

BEFORE THE MAHARASHTRA ELECTRICITY REGULATORY COMMISSION, MUMBAI

PETITION No. of 2018

IN THE MATTER OF

Petition seeking review of the Order no. 15 of 2017 dated 01.03.2018 in the matter of reduction in the technical minimum of generating units in Maharashtra as per central electricity regulatory commission norms.

Maharashtra State Distribution Co. Ltd.

... Petitioner

Vs.

Maharashtra State Load Despatch Centre

... Respondent No. 01

Maharashtra State Power Generation Company Limited

... Respondent No. 02

Review Petition filed by Maharashtra State Electricity Distribution Company Ltd.

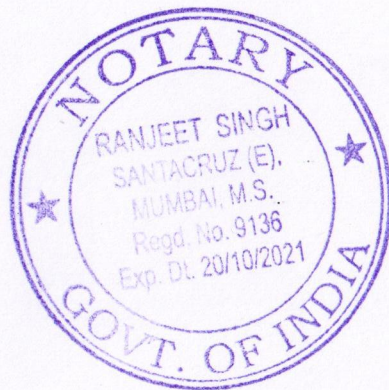
I, Kavita Gharat, aged 40 Years, having my office at MSEDCL, Prakashgad, Plot No.G-9, Anant Kanekar Marg, Bandra (E), Mumbai-400051 do solemnly affirm and say as follows:

I am Chief Engineer (Power Purchase) of Maharashtra State Electricity Distribution Co. Ltd., the Petitioner in the above matter and am duly authorized by the said Petitioner to make this affidavit.

The statements made in the enclosed Petition seeking review of the Order no. 15 of 2017 dated 01.03.2018 in the matter of reduction in the technical minimum of generating units in Maharashtra as per Central Electricity Regulatory Commission norms are based on the information received from the concerned officers of the Company and I believe them to be true.

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 relief sought are identical or similar to the issues arising in the matter pending before the Commission.

I solemnly affirm at Mumbai on this 2nd day of April, 2018 that the contents of this affidavit are true to my knowledge, no part of it is false and nothing material has been concealed there from.



rbharat
Chief Engineer (Power Purchase)

Chief Engineer (Power Purchase)
MSEDCL
M. S. E. D. C. L.

**BEFORE THE HON'BLE MAHARASHTRA ELECTRICITY
REGULATORY COMMISSION, MUMBAI**

Case No. of 2018

IN THE MATTER OF:

Petition seeking review of the Order no. 15 of 2017 dated 01.03.2018 in the matter of reduction in the technical minimum of generating units in Maharashtra as per Central Electricity Regulatory Commission norms.

AND

IN THE MATTER OF:

Petition seeking directions for optimization of power generation in the state of Maharashtra by reducing the technical minimum operation of the generating power plant at par with CERC defined norms.

AND

IN THE MATTER OF:


Petition under Sections 33(1) and 33(4) read with 86 of the Electricity Act, 2003 and applicable provisions of the Maharashtra State Grid Code and the Maharashtra Scheduling and Dispatch Code

AND

IN THE MATTER OF:

Maharashtra State Electricity Distribution Company Limited
5th Floor, Prakashgad,
Plot No. G-9, Bandra (East),
Mumbai - 400051

...PETITIONER



VERSUS

1. Maharashtra State Load Despatch Centre,
Thane-Belapur Road, P.O. Airoli,
Navi Mumbai - 400 708

2. Maharashtra State Power Generation Company Limited
Hong Kong Bank Building, M.G. Road, Fort
Mumbai 400 001

...RESPONDENTS

1. Maharashtra State Electricity Distribution Company Limited (hereinafter to be referred "MSEDCL") is a Company constituted under the provisions of Government of Maharashtra General Resolution No. PLA - 1003 / C. R. 8588 dated 25th January 2005 and is duly registered with the Registrar of Companies, Mumbai on 31st May 2005. MSEDCL is functioning in accordance with the provisions envisaged in the Electricity Act, 2003 and is engaged, within the framework of Electricity Act, 2003, in the business of distribution of electricity to its consumers situated over the entire State of Maharashtra, except Mumbai City & its suburbs (excluding Mulund & Bhandup).

2. The Petitioner had filed a Petition under Sections 33(1) and 33(4) read with 86 of the Electricity Act, 2003 and applicable provisions of the Maharashtra State Grid Code and the Maharashtra Scheduling and Dispatch Code on 10th January 2017 seeking "the Technical minimum capacity of all Generating stations coming under the jurisdiction of MERC and having PPA with MSEDCL to be set at a uniform level of 55% & to issue the directions to MSLDC for backing down the power plant to 55% while managing the demand by observing the MOD."

3. The Hon'ble Commission issued an order dated 1st March 2018 vide case no 15. of 2017 (Annexure- I), ruling that it does not inclined to uniformly apply a Technical Minimum of 55% to all Generating Units with PPAs with MSEDCL and others within its purview due to the following factors:

- The Commission notes the views of the CEA recorded in CERC's Explanatory Memorandum which states that "*The operating capability generally specified in the technical specifications also stipulate continuous operation without oil support above 30% MCR load and control load range of 50% to 100% TMCR.*"

Thus, the Hon'ble Commission states that CEA did not recommend the blanket application of a Technical Minimum level of 55% uniformly to all Generating Units.

- The CPRI-determined Technical Minimum of most of these Units is significantly higher than the uniform level of 55% now proposed by MSEDCL
 - The Technical Minimum resulting from the design and technical factors is significantly higher, the operation of a Unit at a Technical Minimum of 55% may adversely affect the operating life of major associated equipment, including the turbine itself
4. However, the Petitioner submits that in the ibid order dated 01st March 2018, there are certain apparent errors or the non consideration of petitioner's submission and the Petitioner has apprehension over the way certain issues have been dealt with by the Hon'ble Commission and the Petitioner is approaching the Hon'ble Commission with this Petition seeking review of the said order in matter of reduction in the technical minimum of generating units in Maharashtra as per Central Electricity Regulatory Commission norms.
5. MSEDCL submits the review petition for kind consideration of the Hon'ble Commission under Section 94 (1)(f) of the Electricity Act, 2003 to be read along with

regulations 85 (review of Decisions, Directions,& Orders) of MERC (Conduct of Business Regulations) 2005

Basis for Submission of Review Petition

1. MSEDCL submits the basis of filing review petition is primarily to integrate large scale renewable energy and therefore forestall the anticipated practical difficulties and complexities faced by MSEDCL while doing so.
Moreover, MSEDCL having exercised all the available options such as Backing down & providing zero schedule to the conventional Generators, are left with no other option to accommodate Renewable Energy safely into the Grid.
2. The ibid order states that MSEDCL did not respond to Hon'ble Commission when asked about the compensation payable to the Generating Companies. Relevant Extract of the same is being reproduced below for ready reference.

“Commission asked MSEDCL whether it was ready to bear the additional cost on compensation payable to the Generating Companies, to which MSEDCL did not respond “

MSEDCL affirmatively submits that the petitioner never had any objection in paying compensation to the Generators. It was expected that the Hon'ble Commission shall devise such mechanism in line with the prevailing CERC Regulations. However Hon'ble Commission had neglected to address the importance of the issue and failed to devise the expected compensatory mechanism.

Further, looking into the need of hour, MSEDCL is ready to pay the required compensation to the respective Generators for operating plant at the proposed technical minimum levels. Moreover MSEDCL had expressed the same to the Hon'ble Commission during the hearing of the ibid matter.

3. MSEDCL further submits that a similar matter of technical minimum (Case No. 144/MP/2017) is pending before the Hon'ble CERC. The CERC, vide its RoP dated

27.02.2018 has directed to refer this matter to CEA and obtain its expert opinion in this matter. (Annexure - II)

4. MSEDCL request Hon'ble Commission to hold the proceedings of this case and reserve the order till the verdict of the aforementioned case. Details Submission as below:

MSEDCL Submission

6. MSEDCL submits that one of the objective of the Electricity Act -2003, Sec.73(a), National Electricity Policy and Tariff Policy is to ensure availability of the electricity to the consumers at reasonable and Competitive rate. As per tariff policy, a two-part tariff structure was adopted for long term contract to facilitate Merit Order Dispatch. As per MYT Regulation 2011, regulation 39, the tariff for sale of electricity from a thermal power generating station shall comprise of two parts, namely; Annual Fixed Charge and Energy Charges.
7. In line with the tariff policy, Hon'ble Commission vide its Order no. 42 of 2007 dated 17.05.2007 has directed MSLDC to prepare Merit Order Stack (MOD) for the state to facilitate economic load dispatch. MSLDC prepares merit order dispatch stack every month accordingly after collecting data from MSEDCL as well as other utilities in the state i.e. TATA, BEST and R-Infra and State Generation Companies
8. Commission in its order mentioned that..

24.....The Commission also notes that various options, including zero scheduling and reserve shut-downs in consultation with MSLDC, are available to help MSEDCL manage variations in demand.

In this regards, MSEDCL submits that to optimize generating sources, since January 2016, MSEDCL is providing the zero schedule/RSD to the costlier generating station as per MOD considering the seasonal variation in the Demand and availability of the generation. Further, MSEDCL has also exercised all the feasible options such as zero

scheduling of the units and procurement of cheap power on Exchanges/short term when there is a high variation in day to night demand to optimize operation efficacy and the power purchase cost in FY 2016-17. In spite of taking all such measures, in certain period of the year especially in the monsoon period to accommodate the infirm, highly unpredictable RE Power, MSEDCL has faced the difficulties. Hence in anticipation of the upcoming RE power in the state and with long term perspective, to maintain the grid stability, in line with the provision of the prevailing regulation in the central, MSEDCL had filed this petition. But Hon'ble commission has erred in consideration of MSEDCL's view.

9. Further as per the directives of the Hon'ble commission in its daily order dated 20.06.2017 had observed that *"The Commission observed that changes adopted, if any, by NTPC to achieve the above norms in respect of operating parameters, Unit/system modifications or other procedural changes may require to be examined, and MSEDCL may discuss and obtain the above details from NTPC."*

To this, MSEDCL has confirmed and even submitted the response of NTPC, to MERC through correspondence no. CE/PP/Tech. Mini/28633 dated 23rd Nov 2017. It was confirmed by NTPC that they are following the Technical minimum norms of 55 % effectively for all its generating plants irrespective of capacity, age category or technology, since the date of notification of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 without doing any special plant modification.

NTPC and all Central Generating Units are complying the 55% technical minimum norms without doing any special modification. MSEDCL submits that Hon'ble commission should take this into consideration the above submission while determining the technical minimum for Generating stations coming under the jurisdiction of MERC and having PPA with MSEDCL.

10. MSEDCL submits that in furtherance the foundation for filing of review petition is primarily the anticipated practical difficulties and complexities faced by MSEDCL

while integrating large scale Renewable Energy. The Petitioner, summarizing the above submission, reiterates that all necessary steps and actions pertaining to accommodate Renewable energy have already been exercised by MSEDCL, such as backing down and zero schedules of conventional plants.

Hence considering the anticipated capacity addition of renewable energy sources, there is a need for backing down the conventional plants below the present levels of technical minimum to accommodate more Renewable Energy and achieve better Grid Security.

11. Moreover, MSEDCL further submits that the matter related to "Reserve Shutdown and Compensation Mechanism for seeking upward revision of the Technical Minimum fixed for schedule of operation of NLCIL lignite based Generating Stations (TPS I Expn, TPS II stage 1 & 2, TPS II Expn) and other related issues" is pending with CEA.

CERC's records of proceedings (Petition No. 144/MP/2017 dated 27.02.2018) state that this matter has been referred to CEA to obtain its expert opinion in this matter. Hence, MSEDCL requests the Hon'ble Commission to hold the proceedings of case and reserve the order till the outcome of the aforementioned CEA's study and CERC verdict.

A. Renewable Purchase Obligation

12. Further it is submitted that MNRE, GoI is committed to its ambitious renewable energy target of 175 GW of installed capacity by 2022. Accordingly the DISCOMs (Including MSEDCL) have been pursuing the goal of setting up renewable energy capacities and changing its energy mix, to provide an equitable sustainable development.
13. Inline to the Nation-wide target of 175 GW, the new and renewable energy policy approved by the State Govt. of Maharashtra aims at creating 14,400 MW of fresh

renewable grid-connected installed capacity in the sector by 2022 with 7,500 MW from Solar energy and 5,000 MW from Wind energy resulting into an injection of huge infirm power with seasonal variation.

14. Moreover, as per National Tariff Policy, 2016 it is stated that the SERCs shall reserve a minimum percentage for purchase of solar energy from the date of notification of this policy which shall be such that it reaches 8% of total consumption of energy by March 2022. Henceforth as per the ambitious MNRE Plan of 175 GW and the aforementioned National tariff Policy, it is anticipated that the Renewable Purchase Obligation trajectory shall be further revised accordingly.

15. MSEDCL submits that to comply with RPO targets, the DISCOM is duty-bound to contract higher quantum of Renewable Energy. This will lead to increase in RPO obligation and MSEDCL has to contract more and more renewable energy. Also, Renewable energy being infirm in nature, Must run power and not schedulable, puts the Grid security at risk. Therefore, providing backing down limit to 55% of thermal power plant, will lead to more flexibility for accommodating the increasing renewable energy generation which are must run in nature with availability of power which cannot be predicted and is beyond the control of DISCOM.

B. Monsoon Period:

16. MSEDCL load data suggests that overall demand during the night hours is low, on account of reduced demand in commercial and residential category. This demand further drops during monsoon period.

17. Moreover, during the same time period, the Generation from Wind mills shall be to the tune of 5 GW, Infirm power of such huge quantum shall be injected into the grid without schedule. When infirm energy in such high quantum is injected, issues such as grid stability as well as economic operation arises

18. It is highlighted that due to such abundant Wind power availability and due to non-implementation of technical minimum criteria. Many of the thermal plants have to

'zero scheduled' for that particular time block and it will be difficult to cold start and ramp up such Generators in case of sudden unavailability of Wind power.

19. If the technical minimum level of thermal generating station is reduced, there will be furtherscope to accommodate renewable energy along with the Thermal Plants resulting in better grid stability as well as in economic manner.

20. The reduction in technical minimum to 55% of thermal generating units will facilitate to run low cost unit at full capacity by reducing high cost units generation to the proposed 55% technical minimum capacity against the current higher than 55% technical minimum. This shall result in availability of cheaper power to the consumer.

C. Non-Monsoon Period:

21. MSEDCL submits that inline to the MNRE target, considering the solar installed capacity at 7.5 GW and operational CUF of 80% and higher during the day hours, It is submitted that the Solar power is must-run and infirm in nature and to accommodate such power MSLDC shall be required to back down the available thermal plants so as to match the demand and eventually safeguarding the grid.

22. Key findings of a study undertaken by National Renewable Energy Laboratory (NREL), India suggest that by 2022, the Renewable capacity, predominantly Solar Capacity, shall serve 22% of India's power demand. Thus in such a system, it is understood that during day time major source of power shall be Solar and when solar power is unavailable, other generations sources shall compensate for Solar Power.

Hence, to meet the load at night hours, the TPPs running at technical minimum during day-time will be ramped up. However it is evident that, the total capacity of TPPs running at current levels of technical minimum during day hours shall be insufficient to meet the State's total power demand. Hence once the Technical Minimum is lowered, the number of TPPs running at technical minimum at day

hours shall increase, resulting in full-fledged catering of State's Power demand during night hours.

23. MSEDCL further submits that to cater to the short supply in meeting the State's power demand arising on account of TPPs running at current Technical Minimum levels, shall require additional investment in Generators with faster ramp-up rates, to take care of sudden load surge. Hence in such cases, investment in Hydro/Gas based power plants is inevitable which shall additionally burden the consumers. Hence as an alternative, with the existing systems, avoiding any additional capital expenditure, the desired results could be attained through reducing the present levels of technical Minimum and thereby avoiding unnecessary burden on common consumers of MSEDCL.

D. Technical Constraint:

24. It is submitted that the Generation plant can't be instantly made on and off from the system. It takes at least 4 hours to start the generating plant and sometimes it takes up to 24 hours to start generating plant from cold state of operation as such, it is not possible to completely shutdown plant everyday just on the basis of demand. Start up time needs to be taken into consideration while backing down any generating plant. Thus, as demand declines, generation of the particular plant is reduced to technical minimum level; a technical minimum is level at which plant is run to its lowest level. After reducing the generation to the level of technical minimum, the same generating plant can't be back down further, as such next plant in MOD stack needs to be backed down if demand is reduced further.

25. Due to the technical limitation of thermal power plant, each plant can be backed down maximum to its technical minimum, so that the sudden surge or fall in demand can be effectively met by MSEDCL as the ramp up/down time will be applicable for every Unit and the cold start will be limited & restricted to only high cost power plants. For instance, at the proposed technical minimum of 55%, the number of plant undergoing cold start shall be much lesser than the plants undergoing cold start in case of existing technical minimum (higher than 55%).

26. Moreover CERC in hearing dated 28.5.2013 in Petition No 142/MP/2012 directed CEA to submit their views on technical minimum for thermal generating station. CEA in a communication dated 12.9.2013 to CERC in Petition No. 142/MP/2012 has given following views on the issue of technical minimum

"The control range for coal fired unties is generally taken as 50% to 100% MCR and the rated steam temperature can be maintained in this range. However, the units can operate at any lower load without any limits; and minimum load without oil support is taken as about 30% MCR and operation below this limit needs oil support. The CEA Technical Standards for Construction of Electric Plants and Electric Lines Regulations - 2010 prescribe a control load of 50% MCR. The operating capability generally specified in the technical specifications also stipulate continuous operation without oil support above 30% MCR load and control load range of 50% to 100% TMCR Thus unit operation may be envisaged as indicated above, barring any specific operating constraints brought out or recommended by OEMs with proper technical justification."

MSEDCL submits that Hon'ble Commission in its recent order dated 01.03.2018 has quoted the above CEA's correspondence to CERC. However, through a depth reading of the ibid order, one shall conclusively state that Hon'ble Commission has overlooked the above correspondence.

MSEDCL submits that the above CEA's report is a result of an exhaustive study and the outcome of study affirmatively stated that the Units are capable of continuous operations up to a technical minimum of 30%, without oil support. Provided it is understood that CERC considering the wide deviation in the existing Plants life and varied technology, had determined the technical minimum at a cushioned level of 55% along with the compensation to be provided to the Generators as specified in the CERC IEGC (fourth amendment) Regulations, 2016.

Accordingly based on the above submission, MSEDCL request the Hon'ble Commission to take into the consideration the observation of the CEA and re-determine the minimum technical criteria at 55% so as to protect the grid stability,

optimum utilization of all plant, accommodation of renewable power, sustainable real time operation and benefit for the consumers.

E. Devising Compensation Mechanism:

27. Hon'ble commission in the order dtd. 01.03.2018 has ruled that

24. MSEDCL was non-committal when the Commission asked whether it was prepared to compensate the Generators correspondingly. In this context, as also brought out in these proceedings, there may be further implications arising from related provisions of the MYT Regulations and the terms of the PPAs entered into under 63 of the EA, 2003.

28. MSEDCL submits that, CENTRAL ELECTRICITY REGULATORY COMMISSION (INDIAN ELECTRICITY GRID CODE) (FOURTH AMENDMENT) REGULATIONS 2016, provides for compensation methodology in case of a Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations. Para 6.3B of the ibid regulations provides for compensation methodology with respect to degradation in Station-Heat Rate & Auxiliary Consumption and Oil consumption per Start-up. Further there is the provision of supplementary agreement for the generators selected section 63 under EA-2003.

29. The above norms have been finalized by CERC after exhaustively taking in to consideration the views of all the generators as well as other stake holders.

30. MSEDCL affirmatively submits that the petitioner never had any objection in paying compensation to the respective Generators for operating plant at the proposed technical minimum levels.

31. MSEDCL further submits that Hon'ble Commission is empowered under Regulations 37 and 38 of Maharashtra Electricity Regulatory Commission (State Grid Code)

- c) To review and set the Technical minimum capacity of all Generating stations coming under the jurisdiction of MERC and having PPA with MSEDCL at uniform level of 55 %.
- d) To provide the compensation mechanism to the Generator, if required, under Clause 37 and 38 of Maharashtra Electricity Regulatory Commission (State Grid Code) Regulations, 2006.
- e) 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;
- f) To condone any error/omission and to give opportunity to rectify the same;
- g) To permit the Petitioner to make further submissions, addition and alteration to this Petition as may be necessary from time to time;

Bharat

MSEDCL

Chief Engineer (Power Purchase)
M. S. E. D. C. L.



BEFORE ME

R Singh

RANJEET SINGH
M.Sc LL B.

NOTARY
MAHARASHTRA
GOVT OF INDIA

3 APR 2018

