

Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Case No. 164 of 2017

In the matter of

Petition of Maharashtra State Electricity Distribution Company Ltd seeking approval for procurement of around 200 MW Solar power on Long Term basis from rooftop/ground mounted Solar power projects proposed to be set up in the premises of its existing substations and approval for consideration of this Solar power procured for fulfilment of its Solar RPO targets.

Coram

Shri. Anand B. Kulkarni, Chairperson

Maharashtra State Electricity Distribution Company Ltd. (MSEDCL)Petitioner
V/s

Maharashtra Energy Development Agency (MEDA)
Energy Efficiency Services Ltd. (EESL)Impleaded Parties

Appearance

For MSEDCL : Shri. Satish Chavan, (Rep.)
For MEDA : None
For EESL : Shri Saurabh Kumar, (Rep.)
For Consumer Representative : 1. Shri Ashok Pendse, TBIA
2. Shri Shantanu Dixit, Prayas Energy Group

ORDER

Date: 9 January, 2018

1. Maharashtra State Electricity Distribution Co. Ltd., Prakashgad, Plot No G-9, Anant Kanekar Marg, Bandra East, Mumbai-400051, has filed a Petition on 27 November, 2017 seeking approval of procurement of around 200 MW Solar power on long term basis from rooftop/ground mounted Solar power projects proposed to be set up in the premises of existing MSEDCL's substations. Further MSEDCL is seeking approval for consideration of this solar power procured for fulfillment of its RPO under Regulation 7 and 19 of MERC (Renewable Purchase Obligation, Its Compliance And Implementation of REC Framework) Regulations, 2016 (RPO Regulations, 2016); Regulation 94 of MERC (Conduct of Business) Regulation, 2004 (CBR, 2004) and under Section 62 and 86 1(b), (e) of the Electricity Act, 2003 (EA, 2003).

2. MSEDCL's prayers are as follows:

- “
- a) *“To admit the Petition as per the provisions of the Regulation 19 of MERC (RPO, Its Compliance and Implementation of REC Framework) Regulations, 2016.*
 - b) *To approve the solar power procurement of MSEDCL from the solar power projects to be developed by EESL, on the spare land available in the existing MSEDCL's substations and switching substations on Long term basis for 25 year at a rate of Rs.3.00 per unit, as per section 62 and 86 (1) (b), (e) of E.A 2003.*
 - c) *To approve the draft PPA with terms & conditions in line with guidelines issued by Ministry of Power, Government of India for tariff based competitive bidding process, to be signed between EESL & MSEDCL.*
 - d) *To allow MSEDCL to consider this solar power for meeting the Solar RPO requirements.*
 - e) *To consider the submission made by the Petitioner and consider the same positively while deciding the Petition as well as for further actions;*
 - f) *To pass any other order/relief as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice;*
 - g) *Condone any error/omission and to give opportunity to rectify the same;*
 - h) *To permit the Petitioner to make further submissions, addition and alteration to this Petition as may be necessary from time to time.”*

3. The Petition states as follows:

- 1) MSEDCL has been incorporated under Indian Companies Act, 1956 pursuant to decision of Government of Maharashtra (GoM) to reorganize erstwhile Maharashtra State Electricity Board (MSEB). MSEDCL is a Company constituted under the provisions of GoM, General Resolution (GR) No. PLA-1003/C.R.8588/Energy-5 dated 25 January, 2005 and is duly registered with the Registrar of Companies (RoC), Mumbai on 31 May, 2005. MSEDCL is functioning in accordance with the provisions envisaged in the EA,2003 and is engaged, within the framework of the EA,2003, in the business of distribution of electricity to its consumers situated over the entire State of Maharashtra, except some parts of city of Mumbai.

2) The Electricity Act 2003, Section 62 states as under;

“(Determination of tariff): (1) The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity;

(b) transmission of electricity ;

(c) wheeling of electricity;

(d) retail sale of electricity:

Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for promoting competition among distribution licensees, fix only maximum ceiling of tariff for retail sale of electricity.”

Further section 86, 1 (b) and (e) of EA, 2003 states as under:

“86. (1) The State Commission shall discharge the following functions, namely:

(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

.....

(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licence;”

3) The National Tariff Policy, 2016, under clause no. 6.4 (1), provides that ‘the Appropriate Commission shall fix a minimum percentage for purchase of energy from renewable sources taking into account availability of such resources in the region and its impact on retail tariffs’.

4) Regulation 2 (1) (j) of RPO Regulations, 2016 makes it clear that:

“An ‘Obligated Entity’ means the distribution licensees, users owning captive power plants, and open access consumers in the State of Maharashtra, who have to mandatorily comply with renewable purchase obligation under these Regulations subject to fulfilment of conditions outlined under Regulation 5”.

Hence, Renewable Purchase Obligation (RPO) of distribution companies/ direct buyers of electricity were to be fixed by State Electricity Regulatory Commission (SERC) s across the States.

- 5) As per Regulation 7.1 of the RPO Regulations, 2016, the RPO targets are as below:

Year	Quantum of purchase (in%) from RE sources (in terms of energy equivalent in kWh)		
	Solar	Non-Solar (other RE)	Total
2016-17	1.00%	10.00%	11.00%
2017-18	2.00%	10.50%	12.50%
2018-19	2.75%	11.00%	13.75%
2019-20	3.50%	11.50%	15.00%

- 6) MSEDCL has contracted RE (as on 31 August, 2017) for fulfilment of Solar and Non-Solar RPO target on preferential tariff with all RE generators except for 1000 MW Solar power from SECI through Competitive Bidding, which is as below:

Sr. No.	Source of Renewable Energy	Contracted Capacity in MW	Commissioned Capacity in MW
1	Wind	3631.65	3631.65
2	Bagasse based Co-generation	1999.75	1904.85
3	Biomass	211	157
4	Small Hydro	115.625	88.875
5	Solar	1327	322
6	MSW	4	4
Total		7289.03	6108.38

- 7) In view of above, MSEDCL's RPO Compliance (provisional) for FY 2016-17 and FY 2017-18 (1st quarter) is as below:
For FY 2016-17:

MSEDCL GEC in (MU)		Solar RPO (MU)		Non Solar RPO (MU)		Total	
111536	Target	1115	1.00%	11154	10.00 %	12269	11.0%
	Achievement	422	0.38%	9332	8.37 %	9753	8.74%
	Shortfall	693 MU		1822 MU		2516 MU	

For FY 2017-18 (1st Quarter):

MSEDCL GEC in (MU)		Solar RPO (MU)		Non Solar RPO (MU)		Total	
33373	Target	637	2.00%	3342	10.50 %	3979	12.50%
	Achievement	105	0.33%	2372	7.45 %	2477	7.78%
	Shortfall	532 MU		970 MU		1502 MU	

MSEDCL is in shortfall of 693 MUs and 1822 MUs for fulfillment of Solar and Non- Solar RPO target respectively for FY 2016-17. Also, there is shortfall of 532 MUs for fulfillment of Solar RPO target and 970 MUs for fulfillment of Non- Solar RPO target for FY 2017-18-1st quarter.

- 8) Ministry of New and Renewable Energy (MNRE), Government of India has set a target of 8% of Solar power by 2021-22. The objective of National Solar Mission is to achieve 100 GW installed capacity by the end of 2022.
- 9) Regulation 7.2 of RPO Regulations, 2016 also states that, Obligated entities may meet its RPO *by way of own generation* or procurement of power from another RE source or by purchase from Licensee or by purchase of RECs or a combination of these options.

As per Regulation 7.2 of RPO Regulations, 2016 the procurement of RE power generated within Maharashtra by a Distribution Licensee at a rate other than that approved by the State Commission directly from a generator or a Trading Licensee shall not be considered as eligible quantum for fulfillment of RPO of such Distribution Licensee.

- 10) In view of above facts and in order to contribute to the target set by Government of India (GoI), MSEDCL is willing to use spare land at its substations for the generation of Solar energy to mitigate its RPO target given by the Commission.
- 11) MSEDCL is having 3257 nos. of 33-22/11kV Substations in Maharashtra as on March 2017. Power is distributed from these substations to the consumers. MSEDCL has already conducted a survey to ascertain availability of spare land in the substation premises. The data of 3257 nos. of substations is collected which shows that spare land is available in the substations. In the detail Substation wise report, it is found that, in around 300 Substations, the spare land available is more than 10,000 sq.m. in each substation. On these lands, the Solar power plants can be established ranging from 0.5MW- 1.0MW capacities as per the availability and size of land. Initial study revealed that by utilizing spare land available at Substations around 200MWp Solar power can be generated in the substation premises.

- 12) MSEDCL has entered into Memorandum of Understanding (MoU) with M/s Energy Efficiency Services Ltd. (EESL), a PSU of Govt. of India for development and implementation of Solar generation plant at MSEDCL's substation. A non-binding MoU is signed between MSEDCL & EESL on 14 June, 2017 in presence of the Hon. MoE (GoI), Hon. CM (GoM), Hon. EM (GoM). This MoU confirms the preliminary discussion between MSEDCL and EESL regarding their intention to enter into transaction or service pertaining to establishment of solar projects on the spare land available in the premises of MSEDCL's Substations and switching stations. After a series of discussions and negotiations held between EESL and MSEDCL, EESL agreed to erect solar plant and supply the power from the solar projects on the spare land available in the premises of Substations and switching stations at levellised tariff Rs. 3 per unit for a tenure of 25 years which is very much competitive in present scenario and is less than the preferential tariff determined by the Commission.
- 13) MSEDCL submitted cost benefit analysis of the project. Maximum solar capacity to be generated is 200 MW. Considering CUF 17.5% for solar power purchase and 6% losses in transmission & distribution, the cost benefit analysis is as below:

Solar capacity to be generated	200 MW
CUF for Solar power purchase	17.5%
Total Energy generated (A)	200*0.175*24*365 306.6MUs
Losses for 33KV level	6%
Avoided generation (B)	(A)*1.06
(Considering 6% loss of 33KV level)	324.99MUs
Preferential levellised tariff rate for solar generation as per Hon'ble Commission's order dtd 28.04.2017	Rs 5.13per unit
Cost of avoided generation (C)	(B)*5.13 Rs.166.7 Crs
Rate of Power purchase offered by M/S EESL for 25 years	Rs. 3 per unit (levellised)
Cost of Power generation to be paid by MSEDCL to M/s EESL (D)	(A)*3 306.6*3 Rs 91.98 Crs
Saving per year(C-D)	Rs 74.9 Crs
Tentative Cost of line evacuation including civil (Considering 300 nos. of location at substation generating 0.5 to 2MW per solar plant)	Rs 60 Crs

- 14) In view of above, it is clear that there is substantial saving in cost of power which has been reduced due to direct Solar power generation at substation. The annual cost saving is Rs 74.9 Crs. Also it can be seen that payback period for the evacuation arrangement is less than 1 year.
 - 15) MSEDCL enumerated some other benefits of this project as below:
 - (a) Good quality day time power supply to farmers:
 - (b) This project is most beneficial to Agricultural consumers as they will get day time power supply and also during the peak hours. This project is implemented particularly for this purpose only.
 - (c) Reduced peak energy demand:
 - (d) As per the current load position, there is huge demand recorded during the day time. Due to this scheme the peak energy demand will be reduced as Agricultural consumers will be operated on Solar power.
 - (e) Reduction in breakdown resulting in consumer satisfaction.
 - (f) Saving on the transmission & distribution network cost.
 - (g) Reduced T&D losses.
 - 16) MSEDCL prepared draft PPA with terms & conditions in line with guidelines issued by Ministry of Power; Government of India for tariff based competitive bidding process for procurement of power from grid connected Solar PV projects and submitted for approval of Commission.
4. EESL in its submission dated 26 December, 2017 has stated that:
- 1) It was set-up under Ministry of Power, Government of India and has pioneered innovative new energy service model, and its success has created a blueprint for commercial growth of energy service companies in India's energy efficiency space. EESL today is implementing the largest energy efficiency portfolio in the world. EESL's energy efficient appliances and technologies have saved India over 35 billion kWh energy annually. These include cost reduction attributed to aggregating demand and economies of scale, which have stimulated India's private energy efficiency investments.
 - 2) In the state of Maharashtra, EESL is already working with State Government, DISCOMs, ULBs in implementing the Energy Efficiency programs. Some of the programs include distribution of LED bulbs through UJALA programme, Street Light National Programme (SLNP), Building Energy Efficiency Programme (BEEP), Municipal Energy Efficiency Programme (MEEP) etc.
 - 3) With this background, MSEDCL and EESL developed a program to install Solar PV based projects in the open/unused/vacant lands in the substations. In this

regard, MoU was executed between MSEDCL and EESL on 14 July, 2017 for developing approx. 200 MW Solar PV based projects. For the proposed Solar PV projects, EESL discovered the costing through a transparent tendering process on e-procurement website.

- 4) In this context, the present Petition is filed by MSEDCL under sections 62 and 86 1(b) (e) of the EA, 2003 seeking approval for procurement of around 200 MW solar power projects. EESL extend full support to the initiative of MSEDCL for implementation of the 200 MW Solar PV projects on the spare lands of MSEDCL's substations and express interest in signing the long term PPA. EESL request the Commission to approve the project along with PPA.
5. MSEDCL in its additional submission dated 29 December, 2017 has stated that;
- 1) It has filed the Petition seeking approval for procurement of around 200 MW Solar power on Long Term basis from rooftop/ground mounted solar power projects proposed to be set up in the premises of its existing substations and approval for consideration of this Solar power procured for fulfillment of RPO.
 - 2) In this regard, MSEDCL submits following additional points before the Commission with respect to the Petition:
 - i) MSEDCL is planning to procure around 200 MW Solar Power on long term basis from ground mounted Solar Power Projects proposed to be set up in the premises of existing MSEDCL substations' spare land. The word rooftop is inadvertently inserted.
 - ii) Most of the substations where the spare land is available are situated in rural areas and caters pre-dominantly agricultural load.
 - iii) The Sample Single Line Diagram (SLD) of substation is attached for information and ready reference.
 - 3) MSEDCL submits that with regards to the Government of India's target for setting up of 100 GW Solar Power capacities by 2022, Ministry of New and Renewable Energy (MNRE) through its letter dated 24 May, 2017 had directed State Governments to utilize the available spare land in existing substations for Solar power generation.
 - 4) In line with the above target of Govt. of India to achieve 100 GW Solar Power Capacity in the country, MSEDCL decided to explore the possibility of establishment of Solar power project on the spare land available at substations through EESL which is a Joint Venture (JV) of PSUs (National Public Sector Enterprises – NTPC Limited, PFC, REC and POWERGRID) under Ministry of Power, Govt. of India.
 - 5) It was requested to GoM for approval to sign Non-binding MoU for establishment of Solar projects on the spare land available at substation premises vide

letter CMD/209 dated 22 September, 2017. The approval is received from GoM and non-binding MoU between EESL & MSEDCL is signed in the presence of Hon. Chief Minister, Hon. Energy Minister, GoM. and Hon. MoS (I/C), GoI on dated 14 July, 2017.

6) Justification of tariff rate of Rs.3.00 per unit:

Initially tariff offered by EESL in their communication dated 15 June, 2017 for sale of Solar power generated unit at Rs 3.25 per unit with 5.5% escalation every year which means levelled tariff of Rs 5.17 per unit. A series of discussions were held between MSEDCL & EESL to reduce the levelled tariff to the acceptable level. Finally, during the meeting dated 25 September, 2017 between MD, EESL & CMD, MSEDCL, EESL has offered revised levelled tariff rate Rs 3.00 per unit for supplying the power generated to MSEDCL from the proposed Solar PV power plants in MSEDCL substation with revised scope of work as decided in the said meeting.

7) MSEDCL submit that after series of discussions and negotiations the levelled tariff of Rs.3.00 per unit was determined for Solar plants to be set up at MSEDCL substations which seems to be a very competitive rate considering the L1 tariff determined in the Solar park competitive biddings during the period June 2016 to June 2017. The rates discovered were in the range of Rs 4.84 per unit to Rs. 2.44 per unit along with varied amounts of Viability Gap Funding. Since these L1 tariffs have been realized for Solar parks which have advantages like economies of scale and establishment of large project capacities at a single location, therefore the levelled tariff of Rs.3.00 per unit for solar plants at MSEDCL substations seems a very competitive rate.

8) A snapshot of tariffs determined in the biddings that took place during June 2016 and June 2017 is as tabulated below:

S. No.	Tender	Capacity	Date	L1 Tariff (Rs. Per unit)	VGF per MW
1	SECI Bhadla(ILFS Solarpark)	500 MW	May 2017	2.44	Nil
2	SECI Bhadla (Adani park)	250 MW	May 2017	2.62	Nil
3	NTPC Kadapa solar park	250 MW	April 2017	3.15	Nil
4	MP Rewa solar park	750 MW	January 2017	2.97, with 5 Paisa escalation for 15 years; Levelled tariff of 3.30	Nil
5	SECI Maharashtra (DCR)	50 MW	December 2016	4.43	1.24 Cr

S. No.	Tender	Capacity	Date	L1 Tariff (Rs. Per unit)	VGF per MW
6	SECI Andhra Pradesh - DCR	100 MW	December 2016	4.43	1.27 Cr
7	SECI Gujarat – DCR	25 MW	October 2016	4.43	1.22 Cr
8	NTPC Rajasthan	130 MW	October 2016	4.35	NA
9	NTPC Karnataka – DCR	100 MW	September 2016	4.84	NA
10	SECI Maharashtra	450 MW	September 2016	4.42	Nil
11	SECI Uttar Pradesh	160 MW	August 2016	4.43	49.5 lakh
12	SECI Odisha	300 MW	August 2016	4.43	49.15 lakh
13	SECI Chhattisgarh	100 MW	June 2016	4.43	59 lakh
14	SECI Karnataka – DCR	50 MW	June 2016	4.43	1.3 Cr
15	SECI Gujarat	225 MW	June 2016	4.43	67.9 Lakh
16	SECI Karnataka	950 MW	June 2016	4.43	68 Lakh

9) Energy generation for fulfillment of RPO target and its implications thereof:

MSEDCL's Solar RPO Status: Considering the Solar power from 200 MW Solar power projects of EESL in FY 2018-19, MSEDCL Solar power procurement plan and RPO requirement is worked out at normative CUF as under:

FY	Gross Energy Consumption GEC i.e. MSEDCL input in MUs	Solar RPO target and requirement	Solar Requirement	Expected (Available) Capacity	MUS available as per normative CUF	Shortfall(-) /Surplus(+)	Shortfall(-) /Surplus(+) in MW
		%	MUs	MW	MUS	MUs	
2017-18	119533	2	2391	395	657	-1733	-1041
2018-19	124116	2.75	3413	1495	2488	-925	-556
2019-20	129101	3.5	4519	3495	5817	1299	780

Note: GEC upto FY 2019-20 is considered as per MYT tariff Order dated 3 November, 2016

- a) Normative CUFs are considered for calculation of MUs
- b) Capacity addition considered are:

FY 2017-18 End: 1000 MW SECI+100 MW rooftop

FY 2018-19 End:200 MW EESL + 200 MW Mukhyamatri Sour Krishi Vahini Yojana
+500 MW Solar park (Dondaicha)+1000 MW Competitive bidding + 100 MW Rooftop

FY 2019-20 End: 500 MW Mukhyamatri Sour Yojana+500 MW SECI Batch-IV

10) The MUs projected in the above table are based on Normative CUF, however based on past experience of MSEDCL solar power is available at below Normative CUF of around 17% -18%. MSEDCL is in shortfall (provisional) of 690 MUs for FY 2016-17 in meeting Solar RPO target and expecting shortfall (Provisional) of 532 MUs in 1st quarter of FY 2017-18. Therefore the energy that shall be generated by EESL from the said Solar plants at MSEDCL substations shall help the latter in fulfilling its Solar RPO target.

11) MSEDCL submit that EESL shall be setting up around 200 MW Solar power plant on the spare land at MSEDCL substations with a CUF range of 12% to 23%. Therefore approx. 306.6 MUs are expected to be generated from the Solar plants, which shall be purchased by MSEDCL at a levellised tariff of Rs. 3 per unit for a period of 25 years. This power purchase shall cost MSEDCL Rs. 91.98 Crores annually as against Rs. 166.7 Crores that it would have had to pay for purchasing such generation at a preferential tariff of Rs. 5.13 per unit for a total generation of 324.99 MUs including the 6% losses at 33kV level.

12) The detailed calculations for the MUs generated and its cost implications have been tabulated below:

Solar Capacity to be installed	200 MW
Capacity Utilization Factor (CUF) for power purchase	17.5%
Total Energy Generated (MUs)	306.6 MUs
Rate of Power Purchase from EESL for 25 years	Rs. 3 per unit (Levellised)
Cost of Power Purchase per year from EESL Solar Generation at MSEDCL substations (A)	Rs. 91.98 Crores
Preferential Levellised tariff rate for solar generation as per Hon'ble Commission's Order dtd 28 th April 2017	Rs. 5.13 per unit
Cost of solar power as per above preferential tariff (B)	Rs. 166.7 Crores
Savings per year (B-A)	Rs. 74.9 Crores

It is to further submit that MSEDCL shall be saving Rs. 74.9 Crores annually if it purchases power from the said solar plants at MSEDCL substations as per the calculations shown above.

13) Evacuation Cost:

The evacuation cost estimated currently is Rs.60 Crores and may vary as per actual survey and requirements. Joint survey of substation land is under process with EESL representative after finalization of the scope of work DPR will be prepared.

Accordingly the DPR shall be submitted to the Commission for its in-principle approval within the next 3 months i.e. by 31 March, 2018. The impact of evacuation cost on tariff rate will be around Rs. 0.078 per unit for 25 years which is calculated as under:

Total No. of MUs generated in 25 years=306.6 MUs/year *25 yrs=7665 Mus

Total power purchase cost in 25 years = 7665 MUs*Rs.3 per unit=Rs.2299.50 Crs

Adding Rs.60 Crs of evacuation expense, the effective power purchase cost will be Rs.2299.50 Crs+60 Crs=Rs.2359.5 Crs

The effective tariff rate will be= Rs.2359.5 Crs/7665 MUs=Rs.3.078 per unit.

14) Proposed Date of Commissioning of the Solar plants:

MSEDCL submit that the Solar power from the Solar projects developed by EESL will be made available during FY 2018-19. As per PPA, the Commercial Operation Date (COD) is to be achieved within 13 months for each project site from the date of handover of the individual site from the PROCURER i.e. MSEDCL.

15) Current Status of Projects:

Tenders for evacuation of Solar power in existing substation have been floated at Circle/ zonal level. The substation land shall be handed over to EESL after execution of the PPA. The plants are expected to be commissioned in the year 2018-19.

16) PPA preparation:

The PPA between MSEDCL and EESL is a MoU based PPA at a levellised tariff of Rs. 3 per unit. The following additional clauses have been incorporated in the earlier executed MoU based PPA and these clauses have been taken from the Ministry of Power (Guidelines for procurement of Solar PV power, dated 3 August, 2017) and SECI guidelines so as to ensure that it is in the best interest of both the parties for successful execution of these solar projects:

Sr. No.	Particulars	Changes Suggested by MSEDCL
1	Consideration of energy for RPO	Consideration of solar power for RPO fulfillment of MSEDCL. The point need to be incorporated in PPA.
2	EMD and Performance bank guarantee (PBG):	The seller has to provide EMD and performance bank guarantee for timely completion of project as a security and recover the liquidated damages by procurer.

3	Scheduled Commissioning Date (SCD)	<p>1. Shall be 13 months from the date of execution of PPA. The provisions in case of delay in commissioning of projects from SCD to recover liquidated damages shall have to be incorporated in the PPA. The maximum time limit should be specified for installation of project beyond SCD.</p> <p>2. The provision for full or part commissioning as on SCD may be included as in SECI PPA.</p>
4	Term of Agreement:	The extension or renewal of PPA after expiry of term of agreement should be mutual consent. If not renewed upto maximum 3 months post expiry of PPA, the project assets after expiry of term of agreement shall be handed over to Procurer i.e MSEDCL.
5	Clearance Approval	The responsibility of obtaining clearances lie with SPD in SECI PPA .However, in case of EESL PPA, the responsibility fixed on MSEDCL.
6	Tariff:	<p>The tariff is fixed for the entire term of the agreement for the energy supplied (Net energy Export-Import) at metering point. The payment of taxes, duties etc. is proposed to be refunded by Procurer in ESSL PPA. However, the taxes and duties etc. applicable for the generation shall be borne by ESSL as the ownership of the plant is with ESSL.</p> <p>The auxiliary consumption shall not be charged to seller i.e EESL. However, the same shall be netted off against the export.</p>
7	Right to Contracted capacity	The seller (EESL) shall specify CUF range and corresponding energy to be sold or supplied to the procurer (MSEDCL). The seller shall supply the power corresponding to that CUF on annual basis. In case of supply of power less than the committed CUF, the seller shall have to compensate procurer for the shortfall of MUs at a rate of Solar REC and the excess generation over and above maximum declared CUF will be purchased at a rate of 75% of the tariff rate.
8	Payment security Mechanism (LC):	The payment security mechanism to be provided by Procurer or MSEDCL (i.e LC equivalent to one month average billing) shall be as per the MNRE guidelines only.
9	Off-take constraints:	The duration of grid unavailability and generation compensation due to grid unavailability may be

		proposed in line with the MoP guidelines only.
10	Rebate:	The rebate is proposed 0.25% for effecting payment in 3 business days. It may be revised as 7 days as in case of SECI PPA.
11	Repowering:	The provision in case of repowering the capacity during the tenure of PPA is done by Seller; the procurer is obligated to purchase the power equivalent to committed CUF only.
13	Synchronization, commissioning and commercial operation	The procedure shall be as per SECI PPA. Third party verification from MEDA may be proposed to ensure the commissioning/COD.
14	Third Party Sale	In case of default in payment of bills, third party sale is proposed in PPA. However, the same is not proposed in MNRE guidelines. The same shall be with the consent of MSEDCL.

17) Proposed CUF of 17.5% with a range of 23% to 12% and justification thereof:

MSEDCL submit that the projects to be commissioned by EESL at MSEDCL's substations shall operate within a CUF range of 23% to 12% calculated for all the project sites (cumulative capacity of the installed projects). Additionally, provisions have been made in the PPA for compensation to the Procurer (MSEDCL) by the Seller (EESL) for any shortfall in energy generated corresponding to 12% CUF and also for purchase of any excess energy over and above 23% CUF. MSEDCL further submit that the actual average CUF discovered from the existing PPAs is 17%-18% and considering this experience, a CUF of 17.5% has been taken for the purpose of calculations of energy generated, power purchase cost and cost benefit analysis. Any generation from these Solar plants beyond the CUF of 17.5% shall be beneficial for MSEDCL owing to such additional energy.

6. The proceedings of the hearing held on 2 January, 2018 are summarized as follows:

1) MSEDCL Representative stated that:

a) MSEDCL has signed a Non binding MoU with EESL on 14 June, 2017 under Section 62 of EA 2003, when no competitive bidding guidelines for long term Solar Power Procurement were published by Ministry of Power (MoP). The said Guidelines are subsequently published on 3 August, 2017 by MoP.

b) EESL is a Public Sector Undertaking (PSU) of Government of India set-up under MoP. It undertook a transparent tendering process for procurement of Solar Power for MSEDCL on e-procurement website, the discovered rate being Rs 3.00 per unit.

c) As per the conditions of draft PPA proposed to be executed between MSEDCL and EESL, the asset of solar project shall remain with MSEDCL after period of PPA.

d) The rate in this Petition cannot be compared with the discovered for solar parks which has an advantage of economies of scale and establishment of large project capacities at a single location. Proposed solar power plants in this petition are ranging from 0.5 MW to 2 MW, to be erected at different locations/substations of MSEDCL. Also escalation in rate is not proposed for 25 years. Therefore the rate proposed by MSEDCL is comparable taking into consideration the above factors.

- 2) Dr Ashok Pendse on behalf of TBIA, supported the Petition of MSEDCL as it is beneficial to the Agricultural consumers. By mentioning the chronology from June 2017 till December 2017 in the solar sector he stated that the rates of solar power purchase are coming down in the market. Dr. Pendse further stated that the recent solar power purchase in Uttar Pradesh is at Rs 2.48 per unit for ACME 200MW and at Rs 2.47 per unit for Hero Solar 200MW, Bhadla is at Rs 2.44 per unit for 500MW and Rs 2.62 per unit for 250MW, Delhi Metro Reva is at Rs 2.97 per unit for 750MW, Rajasthan ACME at Rs 2.44 per unit for 200 MW. Lease rent in case of Badhla is Rs. 30515/ MW/year. Therefore, there is scope for reduction in the cost of power.
- 3) Shri. Shantanu Dixit on behalf of Prayas Energy Group supported the Petition of MSEDCL as it is beneficial to Agricultural consumers. He stated that MSEDCL should ensure that the land which is to be utilized for solar power project will not be required for augmentation or future expansion of the substations.

7. EESL in its additional submission dated 02 January, 2018 has stated that;

- 1) Draft PPA submitted by MSEDCL vide letter no CE/PP/Solar/28322 dated 20 November, 2017 for Solar Power Project to be developed by EESL on spare land available in the existing MSEDCL Substations is acceptable to them.
- 2) EESL is a Govt. of India organization and they have offered tariff rate of Rs 3.00 per unit and is being derived through open competitive bidding.

8. MSEDCL in its additional submission dated 03 January, 2018 has primarily stated that;

- 1) It will provide the developed land plot to EESL on lease basis @ rate of Rs. 1 per substation per year. EESL has considered the same and has been factorized by the tariff rate.
- 2) Draft PPA submitted with the main Petition, it is submitted that the excess generation over and above maximum declared CUF will be purchased at a rate of 100% of the tariff rate (Ref. Clause no.5.3: Purchase and sale of Contracted Capacity). While in the additional submission dated 29 December, 2017, it has been inadvertently submitted by MSEDCL that the excess generation over and

above maximum declared CUF will be purchased at a rate of 75% of the tariff rate. It is requested to pardon MSEDCL for the inadvertent error and consider the clause in the draft EPA i.e excess generation over and above maximum declared CUF will be purchased at a rate of 100% of the tariff rate.

9. MEDA has not attended the hearing and not submitted any submission in this matter.

Commission's Analysis and Rulings

10. **The Commission notes that MSEDCL has entered into MoU with EESL for purchase of total around 200 MW Solar Power from individual Project of the capacity ranging between 0.5 MW to 1 MW, on long term i.e. for 25 years. All individual Solar Projects will be developed by EESL at the spaces available at various substations of MSEDCL. MSEDCL has identified 300 substations in its area of supply.**
11. **Main prayers of MSEDCL are as follows;**
- (a) Approval for purchase of Long Term 200 MW Solar Power, to be developed by EESL, for 25 years under MoU route.**
 - (b) The rate under the PPA is Rs 3.00 per unit for the duration of the PPA.**
 - (c) Approval of draft PPA with deviations to be signed between EESL & MSEDCL.**
 - (d) Consideration of the above Solar Power towards MSEDCL's Solar RPO target;**
12. **The Commission notes the submission of EESL that it has offered a tariff of Rs 3.00 per unit which is discovered by it through transparent tendering (Competitive Bidding) process.**
13. **The Petition was heard on 2 January, 2018 and the Commission dealt with the above issue of MSEDCL's Long Term procurement of Solar Power for 25 years at a rate of Rs 3.00 per unit from EESL and whether it would count towards fulfilment of its RPO. The Commission has also analysed the issue of approval of draft PPA to be signed between MSEDCL & EESL. The Commission has addressed MSEDCL's above issues in the background of the various statutory, regulatory provisions and the Commission's earlier Orders besides taking on records various submissions, facts and material of various parties under this Case. Accordingly the Commission's observations, findings and ruling are set out below.**
14. **The Section 86(1)(b) of the EA, 2003 reads as follows:**
"8. Functions of State Commission
The Commission shall discharge the following functions, namely: -
"(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating

companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;...”

Further Section 86 (1)(e) of the EA, 2003 reads as follows;

“(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licence;”

Thus Section 86 (1) (b) of the Electricity Act, 2003 provides for the functions of the State Commission, which inter alia states that the State Commission has to regulate electricity purchase and procurement process of Distribution Licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through Agreements for purchase of power for distribution and supply within the State.

15. In the past, the Commission in its Order dated 29 October, 2013 in Case No 92 of 2013 has dealt with the issue of approval of MoU route PPA of 20 MW Solar Power between BEST Undertaking(BEST) & M/s Welspun Energy Maharashtra Pvt. Ltd.(WEMPL) under Section 86 (1) (b) of the EA, 2003. Under that Case, BEST has entered into MoU on 29 January 2013 and signed the PPA on 27 May 2013 with WEMPL for 20 MW Solar Power Plant for 25 years at the quoted tariff of Rs. 8.56 per Unit. This rate was lower than the Commission approved rate for FY 2012-13(Rs. 11.66 per unit) as well as for FY 2013-14(Rs. 9.48 per unit) for Solar PV projects. The Commission in those proceedings had also observed that;

“8.5 The Commission observed that the Tariff at which BEST has entered into long term PPA with M/s Welspun through EoI process is Rs.8.56/ per Unit which is lower than the Commission approved rate for FY 2013-14....”

Finally, the Commission had ruled as below;

“8.8 Having heard the Petitioner and Respondent and in view of the relevant provisions of the Electricity Act, 2003 and relevant Regulations of MERC MYT Regulations, 2011, the Commission accords in principle approval to the Power Purchase Agreement between BEST and M/s Welspun Energy Maharashtra Pvt. Ltd. for 20 MW Solar Power signed on 27 May 2013 for a period of 25 years at the flat rate of Rs. 8.56/ Unit towards the compliance of the solar RPO for period from FY 2010-11 through FY 2015-16 on a cumulative basis by FY 2015-16....”

16. Under the present Case, MSEDCL has prayed to allow it for Long Term procurement of 200 MW Solar Power from EESL for 25 years under MoU route PPA at a rate of Rs 3.00 per unit , under Section 62 and 86 (1) (b), (e) of the EA, 2003. MSEDCL has proposed to enter MoU route PPA at a rate of Rs 3.00 per unit. The Commission has analysed this rate of Rs. 3.00 per unit and its competitiveness in following manner;

(a) **Negotiated Tariff of Rs. 3.00 per unit:** MSEDCL has stated that initially the tariff offered by EESL in its communication dated 15 June, 2017 for sale of Solar power generated unit was at Rs 3.25 per unit with 5.5% escalation every year. Further a series of discussions were held between MSEDCL & EESL to reduce the tariff to the acceptable level. Finally, during the meeting dated 25 September, 2017 between EESL & MSEDCL, EESL has offered revised levelled tariff rate Rs 3.00 per unit for supplying the power generated to MSEDCL from the proposed Solar PV power plants in MSEDCL substation.

(b) **Generic Tariff for Solar PV plants for FY 2017-18:** The Commission's Generic Tariff for Solar PV plants is Rs. 5.13 per unit as determined in its Order dated 28 April, 2017 in Case No 33 of 2017 for FY 2017-18.

(c) **Recent results of Short Term Bidding for Solar PV power:** MSEDCL under the proceedings in Case No 155 of 2017 (Petition of MSEDCL filed on 1 November, 2017) has stated that it has floated a tender document on 29 September, 2017 on the 'Discovery of Efficient Electricity Price' (DEEP) e-Portal for procurement of Solar (100 MW) and Wind power (200 MW) on short-term basis from 1 November, 2017 to 31 October, 2018 and an advertisement was also published in newspapers on 2 October, 2017. For this short Term Bidding a Ceiling rate was fixed at Rs. 3.00 per unit. The non-financial/ technical Bids were opened on 24 October, 2017 and only one Bidder, viz. Manikaran Power Ltd., bid with regard to Solar power; however, it was technically disqualified due to submission of insufficient amount towards Earnest Money Deposit (EMD).

(d) **Recent results of Long Term Bidding for Solar PV power:** Maharashtra State Power Generation Co. Ltd. (MSPGCL) a State Generating Company recently in its Petition (Registered as Case No 172 of 2017) before the Commission, has submitted that a Competitive Bidding process for 200 MW capacity of Solar power (50 MW cumulative capacity in Vidarbha, Marathwada, Western Maharashtra and North Maharashtra) is completed. A levelled rate arrived at is Rs. 3.15 per unit for 25 years.

(e) **Details of SECI Bidding results during June 2016 and June 2017 as submitted by MSEDCL under the present Case:** MSEDCL has stated that the lowest Solar PV tariff discovered during June 2016 and June 2017 under SECI Solar Bidding process was Rs. 2.44 per unit for Bhadla(ILFS Solar park) for 500 MW capacity. The rates discovered during this period were in the range of Rs 4.84 per unit to Rs. 2.44 per unit along with varied amounts of Viability Gap Funding (VGF). These L1 tariffs have been realized for Solar parks which have advantages like economies of scale and establishment of large project capacities at a single location. Further during this period, under the SECI's Bidding process the discovered rate in Maharashtra were Rs.4.43 per unit (for 50 MW in December, 2016) and Rs. 4.42 per unit (for 450 MW in September, 2016).

MSEDCL therefore stated that the levelled tariff of Rs.3.00 per unit under this Case for solar plants at MSEDCL substations seems a very competitive rate. The Commission accepts MSEDCL's plea in this regard.

17. The Commission notes that MSEDCL in its additional submission dated 29 December, 2017 has cited MNRE letter dated 24 May, 2017 marked to various Principal Secretary (Power/ Energy) of various States including the State of Maharashtra. This letter inter alia mentioned following points;

- (i) Government of India has set a target of setting up of 100 GW Solar capacities by 2022. As on dated over 12 GW Solar capacity has already been installed and balance capacity is required to be set up in next 5 years. For taking up additional Solar power capacities, power evacuation/transmission infrastructure is an essential requirement. The Ministry has got prepared from PGCIL, the details of availability of spare capacities in existing/planned substations for the three regions (WR/NR/SR) under ISTS.
- (ii) Considering the above, the State Governments may prioritise setting up of Solar projects subject to availability of land near the available capacity of Substation/transmission system. State Government may examine the above and prepare a plan for setting up of Solar projects in future, which may reduce cost of the projects.

The Commission notes that in this background MSEDCL has decided to explore the possibility of establishment of Solar power project on the spare land available at substations through EESL which is a Joint Venture (JV) of PSUs (National Public Sector Enterprises – NTPC Limited, PFC, REC and POWERGRID) under Ministry of Power, Govt. of India.

Further, 2nd proviso to Regulation 7.2 of RPO Regulation, 2016 provides as below;

“(7.2) An Obligated Entity may meet its RPO target by way of its own generation or procurement of power from another RE Project or by purchase from a Licensee or by purchase of RECs or by a combination of these options

....

Provided further that procurement by a Distribution Licensee of RE power generated within Maharashtra under a scheme of or approved by MNRE may be considered by the State Commission as eligible quantum for fulfilment of the RPO of such Distribution Licensee considering the nature of such scheme”

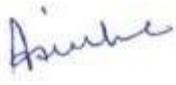
The Commission notes that the Solar power is proposed to be procured by MSEDCL under the present Case has its genesis in the above said MNRE letter dated 24 May, 2017. MSEDCL has stated that the Solar Projects cited in the Petition will be located in its Substations i.e. in Maharashtra. The Commission also notes that MSEDCL has so far fallen short of its Solar RPO targets, and that the rate of Rs. 3.00 per unit for proposed Solar power procurement is below the

preferential tariff of Rs. 5.13 per unit as determined by the Commission in its Order dated 28 April, 2017 in Case No 33 of 2017 for FY 2017-18. As discussed earlier it is also competitive considering the small size and scattered locations, and optimizes the utilisation of MSEDCL's substation lands.

18. In view of foregoing, and also the nature and purpose of the process undertaken by MSEDCL and the consumer interest, the Commission approves MSEDCL's present proposal of Long Term procurement of 200 MW Solar Power, to be developed by EESL, for 25 years under MoU route PPA at a rate of Rs 3.00 per unit.
19. The procurement of power by MSEDCL from the proposed 200 MW Solar Power projects to be developed by EESL would count towards the fulfilment of its Solar RPO for the respective periods. MSEDCL's prayers are addressed accordingly.
20. MSEDCL has sought approval to the draft PPA with deviations to be signed between EESL & MSEDCL. In this regards the Commission accepts MSDCL's submission dated 29 December, 2017 that it has incorporated the additional clauses in the earlier executed MoU based PPA and these clauses have been taken from the Ministry of Power (Guidelines for procurement of Solar PV power, dated 3 August, 2017) and SECI guidelines so as to ensure that it is in the best interest of both the parties for successful execution of these Solar projects. The Commission also notes that EESL in its submission dated 2 January, 2018 has stated that draft PPA submitted by MSEDCL vide letter no CE/PP/Solar/28322 dated 20 November, 2017 is acceptable to them. In these circumstances the Commission accords its approval to the draft PPA with deviations to be signed between EESL & MSEDCL under the present Case.

The Petition of Maharashtra State Electricity Distribution Co. Ltd. in Case No.164 of 2017 stands disposed of accordingly.

Sd/-
(Anand B. Kulkarni)
Chairperson


(Ashwani Kumar Sinha)
Secretary

