

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

GUIDELINES FOR OPERATION OF MERIT ORDER DESPATCH UNDER AVAILABILITY BASED TARIFF ORDER

The Commission formulated the mechanism for application of the Availability-Based Tariff (ABT) regime within Maharashtra vide its Order dated 17 May, 2007 in Case No. 42 of 2006 ('ABT Order'). Further to the ABT Order, and in discharge of its function under Section 86(1) of the Electricity Act (EA), 2003 of regulating electricity purchase and procurement process of the Distribution Licensees, the Commission after stakeholder consultation process through Public Notice dated 3 October, 2018, issues these Guidelines for the operation of Merit Order Despatch (MOD) under ABT Order. These Guidelines shall be effective for implementation from the month of April, 2019. The MOD stack from the month of April 2019 shall be prepared in accordance with these Guidelines. .

The following issues have been identified and addressed in the Guidelines:

1. **Periodicity and Date of preparation of MOD Stack.**
2. **Basis of preparation of MOD Stack, including the Variable Charge to be considered.**
3. **Guidelines for operating the Generating Units.**
4. **Guidelines for Capacity Declaration by Generating Units.**
5. **Guidelines for Zero Schedule instructions to the Generating Units.**
6. **Guidelines for Reserve Shut Down (RSD) instructions to the Generating Units.**
7. **Identification of 'Must Run' Stations, and guidelines for operating Hydro Stations**
8. **Technical Minimum of Generating Units.**



1 PERIODICITY AND DATE OF PREPARATION OF MOD STACK

- 1.1 The Variable Charge of the immediately preceding month and in case the Variable Charge of immediately preceding month is not available, the average of the latest available Variable Charge for the preceding 3 months needs to be considered and submitted to MSLDC-OD for preparation of the MOD Stack by the 14th day of every month. MSLDC-OD shall prepare the MOD Stack on the 15th day of every month, which would be effective from the 16th day of the month till the 15th of the subsequent month unless revised by MSLDC-OD. MSLDC shall upload the monthly MOD Stack on its website in the format given at Annexure-1 by 15:00 hours on the 15th of every month.
- 1.2 The MOD Stack uploaded on the 15th of the month may be subsequently revised by MSLDC-OD in the following circumstances:
- Commencement of supply of power by a Generating Unit under a new arrangement/agreement,
 - Revision of Variable Charges for preparing the MOD Stack due to Tariff Order issued by this Commission for State Generating Stations and the Central Electricity Regulatory Commission (CERC) for Central Generating Stations,
 - Impact of Change in Law in the PPAs as notified by the Distribution Licensee.
- 1.3 The Generating Company shall consider the latest possible actual GCV of Coal for the immediate preceding (n-1) month for furnishing Variable Charges to Distribution Licensees for MOD purposes. However due to uncontrollable factors, in case the GCV of coal of immediately preceding month is not available, the latest available average GCV of coal for preceding three months shall be considered.

2 BASIS AND PREPARATION OF MOD STACK, INCLUDING VARIABLE CHARGE TO BE CONSIDERED

- 2.1 It is the Distribution Licensees who must intimate to MSLDC the Variable Charges of all the Generating Stations/Units from which they are procuring power for preparing the MOD Stack.
- 2.2 For Generating Stations/Units whose Tariff is being determined by the Commission under Section 62 of the EA, 2003, the Variable Charge for MOD purposes shall be the Energy Charge (including 'other variable charges', if any) approved by the Commission in the relevant Tariff Orders plus the actual Fuel Surcharge Adjustment (FSA) billed in the immediately preceding (n-1) month. In case the FSA for the



preceding month has not been billed by the Generating Company to the Distribution Licensee, the last FSA billed by it shall be considered by the Distribution Licensee.

- 2.3 No deviations of any kind from the approved Energy Charge should be taken.
- 2.4 For Central Section Generating Stations (CSGS), the Variable Charge for MOD purposes shall be the landed variable cost at the State periphery for the immediately preceding month, including the injection losses, drawal losses of Central Transmission Utility and other such charges like ED Cess of exporting State.
- 2.5 (a) For the PPAs entered into under Section 63, the Variable Charge for MOD purposes shall be the Energy Charge payable as per the terms of the PPA for the immediately preceding month plus impact of Change in Law as per (b) and (c) below.

(b) The impact of any Change in Law event for the events, which have been already approved by the Commission for a particular Generating Company, such as changes in taxes, levies, cess, procurement of coal from alternate sources to meet the shortfall in coal from original envisaged source, etc., affecting the Energy Charge, should be submitted by the Generating Company to the Distribution Licensee within one month of its occurrence. For e.g., if the Commission has already approved the levy of clean environment cess as Change in Law event, any variation in clean environment cess should be submitted by the Generating Company to the Distribution Licensee within one month from the date of notification towards such variation in clean environment cess. The Distribution Licensee should take into account such impact of Change in Law in the Variable Charge that it intimates to MSLDC for preparation of the MOD Stack. However, the payments for such Change in Law claims will be made by Distribution Licensee after the approval of the Commission in accordance with the provisions of the PPA.

(c) Any new/additional Change in Law event affecting the Energy Charge should be submitted by the Generating Company to the Distribution Licensee within one month of its occurrence. The Distribution Licensee should take into account such impact of Change in Law in the Variable Charge that it intimates to MSLDC for preparation of the MOD Stack. However, the payments for such Change in Law claims will be made by Distribution Licensee after the approval of the Commission in accordance with the provisions of the PPA. In case the Generating Company does not submit the details of new/additional Change in Law event within one month of its occurrence, the Commission will take an appropriate view on the extent of Change in Law claim to be allowed while processing the Petition filed in this regard.



- 2.6 For Intra State Open Access transactions above 50 MW, 60% of total tariff shall be considered as Variable Charge for MOD purposes.
- 2.7 The Variable Charges for MOD purposes shall be provided upto 4 decimal places.

3 GUIDELINES FOR OPERATING GENERATING UNITS

- 3.1 MSLDC shall endeavour to attain the load generation balance on any given day by finalising the schedule of the maximum capacity available, starting from the Station/Unit with the lowest Variable Charge in the Merit Order Stack. MSLDC shall also endeavour to finalise the schedule for the Units required to be operated at technical minimum to the least extent possible.
- 3.2 MSLDC shall operate the MOD strictly as per these guidelines and the Generating Unit shall be backed down or ramped up strictly as per the MOD Stack.
- 3.3 The operation of Generating Units at Technical Minimum shall be strictly guided by the Scheduling and Despatch Code.
- 3.4 The Distribution Licensees should be in continuous consultation with their respective Suppliers and MSLDC, for procuring the highest possible capacity from the Units permitted by the system, rather than scheduling the Units at Technical Minimum.
- 3.5 As a basic principle, MSLDC is required to finalise the despatch schedule based on least-cost principles. In exceptional cases, however, some Units with higher Variable Charges which would not normally be permitted under MOD principles to operate, may be required to operate for various uncontrollable reasons such as transmission constraints in any part of Maharashtra, grid security constraints in importing power to the island city of Mumbai, etc.). MSLDC shall maintain details of such deviations from the MOD principles in the format at Annexure-3 and upload them on its website daily. MSLDC shall also prepare the daily backing down report in the format at Annexure-2 and upload it on its website daily.

4 GUIDELINES FOR CAPACITY DECLARATION BY GENERATING UNITS

- 4.1 As per MERC (Multi Year Tariff) Regulations, 2015, the Declared Capacity (DC) is defined as follows:

“Declared Capacity” means, in relation to a generating Station, the capability to deliver ex-bus electricity in MW declared by such generating Station in respect of any time-block of the day as defined in the State Grid Code or whole of the day, taking into



account the availability of fuel or water, and subject to further qualification in the relevant Regulation.

- 4.2 As per the Definition of DC as specified above, the Generating Company while providing the ex-power plant Generation Schedule in MW and MU for each time-block on day ahead basis, in accordance with the provisions of State Grid Code, is required to take into account the availability of fuel and water. Hence, apart from the day ahead Generation schedule, the Generating Company shall also provide the additional information regarding the fuel and water availability in the following format to MSLDC and contracted Distribution Licensee on day ahead basis:

	Requirement as per Generation Schedule	Availability	Remarks on short fall, if any
Fuel 1 (units)			
Fuel 2 (units)			
Fuel ...			
Water			

- 4.3 MERC MYT Regulations, 2015 specifies the demonstration of Declared Capacity by Generating Stations, as follows:

“51.1 The Generating Company may be required to demonstrate the declared capacity of its Generating Station as and when asked by the MSLDC.”

51.2 In the event of the Generating Company failing to demonstrate the declared capacity, the Annual Fixed Charges due to the Generating Company shall be reduced as a measure of penalty.

51.3 The quantum of penalty for the first mis-declaration for any duration/block in a day shall be the charges corresponding to two days fixed charges.

51.4 For the second mis-declaration, the penalty shall be equivalent to fixed charges for four days and for subsequent mis-declarations in the year, the penalty shall be multiplied in the geometrical progression.

51.5 The operating logbooks of the Generating Station shall be available for scrutiny by the MSLDC, and these books shall keep record of machine operation and maintenance.”

- 4.4 In accordance with the above provisions of MYT Regulations, MSLDC shall ask the Generating Station/Units to demonstrate the maximum DC of Generating Unit for the day or Generation Schedule for the particular time block, particularly under the following circumstances:
- In case the Generation Schedule by any Generating Station for a particular Generating Unit during Peak Hours is lower than Off Peak hours;
 - In case the Generation Schedule for a particular Generating Unit during the low demand period during the year is higher than the Generation Schedule during the high demand period during the year;
 - Based on request of contracted Distribution Licensee;
 - In case the variation in minimum and maximum Generation Schedule by any Generating Station for a particular Generating Unit during various time-blocks of the Day is more than 30% of contracted capacity.
- 4.5 If the Generating Company is unable to ramp up the Generating Unit under circumstances specified above, such instance will be considered as Mis-Declaration by Generating Company and the penalty as per the provisions of Regulations/PPA shall be made applicable. For Generating Stations/Units whose Tariff is being determined by the Commission under Section 62 of the EA, 2003, the penalty shall be as per the MYT Regulations and for the Generating Stations/Units having PPAs entered into under Section 63, the penalty shall be as per the provisions of PPA.
- 4.6 MSLDC shall prepare the report of such instances of mis-declaration in the format enclosed at Annexure-5 and publish the report on its website. MSLDC shall also send such report to the concerned Distribution Licensee having PPA with such Generating Unit on monthly basis by 5th of every month.

5 GUIDELINES FOR 'ZERO SCHEDULE' FOR GENERATING UNITS

- 5.1 In case of anticipated generation availability in surplus of anticipated demand, the Distribution Licensees need to optimise their cost of power procurement considering the contracted sources for the period of anticipated surplus.
- 5.2 If the anticipated generation availability is more than the anticipated demand, the Distribution Licensee may consider giving Zero Schedule to some of its contracted sources for the period during which the demand is expected to be lower than the total



contracted sources availability put together. This should be a conscious decision of the Distribution Licensee in consultation with MSLDC taking into account the demand supply position and transmission constraints.

- 5.3 If grid constraints prevent the Zero Scheduling of the Unit with the highest Variable Charge in the MOD Stack, the Unit with the next highest Variable Charge needs to be considered. However, MSLDC should publish the details of such grid constraints on its website, along with the period for which it is likely to persist.
- 5.4 The Distribution Licensee must give the Generating Company 24 hours prior notice of the Zero Scheduling to enable it to take steps for smooth removal of the Unit from the Grid.
- 5.5 In case a particular Unit is, in fact, required to be scheduled during the pre-declared Zero Scheduling period, the Distribution Licensee must intimate the Generating Company at least 72 hours in advance for the Unit(s) to come on bar in cold start.
- 5.6 Zero Scheduling has to be carried out by Distribution Licensee keeping in consideration its roles and obligations under the corresponding PPAs. The Commission clarifies that any additional cost implication in Variable Charges (by means of inferior norms of operation or minimum fuel off-take conditions) that arises on account of Zero Scheduling will not be allowed as pass through while truing up the power procurement cost.
- 5.7 It is not possible to anticipate and provide for every eventuality that may arise in this regard. It should be the intention of the Distribution Licensees and their suppliers that the PPAs between them shall operate with fairness and without detriment to the interest of either Party.

6 GUIDELINES FOR INSTRUCTING RESERVE SHUT DOWN (RSD) OF GENERATING UNITS BY MSLDC

- 6.1 A Reserve Margin equivalent to the contracted capacity of the largest Unit of the Power Station, contracted by the Distribution Licensee needs to be maintained.
- 6.2 The RSD should be implemented for the capacity available in excess of the largest Unit contracted by the Distribution Licensee.
- 6.3 The RSD should be applied to Units with higher Variable Charges in the MOD Stack, subject to grid conditions permitting the same.



6.4 MSLDC shall upload details of the RSD of the previous month in the format at Annexure 4 on its website by the 3rd of every month.

7 'MUST RUN' AND HYDRO GENERATING STATIONS

7.1 The Hydro Generating Stations are primarily intended to meet peaking power requirements. However, depending on the grid requirements, they may be operated during off-peak hours also. With significant generation capacity addition in the State, MSLDC needs to ensure that the intended purpose of Hydro Generating Stations is not defeated and indiscriminate use of Hydro power is avoided.

7.2 As the Hydro generation capacity is flexible capacity to meet the needs of real-time operations, MSLDC shall be responsible for operating Hydro Generating Stations on a daily basis considering the month-wise water availability indicated by the Distribution Licensees. The Hydro Generating Stations shall be operated by MSLDC to meet the system requirements. MSLDC shall operate the Hydro Generating Stations to restore the load generation balance at the State level, only after exhausting all the other options including ramping up of all thermal generating units up to the available capacity. In order to meet system contingencies, MSLDC may keep Hydro capacity equivalent to the capacity of largest thermal Unit as a spinning reserve. MSLDC to ensure that the hydro capacity to be kept as spinning reserve should be a mix of hydro units from different generating stations of different generating companies (in proportion to contracted capacity of such hydro generating stations) instead of hydro units from single generating station or hydro units of one generating company. Further, MSDLC shall operate the hydro units kept as spinning reserve in consultation with the respective Distribution Licensees, who have entered into contract with respective Generating Company for such hydro units. One of the stakeholders submitted that as the State level MOD is being operated, the generation capacity contracted by one Distribution Licensee is being utilised for meeting the requirement of other Distribution Licensees, for which the appropriate compensation mechanism needs to be specified. The Commission may separately specify such compensation mechanism through separate proceedings.

8 TECHNICAL MINIMUM OF GENERATING UNITS

8.1 The technical minimum for operation in respect of a coal fired/gas fired/multi fuel based thermal generating Unit connected to the STU shall be 55% of its installed capacity.


8.2 The Commission shall devise an appropriate methodology, in due course of time, for compensating such thermal generating stations for the loss of operational parameters on



account of revised technical minimum level vis-à-vis the existing technical minimum level.

The Commission has issued the Maharashtra Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2019 (“DSM Regulations, 2019”) under which the commercial arrangements shall come into force from date to be notified separately through Order and which shall be not later than April 1,2020. Hence, these Guidelines will be applicable till the commercial arrangements under DSM Regulations, 2019 comes into force. The Commission will suitably amend these MOD Guidelines to be in line with the principles specified under DSM Regulations, 2019.




(Abhijit Deshpande)
Secretary, MERC

Dated: 8 March 2019

Annexure 1: State MOD Stack of Variable Charges (VC) for the month of _____

(Effective from 16. __.20 __ to 15. __.20 __)

S. No.	Generating Station	Variable Charge (Rs./kWh)
Above Rs. 4/kWh		
1		
2		
....		
Rs. 3/kWh to Rs. 4/kWh		
3		
4		
.....		
Rs. 2/kWh to Rs. 3/kWh		
5		
6		
....		
Below Rs.2/kWh		
7		
8		
....		

Notes:



Annexure 2: Backing Down report for the date _____

S. No.	Generating Station / Unit	Backing Down period (Time Blocks)		Target Despatch Schedule (MW)		Backing Down quantum (MW)	Remarks
		From	To	Declared Capacity	Despatched Schedule		
1							
....							

Notes:



Annexure 3: Exception Report to Merit Order Despatch for the Date _____

S. No.	Generating Station/Unit	Declared Capacity (MW)	Period to be backed down as per MOD principles (Time Blocks)		Quantum to be backed down as per MOD principles (MW)	Actual Quantum backed down (MW)	Reasons for deviation from MOD principles
			From	To			
1							
....							

Notes:



Annexure 4: Report on Reserve Shut Down for the Month of _____

S. No.	Generating Station	No. of Units	Unit size (MW)	Total Capacity under Reserve Shut Down (Unit No and Capacity)	RSD Period (Date)		Reasons for RSD	Rank in MOD	Generating Station(s) with higher Variable Charge than the Station/Unit which was given MOD	Reasons for not selecting the Generating Station with higher Variable Charge for RSD
					From	To				
1										
....										

Notes:



Annexure 5: Report on Mis-Declaration for the Month

S. No.	Generating Station	Generating Unit	Unit size (MW)	Details of Mis-Declaration Incidence and the penalty that would be applicable
1				
..				

Notes:

