

CE/RE/RPO/FY 2018-19-20/ **No 10913**

Date: **28 MAY 2021**

To,

**The Secretary,  
Maharashtra Electricity Regulatory Commission,  
13th Floor, Centre No.1, World Trade Centre,  
Cuffe Parade, Colaba,  
Mumbai – 400 005.**

**Sub:** Suo-motu proceeding for Verification and Compliance of Renewable Purchase Obligation targets of MSEDCL for FY 2018-19 and FY 2019-20, as specified under MERC (Renewable Purchase Obligation, its compliance and Implementation of REC framework) Regulations, 2016. (Case No. 49 of 2021)

**Ref:** MERC Notice No. MERC Tech/RPO/MSEDCL/116 dated 27.04.2021.

Respected Sir,

With reference to above subject and notice under reference please find enclosed herewith the submission of MSEDCL for Verification and Compliance of Renewable Purchase Obligation targets of MSEDCL for FY 2018-19 and FY 2019-20, as specified under MERC (Renewable Purchase Obligation, its compliance and Implementation of REC framework) Regulations, 2016

Submitted for your further needful please.

Thanking you,

Regards



**Chief Engineer (Renewable Energy)**

**Copy s.w.r. to:**

1. The General Manager (REC, R &D),  
Maharashtra Energy Development Agency,  
Government of Maharashtra  
Aundh Road, Opposite Spicer College,  
Near Commissionerate of Animal Husbandry, Pune-411067
2. The Director ( Commercial), MSEDCL, Mumbai.

**Copy f.w.c.to:**

The Chief Engineer,  
Maharashtra State Load Despatch Centre, Airoli, kalwa, Thane,

**BEFORE THE MAHARASHTRA ELECTRICITY REGULATORY  
COMMISSION**

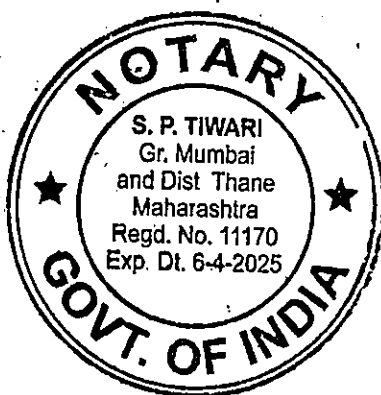
**CASE NO. 49 OF 2021**

**Filing No.:** \_\_\_\_\_

**IN THE MATTER OF**

**SUO-MOTU PROCEEDING FOR VERIFICATION AND COMPLIANCE  
OF RENEWABLE PURCHASE OBLIGATION TARGETS OF MSEDCL  
FOR FY 2018-19 AND FY 2019-20, AS SPECIFIED UNDER MERC  
(RENEWABLE PURCHASE OBLIGATION, ITS COMPLIANCE AND  
IMPLEMENTATION OF REC FRAMEWORK) REGULATIONS, 2016.**

**AND**

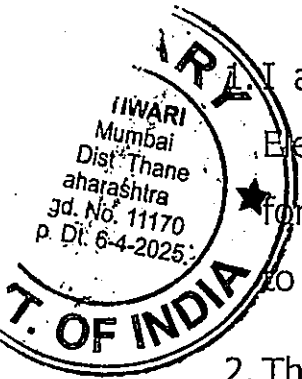


**IN THE MATTER OF**

**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION COMPANY  
LTD**

**AFFIDAVIT ON BEHALF OF PETITIONER (MSEDCL) VERIFYING THE SUBMISSION.**

I, Mrs. Kavita Gharat, aged 43 years, having my office at MSEDCL, Prakashgad, Bandra (E), Mumbai- 400 051, do hereby solemnly affirm and state as under;



1. I am Chief Engineer (Renewable Energy) of the Maharashtra State Electricity Distribution Co. Ltd, (herein after referred to as "MSEDCL" for the sake of brevity), in the above matter and am duly authorized to make this affidavit.

2. The statements made in paragraphs of the submission are true to my knowledge and belief and statements made in point wise submission are based on information and I believe them to be true.

3. I say that there are no proceedings pending in any court of law/ tribunal or arbitrator or any other authority, wherein the Petitioner is a party and where issues arising and/or reliefs sought are identical or similar to the issues arising in the matter pending before the Commission.

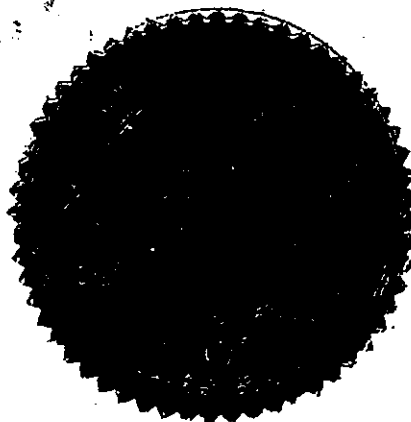
Solemnly affirm at Mumbai on this ---- Day of -----, 2021 that the contents of the above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

*Kavita Gharat*  
Deponent

Identified before me

Place: Mumbai

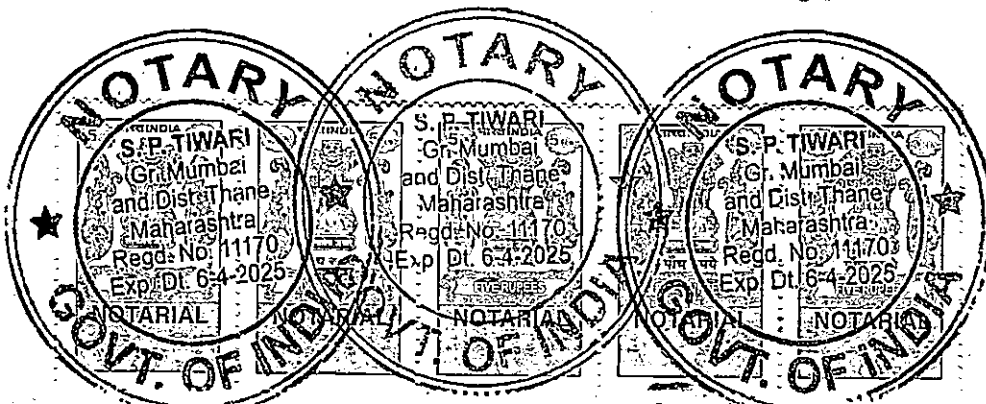
Date:-----.



**BEFORE ME**

*S.P. Tiwari*  
**S. P. TIWARI**  
M.A., LL.B.  
**NOTARY**  
Maharashtra  
(Govt. of India)

28 MAY 2021



BEFORE MAHARASHTRA ELECTRICITY REGULATORY COMMISSION, MUMBAI

Case No. 49 of 2021

IN THE MATTER OF

Suo-motu proceeding for Verification and Compliance of Renewable Purchase Obligation targets of MSEDCL for FY 2018-19 and FY 2019-20, as specified under MERC (Renewable Purchase Obligation, its compliance and Implementation of REC framework) Regulations, 2016.

**SUBMISSION**

BY MAHARASHTRA STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED, MUMBAI.

MSEDCL is filing this Submission before this Hon'ble Commission, pursuant to the directives issued by the Hon'ble Commission vide its Notice No. MERC/Tech/RPO/MSEDCL/116 dated 27.04.2021, which are reproduced as follows;

- a) *Reconciliation statement along with rationale with regards to GEC data reported by MSLDC and audited data of Distribution Licensee.*
- b) *MSEDCL should verify the RPO settlement details for FY 2018-19 and FY 2019-20, as submitted by MEDA (copy attached as Annexures to this letter) and highlight the discrepancies, if any, along with proper justification.*
- c) *MSEDCL should submit the status of Solar, Non-Solar RPO compliance including Mini/Micro Hydro RPO compliance, as per the directives of the Commission vide Orders in Case No.180 of 2013, Case No.190 of 2014, Case No. 16 of 2016, Case No. 169 of 2016, Case No.207 of 2017 and Case No. 36 of 2019 along with detailed statement for project wise energy procurement in MUs from all Solar & Non-Solar generating projects including Mini/Micro Hydro projects and project wise contracted Solar and Non-Solar power capacity in MW during FY 2010-11 to FY 2019-20.*
- d) *MSEDCL should submit detailed list of action and efforts undertaken by it prior to and during FY 2018-19 and FY 2019-20 to ensure compliance of RPO targets in respect of Solar RPO, Non-Solar RPO and Mini/Micro Hydro RPO.*
- e) *MSEDCL should submit the details for long term RE procurement plan (in MUs and corresponding MW) for meeting the future RPO targets.*

It is respectfully submitted that, MSEDCL, vide letter dated 04.11.2019 and e-mail dated 15.09.2020, 23.10.2020, has submitted the RPO Compliance Reports for FY 2018-19 and FY 2019-20 (through MEDA's web portal) respectively in the prescribed format to MEDA and Hon'ble MERC. The point-wise submission to the above is as under:

***a) Reconciliation statement along with rationale with regards to GEC data reported by MSLDC and audited data of Distribution Licensee.***

- i. The compliance of RPO was computed on the basis of monthly Gross Energy Consumption (GEC) at G<>T interface (aggregated annually) during FY 2018-19 and FY 2019-20, as informed by MSLDC.

ii. FY 2018-19:

The GEC of MSEDCL as per SLDC is 136145.56 MU, which is inclusive of the energy consumption by Open Access consumers of MSEDCL. Also, MSEDCL RE procurement and open access consumption are considered by grossing up the losses at Transmission periphery i.e. G<>T Interface in line with MERC order dated 14.09.2016 in Case No. 16 of 2016. The total open access consumption for FY 2018-19 was 5215.91 MU (Conventional Open Access 4329.36 MU, Wind+ Solar+ Small Hydro Open Access 886.54 MU). Thus, the actual GEC of MSEDCL (excluding OA Consumption) at G<>T Interface is 130932.65 MU.

iii. FY 2019-20:

The GEC of MSEDCL as per SLDC is 132117.103 MU, which is inclusive of the energy consumption by Open Access consumers of MSEDCL. Also, MSEDCL RE procurement and open access consumption are considered by grossing up the losses at Transmission periphery i.e. G<>T Interface in line with MERC order dated 14.09.2016 in Case No. 16 of 2016. The total open access consumption for FY 2018-19 was 4442.350 MU (Conventional Open Access 3603.001 MU, Wind+ Solar+ Small Hydro Open Access 839.349 MU). Thus, the actual GEC of MSEDCL (excluding OA Consumption) at G<>T Interface is 127674.753 MU.

***b) MSEDCL should verify the RPO settlement details for FY 2018-19 & FY 2019-20, as submitted by MEDA (copy attached as Annexures to this letter) and highlight the discrepancies, if any, along with proper justification.***

**FY 2018-19:-**

- i. The details of MSEDCL's RPO compliance for FY 2018-19 submitted to MEDA are as follows :

Gross Energy Consumption (MUs)		Solar RPO		Non Solar RPO (Including Mini-Micro)		Mini / Micro Hydro RPO (within Non Solar RPO)		Total	
		Mus	%	Mus	%	Mus	%	Mus	%
130932.65	Target	3601	2.75	14403	11.00	28.81	0.022	18003	13.75
	Procurement	2279	1.74	12466	9.52	0.36	0.002	14746	11.26
	Shortfall (-) / Surplus (Mus)	-1321		-1936		-28.45		-3258	

As per MERC Order in Case No. 36 of 2019, MSEDCL has fulfilled its Non-Solar RPO target up to FY 2017-18 with surplus of 55.151 MU, which is only 0.43% in excess of FY 2017-18 non-solar target. MSEDCL has considered these 55.151 MU for RPO compliance of FY 2018-19, Therefore the revised MSEDCL's RPO compliance for FY 2018-19 is as below:

Gross Energy Consumption (MUs)		Solar RPO		Non Solar RPO (Including Mini-Micro)		Mini / Micro Hydro RPO (within Non Solar RPO)		Total	
		Mus	%	Mus	%	Mus	%	Mus	%
130932.65	Target	3601	2.75	14403	11.00	28.81	0.022	18003	13.75
	Procurement	2279	1.74	12523	9.56	0.36	0.0002	14803	11.31
	Shortfall (-) / Surplus (Mus)	-1321		-1880		-28.45		-3200	

Remark:- The calculations are done with six digits from decimal point.

#### FY 2019-20:-


- i. The details of MSEDCL's RPO compliance for FY 2019-20 submitted to MEDA are as follows :

Gross Energy Consumption (MUs)		Solar RPO		Non Solar RPO (Including Mini-Micro)		Mini / Micro Hydro RPO (within Non Solar RPO)		Total	
		Mus	%	Mus	%	Mus	%	Mus	%
127674.753	Target	4469	3.50	14683	11.50	29.36	0.023	19151	15.00
	Procurement	3616	2.83	10453	8.19	6.92	0.005	14069	11.02
	Shortfall (-) / Surplus (Mus)	-852		-4230		-22.44		-5082	

Remark:- The calculations are done with six digits from decimal point.

- ii. There is difference of 39.548 MU between the compliance report submitted to MEDA and the recently reconciled report of MSEDCL. The additional 39.548 MU (at G<>T periphery) are due to late agreements finalized for procurement of RE power and their booking into the system thereon

The revised MSDECL's RPO compliance for FY 2019-20 is as below:




Gross Energy Consumption (MUs)		Solar RPO		Non Solar RPO (Including Mini-Micro)		Mini / Micro Hydro RPO (within Non Solar RPO)		Total	
		Mus	%	Mus	%	Mus	%	Mus	%
127674.753	Target	4469	3.50	14683	11.50	29.36	0.023	19151	15.00
	Procurement	3624	2.84	10485	8.21	6.92	0.047	14109	11.05
	Shortfall (-) / Surplus (Mus)	-845		-4197		-22.44		-5042	

**c) MSEDCL should submit the status of Solar, Non-Solar RPO compliance including Mini/Micro Hydro RPO compliance, as per the directives of the Commission vide Orders in Case No.180 of 2013, Case No.190 of 2014, Case No. 16 of 2016, Case No. 169 of 2016, Case No.207 of 2017 and Case No. 36 of 2019 along with detailed statement for project wise energy procurement in MUs from all Solar & Non-Solar generating projects including Mini/Micro Hydro projects and project wise contracted Solar and Non-Solar power capacity in MW during FY 2010-11 to FY 2019-20.**

MSEDCL's compliance in respect to the directives of the Commission in the said Orders are as below:

FY	MERC Order		RE Source	Directives of the Commission	Compliance of the Directives
	Case No.	Date			
2012-13	180 of 2013	12-Mar-14	Non-Solar	Allowed MSEDCL to meet its Non-Solar RPO shortfall of FY 2012-13 in FY 2013-14 on cumulative basis (298.37 MU)	Non-solar: MSEDCL fulfilled cumulative Non-solar Target upto FY 2014-15, by way of purchase of Non-Solar RECs. (1724.49 MUs) during Jan-March, 2018
			Mini-Micro	Allowed MSEDCL to meet its RPO target of Mini/Micro Hydro by FY	MSEDCL purchased Non-Solar RECs in Dec,-2017 and Mar, 2018 to meet




FY	MERC Order		RE Source	Directives of the Commission	Compliance of the Directives
	Case No.	Date			
				2015-16 on cumulative basis. (16.60 Mus)	cumulative mini-micro Hydro target upto FY 2016-17.
			Solar	Allowed MSEDCL to cumulatively fulfil its Solar RPO targets by FY 2015-16 (644.22 Mus).	MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18 and Oct-18 ( 1378.966 Mus). REC certificates are attached as Annexure – B.
2013-14	190 of 2014	04-Aug-15	Non-Solar/Solar	MSEDCL shall constitute a separate 'RPO Regulatory Charges Fund' to purchase Solar and Non-Solar RECs and/or to procure power so as to fully meet the cumulative shortfall against RPO targets (Solar: 925.96 MUs and Non-Solar: 1078.13 MUs) by the end of March, 2016.	Solar: MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18 and Oct-18 ( 1378.966 Mus) Non-solar: MSEDCL fulfilled cumulative Non-solar Target upto FY 2014-15, by way of purchase of Non-Solar RECs. (1724.49 MUs) during Jan-March, 2018
			Mini-Micro	MSEDCL may make up for the past shortfall, including the shortfall in FY 2013-14, by fulfilling its Mini/Micro Hydro RPO (32.65 MUs) targets on a cumulative basis by the end of FY 2015-16.	MSEDCL purchased Non-Solar RECs in Dec,-2017 and Mar, 2018 to meet cumulative mini-micro Hydro target upto FY 2016-17.
2014-15	16 of 2016	42627	Non-Solar/Solar	MSEDCL shall constitute a separate 'RPO Regulatory Charges Fund' and shall be utilized to purchase Solar and Non-Solar RECs and/or to procure power so as to fully meet the shortfall against its Solar and Non-Solar (excluding Mini/Micro Hydro) RPO targets for FY 2014-15 by the end of March, 2017, (Cumulative shortfall: Solar: 1201.81 MUs and Non-Solar: 1724.49 MUs)	Non-solar: MSEDCL fulfilled cumulative Non-solar Target upto FY 2014-15, by way of purchase of Non-Solar RECs. (1724.49 MUs) during Jan-March, 2018. MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18 and Oct-18 ( 1378.966 Mus)
			Mini-Micro	allows MSEDCL to purchase Non-Solar RECs in the current year (FY 2016-17) to meet any shortfall still	MSEDCL purchased Non-Solar RECs in Dec,-2017 and Mar, 2018 to meet cumulative mini-micro Hydro target upto FY






FY	MERC Order		RE Source	Directives of the Commission	Compliance of the Directives
	Case No.	Date			
				remaining for the period upto FY 2014-15	2016-17.
2015-16	169 of 2016	27-Mar-18	Non-Solar/Solar	MSEDCL shall constitute a notional 'RPO Regulatory Charges Fund to purchase Solar power and/or RECs so as to fully meet its shortfall of FY 2015-16 by the end of March, 2019. (Solar: 1359.75 MUs and Non Solar: cumulative surplus of 34.155 MUs)	Non Solar: Non-Solar targets has been fulfilled by RE procurement (1078.55 MUS) and RECs (666 MUs) with the surplus of 34.155 MUs.  MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18 and Oct-18 ( 1378.966 Mus)
			Mini-Micro	to meet this shortfall by purchase Non-Solar RECs (or additional Mini/Micro Hydro power, if available) by the end of FY 2018-19) to meet any shortfall still remaining for the period upto FY 2015-16.	MSEDCL purchased Non-Solar RECs in Dec,-2017 and Mar, 2018 to meet cumulative mini-micro Hydro target upto FY 2016-17.
2016-17	207 of 2017	31-Jul-18	Non-Solar	Cumulative Surplus of 34.15 MUs	Non-solar: MSEDCL fulfilled standalone Non-Solar RPO Target by the way of RE procurement and REC purchase ( 1822 MUs).
			Mini-Micro	The Commission allows MSEDCL to meet the shortfall by purchase Non-Solar RECs (or additional Mini/Micro Hydro power, if available) by the end of FY 2018-19) to meet any shortfall still remaining for the period upto FY 2016-17" ( 90.252 Mus)	MSEDCL purchased Non-Solar RECs in Dec,-2017 and Mar, 2018 to meet cumulative mini-micro Hydro target upto FY 2016-17.
			Solar	MSEDCL shall purchase Solar power and/or RECs (subject to Supreme Court decision) so as to fully meet its standalone and cumulative shortfall (as determined earlier in this Order at the end of FY 2016-17), by the end of March, 2019 instead of March 2020 as	MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18, Oct-18 ( 1378.966 Mus) and is in process of purchase of solar RECs towards fulfilment of Solar RPO shortfall for FY 2016-17.



FY	MERC Order		RE Source	Directives of the Commission	Compliance of the Directives
	Case No.	Date			
				requested by MSEDCL. (2049.614 MUs)	
2017-18	36 of 2019	27-Mar-2019	Non-Solar	MSEDCL fulfilled standalone Non-Solar RPO Target of FY 2017-18 with surplus of 55.151 MUs.	As per MERC (RPO-REC) Regulations, 2016, Regulation No. 7.1 <i>"....Provided further that any variation in the fulfilment of RPO targets by the Obligated Entity within a band of +/- 5% of the applicable RPO target (in terms of Energy Units or MWh) for the respective years shall be allowed under exceptional circumstances subject to detailed scrutiny.."</i> In view of above provision, it is humbly requested Commission, to consider this surplus 55.151 MU towards fulfillment of Non-Solar RPO target for FY 2018-19 in lieu of shortfall in meeting non-solar RPO target in FY 2018-19.
			Mini-Micro	MSEDCL purchased Non-Solar RECs in Dec, 2017 and Mar, 2018 to meet cumulative mini-micro Hydro target upto FY 2017-18.	MSEDCL meets its cumulative Mini-Micro RPO target till FY 2017-18.
			Solar	MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs during Sept-18, Oct-18 (1378.966 Mus) and is in shortfall of Solar till FY 2017-18 is 2147.016 MUs (670.648 of FY 2016-17 + 1476.37 of FY 2017-18).  MSEDCL shall purchase Solar power and/or RECs so as to fully meet its standalone and cumulative shortfall of 2147.016 MU, by the end of March, 2020.	MSEDCL tried to purchase Solar RECs from exchanges at floor price rate. However, the bids were not successful and the Solar RPO target could not been fulfilled through procurement of RECs.  The financial condition of MSEDCL is further deteriorated due to Covid-19 pandemic and its restriction, hence it could not purchase RECs and from July 2020 onwards the trading is on hold as per directives from Hon'ble APTEL.



FY	MERC Order		RE Source	Directives of the Commission	Compliance of the Directives
	Case No.	Date			
					<p>Hon'ble Appellate Tribunal for Electricity (APTEL) vide its order dated 24.07.2020 in APPEAL NO. 113 OF 2020 directed that the REC trading session scheduled on 29.07.2020 shall be postponed.</p> <p>Further, on 26.08.2020 (through video conferencing) the APTEL's interim order dated 24.07.2020 in appeal No. 113 of 2020 is extended till the next date of hearing.</p>

The details of RE procurement for FY 2018-19 and FY 2019-20 is attached herewith as Annexure I.

***d) Detailed statement for project wise energy procurement in MUs from all Solar & Non-Solar generating projects including Mini/Micro Hydro projects and project wise contracted Solar and Non-Solar power capacity in MW during FY 2010-11 to FY 2019-20.***

***i. Status of Mini-Micro Hydro Target compliance:***

MSEDCL has met its Mini-Micro Hydro targets upto FY 2017-18 by way of purchasing Non-solar RECs and non-solar Power.

MSEDCL is in standalone shortfall of 28.45 MU and 22.45 MUs for mitigating Mini-Micro Hydro Target of FY 2018-19 and FY 2019-20 resp. The cumulative shortfall upto FY 2019-20 is 50.90MUs

***ii. Status of Non-Solar RPO compliance (including Mini-Micro Hydro):***

MSEDCL has fulfilled its non-Solar RPO Target upto FY 2017-18.

MSEDCL is in standalone shortfall of 1879 MU and 4197 MUs for mitigating non-Solar RPO Target of FY 2018-19 and FY 2019-20 resp. The cumulative shortfall upto FY 2019-20 is 6076.603 MU.

***iii. Status of Solar RPO compliance:***

MSEDCL has met its Solar RPO target upto FY 2015-16 by the way of purchase of Solar RECs and Solar Power.

FY	Solar Shortfall
2016-17	670.648
2017-18	1476.368
2018-19	1321.482
2019-20	844.838
cumulative(upto 2019-20)	<b>4313.336</b>

*e) MSEDCL should submit detailed list of action and efforts undertaken by it prior to and during FY 2018-19 to ensure compliance of RPO targets in respect of Solar RPO, Non-Solar RPO and Mini/Micro Hydro RPO.*

**FY 2018-19:-**

**I. Efforts taken for meeting Non-Solar RPO target:**

- i. MSEDCL respectfully submits that MSEDCL has always been encouraging Renewable generation in the State and has executed long term Energy Purchase Agreements (EPAs) with the renewable generators at preferential tariff determined by the Hon'ble Commission. Also MSEDCL is carrying out bidding process to procure renewable energy through the competitive bidding.
- ii. It is to submit that after December 2017 MSEDCL has switched to procurement of RE Power (Wind and Baggasse) through competitive bidding process as per MNRE guidelines so as to purchase the same at competitive rates. The bidding process has its own timeframe/milestones and after floating of the bids it takes approximately 18 Months for commission of RE Power project and injection of power into the grid. MSEDCL has floated sufficient tenders for procurement of RE Power so as to meet the current RE shortfall and future RPO targets.
- iii. It is also to submit that MSEDCL had floated more than 4100 MW of Non-Solar based tenders during last two years but had received very poor response which has resulted in contracting about 1000 MW in Non-Solar only. Despite multiple efforts in floating RE tenders and giving enormous publicity over newspapers, response has been poor over past two years.

Technology	No. of Tenders (Nos)	Total Tendere d Capacit y (MW)	Rate discovere d (Rs/unit)	Bid receive d	Contracte d Capacity (MW)
Wind	8	2830	2.52-2.87	595	589
Bagasse	8	1179	4.75-4.99	472	412
Others (Wind-Solar Hybrid)	2	180	-	0	0
<b>Total</b>	<b>18</b>	<b>4189</b>	<b>0</b>	<b>1067</b>	<b>1001</b>

Apart from this MSEDCL has executed Power Sale Agreement with SECI for procurement of 500 MW wind power. The Schedule commission date for these projects were Feb 2020. The projects are yet to be commissioned and delayed due to impact of covid-19 pandemic.

- v. MSEDCL has procured 200 MW Wind Power from Wind Generators on short term basis for a period of minimum 3 months to maximum 12 months with due approval of Hon'ble Commission vide Order dated 15.11.2017 in Case No. 155 of 2017 and the energy generated from these generators has also been considered for fulfillment of Non-Solar RPO.
- vi. MSEDCL has executed Long Term EPA to the tune of 7310 MW capacity with Non-Solar RE Generators (as on 31.03.2019) Details as below:

S.No.	Non Solar - RE Sources	Contracted capacity (as on 31.03.2018)	Capacity Addition during FY 18-19	Contracted capacity (as on 31.03.2019)
1	Wind	3765	692	4457
2	Small Hydro	305.1	-	295
3	Bagasse (Co-gen)	1997.75	308.25	2306
4	Biomass	236	-	236
5	MSW	4	12	16
	<b>Total</b>	<b>6307.85</b>	<b>1012.25</b>	<b>7310</b>

- vii. MSEDCL further submits that on the basis of commissioned capacity and as per normative CUF / PLF decided by MERC, expected generation from non-solar RE sources for FY 2018-19 is tabulated as below:

S.No.	Generation Source	Commissioned (as on 31.03.2018)	Capacity Commissioned during FY 18-19	Commissioned capacity as on 31.03.2019	MERC Normative CUF /PLF	Expected Generation for FY 18-19	Actual Generation for FY 18-19 (@ G<>T interface)
	Non - Solar	MW	MW	MW	%	MU	MU
1	Wind	3765	-308	3457	22%	6959	6881
2	Small Hydro	290	-3	287	30%	758	826
3	Bagasse (Co-gen)	1954	258	2212	60%	10948	4311
4	Biomass	182	0	182	80%	1275	504
5	MSW	4	0	4	80%	28	1
	Total	5846		6142		19969	12523

**INDIA** Note: Computation of expected generation for FY 18-19 is based on 100% generation from the plant Commissioned on or before 31.03.2018 and 50% generation from the plant commissioned during FY 18-19. '-' sign in capacity commissioned column indicates the expiry of EPA.

- viii. MSEDCL submits that from above table it is clear that the current contracted capacity (as on 31.03.2019) was well sufficient for fulfilment of Non-Solar RPO Compliance (19969 MUs).
- ix. However, due to natural factors beyond the control of MSEDCL viz. Changes in climate and inefficiency of Generators, the actual resulting CUF / PLF is not at par with the normative CUF / PLF, which eventually affects the actual generation (12523 Mus) from non-solar RE-sources and leads towards shortfall in meeting RPO target.

## II. Efforts taken for meeting Solar RPO target:

- i. MSEDCL has executed long term power purchase agreements for the total capacity of 2717 MW as on 31.03.2019 to meet the solar target under various schemes of MNRE, GoI and with MSPGCL.

Generation Source	Contracted capacity (as on 31.03.2018)	Capacity Addition during FY 18-19	Contracted capacity (as on 31.03.2019)
Solar	1527	1190	2717

- ii. The expected generation from the Commissioned capacity is as below:

Generation Source	Commissioned (as on 31.03.2018)	Capacity Commissioned during FY 18-19	Commissioned capacity as on 31.03.2019	MERC Normative CUF /PLF	Expected Generation for FY 18-19	Actual Generation for FY 18-19
Solar	MW	MW	MW	%	MU	MU
	832	285	1117	19%	1622	962

*Note: Computation of expected generation for FY 18-19 is based on 100% generation from the plant Commissioned on or before 31.03.2018 and 50% generation from the plant commissioned during FY 18-19.*

- iii. MSEDCL submits that from above table it is clear that, there was shortfall of 660 MU's between expected generation and actual generation for FY 2018-19 from solar RE sources, which is prime reason for overall solar RE shortfall of 1321 MU's for FY 2018-19.
- iv. As per MERC (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015) Regulations, solar energy purchased by MSEDCL through the net metering is eligible towards meeting its solar RPO. The relevant para is reproduced below.

*"...11.2. The quantum of electricity consumed by the Eligible Consumer from the Roof-top Solar PV System under the Net Metering arrangement shall, if such Consumer is not an Obligated Entity, qualify towards meeting the Solar RPO of the Distribution Licensee:*

*Provided that the Distribution Licensee shall, with the consent of the Eligible Consumer, make all the necessary arrangements, including for additional metering, as may be required for the accounting of the Solar energy generated and consumed by the Eligible Consumer.*

*11.3. The unadjusted surplus Units of Solar energy purchased by the Distribution Licensee under the provisions of Regulation 10.3 shall qualify towards meeting its Solar RPO...."*

As on March 2019; the rooftop solar capacity (Cumulative) 288.80 MW of was installed and 253.54 MUs from Net-Metering consumers has been considered for Solar RPO. The details of the rooftop solar installed capacity in MW is as below:

Category	FY 2018-19	
	No. of Solar Generator (Cumulative)	Solar Capacity in MW (Cumulative)
HT	700	155.56
LT	13692	133.24
<b>Total</b>	<b>14392</b>	<b>288.80</b>

- v. As per MERC order dated 19.03.2019 in Case No. 33 of 2019, the Hon'ble Commission allowed MSEDCL to consider solar generation from the Off-Grid Solar pumps for fulfillment of its solar RPO targets.
- vi. In view of above, the off-grid generation from Solar pump (around 50000 no.) of 12.16 MU (From FY 2016-17 to FY 2018-19) has been considered for meeting Solar RPO target.
- vii. It is to submit that after December 2017 MSEDCL has switched to procurement of RE Power (Wind and Bagasse) through competitive bidding process as per MNRE guidelines so as to purchase the same at competitive rates. The bidding process has its own timeframe/milestones and after floating of the bids it takes approximately 18 Months for commission of RE Power project and injection of power into the grid. MSEDCL has floated sufficient tenders for procurement of RE Power so as to met the current RE shortfall and future RPO targets.
- viii. To achieve the RPO targets set by the Hon'ble Commission, MSEDCL has been aggressively calling for tenders through transparent competitive bidding from December 2017, under Solar category. MSEDCL floated following inter/intra state Solar tenders during last two years. The details are as follows.

S. N. o.	Tender Type	Capacity (MW)	Tender Date/ Month	Ceiling Tariff (Rs./kWh)	Capacity of bids received (MW)	Discovered Tariff (Rs./kWh)
1	Inter/Intra state	1000	09.04.2018	3.00	1000	2.71 to 2.72
2	Inter/Intra state	1000	05.12.2018	2.90	1000	2.74 to 2.75
	Total	2000 MW				

- ix. The details of tenders floated by MSEDCL under 'Mukhyamantri Saur Krishi Vahini Yojana' through competitive bidding is as shown below:

Sr. No.	Date of Tender	Capacity of Tender (MW)	Bids received (MW)	Tariff discovered (Rs/kWh)	PPAs signed (MW)
1	27.04.2018	1000	235	3.09 to 3.15	235
2	15.09.2018	1400	180	3.29 to 3.30	Nil
3	07.01.2019	1400	1170	3.16 to 3.30	10
		3800	1585		245



- x. MSEDCL has also contracted 200 MW Solar power with M/s Energy Efficiency Service limited (EESL) on 20.01.2018 to meet the solar RPO targets set out by MERC. Further, additional 300 MW PPA was contracted with M/s EESL on 30.10.2019.

### III. Efforts taken to meet Mini-micro Hydro RPO Target:

It is to submit that MSEDCL has signed PPA with Mini/Micro Hydro Generators, whoever had approached for signing of EPA. Moreover, it is to be submitted that till March 2019, only three generators had executed EPA. The projects are Shahanoor (0.75 MW), Yeoteshwar (0.075 MW) and Terwanmedhe, MSPGCL (0.2 MW). The details are as below:

Generation Source	Contracted capacity (as on 31.03.2018)	Capacity Addition during FY 18-19	Contracted capacity (as on 31.03.2019)
<b>Mini / Micro Hydro</b>	1.025	-	1.025

The expected generation from the mini-micro hydro was as below:

Generation Source	Commissioned capacity (as on 31.03.2018) (MW)	Capacity Commissioned during FY 18-19 (MW)	MERC Normative CUF*	Expected Generation for FY 18-19 (MU)	Actual Generation for FY 18-19 (MU)
<b>Mini / Micro Hydro</b>	1.025	0	30%	2.69	0.356

### IV. Efforts for purchase of RECs

It is submitted that, MSEDCL is trying to fulfill the above said shortfall in RPO target by purchase of RECs and energy. Further, it is respectfully submitted to the Hon'ble Commission that MSEDCL faced difficulties in purchasing RECs due to non-availability of sufficient quantities of RECs during these periods and increased rates of RECs in the market.

### FY 2019-20:-

### V. Efforts taken for meeting Non-Solar RPO target:

- MSEDCL has procured 400 MW Wind Power from Wind Generators on short term basis for a period of minimum 3 months to maximum 12 months with due approval of Hon'ble Commission vide Order dated 15.11.2017 in Case No. 155 of 2017 and the energy generated from these generators has also been considered for fulfillment of Non-Solar RPO.
- MSEDCL has executed Long Term EPA to the tune of 6783 MW capacity with Non-Solar RE Generators (as on 31.03.2020) Details as below:

S.No.	Non Solar - RE Sources	Contracted capacity (as on 31.03.2019)	Capacity Addition during FY 19-20	Contracted capacity (as on 31.03.2020)
1	Wind	4457	-643	3814
2	Small Hydro	295	12	307
3	Bagasse (Co-gen)	2306	112	2418
4	Biomass	236	-8	228
5	MSW	16	0	16
	<b>Total</b>	<b>7310</b>		<b>6783</b>

Remark: (-) sign indicates expiry of Long term EPA.

MSEDCL further submits that on the basis of commissioned capacity and as per normative CUF / PLF decided by MERC, expected generation from non-solar RE sources for FY 2019-20 is tabulated as below:

S.No.	Generation Source	Commissioned (as on 31.03.2019)	Capacity Commissioned during FY 19-20	Commissioned capacity as on 31.03.2020	MERC Normative CUF / PLF	Expected Generation on for FY 19-20	Actual Generation for FY 19-20 (@ G<>T interface)
	<b>Non – Solar</b>	<b>MW</b>	<b>MW</b>	<b>MW</b>	<b>%</b>	<b>MU</b>	<b>MU</b>
1	Wind	3457	-362	3095	22%	6314	6584
2	Small Hydro	287	14	301	30%	773	802
3	Bagasse (Co-gen)	2212	89	2301	60%	11860	2711
4	Biomass	182	-8	174	80%	1247	380
5	MSW	4	0	4	80%	28	0.87
	<b>Total</b>	<b>6142</b>		<b>5875</b>		<b>20222</b>	<b>10478</b>

*Note: Computation of expected generation for FY 18-19 is based on 100% generation from the plant Commissioned on or before 31.03.2018 and 50% generation from the plant commissioned during FY 18-19. '-' sign in capacity commissioned column shows the expiry of EPA.*

iv. MSEDCL submits that from above table it is clear that the current contracted capacity (as on 31.03.2020) is well sufficient for fulfilment of Non-Solar RPO Compliance (20222 MUs).

v. However, due to natural factors beyond the control of MSEDCL viz. Changes in climate and inefficiency of Generators, the actual resulting CUF / PLF is not at par with the normative CUF / PLF, which eventually affects the actual generation (10478 Mus) from non-solar RE-sources and leads towards shortfall

in meeting RPO target.

vi. Further, it is to submit that, the main reason observed for shortfall in meeting non-solar RPO target for FY 2019-20 is due to less generation from the bagasse based co-generation projects. There was drought situation in the Districts such as Ahmednagar, Solapur and Marathwada region due to which crushing was less and also generation was less by around 50% as compared to previous year i. e. FY 2018-19(Mus). Many of the sugar factories were not even started for crushing. Whereas some of the districts such as Kolhapur, Sangli and Satara were flooded. Due to water logging in this area for very longer period, the crop was damaged and hence there was less crushing and eventually less generation.

vii. It is to submit that after December 2017 MSEDCL has switched to procurement of RE Power (Wind and Bagasse) through competitive bidding process as per MNRE guidelines so as to purchase the same at competitive rates. The bidding process has its own timeframe/milestones and after floating of the bids it takes approximately 18 Months for commission of RE Power project and injection of power into the grid. MSEDCL has floated sufficient tenders for procurement of RE Power so as to meet the current RE shortfall and future RPO targets.

viii. It is also to submit that MSEDCL had floated more than 4100 MW of Non-Solar based tenders during last two years but had received very poor response which has resulted in contracting about 1000 MW in Non-Solar only. Despite multiple efforts in floating RE tenders and giving enormous publicity over newspapers, response has been poor over past two years.

Technology	No. of Tenders (Nos)	Total Tendered Capacity (MW)	Rate discovered (Rs/unit)	Bid received	Contracted Capacity (MW)
Wind	8	2830	2.52-2.87	595	589
Bagasse	8	1179	4.75-4.99	472	412
Others (Wind-Solar Hybrid)	2	180	-	0	0
Total	18	4189	0	1067	1001

#### VI. Efforts taken for meeting Solar RPO target:

- i. MSEDCL has executed long term power purchase agreements for the total capacity of 2717 MW as on 31.03.2019 to meet the solar target under various schemes of MNRE, GoI and with MSPGCL.

Generation Source	Contracted capacity (as on 31.03.2018)	Capacity Addition during FY 18-19	Contracted capacity (as on 31.03.2019)
Solar	1527	1190	2717

ii. The expected generation from the Commissioned capacity is as below:

Generation Source	Commissioned (as on 31.03.2019)	Capacity Commissioned during FY 19-20	Commissioned capacity as on 31.03.2020	MERC Normative CUF /PLF	Expected Generation for FY 19-20	Actual Generation for FY 19-20
Solar	MW	MW	MW	%	MU	MU
	1117	1155	2272	19%	2820	3624

*Note: Computation of expected generation for FY 18-19 is based on 100% generation from the plant Commissioned on or before 31.03.2019 and 50% generation from the plant commissioned during FY 19-20.*

iii. As per MERC (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015) Regulations, solar energy purchased by MSEDCL through the net metering is eligible towards meeting its solar RPO. The relevant para is reproduced below.

*"...11.2. The quantum of electricity consumed by the Eligible Consumer from the Roof-top Solar PV System under the Net Metering arrangement shall, if such Consumer is not an Obligated Entity, qualify towards meeting the Solar RPO of the Distribution Licensee:*

*Provided that the Distribution Licensee shall, with the consent of the Eligible Consumer, make all the necessary arrangements, including for additional metering, as may be required for the accounting of the Solar energy generated and consumed by the Eligible Consumer.*

*11.3. The unadjusted surplus Units of Solar energy purchased by the Distribution Licensee under the provisions of Regulation 10.3 shall qualify towards meeting its Solar RPO...."*

511.39 MW of rooftop solar capacity (Cumulative) has been installed as on March 2020 and 253.54 MUs from Net-Metering consumers has been considered for Solar RPO. The detail of installed solar capacity in MW is as below:

Category	FY 2019-20	
	No. of Solar Generator (Cumulative)	Solar Capacity in MW (Cumulative)
HT	1176	270.11
LT	25355	241.28
Total	26531	511.39

iv. As per MERC order dated 19.03.2019 in Case No. 33 of 2019, the Hon'ble Commission allowed MSEDCL to consider solar generation from the Off-Grid Solar pumps for fulfillment of its solar RPO targets.

In view of above, the off-grid generation from Solar pump (around 50000 no.) of 4.08 MU has been considered for meeting Solar RPO target.

v. To achieve the RPO targets set by the Hon'ble Commission, MSEDCL has been aggressively calling for tenders through transparent competitive bidding from December 2017, under Solar category. MSEDCL floated following inter/intra state Solar tenders during FY 2019-20. The details are as follows:

S. N o.	Tender Type	Capacity (MW)	Tender Date/ Month	Ceiling Tariff (Rs./kWh)	Capacity of bids received (MW)	Discovered Tariff (Rs./kWh)
3	Inter/Intra state	1000	04.06.2019	2.80	0	NA
4	Inter/Intra state	500	23.08.2019	2.80	0	NA
5	Intrastate	500	22.11.2019	2.90	500	2.89 to 2.90
6	Intrastate	500	27.12.2019	2.90	350	2.90
	Total	2500 MW			850	

vi. The details of tenders floated by MSEDCL under 'Mukhyamantri Saur Krishi Vahini Yojana' through competitive bidding is as shown below:

Sr. No.	Date of Tender	Capacity of Tender (MW)	Bids received (MW)	Tariff discovered (Rs/kWh)	PPAs signed (MW)
1	20.09.2019	1350	5	3.14	5
2	31.12.2019	1350	283	3.28 to 3.30	277
		2700	288		282

vii. In continuation to MSEDCL's earlier contracted 200 MW Solar power with M/s Energy Efficiency Service limited (EESL) on 20.01.2018, additional 300 MW PPA was

contracted with M/s EESL on 30.10.2019 to meet the solar RPO targets.

#### VII. Efforts taken to meet Mini-micro Hydro RPO Target:

It is to submit that MSEDCL has signed PPA with Mini/Micro Hydro Generators, whoever had approached for signing of EPA. Moreover, it is to be submitted that till March 2020, only three generators had executed EPA. The projects are Shahanoor (0.75 MW), Yeoteshwar (0.075 MW) and Terwanmedhe, MSPGCL (0.2 MW). The details are as below:

Generation Source	Contracted capacity (as on 31.03.2019)	Capacity Addition during FY 19-20	Contracted capacity (as on 31.03.2020)
Mini / Micro Hydro	1.025	-	1.025

The expected generation from the mini-micro hydro is as below:

Generation Source	Commissioned capacity (as on 31.03.2019) (MW)	Capacity Commissioned during FY 19-20 (MW)	MERC Normative CUF*	Expected Generation for FY 19-20 (MU)	Actual Generation for FY 19-20 (MU)
Mini / Micro Hydro	1.025	0	30%	2.69	6.918

**f) MSEDCL should submit the details for long term RE procurement plan (in MUs and corresponding MW) for meeting the future RPO targets.**

- MERC has notified MERC(RPO-REC) Regulations, 2019 on 27.12.2019 and set out the RPO targets for the obligated Entities for FY 2020-21 to FY 2024-25.
- Accordingly, MSEDCL has planned to procure the RE Power considering the present shortfall and future RE Power requirement till FY 2024-25. The details of long term RE procurement plan (in MUs and corresponding MW) is as follows:

#### NON-SOLAR:

Parameter	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Energy purchase excluding OA and Hydro	MU	134826	137181	139726	143996	148445
RPO Target as per Regulation	%	11.50%	11.50%	11.50%	11.50%	11.50%
<b>Annual Standalone target</b>	<b>MU</b>	<b>15505</b>	<b>15776</b>	<b>16068</b>	<b>16560</b>	<b>17071</b>
<b>Required Total Capacity for RPO</b>	<b>MW</b>	<b>7690</b>	<b>7199</b>	<b>7332</b>	<b>7556</b>	<b>7790</b>

The present contracted Non-solar RE capacity is 11151 MW (as on 31.03.2021). Hence, No additional Non-Solar RE Power is required to be contracted. However, considering the expiry of existing contracts, earlier shortfall and low cuf due to climatic conditions. MSEDCL has planned to procure additional 2000MW Non-solar RE Power.

#### SOLAR:-

The MERC vide the RPO Regulations, 2019 has set up a stiff target of 13.50 % for Solar RPO to be achieved till FY 2024-25. Accordingly, MSEDCL plans to procure around 5500 MW solar capacity through centralised and de-centralised solar power projects.

#### ***Additional submission:***

It is to submit that, this Hon'ble is well aware of the prevailing Covid-19 Pandemic situation which has adversely impacted the commission of new RE projects. The SCOD/COD of the earlier contracted projects has been extended from time to time considering the force majeure event of Covid-19. In spite of MSEDCL's all out effort, the RE Power could not be procured due to delay/non-commissioning/no or poor response to the bid floated by MSEDCL as Covid-19 has impacted all these activities.

With this difficulty, MSEDCL had approached this Hon'ble Commission with Case No. 21 of 2020 with the main prayer to allow to pass the RE procurement shortfall till FY 2022-23 and not to levy penalty for such shortfall. The Commission vide order dated 01.01.2021 opined that such prayer of MSEDCL was premature and MSEDCL shall take all efforts to fulfill its RPO including procurement of RECs at regular intervals.

In view of above MSEDCL graciously prays to the Hon'ble Commission to roll over the present RE shortfall without levy of any penalty till FY 2024-25.

Efforts for purchase of RECs

It is submitted that, MSEDCL is trying to fulfill the above said shortfall in RPO target by purchase of RECs. Further, it is respectfully submitted to the Hon'ble Commission that MSEDCL faced difficulties in purchasing RECs due to non-availability of sufficient quantities of RECs during these periods and increased rates of RECs in the market. The REC prices discovered in the market for FY 2019-20 is in the range of solar-Rs. 1500/REC to Rs, 2400/ REC and non-solar Rs. 1300/REC to Rs, 2200/ REC

#### **Summary:**

##### **1. Procurement of RE power through Competitive Bidding:-**

In this regard, it is submitted that, MSEDCL has taken all possible efforts to procure RE power at competitive rate through competitive bidding process. In recent three years almost 9000 MW capacity of tenders had been published by MSEDCL for procurement of Solar and No-Solar Power. But, MSEDCL received only 2138 MW bid capacity against these tenders, which is 23 % of tendered capacity. The poor response to the tender might be due to issues such as grid

connectivity, non-adoption of tariff for tenders under MSKVY owing to high tariff etc. which is beyond the control of MSEDCL.

## **2. Wind Power Tenders for post expiry EPA:-**

The major contracted quantum in RE procurement is from Wind Source. Almost 1100 MW capacity of wind Energy Purchase Agreements (long term) has been expired till FY 2019-20. MSEDCL floated (Tendered a capacity-2150 MW) Wind power tenders under post expiry of Energy Purchase Agreements projects. Despite of re-tendering of capacities and huge advertisement, subscription is almost negligible (89 MW). The poor response to the post-expiry tender might be due to the liberty such wind generators are having to opt for open access instead of participation in tender of MSEDCL which had ceiling tariff of Rs. 2.52 / unit. It was argued by MSEDCL before this Hon'ble Commission that, since such wind generators have recovered their substantial amount of investment from MSEDCL through EPA's at preferential tariff, it would be appropriate to compel them to sale to power to MSEDCL after post-expiry at tariff discovered under competitive bidding with ceiling rate of Rs.2.52 per unit. However such post expiry wind generators on one hand has ripped the benefit of preferential tariff and now prefer to sale power under open access resulting in poor response to the post expiry tenders.

## **3. Climatic condition**

Renewable sources are variable, infirm and dependent on nature. Further, during last two years there was very much fluctuation in atmospheric/weather condition. It is submitted that, the main reason observed for shortfall in meeting non-solar RPO target for FY 2019-20 is due to less generation from the bagasse based co-generation projects. There was drought situation in the Districts such as Ahmednagar, Solapur and Marathwada region due to which crushing was less and also generation was less by around 50% as compared to previous year i. e. FY 2018-19 . Many of the sugar factories were not even started for crushing. Whereas some of the districts such as Kolhapur, Sangli and Satara had flood situation. Due to water logging in this area for very longer period, the crop was damaged and hence there was less crushing and eventually less generation.

The generation from wind mills was also on lesser side as compared to previous years.

## **4. Efforts for purchase of RECs:-**

It is submitted that MSEDCL has achieved it's Non-Solar RPO target (including Mini-Micro Hydro) upto FY 2017-18 and achieved Solar Target upto FY 2015-16 by way of purchasing RE power and purchasing RECs.



*(vi) The provisions in Regulations like power to relax and power to remove difficulty should be exercised judiciously under the exceptional circumstances, as per law and should not be used routinely to defeat the object and purpose of the Regulations."*

This is also essentially in line with the earlier ATE Judgment dated 25 April, 2014 in Appeal No. 24 and IA No. 39 of 2013.

It is submitted that RECs is merely a paper compliance only and no actual RE purchase involved.

The financial condition of MSEDCL is further deteriorated due to Covid-19 pandemic and its restriction, hence MSEDCL was financially not in a position to purchase RECs. Also, from July 2020 onwards the trading is on hold as per directives from Hon'ble APTEL.

It is submitted that, MSEDCL will try to fulfill the above said shortfall in RPO target by purchase of RECs as an when such opportunity is available.

**Prayers:**

Considering all the above efforts taken by MSEDCL to meet RPO target, it is humbly prayed as under:

- 1) To consider the difficulties faced by MSEDCL of low generation received from contracted capacity in real time of operation and non-availability of Solar REC in the Market during FY 2018-19 and FY 2019-20, while deciding the RPO compliance.
- 2) To carry forward the shortfall in Non-Solar (Including Mini-Micro hydro) and Solar RPO target of MSEDCL and allow to fulfill RPO target by FY 2024-25 without levy of any penalty.
- 3) To permit MSEDCL to make further submissions, addition and alteration to this submission as may be necessary from time to time.

Place: Mumbai

*K. R. Raut*  
Chief Engineer (Renewable Energy)

**BEFORE ME**

**S. P. TIWARI**  
M.A., LL.B  
NOTARY  
Maharashtra  
(Govt. of India)

**28 MAY 2021**

