MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
World Trade Centre, Centre No.1, 13th Floor,
Cuffe Parade, Mumbai – 400 005
Tel. 022 22163964/65/69 Fax 22163976
Email: mercindia@mercindia.org.in
Website: www.mercindia.org.in

Maharashtra Electricity Regulatory Commission (Deviation Settlement Mechanism & related matters) Regulations, 2019

STATEMENT OF REASONS

Dated: 1 March, 2019

Introduction

The Commission had issued a Suo-Motu Order in Case No 42 of 2006 on 17 May, 2007, whereby it introduced the weighted Average System Marginal Pricing (WASMP) based Balancing and Settlement Mechanism in Maharashtra.

The Commission decided to review the existing balancing and settlement mechanism and to introduce the Deviation Settlement Mechanism in Maharashtra.

Accordingly, draft MERC (Deviation Settlement Mechanism and related matters) Regulations, 2018 along with Explanatory Memorandum was published on the Commission's websites www.mercindia.org.in / www.merc.gov.in in downloadable format and also published a Public Notice in daily newspapers Marathi (Maharashtra Times and Loksatta) and English (Indian Express and Times of India), inviting comments, objections and suggestions from all stakeholders by 23rd November 2018, which was subsequently extended as per request of some of the stakeholders. Total 6 entities responded to the Notice.

Further, the Central Commission notified 4th Amendment to its DSM Regulations, 2014 on 20thNovember, 2018 wherein the Central Commission has broughtseveral changes that need to be incorporated in the Draft DSM Regulations as published by the Commission for public consultation. Besides, the Commission considered it necessary to discuss the implementation aspects and to ascertain the preparedness of stakeholders for introduction of DSM regime. Hence, the Commission considered it appropriate to organise a workshop for key stakeholders to discuss and understand their preparedness and views in the light of the Central Commission's 4th Amendment to DSM Regulations dated 20thNovember, 2018. Accordingly, the Commission organised the workshop on 12thFebruary, 2019 at conference room of Maharashtra Water Resources Regulatory Authority (MWRRA), World Trade Centre, Mumbai. The presentations made by stakeholders areavailable on the Commission's website www.mercindia.org.in / www.merc.gov.in for reference.

The main issues raised during the public consultation process, and the Commission's analysis and decisions on them which underlie the Regulations as finally notified are set out below.

1. Commencement of commercial arrangement specified in the Regulations

1.1. Proposed in draft DSM Regulations, 2018

These Regulations except commercial arrangements, Deviation Charges, Additional Charges for Deviation and penal action shall come into force on the date of notification in these Regulations in the official Gazette.

Provided that the commercial arrangement shall come into force from date to be notified separately through Order, which shall not be later than 1 April 2020.

1.2. Comments received

MSEDCL submitted that, it did not support the concept of implementation of deviation settlement mechanism in two phases. The commercial arrangement should come into force from the date of notification of MERC DSM regulations. It claimed that it had incurred a loss of more than Rs.4000 Crs till date, due to present Balancing and Settlement mechanism for deviation settlement in the State for which a separate petition was filed by it before the Commission which is being duly considered for order.

The main hurdle in implementation of DSM Regulations is installation of all interface meters and software for scheduling & accounting. As per data available with MSEDCL, there are still 47 nos. of T-D interface locations of MSEDCL which are yet to be metered by MSETCL and AMR system is not in place. Due to this reason, presently MSEDCL T-D interface drawal for FBSM mechanism is not actual quantum but is a derived one. This resulted in wrong computation of FBSM bill for MSEDCL.

The MSEDCL is of view that three-month time period is more than sufficient to install meters at these 47 interface points. Hence, it requested the Commission to issue directive to STU for 100% metering of all these 47 interface points within next three months. Further, STU should also be directed to install both main & check meters at all remaining locations subsequently. However, this should be a parallel activity & DSM mechanism should not be delayed for replacement or installation of new meters at interface points; as delay in process of implementation of proposed DSM mechanism will ultimately affect consumers of MSEDCL on account of loss being incurred by MSEDCL due to flaws in existing FBSM mechanism.

MSEDCL further requested that, if immediate implementation of new DSM Regulations is not possible then the Commission should devise a methodology to compensate MSEDCL's consumers for the losses incurred due to FBSM till revised DSM is implemented including loss incurred in past.

1.3. Analysis and Commission's Decision

The Commission observes that establishment of interface metering, communication infrastructure and AMR facility available at all interface points is crucial for implementation of energy accounting and any form of balancing or deviation accounting mechanism. The

Commission notes that, presently in the absence of 100% metering of all T-D interface points, energy drawal for MSEDCL under FBSM mechanism is derived quantum, which must be addressed forthwith. The Commission also notes that as per SAMAST framework for implementation of DSM mechanism at state level, detailed activity chart and timelines have been prepared and all the stakeholders are advised to adhere to these timelines. **The Commission directs STU to prepare detailed action plan incl As-Is assessment of status of installation of Interface Meters (G<>T and T<>D) and AMR facilities within one month from date of notification of these DSM Regulations and submit monthly progress report to accomplish 100% interface metering within stipulated time period not later than six months from date of notification of DSM Regulations.**

The Commission observes that during the workshop conducted on 12-Feb-2019 around 12 to 14 months timeline has been proposed by STU/SLDC for putting in place necessary metering, communication infrastructure, AMR facilities covering all interface points and associated hardware/software incl. trial operation. Accordingly, the Commission notes that, upon notification of DSM Regulations an implementation period of at least up to 12 months including trial operation period would be necessary for various stakeholders to set up interface metering and communication infrastructure and energy accounting Framework. The SAMAST Report published by Forum of Regulators (FOR) also envisages one year period for implementation of DSM framework.

STU, SLDC and all key stakeholders incl Generating Companies and Distribution licensees will require some time for preparedness and setting up hardware/software and to undertake pilot test runs. Further, implementation of DSM Regulations would also coincide with the 4th Control Period of MYT Regulations commencing from 01 April, 2020. Accordingly, the Commission proposes the commercial implementation of DSM Framework in phased manner by 1st April 2020. The Commission shall review the status of required preparedness and shall separately notify the date of commercial implementation of DSM framework.

1.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

2. Regulation 1.2: Revision in the Definitions

2.1. Proposed in draft DSM Regulations, 2018

Definition of Deviation, 'Seller', Grid Code, Gaming and Time Block;

2.2. Comments received

Tata Power submitted that, the definition of Seller mentions Generating Stations as one entity, however, in case Generating station was having multiple units and alsohaving multi fuel fired capability, the regulation is not clear as to whether the scheduling will be done Unit wise or at a Station Level.

BEST Undertaking submitted that, Definition of Deviation should be for Drawal Deviation = Actual Drawal– Actual Availability (Scheduled) and for Generation Deviation = Actual Generation – schedule Generation.

MSEDCL submitted that, the present state grid code was based on IEGC 2006 & is in force since 1st April 2006. However, CERC has repealed IEGC 2006 & issued IEGC 2010 on 28thApril 2010. Since then CERC has issued various amendment with latest being 5th amendment which was issued on 12th April 2017. Some of important provisions such as Change in time schedule for declaration of day ahead availability by generators, Declaration of availability by generators, Trial Run operation before COD, Change in technical minimum concept of thermal generators thereby increasing flexibility in generation, Change in schedule by seller or buyer. At present change in requisition can be done from 4th time block whereas in state grid code, time period is from 6th time block. In view of various amendment in IEGC, the Commission is requested to review existing state grid code& amend the draft regulation to bring the same in line with various amendments in IEGC.

As regards definition of Gaming, MSEDCL submitted that, even buyer especially open access consumer on many occasions might intentionally mis-declare the drawal schedule or may not procure from Power Exchange and then overdraw from the grid resulting in additional penalty on MSEDCL.

In view of the above, buyers also need to be included in the definition of gaming to control such financial gain. As per clause 6.5(1) of IEGC 2010, "gaming is an intentional mis-declaration of a parameter related to commercial mechanism in vogue, in order to make an undue commercial gain". On the basis of above facts, definition of gaming should be revised by inclusion of buyer.

With Regard to definition of Time Block, MSEDCL submitted that, the CERC has published staff paper on "Introduction of Five Minute Scheduling, Metering, Accounting and Settlement in Indian Electricity Market". The need for implementing a 5-minute scheduling and settlement at the Inter-State level is being felt considering the variability of load and renewable especially considering the increasing RE penetration in the coming years. The FOR Technical Committee recommended the implementation of its report on Scheduling, Accounting, Metering And Settlement of Transactions in electricity (SAMAST) at the intra-state level. The states implementing SAMAST at the intra-state level are required to factor the 5-minute periodicity in the metering as well as software being procured for scheduling and settlement.

Hence in view of upcoming development at central level for implementation of scheduling on five minute basis in future, it is requested to introduce clause regarding installation of new interface meters i.e. ABT meters which should be reprogrammable one so that there will not be any need to replace the meter if CERC changes its scheduling, accounting & deviation settlement mechanism in future. Presently such configurable meters are available in market.

2.3. Analysis and Commission's Decision

Definition of Seller in the DSM Regulations is generic in nature. It can be either Unit of generator or generating station including all units. The DSM Regulations proposes to continue with the existing arrangement under MERC MYT Regulations, 2015 i.e. the generating plants where the Commission is determining Unit wise Tariff or where Captive Generating Plant or Open Access Generating plant where there is unit-wise sale or wheeling arrangement in place

then, the same shall be considered on Unit-wise basis for the purpose of Scheduling and DSM accounting under these Regulations.

With regard to definition of Deviation, the Buyers are expected to estimate their drawal and prepare a drawal schedule. Buyers shall consider the availability of Generators with whom they are having PPAs. Definition of Deviation at injection end (for Generating entity) and at drawal end (for Drawee entity) has been clearly defined, which is consistent with definition of Deviation considered under inter-state/regional deviation accounting and regional energy accounting framework as per CERC DSM Regulations.

With regardto amendment of State Grid Code in line with the amendments of IEGC, the Commission is aware of the recent revisions in the IEGC by Central Commission. The Scheduling process proposed in the Explanatory Memorandum of Draft DSM Regulations is in line with the recent revisions in the scheduling process at the regional level.

With regard to the Technical Minimum, the Commission vide Order dated 19 October, 2018 in Case No. 115 of 2018 has referred its draft Guidelines for Merit Order Dispatch published on 1 October, 2018 which proposes the Technical Minimum of 55% for the Generating Units in the State of Maharashtra in line with the CERC Regulations. The MoD guidelines are at advanced stage of regulatory consultation process. The issue of Technical Minimum shall be dealt by the Commission while finalising MoD guidelines. Further, **the Commission shall undertake Regulatory process for revision in the State Grid Code separately in line with provisions of IEGC.**

With regards to issue of gaming, the DSM framework proposes volume limits and also Additional Deviation Charge for continuous deviation by Seller or Buyer. Further, Regulation 9(A) proviso specifies the provision of change in sign within certain time blocks. Provision of Change in Sign shall also eliminate the possibility of continuous deviation in either direction. Based on the comments received during consultation process and also during stakeholder consultation workshop, the Commission is of the view that in the initial phase of implementation of DSM framework, the change in sign provision shall only be operational for monitoring purposes; however, the applicability of Additional Deviation Charges for the non-compliance of provision of Sign Change shall be made applicable at later date, to be notified separately upon gaining experience. However, the suggestion of MSEDCL regarding definition of gaming is accepted and definition of Gaming is modified accordingly.

With regards to revision in definition of Time Block, the Commission in its explanatory Memorandum published with Draft DSM Regulations has noted the ongoing development at National level regarding revision of time block to 5 minutes. The definition of Time Block in Draft DSM Regulations provides the enabling provision to revise the time block to 5 minutes as and when revised by the Central Commission at regional level. Further, the Commission in its Explanatory Memorandum has proposed that, STU/SLDC while planning for new metering infrastructure need to ensure that, Interface Metering, Energy Accounting and Deviation Settlement should be capable of undertaking transactions with 5-minute duration. All future resource planning, IT and communication system requirement and infrastructure development shall be undertaken to cater to the requirement of 5 minute Time Block as and when introduced at national and state level. The definition of ‘Time-block’ has been retained as proposed under Draft DSM Regulation to ensure the freedom/flexibility to revision in time-block duration, as and when found necessary.

2.4. Provision in MERC DSM Regulations. 2019

The provision of Buyer is added in the definition of Gaming and definition of Time block is revised in line with 4th Amendment to CERC DSM Regulations.

Definition 2(1)(k) is revised as below

'Gaming' in relation to these Regulations, shall mean an intentional mis-declaration of declared capacity by any Seller or drawal schedule by Buyer in order to make an undue commercial gain through Charge for Deviations;

3. Regulation 2: Additional Definitions to be incorporated

3.1. Analysis and Commission's Decision

The Deviation Settlement framework proposed by the Commission for the State is in line with CERC DSM Framework. The CERC published Draft 4th Amendment to its DSM Regulations, 2014 on 29thJune, 2018 alongwith Explanatory Memorandum. The CERC in its Explanatory Memorandum of 4th Amendment to its DSM Regulations has discussed the rationale behind linking DSM price vector to Day Ahead Market Price instead of linking with the CERC determined variable cost of thermal Power plants.

The CERC Explanatory Memorandum proposes that, the DSM Price Vector should be linked to the existing market discovered prices (day-ahead market). The details of the design aspects associated with market-linked DSM price vector discussed in the Explanatory Memorandum are as follows:

i. *Under the present circumstances, it is felt prudent to use the price discovered in the day-ahead market as a reference for the DSM price vector. In future, when market based procurement of ancillary services matures and robust discovery of prices takes place, other alternatives may be examined.*

ii. *The linking of prices in DAM and DSM market segments may be considered.*

iii. *The Area Clearing Price (ACP) should be linked to the DSM Price so as to factor geography and transmission congestion.*

iv. *It is proposed that day-ahead market price of the Power Exchange having a market share of 80% or more in energy terms on a daily basis be linked to the DSM price. If there is no single Power Exchange having a market share of 80% or more, the weighted average day-ahead price should be used for linking to the DSM price.*

v. *The daily average area clearing prices in the day-ahead market should be used as the basis for market linked DSM price for the time being and not the time block ACP which could have high volatility.*

vi. *The frequency band for the purposes of the DSM price vector may be taken as 49.85-50.05 Hz to begin with.*

vii. *A time period of 6 months may be given as an advance notice period to the utilities to gear up. At the end of 6-month period, the frequency band for DSM price vector should be changed to 49.90-50.05 Hz so as to align with the IEGC mandated operational frequency band (as amended from time to time).*

viii. The average daily ACP should be used as a reference and linked to the DSM rate at 50 Hz.

ix. The DSM rate vector should be dynamic and slope determined by joining the identified price points at 50 Hz. (daily average ACP modified to include transmission charges and losses), low frequency of 49.85 Hz (Rs. 8 per unit) and 50.05 Hz (zero) on a daily basis i.e. dual pricing, bringing in the desired hysteresis.

x. The present methodology of DSM rates for the renewable should be continued as of now.

xi. In the interest of secure grid operation, all the volume limits along with associated surcharge/additional surcharge should be retained in the new market linked DSM price mechanism for the time being and tightened progressively in line with the international practice.

Subsequently, CERC has notified 4th Amendment to its DSM Regulations, 2014 on 20th November, 2018 wherein, CERC brought, several changes that need to be incorporated in the Draft DSM Regulations published by the Commission for public consultation. Some of the important changes that are required to be brought in intra-state DSM Framework published by the Commission are:

1. Revision in frequency band from (49.70 Hz to 50.05 Hz) to (49.85 Hz to 50.05 Hz)
2. Introduction of new Definitions - Area Clearing Price (ACP), Day Ahead Market Price (DAM), Area Control Error (ACE) etc.
3. Linkage of DSM Price vector to DAM alongwith change of slope/price vector revision.
4. Revision of CAP Rate linkage
5. Change in methodology of Price Vector applicable for Deviation from pre-determined price vector linked with fuel price to Day ahead Market Price
6. Revision in Time-blocks for Zero Crossing from 12 to 6
7. Daily deviation volume limit 3% for beneficiaries and 1% for Generators and treatment thereof
8. Revision in Appendix etc.

Accordingly, the Commission has revised the DSM Regulations to incorporate these amendments to be aligned with the DSM Regulations notified by the CERC on 20thNovember, 2018.

3.2. Provision in MERC DSM Regulations. 2019

The appropriate provisions of MERC Draft DSM Regulations, 2018 have been modified upon incorporating necessary changes including definitions, DSM price vector formulation, operating frequency range etc. with certain modifications to be consistent with the DSM framework to be applicable at regional level and notified by Central Commission.

4. Regulation 4: Applicability of Regulations

4.1. Proposed in draft DSM Regulations, 2018

These Regulations shall apply to the transactions of conveyance of electricity through short-term open access or medium-term open access or long-term open access using intra-state transmission system (InSTS) or distribution system of electricity (including inter-state wheeling of power), subject to the following conditions:

(A) Deviation Settlement Mechanism under these Regulations shall be applicable for all Seller(s), including open access generators, captive generators (excluding in-situ captive generators) connected to intra-state transmission system but excluding wind and solar generating station(s).

Provided that, forecasting, scheduling and deviation settlement related matters regarding wind and solar generation shall be governed as per the provisions of "Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018" and its amendments thereof.

(B) Deviation Settlement Mechanism under these Regulations shall be applicable for all Buyer(s) including distribution licensee(s), deemed distribution licensee(s) located in the state and full open access consumers connected to intra-state transmission system.

Provided that, Deviation Settlement of partial open access consumers connected to intra-state transmission system and all open access consumers connected to distribution network shall be in accordance with the provisions of Maharashtra Electricity Regulatory Commission (Transmission Open Access) Regulations, 2016 and Maharashtra Electricity Regulatory Commission (Distribution Open Access) Regulations, 2016 and its amendment thereof.

4.2. Comments received

SLDC submitted that, other RE Generators except Wind/Solar Generators should be made part of DSM Regulations i.e. RE Generators which are not included in F&S Regulation and having installed capacity equal and above 50 MW for first year of implementation of DSM and gradually the limit shall be decreased to 10 MW per year till 20 MW shall be subject to deviation charge in this mechanism.

Tata Power and BEST Undertaking submitted that, regarding applicability of DSM charges to DISCOMs w.r.t. Hydro and RE Generations, it is proposed that, the deviation charges shall not be made applicable to Discoms on account of variation in the Hydro Generation as per SLDC's instructions for controlling Grid parameters, as this is completely uncontrollable factor for DISCOMs. Further, in case of variation in RE generation, volume limit for calculating the additional Deviation charges shall not be made applicable.

MSEDCL submitted that, it is a welcome step to bring the generators under the ambit of the intra-state ABT mechanism to bring about disciplined operation i.e. the UI charges for the deviations from the schedule are borne by the respective generators to avoid undue burden on

the consumers. However, it requested to include the generators connected to Distribution Network also. It is mentioned in Explanatory Memorandum that, in respect of RE generator other than Wind & Solar, generator with installed plant capacity more than 25MW are only required to submit schedule. This means, generator below 25MW installed capacity will be out of ambit of this regulation. If so, large quantum of RE generators, notably Biomass, Bagasse, Cogen etc will be out of ambit of this regulation.

Further, in case of CERC DSM regulation-2014, there is no such condition in respect of applicability for generator or buyer under DSM mechanism with regards cap on installed capacity. All intrastate generator irrespective of installed capacity & level of connectivity (i.e. Transmission or distribution) shall be included in this proposed regulation. It is suggested that generating station having long term power purchase agreement with same variable rate in MOD stack shall be considered as one state pool participant and Units which are specifically for merchant capacity shall be considered as separate state pool participant.

MSEDCL further submitted that, presently RE Solar & Wind generators have no deviation charges till its absolute error exceeds 15%, whereas conventional generators or buyer have no such limit given. Hence, deviation by these RE generators having contracted with partial open access consumers have to be borne by DISCOM and mainly by MSEDCL. Now consider a case of a partial open access consumer having total CD of 15MW with 60% contracted with RE generator and Now to meet demand of 10MW, generator has to schedule 9MW. But due to some reason, RE generator only generated 4MW. In such case, partial OA consumer will draw rest 6MW from DISCOM. Since CD with DISCOM was 6MW, DISCOM will not get any additional charges for absorbing deviation of RE generator of partial open access consumer & other hand , DISCOM will have option like

1. overdraw from grid & pay DSM charges
2. Schedule costly generation
3. Curtail its load and keep our consumer in dark

Under all above option, there will be financial implication to DISCOM. Hence, it suggested following two changes:

A. Open Access consumer whether partial or full taking power beyond a particular capacity say 5 MW should be made pool participant otherwise all OAs would become partial OA and escape from DSM, if there is shortfall in generation or no generation. Partial open access consumers particularly with more than 50% contract demand from RE source should alsobe part of present deviation settlement mechanism.

B. In respect of balance, partial open access consumers, Existing MERC (Transmission/Distribution Open access regulation should be amended and any deviation of RE generator should be borne by concerned partial OA consumer as a temporary tariff Units & rate of temporary tariff units should be increased. As per recent tariff order approved by the Commission in case no 195 of 2017, rate of temporary tariff is Rs. 11.75/Kwh. Recently power rate in Indian Energy exchange has reached to almost Rs.18.63/Kwh.

   The cost of generation of electricity from diesel generator is also more than Rs. 15 per kWh with additional fixed cost. Hence to bring discipline in open access sourcing

of power for assessing its daily requirement, to deter them from overdrawal, it is necessary that existing rate of temporary tariff should be increased further. Hence, a separate rate of temporary tariff may be created for open access consumers.

Further, MSEDCL requested to extend the definition of Buyer to include the Deemed Licensee such as Railways, SEZ, Distribution Licensee as per Section 13 and 14.

4.3. Analysis and Commission's Decision

The Draft MERC DSM Regulations, 2018 specifies that, these Regulations shall apply for all Seller(s), including open access generators, captive generators (excluding in-situ captive generators) connected to Intra-State transmission system but excluding wind and solar generating station(s). The embedded generators connected to Distribution Network shall not be part of DSM Framework directly, however their Deviation Settlement shall be in accordance with the provisions of MERC (Distribution Open Access) Regulations, 2016 and its amendment thereof.

The Deviation Settlement of Partial Open Access Consumers connected to Intra-State transmission system and distribution network shall be in accordance with the provisions of MERC (Transmission Open Access) Regulations, 2016 and MERC (Distribution Open Access) Regulations, 2016 and its amendment thereof. The provisions of Regulation 16 of MERC Distribution OA Regulations specifies that, the Partial OA consumers shall submit their schedule to the Distribution Licensee and it will be part of Discom schedule.

The Commission is of the view that, from visibility and system operations point of view, Sellers and Buyers connected to InSTS with installed generation capacity above certain threshold capacity limit needs to be brought under the ambit of DSM framework in the initial phase. Accordingly, the Commission has specified that, generators having installed capacity more than 25MW connected to InSTS shall be covered under the proposed DSM framework with the enabling provision that this threshold capacity limit shall be revised over the period.

With regard to Tata Power's submission, the generators' deviation charges shall not be billed to Discom. The generator's deviation and Discom's deviation shall be computed separately and billed separately. Further, as and when generator's schedule is revised as per the instructions of SLDC, it will be treated as revision of schedule and not the deviation to the earlier schedule. Treatment to deviation on account of infirm RE generators shall be in accordance with the provisions of MERC F&S Regulations, 2018 and its amendments thereof. The formula for volume limits for Discoms shall be linked with Peak Demand of Discom and not with RE Deviation in the Licence area of Discom.

With regard to applicability of DSM for generating plant, Unit wise or plant wise, the Draft DSM Regulations proposes to continue with the existing arrangement i.e. the generating plants where the Commission is determining Unit wise Tariff, or where Captive Generating Plant or Open Access Generating plant where there is unit-wise sale or wheeling arrangement in place then, the same shall be considered on Unit-wise basis for the purpose of Scheduling and DSM accounting under these Regulations.

Provisions under the DSM Regulations, shall not be applicable to variable RE generators like Wind, Solar and hybrid RE generating plant comprising wind and solar, however, the 15%

limit specified in the MERC F& S Regulations, is subject to the provisions of Regulation 12 of the MERC F&S Regulations. MSEDCL may refer the F&S procedure approved by the Commission for illustrations of DSM charges computation for variable RE generators.

Further, the Commission would like to clarify that the DSM Regulations cover all Generating stations connected to intra-state transmission system including renewable energy generating stations (excluding variable RE generating stations such as wind and solar). Considering implementation aspects and operational complexities a threshold capacity limit of installed generation capacity of more than 25 MW is considered to begin with, however, over the period, the threshold capacity limit shall be revised in stages based on report of MSLDC.

Further, the issues raised by MSEDCL such as revision in the provisions of OA Regulations, Revision of temporary Tariff for OA consumers, creation of separate category are out of the preview of the present Regulatory Process initiated by the Commission for DSM Regulations.

The definition of Buyer is standard definition, in line with the Model DSM Regulations published by FOR. However, the Applicability as mentioned under Regulation 4 of MERC Draft DSM Regulations, 2018 specifies that, Buyers includes Deemed Distribution Licensees as well.

4.4. Provision in MERC DSM Regulations. 2019

The provision of Part A of Applicability of the DSM Regulations is revised as below:

(A) Deviation Settlement Mechanism under these Regulations shall be applicable for all Seller(s) having installed generating capacity above 25 MW (or such other threshold capacity), including renewable energy generators but excluding wind and solar generating stations(s),open access generators, captive generators (excluding in-situ captive generators) connected to intra-state transmission system.

Provided that the revision in thethreshold capacity limit shall be separately notified by the Commission in stages over the period considering implementation aspects and based on report to be submitted by SLDC.

5. Regulation 5: Duties of State Load Despatch Centre and State Entities

5.1. Proposed in draft DSM Regulations, 2018

These Regulations aim to govern the functioning of various State entities in a way that discipline is maintained with regards to the injection and drawal of energy by such State entities and the reliability and integrity of power system is maintained.
To meet these objectives, necessary preconditions and covenants for participation by the State entities.

(1) The State entities shall inform the SLDCs of all contracts they have entered into for exchange of energy.

(2) ------

(3) The State entities shall enter into Connection Agreement/Open Access Agreement with the concerned transmission licensee, which shall specify physical and operational requirements for reliable operation and gain physical access and connection to the intra-State transmission system (InSTS) or enter into Connection Agreement/Open Access Agreement with concerned Distribution Licensee for use of distribution system, as the case may be in accordance with Maharashtra Electricity Regulatory Commission (Transmission Open Access) Regulations, 2016 and Maharashtra Electricity Regulatory Commission (Distribution Open Access) Regulations, 2016, and its amendment thereof. The State Transmission Utility shall make necessary arrangements for putting up suitable meters, capable of recording energy flows at 15-minute intervals or any other time interval as specified by the Commission, at the points of injection and drawal. The time synchronisation of metering system shall be through Global Positioning System with counter check from the State Energy Accounting Centre which is the SLDC.

(4) SLDC shall take all decisions regarding the despatch of stations after evaluating all the possible network parameters, constraints, congestions in the transmission network and in the eventuality of any such network aberration, the instructions by the SLDC relating to despatch and drawal shall be binding on all State entities.

SLDC shall publish all such information as required for all other State entities to be aware of the energy exchanges taking place within the pool as well as exigency conditions, if any with regard to despatch of power.

5.2. Comments received

SLDC Submitted that, all Discoms need to have inter-se contracts in order to schedule contingency power procurement from other Discom.

STU shall install ABT meters at all interface locations along with necessary communication infrastructure for Automatic Meter Reading i.e. online transmission of ABT meter data at SLDC. Power Transformer LV shall be considered as T<>D interface location for Discom in case of HV outgoing feeders of single utility. Feeder shall be considered as T<>D location for Discom where outgoing HV feeders belong to multiple utilities. Feeder shall be considered as T<>D location for discom in case of full Open Access Consumers. The interface location for EHV consumer shall be considered as T<>T location at Consumer end. Unit wise measurement for generators shall be considered for G<>T locations i.e. (GTs and SATs measurement). The above metering philosophy needs to be adopted in State Metering code.

With regard to decision to be taken by SLDC for Despatch of generation, MSEDCL submitted that, the specific reason for taking decision regarding the despatch of stations should be informed to concerned Discom by SLDC. The commercialarrangement for decision taken by SLDC to meet exigency situation need to be defined. The Regulation needs to provide clarity for the treatment of hydro power used by the Distribution Licensee during the peak period to maintain Grid Frequency of the State under the direction of SLDC. MSEDCL's hydro projects especially Koyna HEP is used by SLDC as a counter measure, however hydro generation like Koyna is contracted with MSEDCL only and has limitation on use on account of water allocation quota.

The Commission has given specific treatment for TPC Hydro under Scheduling and Despatch Code that, TPC hydro Generation is primarily intended to meet peak demand of Mumbai Discoms in accordance with the PPA/Contracts/Allocation and will be operated as per the Commission's directives given in its Orders. SLDC is using Koyna as well as other hydro station contracted with MSEDCL, not only to control overdrawal of Mumbai Discom but also to meet demand of Mumbai. Mumbai Discoms instead of purchasing from power exchange overdraw the power from the State pool when the energy rates at power exchange were very high resulting in over usage of Koyna by SLDC so as to control overdrawl from the central grid. It is requested that, the Koyna should not be used as a balancing mechanism. However, in case of exigency if Koyna is used by SLDC (that too with prior permission/consent from MSEDCL) to control overdrawal or to meet demand of Discom other than MSEDCL then there must be a fair commercial mechanism to settle such transactions. The commercial mechanism should be such that it will deter other Discom to use Koyna to control its overdrawal and economically forced them to manage their purchase effectively. The other Discoms overdrawing from grid either intentionally or unintentionally shall not be allowed, as it will not only jeopardise power planning of MSEDCL but also increase financial burden on consumers of MSEDCL.
Further,for Mumbai discoms present peak demand is of 3600MW, whereas firm power tie-up under Long term is only 2420MW & RE power tie up is 387MW. Hence, more than 30% power is purchased from short term & at present no reserve is available to meet contingency. This lack of firm PPA of Mumbai DISCOMs gives them opportunity to use power contracted by MSEDCL by way of unscheduled drawal. This can be seen from FBSM bills issued by SLDC from 2011-12 to Nov -2016 & from DSR reports of SLDC.

Hence, the Commission is requested to mandate Mumbai Licensee to execute adequate PPA to meet their demand, otherwise they may not be able to get power from short term market and may deliberately on account of higher price in power exchange or short term market, use MSEDCL power.
Further, instead of using Koyna hydro to meet exigency situation, it is proposed to create the reserve at intra state level as mentioned in report of CERC committee on spinning reserve published by CERC on 17thSeptember, 2015.

Hence it is submitted that provision should be made in regulation thereby mandating Discom to tie-up with hydro, battery storage, gas station or any such fast responding tertiary reserve to meet its exigency. The Discom-wise quantum shall also be fixed for such mandatory reserve. In view of high penetration of RE generation in future, the tertiary reserve will be needed as balancing mechanism. Hence looking into future power scenario, the Commission is requested to initiate action in this important matter at earliest.

5.3. Analysis and Commission's Decision

The Commission notes the suggestion of SLDC. However, Distribution Licensee(s) may enter into contract on their own based on their own assessment of utility-wise load generation balance and economic considerations. Further, provision of MERC MYT Regulations, shall govern the procurement of power by any Distribution Licensee. The requirement of adequacy of contracted power, reserve requirements and unit commitment shall be dealt under suitable

provisions of MYT Regulations and Ancillary Service Regulations, as and when, notified upon due regulatory process.

The preparedness for implementation of DSM framework such as metering infrastructure incl. AMR facilities, is discussed by the Commission in explanatory memorandum of the draft DSM Regulations. Further, the Commission also conducted the workshop with the concerned stakeholders to ascertain the preparedness of the stakeholders for implementation of DSM framework in the state.

The Commission is of the view that, the necessary metering infrastructure for interface metering including AMR facilities must be in place for implantation of DSM framework in the State. The Commission has also constituted a working group of major stakeholders to monitor the progress of the implementation of DSM Regulations. **The Commission also directs STU to prepare detailed action plan including As-Is assessment of status of installation of Interface Meters (G<>T and T<>D) and AMR facilities within one month from date of notification of these DSM Regulations and submit monthly progress report to accomplish 100% interface metering within stipulated time period not later than six months from date of notification of DSM Regulations.** Further, STU in co-ordination with SLDC should conduct stakeholder's workshops for familiarisation of features of DSM Regulations and address issues during implementation thereof.

The Commission observes that MSEDCL has raised the issues which are mainly related with existing FBSM framework. The draft DSM framework specifies decentralised MoD i.e. utility wise MoD for day ahead scheduling. Each Buyer shall provide its day-ahead schedule considering its own PPAs and availability of generators under PPAs.

Accordingly, each Buyer including Mumbai Discoms have to demonstrate their PPAs or any other power procurement arrangement while submitting their day-ahead schedule to SLDC. SLDC shall operate Centralised MoD of all generators in the State only in case the grid parameters including frequency, voltage parameters and transmission line loading and substation loading conditions deviate beyond permissible operating range or to comply with RLDC instructions, in real time and that too for limited period till the Buyer enters into short term PPA or any other bi-lateral arrangement.

With regards to the issues raised by MSEDCL regarding use of Koyna or other hydro sources having PPA with MSEDCL, the MoD guidelines and scheduling despatch operating procedures shall specify the details of the usage of hydro sources in the State.

The other issues such as reserve capacity, standby power for Mumbai, Ancillary services, PPAs of Mumbai Discom are out of the preview of the present regulatory proceedings initiated by the Commission for finalisation of DSM framework to be implemented in the State.

5.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with suitable modifications particularly with reference to guiding principles for operationalising deviation settlement mechanism for the state as specified under Regulation 6.

6. Principles for Operationalising Deviation Settlement Mechanism

6.1. Proposed in draft DSM Regulations, 2018

The framework for Deviation Settlement Mechanism shall cover the following key design parameters, viz., (a) Scheduling Period (b) Guiding Principles for Scheduling and Despatch (c) Operating Range of Frequency (d) Deviation (e) Settlement Period (f) Measurement Unit for State Deviation Pool Account(g) Deviation Pool Price Vector (h) Deviation Volume Limit (i) Premise for Allocation of Losses. -----

6.2. Comments received

A. Scheduling Period

MSEDCL submitted that, as per present clause 6.5 (3) of IEGC 2010, ISGS station has to submit its availability by 06:00 Hrs but as per State scheduling & Dispatch code, intra state generator has to submit its availability by10:00 hrs. If this provision of scheduling & Dispatch code is made in line with IEGC provision then it would help Discom for next day power planning. Generators may be directed to inform change in availability to concerned Discom also in addition to SLDC. As per the para 3.5.4(7) of explanatory memorandum, the revision of declared capability by seller(s) and requisition by buyers for remaining period of day shall be permitted with notice. Revised schedule/declared capability in such cases shall become effective from the 6th time block, counting the time block in which the request for revision has been received by SLDC to be the first one, however, as per clause 6.5(18) of IEGC, the revision is effective from 4th time block. It is requested to amend this provision to make it in line with IEGC -2010.

Further, MSEDCL requested that instead of centralised MOD in real time, there should be centralised operation of decentralised MOD of each Discom by SLDC. Centralised MOD will create commercial complication in settlement of deviation.

B. Guiding Principles for Scheduling and Despatch

SLDC submitted that, as major day ahead energy transaction is proposed to schedule based on Utility-wise MOD, for remaining minor energy transactions in real time, Utility wise MOD may be continued. Tata Power submitted that, for the purpose of load generation balance, Buyer/Utility-wise MoD principle shall be followed with opportunity for inter-se exchange of un-requisitioned surplus available power amongst Distribution Licensee(s) to optimise their cost of power procurement. In case of surplus after meeting the requirement of distribution licensees the balance URS if any shall be shared between buyers.

Further, Tata Power proposed that, the URS be made available to the requesting Discom only at variable cost of the generation in line with the fact that deviation vector is also linked to the variable cost of generation. As mentioned in the Day Ahead scheduling process in the explanatory memorandum, the URS is proposed to be published by SLDC on three occasions on day ahead basis. It is highly likely the URS once declared will undergo revisions based on the final despatch schedules factoring power exchange and collective transactions. In case of downward revision of URS once declared, the planning of Discoms who has tied up the URS, would go hay wire and will loose its opportunity to tie up from other sources. Hence, downward revision of the URS beyond 10% of the original URS shall not be allowed except

on account of Force Majeure on generator's account. The procedure for operational and commercial arrangements with regards to tie up of URS Power is required to be formulated with due participation of all DISCOMs. In case there are multiple discoms requesting for URS in one time block, the allocation of URS shall be done such that URS gets allocated to DISCOM to replace the highest cost of generation in the State. Further, the DSM Regulations are silent on the fact that whether latest available URS would be declared by SLDC based on real time conditions e.g. in case Discom revises its demand due to sudden rains etc. and also whether other Discoms would have opportunity to tie up this URS on a real time basis. Also, the procedure for real time URS transactions needs to be formulated. URS mechanism shall not be made applicable to Open Access consumers (buyers). However, In case there is un-requisitioned surplus even after meeting the requirement of distribution licensees the balance URS if any shall be made available to buyers.

BEST Undertaking submitted that, as per guidelines for operation of MoD only variable charge will be considered for MoD. Hence rate for inter-se exchange of URS power will have only variable component. There is no mention about how fixed component to be settled. There is no clarity for the rate to be considered for this must absorb quantum from IEX purchase, interstate bilateral power, technical minimum of InSTS generator and other must absorb quantities in the marginal cost. The scenario of lesser availability URS of one utility should be defined where it is to be shared among multiple utilities. It is mandatory to request for URS, however, it is not clear whether, a Utility is allowed to deny URS. The denial by a utility should be segregated from the failure to contract URS.

If Discom gives technical minimum schedule to generator, Buyer will make the payment only as per schedule. However, if SLDC ramps up the generation, then Discom should not be asked to absorb the excess generation which may cause excessive deviation. Discom shall be allowed to make the payment as per the schedule given by them. Any real time addition in the availability for system requirements should be shared by all the utilities.

Further, any revision in generation schedule should be permitted only if it is consented by the Buyer utility. However, in case of forced revision, immediate intimation should be given to the buying utility.

APML proposed that un-requisitioned surplus power should be exchanged amongst Buyer(s) / Distribution Licensee(s) to optimize their cost of power procurements. It is requested to elaborate the accounting and settlement mechanism that will be adopted for this proposed inter-se exchange of un-requisitioned surplus power.

AEML proposed that, SLDC also needs to publish applicable rates for such exchange of URS amongst the Buyers/Distribution licensees and also publish monthly report as URS Power is being implemented for the first time in Maharashtra and need to be tested for its effectiveness from implementation perspective. For seamless information flow, systems need to be in place where real-time messages and information is submitted to Discoms for power management; else it will not be appropriate to check effectiveness only, based on the post facto reports.

MSEDCL submitted that, the SLDC must schedule URS to Discom requesting only after written consent from Discom whose URS power will be availed. Moreover, DSM objective should be to reduce the unscheduled interchange of power and not the reduction in cost, otherwise DISCOM especially those Discom having less than 100% tie-up under long term

power purchase agreement will use this mechanism to procure power as an option from other utility mainly MSEDCL. Buyer Discom who depends on short term power purchase to some extent like if market price is high then they will go for URS being cheaper than market price. The consent must be taken by Discom for availing URS of other Discom. Further in case availing URS power as per CERC regulation is concerned, beneficiary cannot avail URS power from particular station unless that beneficiary also has some share in that particular station. For example, MSEDCL can avail URS of ISGS stations in which it has share allocated by Ministry of power. Hence it is suggested that, for scheduling of URS, there must be at least some agreement within Discom for sharing of URS power.

Further, in case of use of URS power, fixed cost of station needs to be borne by Discom who avail said power. The same concept is used for scheduling of URS power at inter-state level. However, for availing URS of particular station, concerned DISCOM/Buyer/beneficiary must have power purchase agreement with that station. Otherwise DISCOM/Buyer has to purchase from intraday Energy Exchange market by bidding process. The minimum time required to schedule power under such transaction is two hours. Moreover, concerned DISCOM/Buyer has to pay POC drawal charges & also required to bear POC drawal loss. The average landed cost is almost 35 to 40 paisa. Rate of URS power shall be higher of following:-

1. Marginal cost of power procurement + Average fix cost + Average per unit cost required to incurred for scheduling of schedule power from power exchange or short term (i.e per unit POC charges & losses)
2. Total Tariff (Variable cost + Fixed Charge) of station for respective month + Average per unit cost required to incurred for scheduling of schedule power from power exchange or short term.
3. Landed cost of power purchase from power exchange + 10%

Further, since URS power of one entity can be availed by other entity only from 4th time block, there are chances that complete URS may not be used by Discom, hence non-availing URS should not be linked with efficacy of power procurement/sale of Distribution licensee.

C. Consideration of Constraints in hydro Scheduling:

Tata Power submitted that, the scheduling of hydro generating stations needs to be taken into account the Must Run (e.g. Lake Overflow etc.) and maximum level of daily generations based on tailrace user requirements and water management respectively. Further, the operational safety requirement w.r.t. ramp up and ramp down of hydro stations is specific to each plant. Hence, it is proposed that, scheduling of hydro stations may be done by respective generating companies and their beneficiaries instead of SLDC.

D. Allocation of actual hydro Generation between Beneficiaries:

Tata Power submitted that, in view of proposed shift from Centralised MoD approach to Utility wise MOD approach, principles of allocation of actual hydro generation between beneficiaries needs to be specified.

As seen from ongoing experience, the hydro Generation usually tends to be different than what is scheduled. At present, in such case, the settlement of actual hydro generation is done based on the capacity allocation of respective beneficiary as Discoms are not scheduling hydro requirement individually. But, in case Utility wise MoD, Discoms are going to

schedule their Hydro Tie ups individually. If actual generation is allocated to Discoms as per schedule ratio, then this will lead to an unequal distribution of water allocation to respective DISCOMs. In order to ensure that water allocation as per PPA, it is proposed that the methodology for allocation of the actual Hydro generation should be defined in consultation with Generator, Discoms and SLDC.

Thermal as well as hydro generation will be picked up / dropped by SLDC in real time as per system condition (Line overloading, State heavy under draw). This will result in surplus / shortfall for Discoms who have contracted power from respective generators. The impact of these instructions of SLDC would result into heavy deviation charges to DISCOMs.

BEST undertaking submitted that, proposed Draft Regulations does not provide clarity on treatment to the hydro generation in the scheduling process. There is no mention of keeping any kind of spinning reserve from hydro generation. There is also no clarity over the quantum which contracting Discom/Buyer can schedule from hydro generation. Further, there is no clarity as to how, irrigation off take requirements would be incorporated in the hydro schedule.

E. Spinning Reserve:

Tata Power submitted that, as mentioned in the para no. 3.4.5 of the explanatory memorandum, the operational control of hydro generating station ought to be kept with SLDC with freedom to operate the same for taking care of system emergencies by way of keeping spinning reserve. However, this results in to Discoms who have tied up hydro capacity, buying the equivalent additional power at higher rates from market as well as paying fixed cost of such tied up hydro capacity. Further, it would not be a prudent practice to keep cheaper hydro power of 660 MW on spinning reserve and burden DISCOMs with additional power purchase cost. It is requested that, instead of keeping cheapest resource as spinning reserve, the generator whose PLFs are lower should be kept and utilized as spinning reserve. Further, the allocation of the actual generation picked up on the spinning reserve shall be done based on the marginal cost of the Utility whose spinning reserve is being utilised.

F. Accounting of Changeover Quantum between Tata Power-D and AEML:

At present under FBSM regime, the deviation in the Changeover quantum is adjusted amongst Tata Power-D and AEML based on the actual changeover quantum (which happens approximately after one year) without causing any deviation charges on account of deviation in changeover energy. Also, the variation in changeover energy has no impact on other utilities.
However, current draft regulations do not address this issue.

6.3. Analysis and Commission's Decision

The Draft Regulations proposes to adopt utility-wise decentralised MoD principles for load-generation balancing during day-ahead basis and centralised MoD for real time despatch (during system emergency conditions). SLDC could follow the MoD Guidelines (as amended from time to time) for system operations in real time taking into consideration the system requirement and grid conditions for reliable, secure and optimal and cost-efficient despatch.

Such hybrid approach (de-centralised on day ahead basis and centralised during real time) would be compatible with emerging framework for power market operations.

With regard to the Tata Power's submission to share the Un-requisitioned surplus power between buyers, the Draft DSM Regulations proposes that, for the purpose of load generation balance, Buyer/Utility-wise MoD principle shall be followed with opportunity for inter-se exchange of un-requisitioned surplus available power amongst Buyer(s)/Distribution Licensee(s) to optimise their cost of power procurement. During Day-ahead scheduling if any Buyer has no sufficient power to meet its drawal schedule, it may enter into bilateral contract with the Distribution Licensee with whom surplus generation is available.The Commission notes the utilities' submission that such inter-se exchange of surplus available capacity should be left entirely at the discretion of the concerned distribution licensees.

Further, the Commission notes that stakeholders have proposed to link the rate for settlement of such inter-se exchange of un-requisitioned surplus power to the market price as applicable or have proposed that such rate for bilateral inter-se power exchange should be left for licensees to mutually agree. Accordingly, the Commission has modified the provisions such that, such inter-se or bilateral sale/purchase of power on day-ahead basis may be undertaken by respective licensees entirely at their discretion and the time block wise rate for settlement of such inter-se exchange of un-requisitioned surplus power for load generation balance during day ahead scheduling may be mutually agreed.

Available Surplus capacity with distribution licensee shall be known on day ahead basis on multiple occasion viz. prior to power exchange clearance and post power exchange clearance on day ahead basis. The same shall be known once the trading session is over on power exchange and actual bids honoured considering transmission constraints. Accordingly, the surplus capacity with the Buyer may get scheduled with revisions of schedules. The decision of Buyer having PPA with Generator declared under URS, shall be final.

As per the Regulation 6 (B), the SLDC shall prepare the detailed procedure for scheduling process. The procedure for operational and commercial arrangements with regards to tie up of URS Power shall be part of the scheduling process to be prepared by SLDC. The Commission directs SLDC to publish the Draft procedure for stakeholder consultation before submitting to the Commission for approval.

The provision of Draft Regulation 6(B)(i), specifies that, for the purpose of load generation balance, Buyer/Utility-wise MoD principle shall be followed with opportunity for inter-se exchange of available un-requisitioned surplus power amongst Buyer(s)/Distribution Licensee(s) to optimise their cost of power procurement. It is appropriate to follow the principle of least cost option while scheduling the URS. The intention of declaring URS is not to identify the opportunity cost of generation available. It is upto Buyers/Distribution Licensees to declare their URS available for other Buyers during day-ahead scheduling and other Buyers to decide whether they want to tie up with URS made available by other Buyers/Distribution Licensees. It is expected that these decisions shall be taken by Distribution Licensees on the commercial principles.

Further as specified in the Regulations, the SLDC shall maintain and publish separate account of such exchange of surplus power capacity amongst the Buyers/Distribution licensees.

The DSM Regulations specifies the Guiding Principles for scheduling process. Further, the Draft MoD guidelines published by the Commission also specifies certain principles for use of hydro generation for system stability. According to the MoD Principles, t*he Hydro Generating Station is primarily intended to meet peaking power requirements. The Hydro generation capacity is flexible to meet the needs of real-time operations.* ***SLDC shall be responsible for operating hydro generating stations daily considering the month-wise water availability indicated by the distribution licensees. Further, SLDC in its detailed Scheduling and Desptatch procedure should include modalities of operation of Merit Order Stack of generating stationswhile catering to system boundary conditions and to comply with RLDC instructions in line with IEGC/State Grid Code and in accordance with approved MOD Guidelines/principles thereof.The Operating Procedures should outline conditions for operation of dispatch,back-down and curtailment protocols, taking into consideration the ramp up, ramp down, technical minimum and other operating conditions. While formulating Operating Procedures SLDC should also take into consideration the procedures and practices followed by RLDC/NLDC for power system operations including Ancillary services operations.***

Accounting of Changeover Quantum between Tata Power-D and AEML is out of the preview of this State Deviation Pool Accounting. The directives of the Commission vide its various relevant orders shall be applicable in such cases. During the stakeholder consultation workshop, the licensees have suggested that the accounting treatment on account of change-over quantum would be undertaken outside the State Deviation Pool account settlement and the same can be firmed up before finalising Operating Procedure for Deviation Accounting upon stakeholder consultation.

As regards the reserve requirements and operations of the Ancillary service mechanism, the same shall be dealt with at the time of formulation of Ancillary Services Regulations through separate regulatory consultation process.

The Commission notes that as per IEGC, any revision in the schedule or allocation of generation shall be applicable in the 4th time block only. During real time operation, in case the grid parameters including frequency, voltage parameters and transmission line loading and substation loading conditions deviate beyond permissible operating range or to comply with RLDC instructions, SLDC shall take suitable measures in the interest of reliable and safe grid operations and issue necessary despatch or curtailment instructions in accordance with Centralised MoD principles for the state as whole, as per approved MoD Guidelines so as to maintain the load- generation balance and comply with conditions stipulated under IEGC and State Grid Code.

If SLDC takes any decision of ramping up or brining additional generation or backing down on account of curtailment, such action of SLDC shall lead to revision in schedule. Revision in schedule shall be effective from the 4th time block counting instruction issued by SLDC in the time block as 1st time-block. SLDC shall maintain and publish separate account of such actions initiated by SLDC in the interest of grid operation or in compliance of RLDC instructions in conformity with DSM Regulations of Central Commission. SLDC shall

publish monthly report of exchange of power capacity amongst the State Entities resulting on account of such SLDC interventions.

The time block wise settlement of such power exchange on account of such actions initiated by SLDC shall be settled at the applicable Deviation rate including Additional Deviation Charges, if any, for the state at the state periphery for the respective time block.

Further, point i of para 3.5.3 of explanatory memorandum, proposes that, Sellers shall forecast the availability for day ahead on 15-minute time block basis and inform to the buyers with whom they have PPAs or any other power procurement arrangement and to the SLDC.

The revision in schedule is also allowed for Buyer/Distribution Licensees, however, practically discoms may not have direct control on load, hence it is expected that, in case of variation in load the corrective action is expected to be taken by revising the schedule of generator or through demand side measures or demand response or by way of contracting for power for purchase/sale through power exchange, as and when, intra-day/real time market is operational.

The revision in the schedule requested by the buyer/seller shall become effective from 4th time block similar to the effectiveness of revision in the schedule initiated by SLDC for grid operation purposes.

6.4. Provision in MERC DSM Regulations. 2019

The Commission has revised Guiding Principles for Scheduling and Despatch specified in the Draft DSM Regulations for providing more clarity and addressing the issues raised by the Stakeholders during public consultation.

7. Provision formonitoring penalty for SCADA visibility

7.1. Comments received

As per communication regulation [clause 7.6(i], it is responsibility of SLDC for integration of communication system in intra state network, distribution system and generating stations at SLDC and for monitoring, supervision and control of power system and adequate data availability in real time. As per clause 7.7(i) of CERC communication regulation, STU is responsible for planning and coordination for development of reliable backbone communication for data communication within a State among State Load Despatch Centres, DISCOM control centres along with Generating Stations in the State, STU Sub-Stations, IPPs, and renewable energy generators within State system.

The real time decisions regarding scheduling are taken based on SCADA data visibility. In Maharashtra, on many occasions, it is observed that due to SCADA visibility issues, state drawal was not computed correctly. In fact in Maharashtra, central Sector drawal is computed based on SCADA of PGCIL & SCADA of STU. As per prudent practice, SLDC has to monitor State UI based on SCADA at STU. But presently SLDC is not following this practice.

It is proposed that if State doesn't violate limit of deviation but on account of SCADA problem, if State is being liable for any UI charges as per SEM Data, the said charges to be recovered from default entity i.e. STU as SCADA data visibility is responsibility of the STU.

7.2. Analysis and Commission's Decision

The Commission in para 4.1.1 and 4.1.2 of its explanatory memorandum has discussed the issues related to preparedness of all entities for implementation of DSM framework in the State.

The requirement of communication network is also highlighted by the Commission. The issue of error in data of regional communication system and State SCADA is specific operational issue which cannot be dealt through the provision of Regulations. Further, the Commission has provided more than 12-month time period for all entities for necessary preparedness including metering and communication infrastructure.

7.3. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations.

8. Regulation 6 (E) :Settlement Period

8.1. Proposed in draft DSM Regulations, 2018

Preparation and settlement of 'State Deviation Pool Account' shall be undertaken on weekly basis coinciding with the mechanism followed for regional ***energy accounts****.*

8.2. Comments received

MSEDCL submitted that, Regional Energy account is settled on monthly basis. The reference of regional energy account may be revised to Deviation Settlement account.

SLDC submitted that, many times weekly bills issued by WRPC are revised post facto for various reasons. Accordingly, relevant weekly DSM bills shall be revised.

8.3. Analysis and Commission's Decision

Provisional State Energy Account and Statements for Deviation Account Settlement shall be available for scrutiny and verification by concerned State Entity for specified time period. The same would be finalized within stipulated time period upon addressing comments/discrepancies (if any) in time bound manner. SLDC shall formulate detailed procedure for preparation and settlement State Energy Account and State Deviation Pool Account, upon due consultation process. The stakeholders would get opportunity to address their concerns regarding settlement process, if any, at that time.

However, if any revised bill received from WRPC after stipulated time period same shall be adjusted in the subsequent bills or through supplementary bills, as the case may be. Since the DSM Pool is non-Zero sum Pool such variations can be addressed through DSM Pool Account operation.

The provision of Clause 6(E) draft DSM Regulations is revised accordingly.

8.4. Provision in MERC DSM Regulations. 2019

"Preparation and settlement of 'State Deviation Pool Account' shall be undertaken on weekly basis coinciding with the mechanism followed for regional ***Deviation settlement account****."*

9. Regulation 6 (I): Premise for Allocation Losses

9.1. Proposed in draft DSM Regulations, 2018

For scheduling purposes, intra-state transmission system losses as approved by the Commission shall be allocated amongst the State entities in proportion to the schedule drawl by each State Entity.

Provided that State Load Despatch Centre shall maintain account of actual intra-state transmission system loss for each time block and publish reconciliation statement of 52 weekly average loss vis-à-vis approved loss by the Commission on its website.

9.2. Comments received

Tata Power, BEST Undertaking and AEML submitted that, as per the provisions of draft DSM regulations, the SLDC shall maintain account of actual intra-state transmission system loss for each time block and publish reconciliation statement of 52 weekly average loss vis-à-vis approved loss by the Commission on its website. However, it is not clearly mentioned whether the actual intra-state transmission system loss for each time block as per SLDC shall be used for the purpose of computation of Deviation charges.

In case, the actual intra-state transmission system loss for each time block of SLDC is used for the purpose of computation of Deviation charges, we wish to submit that any deviation of DISCOM on account of variation in intra-state transmission system loss, shall not be considered for computation of Volume limit deviation and deviation charges thereof.

AEML further submitted that, in the present system, the computation and settlement is being done considering actual loss. Considering the above proposed Regulation, it appears that in the proposed system also, the settlement will be done considering 52 week average loss. Now, since actual losses (52 week rolling average) vary by upto 0.6% vis-à-vis the approved losses of the Commission, the Buyers are exposed to risk of deviation simply on account of variation in Transmission Loss.

BEST undertaking submitted that, most of the Mumbai utilities contracted generation is located at load centres, having actual loss level less than 1%. Applying InSTS loss level to Mumbai licensees is unrealistic. The same has been discussed in the concept paper of MSPC submitted on 16 February, 2015.

SLDC proposed that, the InSTS loss is calculated on monthly basis considering injection in the InSTS and Drawl from InSTS, same shall be applicable for DSM. In order to calculate 15 min time block loss. it needs to have for each and every injection even of small capacity. Hence, it is proposed to apply monthly average 52 week loss for DSM calculation.

MSEDCL submitted that, Utility's drawal should be considered at their actual T-D periphery with MSETCL. MSEDCL welcome the suggestion of considering InSTS losses for scheduling purpose. The calculation of separate drawal & injection loss as used for scheduling of power from ISTS network needs special mechanism like point of connection methodology being used by NLDC. Hence MSEDCL is of opinion that scheduling loss i.e. InSTS drawal loss must be same for all entities irrespective of whether entity is located in MSETCL transmission network or not. The 15-min block wise InSTS loss along with data shall be made available by SLDC on its website. Proposed draft Regulations is silent on the impact to be calculated for any variation between Approved Loss and 52 weekly average loss.

9.3. Analysis and Commission's Decision

The Draft DSM Regulations proposes that, for scheduling purposes, InSTS losses as approved by the Commission shall be allocated amongst the State entities in proportion to the schedule drawal by each State Entity. Further, while preparing the state-wide energy account, the SLDC shall consider the actual intra-state transmission loss for energy balance only, however, the deviation account or deviation charges for each intra-state entities shall not be modified on account of variation in actual loss than that approved. In fact, such variation in actual transmission loss vis-à-vis normative approved transmission loss shall reflect the integrity of energy account and shall ensure the coverage of all interface points under energy accounting framework. Actual intra-state transmission loss shall be computed for the purpose of energy balance only and schedule of Buyer shall not be revised with actual InSTS losses.

Commission notes the suggestion of SLDC for monthly computation and publication of transmission loss. Accordingly, SLDC shall maintain time block-wise energy account information and publish reconciliation statement of monthly average intra-state transmission loss and 52-weekly average intra-state transmission vis-à-vis approved loss by the Commission on its website.

9.4. Provision in MERC DSM Regulations. 2019

Premise for Allocation of Losses: For scheduling purposes, intra-state transmission system losses as approved by the Commission shall be allocated amongst the State entities in proportion to the schedule drawal by each State Entity.

Provided that State Load Despatch Centre shall maintain account of actual intra-state transmission system loss for each time block and publish reconciliation statement of 52 weekly monthly average intra-state transmission loss and 52-weekly average intra-state transmission vis-à-vis approved loss by the Commission on its website.

10. Regulation 6 (G):Deviation Pool Price Vector

10.1. Proposed in draft DSM Regulations, 2018

Deviation Pool Price Vector: *The pricing of deviation of Buyers/Sellers shall be in accordance with the Deviation Price Vector as specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014 and its amendments thereof.*

Provided that deviation of wind and solar generators shall be treated as per the provisions of "Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018".

Further, additional condition for a change in sign of the deviation shall be met once every 12-time blocks by Buyer/Seller, failing which, additional charges @10% of the Deviation Charges applicable shall be levied for the duration of continuance of violation.

10.2. Comments received

SLDC submitted that, the CERC has notified 4th Amendment in DSM on 20th November, 2018 and is applicable w.e.f. 01.01.2019. The DSM price vector for intra-state DSM needs to be changed accordingly in order to have seamless operation of CERC DSM and Maharashtra DSM.

10.3. Analysis and Commission's Decision

MERC Draft DSM Regulations,2018 has enabling provisions, which stipulates that, as and when the Central Commission revises its deviation price vector, the same will be applicable for intra-state entities under MERC DSM Regulations.

The CERC has recently notified 4th amendment to the DSM Regulations, wherein the Central Commission has changed the methodology of Price Vector applicable for Deviation from pre-determined price vector linked with fuel price to Day ahead Market Price (DAM)

The Commission has noted the recent amendments of CERC with regard to revision in DSM Price Vector and the same has been incorporated while finalising the DSM Regulations.

10.4. Provision in MERC DSM Regulations. 2019

The Draft DSM Regulations have been suitably amended to incorporate the changes with suitable modifications to be in line with 4th amendments notified by the CERC for its DSM Regulations vide notification dated 20 November, 2018.

11. Regulation 7(1): Declaration of Capacity and Scheduling

11.1. Proposed in draft DSM Regulations, 2018

(1) The provisions of the Maharashtra State Grid Code and Maharashtra Electricity Regulatory Commission (Transmission Open Access) Regulations, 2016 and Maharashtra Electricity Regulatory Commission (Distribution Open Access) Regulations, 2016 as amended from time to time, shall be applicable for declaration of capacity and scheduling.

(2) The generating station, as far as possible, shall generate electricity as per the day-ahead generation schedule finalized by the SLDC in accordance with the Maharashtra Electricity Grid Code.

Provided that the revision in generation schedule on the day of operation shall be permitted, in accordance with the procedure specified under the Maharashtra State Grid Code and Maharashtra Electricity Regulatory Commission (Transmission Open Access) Regulations, 2016 and Maharashtra Electricity Regulatory Commission (Distribution Open Access) Regulations, 2016 as amended from time to time, as the case may be.

11.2. Comments received

SLDC submitted that, Ex. Bus declaration of capacity by generator shall be based on installed capacity and auxiliary consumption without Valve Wide Opening (VWO) operation. Revision in schedule shall be as per Scheduling and Despatch Code.

11.3. Analysis and Commission's Decision

The revision in schedule shall be as per Scheduling and Despatch Code and in line with the guiding principles specified in the MERC DSM Regulations.

SLDC shall provide necessary details while preparing the detailed procedure for scheduling and rescheduling process.

11.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications. SLDC shall propose suitable amendments in the scheduling despatch procedures and the same shall be reviewed for incorporation in state grid code upon due regulatory process.

12. Regulation 8(2): Treatment for Gaming

12.1. Proposed in draft DSM Regulations, 2018

1) *The Commission, either suo-motu or on a Petition made by the SLDC, or any affected party, may initiate proceedings against any generating company or Seller on charges of gaming and if required, may order an enquiry to be made by such officer of the Commission or such other party as the Commission may deem fit. The enquiry officer so appointed shall submit his findings within such time as may be fixed by the Commission and such investigating officer or authority shall exercise all powers as envisaged under Section 128 of the Act.*

2) *If in the proceeding initiated by the Commission or in the enquiry made in this regard under Clause (1) above, it is proved that any generating company or Seller has indulged in gaming, the Commission may without prejudice to any other action under the Act or Regulation made thereunder, disallow any Charges for Deviation to such Seller or generating company during the period of such gaming.*

12.2. Comments received

AEML submitted that, provisions of Settlement during enquiry period and outcome of enquiry needs to be mentioned. During this period decision of SLDC shall be binding on generator. If in the proceeding initiated by the Commission or in the enquiry made in this regard under Clause (1) above, it is proved that any generating company or Seller has indulged in gaming, the Commission may without prejudice to any other action under the Act or Regulation made thereunder, disallow any Charges for Deviation to such Seller or generating company during the period of such gaming. The term "Disallowance" makes it appear as if it is only applicable for regulated generators under Section 62 of EA, 2003. The term "penalize" may be used instead to make it clear that it is applicable for IPPs and Section 63 Generators also.

MSEDCL submitted that, in addition to penal action as proposed in draft, action shall also be taken on concerned generator for repeated incidences.

12.3. Analysis and Commission's Decision

The Commission has specified necessary actions to be initiated by SLDC in case, SLDC observes any intentional mis-declaration by any Seller including the Generators contracted under Section 63 of EA 2003 as well as Gaming by Buyers. The Commission has also specified that, it shall exercise all the necessary powers as envisaged under Section 128 of the Act. Further, the Commission has all powers to regulate the PPAs under Section 63 of the EA, 2003.

12.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions with suitable amendments to cover Gaming by Buyers as well, under the Draft DSM Regulations.

13. Regulation 9: Charges for Deviation

13.1. Proposed in draft DSM Regulations, 2018

(A) Deviation Charges for Sellers and Buyers:

1) *The Charges for Deviation for all the time-blocks shall be payable for over-drawl by the Buyer and under-injection by the Seller and receivable for under-drawl by the Buyer and over-injection by the Seller, which are State entities, and shall be worked out on the average frequency of a time-block by considering the Price Vector for Deviation Charges as specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters)Regulations, 2014 and its amendments thereof considering the methodology specified in Annexure1 of these Regulations and subject to the conditions stipulated under Clause (2) to (8) of this Regulation:*

   Provided that, a change in sign of the deviation shall be made once every 12-time blocks, failing which additional charges @10% of the Deviation Charges applicable shall be levied for the duration of continuance of violation.

   Provided further that the applicability of above prescribed additional charges for such failure by Buyer(s)/Distribution Licensee(s) shall be applicable from date to be notified separately.

2) *The Charges for Deviation of generating stations regulated by the Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as fuel, when actual injection is higher or lower than the scheduled generation, shall not exceed the Cap Rate to be determined by the Commission from time to time 2[394.3] Paise/kWh.*

3) ---------

13.2. Comments received

SLDC submitted that, provisions of 4th amendments of CERC DSM Regulations shall be made applicable.

Tata Power Submitted that, the revised schedule if any by SLDC for system requirement shall be made effective considering the ramp rate of the Unit for Pick up / drop as applicable. Further, in such case, the settlement of any additional energy shall be as per the actual fuel used for meeting the revised schedule and cap rate as defined in this regulation shall not apply.

BEST Undertaking submitted that, when frequency is above 50.05 Hz all the generation above X limit would be sold at zero paise, which will incur huge loss to Discom/Buyer.

AEML submitted that, the Charges for Deviation of generating stations regulated by the Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as fuel, when actual injection is higher or lower than the scheduled generation, shall

not exceed the Cap Rate to be determined by the Commission from time to time [394.3]Paise/kWh. If Generator is injecting higher quantum its revenue should be restricted to the CAP rate. There is possibility of gaming if rate is capped for under injection, hence under injection should be charged at actual DSM rate. The reference of lower may be deleted.

MSEDCL submitted that, since generation deviation can be managed, it is necessary that for under injection at low frequency i.e. beyond IEGC frequency band, generator needs to be penalised. Similarly, those generators helping grid by over injecting at low frequency needs to be incentivised. Generator should not be given any discriminatory treatment than Discom. Moreover, the Commission has not mentioned any specific reason for providing cap DSM rate only in respect of generator. Hence this provision of CAP rate needs to be removed.

13.3. Analysis and Commission's Decision

Draft MERC DSM Regulations, 2018 has enabling provisions, which specifies that, as and when the Central Commission revises its deviation price vector, the same will be applicable for intra-state entities under MERC DSM Regulations. The CERC has recently notified 4th amendment to the DSM Regulations, wherein the Central Commission has changed the methodology of Price Vector applicable for Deviation from pre-determined price vector linked with fuel price to Day ahead Market Price. The Commission has noted the recent amendments of CERC and same has been incorporated while finalising the Draft DSM Regulations. As per the principles specified in the Draft Regulations, the deviation settlement shall be in line with the price vector specified in the CERC DSM Regulations as amended from time to time.

As proposed by Tata Power, considering actual fuel cost for each settlement for which SLDC has revised the schedule shall not be practically possible. The verification of actual fuel cost by SLDC for the energy generated shall not be possible, nor is it necessary for the purpose of deviation settlement, which is linked to DSM price vector as stipulated under DSM Regulations.
Accordingly, the Commission has incorporated the necessary revisions in line with the 4th Amendment to the CERC DSM Regulations wherein the Deviation charge is linked with Day ahead market price. (DAM) vector i.e. market determined price.

The rationale for introduction of CAP Rate is covered under Explanatory Memorandum, as while incentivising Generators for the over-injection during low frequency regime, it will not allow them to make excessive earnings over their variable cost of generation. Besides, the provision of Cap Rate will ensure creation of non-zero sum DSM pool account at state level.

13.4. Provision in MERC DSM Regulations. 2019

The provisions of Draft DSM Regulations have been suitably modified to incorporate the requisite changes to be in line with 4th amendment notified by the CERC for its DSM Regulations vide notification dated 20 November, 2018

14. Regulation 9 (A) (7): Treatment to the Infirm Power

14.1. Proposed in draft DSM Regulations, 2018

(7) The infirm power injected into the grid by a generating unit of a generating station during testing, prior to COD of the unit shall be paid at Charges for Deviation for infirm

power injected into the grid, consequent to testing, for a period not exceeding six months or the extended time allowed by the Commission in the Maharashtra Electricity Regulatory Commission (Transmission Open Access) Regulations, 2016 and Maharashtra Electricity Regulatory Commission (Distribution Open Access) Regulations, 2016, as amended from time to time, subject to ceiling of Cap Rates as specified in the Table.-----

14.2. Comments received

MSEDCL submitted that, there is a possibility of increase in indiscipline of generators by encouraging injection of infirm power during identified hours of the day. With addition of large unit sizes, in-firm power (its injection and non-injection) can bring significant deviation in a vulnerable system. The permission for injecting infirm power shall be given as far as possible during peak demand period i.e. during day time. The record of infirm power injected by generator with detail such as expected COD, permission given by SLDC, duration of infirm power injected etc shall be made available on SLDC website. Presently Infirm power is injected into the grid on prior permission of MSLDC with zero paisa by the generator. The infirm power injected into grid by generator prior to COD, will affect unscheduled interchange of state. Hence, it is proposed that irrespective of type of fuel, cap for deviation charges shall be the lowest variable charges in respective month MOD stack**.**

14.3. Analysis and Commission's Decision

The infirm power is expected to be injected in the grid during pre-Commissioning trials and Commissioning tests of generators. The Cap rates proposed in the draft DSM Regulations is in line with fuel source-wise highest tariff rates approved by the Commission. Infirm power may be available either during peak requirement or off peak requirement. If SLDC observes that, such Generator is intentionally mis-using the provisions for infirm power, SLDC is empowered to take necessary action for Grid safety.

14.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

15. Regulation 10: Limits on Deviation Volume and Consequences of Crossing Limits

15.1. Proposed in draft DSM Regulations, 2018

*(A) The over-drawal or under-drawal of electricity by any Buyer during a time block shall not exceed 12% of its scheduled drawal or **[X] MW**, the limit arrived as per clause (B) of this Regulation, whichever is lower, when grid frequency is between the range of '49.70 Hz and above to below 50.05 Hz.'*

*(B) The Volume Limit of **[X] MW** for distribution licensee(s) and Buyers shall be determined as under:*

i. Minimum of (12% of schedule, (Peak Demand of Distribution Licensee or Buyer / ∑NCPD) x State Volume Limit)

Where, NCPD (Non-Coincident Peak Demand) represents the sum of Peak Demand of Distribution Licensee(s) and Buyer(s) subject to the condition stipulated under the following sub-clause (iii).

ii. *State Volume Limit shall be linked to Volume Limit (L) applicable to the State as per the CERC (Deviation Settlement Mechanism and related matters) Regulations,2014 and its amendments thereof;*

iii. *Where Peak Demand of the Distribution Licensee shall be recorded as Peak Demand in the previous Financial Year or Projected Peak Demand of Buyer in ensuing Financial Year, whichever is higher;*

Provided that no over-drawal of electricity by any Buyer shall be permissible when grid frequency is "below 49.70 Hz" and no under-drawal of electricity by any Buyer shall be permissible when grid frequency is "50.05 Hz and above".

15.2. Comments received

SLDC submitted that, Frequency limits have to be as per CERC DSM Regulation amendments.
The deviation volume calculated as per formula given in regulation is very less in case of some utilities. It is proposed that minimum value of deviation volume shall be made applicable same as 10(C) of regulation i.e. 10 MW for Buyers also.

Tata Power submitted that, Minimum of (12% of schedule, (Peak Demand of Distribution Licensee or Buyer / ΣNCPD) x State Volume Limit). The deviation volume for Tata Power-D works out to be around 9 MW which is even less than the Forecasting as well as SCADA error. This will result into additional penalty to Discoms on the round the clock basis. Hence, it is requested that the deviation volume limit may please be increased to 25 MW for Tata Power-D. The present limit of 10 MW in case of any generator is a completely unviable stipulation. The same should be maintained at 12 % of schedule in line with the provisions of DSM regulations of CERC. Also, whenever the State as a whole is not deviating its limit of 250 MW, the Additional deviation charges shall not be made applicable to Seller(s) / Buyer(s).

Further, as mentioned in the para 7 of Section 3.5.4 of explanatory memorandum, the revision of declared capability by the seller(s) and requisition by the buyers for the remaining period of the day shall also be permitted with a notice. Revised schedules/declared capability in such cases shall be allowed to become effective from the 3rd time block, in case of failure of Auxiliary Equipment or Unit Tripping as the sudden load is completely beyond control of Generator. Further, it is submitted that before implementation of the proposed mechanism, the State Transmission Utility should be tasked to implement Automatic Meter Reading (AMR) at all points of injection and drawl with online data sharing with Discoms, so that the data errors do not contribute to the Discom's deviation and expose it to financial risk.

BEST undertaking requested to consider the revision of schedule to be implemented within 2 time blocks. Further, the volume limits for BEST works out as 9 MW which is only 1% of the

maximum demand which is 900 MW. It is practically difficult to forecast within such inaccuracy of 1%.

Further, Discom will have to pay double penalty where DSM rate above 50.05 Hz becomes zero, any surplus power injected into the grid above this frequency level, will be at zero cost. In addition to this additional charges will be applicable to the incremental utility for every unit incremented. This will discourage utilities from entering into PPA/Bilateral contract upto their total demand level. The proposed mechanism is more stringent. The additional deviation charges shall be made applicable only when the frequency is above 50.05 Hz mark.

AEML submitted that, the Commission has, apparently, linked the Deviation Limits of individual Discoms to the State Volume Limit (SVL) of 250 MW or 12% of Schedule, whichever is less. In case of AEML, the ratio of its Peak Demand to the sum of Peak Demand of Different Discoms/buyers of the State works out to about 7%, which, when applied to the SVL of 250 MW, works out to about 17 MW. AEML's system peak demand is itself more than 1700 MW and hence the Deviation Limit for AEML is only about 1% or less, of its Peak Demand. The deviation limits proposed are too stringent and cannot possibly be achieved given the large number of unpredictable events that the Discoms and Generators face in managing their demand or injection. It is submitted that, the Commission may kindly allow the Deviation Limit to be at 12% of Schedule to start with, which can be reviewed and revised subsequently as more robust forecasting systems are put in place and other preparedness issues are sorted out. In this regard, it is further submitted that the CERC has considered the State Volume Limit as 250 MW, which, out of the total State Drawl over inter-regional lines of about 6000 MW, which works out to a deviation of 4%-5%.

Further, as Deviation Limits are being introduced for the first time in Maharashtra, the Additional Charges beyond limits may not be introduced, at least, to start with and SLDC may keep the strict control and monitoring. Further, whenever frequency is low and if there is overdrawl the effective rate will be automatically be higher. This can achieve grid discipline, even without introducing Additional Charges.

Under the existing Regulatory framework, the revision in Drawl/Generation Schedule is effected by SLDC after 6 time blocks which is quite long. As submitted above, Discoms are exposed to large scale variations in demand due to several factors, including variability of their own RE sources (as explained later). For Discom, the dispatch schedule is equal to the Generation it arranges from its contracted sources, hence, a lower frequency for revision in Schedules would, at least, allow Discoms to manage their generation and address the risk of deviation. RLDC, at Regional level, allows schedule revision within 4 time blocks, which helps States to reduce their deviations. Therefore, considering the above, it is submitted that the time limit for effecting the revision should be lowered to two (2) time blocks from the present six (6) time blocks and, in any event and without prejudice to the same, it may, at least be made same as that prevalent at the Regional Level.

With regards to Peak Demand to be considered for Volume Limits, proviso may be added to consider the peak demand projected based on 5 year CAGR of demand for all Buyers.

Further, controllability of Discom is limited. During low demand period, Demand may be lower than the must absorb (RE + tech min). Hence, it is not possible to restrict under

injection at Discom level. Therefore, it is suggested that in this situation SLDC may take appropriate decisions such as Reserve Shut down to manage over-drawl at State level. Sudden and unexpected changes in weather, resulting in increase or decrease of temperature can cause drastic changes to the Discom demand, even with the best of forecasting techniques. In AEML's area of supply, it has been seen that only a 1degree change in temperature could vary consumer demand by as much as 45 MW. While AEML does carry out its demand forecast, considering the weather patterns, but changes in weather are unpredictable and, no matter how much prudence is exercised in day-ahead planning, real-time changes in weather leave the Discoms in a lurch and lead to situations of over-drawl, in particular, to meet the demand of consumers. Even though there is facility to revise the schedules during the day of operation it will not be possible to arrange the revised power requirement at the granularity of 15 min as currently a minimum of 3 hours is required to arrange any power on power exchange and even more to arrange Bilateral power as it involves negotiation with Seller / trader etc. Hence, the Proviso may be deleted as Discom may not be able follow the same.

MSEDCL submitted that CERC had earlier fixed deviation limit of 150 MW to Maharashtra vide DSM regulation. Thereafter considering DSM limit applicability to wind & Solar & predominant penetration of RE in some states, allocated additional 100MW to Maharashtra on account of its RE rich state having RE installed capacity more than 3000MW. Mumbai DISCOM's tie up RE generation capacity is much less than 3000MW (only about 700MW). Hence Maharashtra would not have got any additional margin on account of RE generation contracted capacity of Mumbai DISCOM.

MSEDCL tied up RE generation capacity only from Wind, Solar is more than 4800 MW & will exponentially increase further in future. Hence it is submitted that additional 100MW deviation limit allocated by CERC to Maharashtra should be exclusively allocated to MSEDCL & deviation limit of all buyers (including MSEDCL) than shall be computed with State Volume Limit as 150MW in proportionate of recorded NCPD.

Accordingly, deviation limit of buyer should be computed with State Volume Limit as 150MW. After calculating volume limit for MSEDCL on above formula taking 150MW as state volume limit, 100MW allocated to Maharashtra for being renewable energy state should be added. For example if MSEDCL peak demand is 85% of ΣNCPD then MSEDCL volume limit as per above formula will be 127.5 MW. Hence total deviation limit allowed to MSEDCL should be 127.5 +100 i.e 227.5MW. The actual recorded Peak demand should be considered & not projected peak demand for computation of deviation volume limit. Further, rationale behind considering deviation volume for generator as 10MW needs to be given.

15.3. Analysis and Commission's Decision

The Commission has noted the revision in the Frequency limits by Central Commission from 49.7 Hz to 50.05 Hz to 49.85Hz to 50.05 Hz. Accordingly, the Commission has revised the frequency limits while finalising the Draft DSM Regulations.

The volume limits for intra-state entities need to be aligned with the State Volume limit allowed by CERC at regional level to minimise the regional deviation charges for the State.

The Draft DSM Regulations proposes to link the volume limits for intra-state entities with their contribution in the Peak Demand as specified in the FOR Model DSM Regulations. The

Commission is of the view that, only 12% of volume limit for each entity shall exceed the overall limit of 250MW at regional periphery as peak demand of the some of the State entities is very high.

Accordingly, the Commission has proposed the formula for volume limits linked with its contribution in the Peak Demand of Distribution Licensee/Buyer. Further, considering the Stakeholder's comments the Commission is proposing that, Volume Limit for the Distribution Licensee or Buyer shall be rounded off to nearest integer value subject to condition that for Distribution Licensees or Buyers with Peak Demand upto 10 MW, the volume limit of 1 MW shall apply and for Distribution Licensees or Buyers with Peak Demand exceeding 10 MW but below 20 MW, volume limit of 2 MW shall apply.

The implementation of DSM framework shall be initiated with the proposed volume limits in the draft DSM Regulations and based on the actual data generated during initial phase of implementation, the Commission may revise the volume limits for intra-state entities.

With regard toadditional Deviation Charges, the Commission is of the view that, the volume limits shall not be practically maintained by the state entities without applicability of additional deviation charges. Additional Deviation Charges are necessary, to follow the volume limits by intra state entities.

However, the Commission has noted the suggestions and comments of the objectors that impact of additional deviation charges should not be too onerous, particularly due to introduction of intra-state entity volume limits, which are too low (e.g. <2% of peak demand of distribution licensee). The distribution licensees have also suggested that benefit of aggregation, in case, state volume limit (L) (i.e., 250 MW at present) is not exceeded or if state do not suffer additional deviation charges at state periphery, then the State Entities may not be subjected to Additional Deviation Charges.

While the Commission has taken note of this submission that during initial stages of introduction of intra-state entity volume limits, proposed suggestion can be explored. However, it should not lead to dilution of the concept of intra-state entity 'volume limit'. The Commission further opines that the mechanism should encourage the state entities towards scheduling discipline and should hold them accountable for their deviation management individually, so that collectively load-generation balance, area control error and deviation at state periphery improves in the overall interest of grid security and reliable power system operations.

Thus, Commission has stipulated a condition that for deviations exceeding its volume limits upto 6 time-block during the day, additional deviation charges shall not be applicable if the deviation at state periphery does not exceed the state volume limit, beyond which, the additional deviation charges shall continue to be applicable, even if Deviation at state periphery does not exceed State Volume Limit.

With regards to BEST's submission, the applicability of additional charges beyond frequency is 50.01 Hz is necessary to maintain the frequency close to 50Hz. the generators are not expected to inject the power when frequency is increasing above 50 Hz. The power injected at

this frequency need to be discouraged to avoid over frequency conditions. Further, Discoms can enter into PPA considering their demands but schedule need to be given considering the demand estimated for Day ahead basis and need to revise the schedules as and when required based on actual demand during intra-day.

The Commission notes the submission of AEML. The provision of the para 7 of 3.5.4 of Explanatory Memorandum provides that, the revision in schedule shall be effective from 6th time block. However, guiding principles for scheduling specified under clause 6(B) of Draft DSM Regulations refers to the provisions of Maharashtra State Grid Code. The Commission notes that, some of the provisions of State Grid Code needs to be amended in line with IEGC amendments. **The Commission shall initiate the Regulatory process separately for amendment of State Grid Code in line with latest amendments in IEGC.**

The proviso under Clause 10(B) is necessary to maintain the deviation in the frequency close to 50Hz. As submitted by AEML, Discom may have limited controllability over demand, however with proper forecasting, Discom can revise their schedule and/or take steps through appropriate demand side measures incl. demand response to minimise the deviation in either of the direction.

Further, the Commission has also notified F&S Regulations for variable RE generation which shall be also bring discipline in forecasting of RE generation. The Discoms may use this data while forecasting their demand and preparing their schedule.

15.4. Provision in MERC DSM Regulations. 2019

The Commission has revised the provisions Volume Limits proposed in the Draft DSM Regulations as below:

(B) The Volume Limit of **[X] MW** for distribution licensee(s) and Buyers shall be determined as under:

i. Minimum of (12% of schedule, (Peak Demand of Distribution Licensee or Buyer / ∑NCPD) x State Volume Limit)

Where, NCPD (Non-Coincident Peak Demand) represents the sum of Peak Demand of Distribution Licensee(s) and Buyer(s).

Where, Peak Demand of the Distribution Licensee(s) and Buyer(s) shall be recorded Peak Demand in the previous Financial Year or Projected Peak Demand of Distribution Licensee(s) or Buyer(s) in ensuing Financial Year, whichever is higher;

ii. Volume Limit for the Distribution Licensee or Buyer determined as per above formula shall be rounded off to nearest integer value subject to condition that for Distribution Licensees or Buyers with Peak Demand upto 10 MW, the volume limit of 1 MW shall apply and for Distribution Licensees or Buyers with Peak Demand exceeding 10 MW but below 20 MW, volume limit of 2 MW shall apply.

Further, suitable provisos under Clause (D) of Regulation 10 regarding applicability of Additional Deviation Charges for Buyer/Seller exceeding its Volume Limits have been incorporated as under:

> *"Provided that Additional Charges for Deviations for time-block shall not be applicable for Seller/Buyer, in case, Deviation for state at state periphery does not exceed State Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the state at the State periphery as per Regional Deviation Pool Account;*
>
> *Provided further that Additional Deviation Charges shall not be applicable in case Seller/Buyer exceeds its Volume Limit (X) upto six (6) time-blocks within a day, beyond which the Additional Deviation Charges shall be applicable for Seller/Buyer irrespective of the condition that Deviation for State at state periphery is within Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the State at the State periphery."*

16. Regulation 10 (C): Limits on Deviation Volume and Consequences of Crossing Limits

16.1. Proposed in draft DSM Regulations, 2018

10 (C) The under-injection or over-injection of electricity by Seller shall not exceed the following when grid frequency is "49.70 Hz or above and below 50.05 Hz";

*a. 12% of the scheduled injection or **[10] MW,** whichever is lower for a Seller;*

*Provided that in case schedule of a Seller, in a time block, is less than or equal to **[40] MW**, under-injection/over-injection in a time-block shall not exceed [**5**] MW, when grid frequency is "49.70 Hz or above and below 50.05 Hz".*

16.2. Comments received

APML and AEML submitted that,the deviation limit of "12% of the Schedule or [10] MW, whichever is lower by the seller" for under injection or over injection, seems to have been specified, considering smaller size units. As per the directives of CEA, all the capacity addition in the past 5 years were with super/ultra-super critical units of size 660 MW and above, to address environmental concerns by reducing coal consumption/ emissions.

APML's Tiroda TPP having installed capacity of 5 x 660 MW, a deviation of even 1% will be equivalent to 33 MW which is 23 MW higher than the limit of 10 MW, as proposed in the draft Regulation.

For many uncontrollable reasons like coal quality, coal mill outlet/inlet temperature, variations in Grid frequency etc. the output from the generating units is bound to fluctuate. The deviation limit of 10 MW does not take care of these slight variations, especially for the plants with multiple units, as in our case of APML Tiroda TPP (5 x 660 MW).

The CERC DSM Regulation has fixed deviation limit of "12% of the Scheduled injection or 150 MW, whichever is lower for a seller". These limits very well take care of the possible

reasonable deviations of small as well as big size units. It is requested to align the deviation limits in line with the CERC DSM Regulation.

Further, forced outage of a unit is an event which cannot be controlled by the generator. The objective of DSM is to achieve Grid discipline from controllable factors, whereas, forced outage is an uncontrollable factor. It is requested to exclude events of forced outage from the DSM mechanism.

16.3. Analysis and Commission's Decision

The Commission is of the view that, generator has reasonable control over generation and in case of un-controllable factors such as coal quality, coal mill outlet/inlet temperature, variations in Grid frequency etc. mentioned by APML and AEML, the generator has option to revise the schedule during real time operation to minimise the deviation in either of the direction. The generator is expected to revise its schedule to zero in case of forced outage to minimise the deviation to zero.

However, considering the Stakeholder's comments the Commission proposes to revise the minimum volume limit to 30 MW as against 10 MW proposed in the Draft Regulations for generators having schedule more than 10MW.

16.4. Provision in MERC DSM Regulations. 2019

The Commission has revised the provisions of minimum volume limits for generators from 10 MW to 30 MW in the MERC DSM Regulations, 2019.

Further, suitable provisos under Clause (E) of Regulation 10 regarding applicability of Additional Deviation Charges for Seller/Generator exceeding its Volume Limits have been incorporated as under:

> "*Provided that Additional Charges for Deviations for time-block shall not be applicable for Seller, in case, Deviation for state at state periphery does not exceed State Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the state at the State periphery as per Regional Deviation Pool Account;*
>
> *Provided further that Additional Deviation Charges shall not be applicable in case Seller exceeds its Volume Limit (X) upto six (6) time-blocks within a day, beyond which the Additional Deviation Charges shall be applicable for Seller irrespective of the condition that Deviation for State at state periphery is within Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the State at the State periphery.*

17. Difference between Intra-State and Inter-State Deviation Settlement Framework

17.1. Comments received

AEML submitted that, while at the Regional Level, State is the control area, which consists of various embedded Discomsand also include of all the Intrastate & other generators connected to Intra-State Transmission system. Therefore, in regional level mechanism, State as a control area, has controllability of drawl from regional system through:

- State can ramp up / down Intra-State generators including IPPs etc
- State can manage Hydro generation accordingly
- Additional purchase under the URS mechanism prevailing at regional level
- Can use pumped hydro stations if available
- In extreme case can undertake the Load curtailment of non-essential load

With the above avenues, State, as a whole, has better controllability on the drawl from the Regional Pool and can follow the defined limits to the large extent. Whereas for intra-state, the Control Area shall be Discom, which comprises only of load catered by the Discom and therefore leaves no flexibility/ controllability of demand in the hands of Discom. The demand of the consumers will vary from time to time and season to season. Therefore, the Regional Level is fundamentally different, with the State having several avenues at its disposal to manage its deviation within the State volume limits, whereas the Discom can only do so by managing its demand, while also not having any control on the variability of its contracted renewable generation.

17.2. Analysis and Commission's Decision

The Commission notes the submission of AEML, wherein AEML has compared the deviation mechanism at regional level and deviation mechanism proposed in the MERC Draft DSM Regulations.

The Commission is of the view that, for maintaining the state volume limits at regional level, it is a collective responsibility of all the intra-state entities to limit their deviations within permissible limits. With scientific demand projection techniques and historical data analysis, Discoms can reasonably estimate their demand. Further, there is provision for revisions in the schedule during real time operation as it approaches close to the particular time blocks.

Further, the Commission has also notified F&S Regulations for variable RE generation which is expected to bring discipline in forecasting of RE generation.

17.3. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

18. Preparedness for implementation of DSM Framework in the State

18.1. Comments received

AEML submitted that, in Maharashtra, currently there are no limits on the deviation, whereas the DSM mechanism proposes to bring in very stringent deviation limits. Therefore, there is need to bring in Deviation Limits in phased manner so that the State entities get sufficient time to prepare themselves and institute more accurate demand forecasting tools. In this regard, it is submitted that while devising the DSM mechanism at the regional level, CERC has progressively tightened the frequency band, so as to allow time to the regional entities to bring in grid discipline.

Further, currently, Grid operation monitoring is done based on SCADA data whereas the billing / DSM settlement will be undertaken based on SEM data. Generally it is observed that there is large variation in these two data and this will introduce large error (> 2% in some

time blocks). Now, while the same issue exists at present, as well, it does not a financial impact on the Discoms because there are presently no Deviation Limits.

Additional Deviation Charges for every unit of over drawal is 1624 Paise per unit. It is advisable that, this DSM mechanism shall be implemented only after installation of Automatic metering system with time synchronised with SLDC server, with real time visibility.

18.2. Analysis and Commission's Decision

Model DSM Regulations published by FOR also expects that, all the States shall implement the Deviation Settlement Mechanism at intra-state level with volume limits which includes the States who do not have any experience of implementation of Intra-state ABT mechanism. However, the Maharashtra state has experience of implementing FBSM mechanism for over seven years and considered as Category 'A' State under SAMAST Report published by FOR. Though the volume limits are introduced 1st time for Intra-State entities under DSM Framework, the State is observing volume limits at regional periphery.

Further, with regards to preparedness for infrastructure at ground level, the Commission has discussed the issues in detail in chapter 4 of the Explanatory Memorandum published with the Draft MERC DSM Regulations.

Further, the Commission has conducted the workshop to understand the preparedness of the Stakeholders. The Commission has also constituted working group of key stakeholders to monitor the progress of DSM implementation in the State.

18.3. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

19. Regulation 10 (K): Zero Crossing or Sign Change for Deviation

19.1. Proposed in draft DSM Regulations, 2018

10 (K) In the event of sustained deviation from schedule in one direction (positive or negative) by any state entity, such State Entity (Buyer or Seller) shall have to make sign of their deviation from schedule changed, at least once, after every 12 time blocks.

19.2. Comments received

MSEDCL welcomes the provision to allow the sign till 12 sign block as demand is uncontrollable factor and due to any changes in demand and availability, revision in generator is required to be undertaken along with the consideration of renewable power in the system. However, it is submitted that deviation can be easily controllable by Generator and therefore for Seller, the deviation for change in sign can be allowed for a shorter duration like six time blocks or lower.

Tata Power requested to clarify the computation with an example whether the additional charges will be applicable for time blocks beyond 12 time blocks. Discom will not be able to monitor sign change as Renewable and Changeover consumers schedules get replaced by

actual afterwards. It is requested, not to consider effect of change in Renewable and Changeover energy in deviation sign change calculation.

BEST Undertaking submitted that, to avoid additional charges, utility should be allowed to provide drawal schedule lesser than the its availability (i.e. Must absorb level). Such a surplus availability should be allowed to sell as URS power at marginal cost of the utility. SLDC should provide real time data visibility of billing meters to monitor the deviations and take precise decisions for revisions.

In the month of winter, Discom's demand drops significantly whereas the availability with must absorb quantum including technical minimum remains much above level. Therefore in such event it will not be possible to change the sign from under drawal to over drawal within 12 consecutive slots.

AEML submitted that, Discom has very limited/No control on the drawl during the day of operation and whatever control it can exercise, it is by way of demand curtailment only. Therefore, in order to meet this condition of the proposed Regulations during overdrawl, the Discom will have to resort to Load curtailment which will affect the Consumers.

Further, considering the fact that the monitoring is done on SCADA data, while billing is done using SEM data and, there is large variation generally observed between the two. Therefore, given the fact that Deviation Limits are very low for a Discom, even if a Discom achieves single reversal during operation, it may not be visible at all when checked with Meter data. It is suggested that the sign reversal shall be considered only for the Generators and not for the Drawee entities.

19.3. Analysis and Commission's Decision

The Draft DSM Regulations has proposed sign change after 12 time blocks in line with CERC DSM Regulations, however, CERC vide it 4th Amendment to DSM Regulations dated 20 November, 2018 has revised the provision of 12 time blocks to 6 time blocks. Accordingly, the Commission has revised the provision of the change in sign from 12 time blocks to 6 time blocks while finalising the DSM Regulations for monitoring purpose to begin with. The Commission has provided the illustration in clause 10(K) of Draft DSM Regulations which is also revised for 6 time blocks as against 12 time blocks.

With regard to submission of BEST undertaking in case of continuously under-drawl for 12 time blocks, for changing the sine,Discom is expected to revise the Schedule downward to match the under-drawal.

Accordingly, the provision of Zero Crossing or Sine Change shall be applicable to Buyers and Sellers both for monitoring purpose to begin with, however the applicability of additional charge for violation of sign change stipulation shall be leviable for each such violation during a day shall be notified separately by the Commission, upon gaining experiencein stages over the period considering implementation aspects and based on report to be submitted by SLDC.

SLDC shall maintain the record of the incidences of violating the provision of Zero Crossing by the State Entities.

With Regard to difference in SCADA data and AMR data, the Commission has discussed in the issues under preparedness for implementation of DSM framework in the State.

19.4. Provision in MERC DSM Regulations. 2019

The Commission has revised the provision of Clause 10 (K) to be in line with 4th Amendment to CERC DSM Regulations dated 20 November, 2018, with suitable modifications as discussed above.

Further, the Commission has also revised the applicability of additional Charge for violation of sign change which shall be notified separately by the Commissionin stages over the period considering implementation aspects and based on report to be submitted by SLDC.

20. Regulation 10 (D)& (E) : Additional Deviation Charges

20.1. Proposed in draft DSM Regulations, 2018

10 (D)In addition to the Charges for Deviation as stipulated under Regulation 9 of these Regulations, Additional Charges for Deviation shall be applicable for over-drawl as well as under-injection of electricity for each time block in excess of the volume limit specified in Clause (B) and (C) of this Regulation, when average grid frequency of the time block is "49.70 Hz and above" at the rates specified in Table I of Annexure-II in accordance with the methodology specified in Clause (H) of this regulation

20.2. Comments received

SLDC requested to revise the frequency as per 4th Amendment to CERC DSM Regulations.

MSEDCL submitted that, if two Discoms, one having schedule of 85 MW & other 20,000 MW. The Discom with low schedule, shall have to pay additional 100% DSM charges when its scheduling error exceed 12% above its allowable 12% deviation limit whereas, Discom with high demand has to pay additional 100% DSM charges for exceeding when its scheduling error exceed 0.001% above allowable limit. It is proposed that in case of buyer/DISCOM this additional deviation limit shall be on basis of peak demand.

20.3. Analysis and Commission's Decision

The Additional Deviation Charges shall be applicable when the Buyer /Seller shall cross the allowable volume limits. The volume limit specified in the Table I of Annexure –II is for over-drawal by any Buyer above X MW and upto X+[10] MW , where X is the Volume limit linked with Peak Demand of Buyer, which will be higher in case of Discom having higher Demand. It would not be appropriate to further allowance of incremental volume limit linked with peak demand for Additional Deviation Charges.

Considering the Stakeholder's comments the Commission has proposed to revise the minimum volume limit to 30 MW as against 10 MW proposed in the Draft Regulations for generators/sellers having schedule more than 10MW. Accordingly, the applicability of Additional Deviation Charges specified in the Annexure of the Regulations shall be also revised.

Further, the Commission has noted the suggestions and comments of the objectors that impact of additional deviation charges should not be too onerous, particularly due to introduction of

intra-state entity volume limits, which are too low (e.g. <2% of peak demand of distribution licensee). The distribution licensees have also suggested that benefit of aggregation, in case, state volume limit(L) (i.e., 250 MW at present)is not exceeded or if state do not suffer additional deviation charges at state periphery, then the State Entities may not be subjected to Additional Deviation Charges.

While the Commission has taken note of this submission that during initial stages of introduction of intra-state entity volume limits, proposed suggestion can be explored.However, it should not lead to dilution of the concept of intra-state entity 'volume limit'.The Commission further opines that the mechanism should encourage the state entities towards scheduling discipline and should hold them accountable for their deviationmanagement individually, so that collectively load-generation balance, area control error and deviationat state periphery improves in the overall interest of grid security and reliable power system operations.

Thus, Commission has stipulated a condition that for deviations exceeding its volume limitsupto 6 time-block during the day, additional deviation charges shall not be applicable, beyond which, the additional deviation charges shall continue to be applicable even if Deviation at state periphery does not exceed State Volume Limit.

20.4. Provision in MERC DSM Regulations. 2019

The Commission has revised the frequency band in line with 4th Amendment to CERC DSM Regulations. Further, the Commission has revised the applicability of Additional Deviation Charges for the Generators, with suitable modifications as discussed above.

Accordingly, suitable provisos under Clause (D) of Regulation 10 regarding applicability of Additional Deviation Charges for Buyer/Seller exceeding its Volume Limits have been incorporated as under:

> *"Provided that Additional Charges for Deviations for time-block shall not be applicable for Seller/Buyer, in case, Deviation for state at state periphery does not exceed State Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the state at the State periphery as per Regional Deviation Pool Account;*
>
> *Provided further that Additional Deviation Charges shall not be applicable in case Seller/Buyer exceeds its Volume Limit (X) upto six (6) time-blocks within a day, beyond which the Additional Deviation Charges shall be applicable for Seller/Buyer irrespective of the condition that Deviation for State at state periphery is within Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the State at the State periphery."*

Further, suitableprovisosunder Clause (E) of Regulation 10 regarding applicability of Additional Deviation Charges for Seller/Generator exceeding its Volume Limits have been incorporated as under:

"*Provided that Additional Charges for Deviations for time-block shall not be applicable for Seller, in case, Deviation for state at state periphery does not exceed State Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the state at the State periphery as per Regional Deviation Pool Account;*

Provided further that Additional Deviation Charges shall not be applicable in case Seller exceeds its Volume Limit (X) upto six (6) time-blocks within a day, beyond which the Additional Deviation Charges shall be applicable for Seller irrespective of the condition that Deviation for State at state periphery is within Volume Limit (L) for the time-block or no Additional Deviation Charges are payable for the State at the State periphery.

21. Treatment to the Standby Power Arrangement

21.1. Comments received

Tata Power and BEST Undertaking submitted that, the deviation settlement mechanisms shall not be applicable for Standby Power arrangement between MSEDCL and Tata Power-D.

21.2. Analysis and Commission's Decision

The existing Standby power arrangement between Mumbai Discoms and MSEDCL shall be governed by the respective Orders of the Commission.

21.3. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations.

22. Regulation 11(3): Drawal of Power by Generator before CoD

22.1. Proposed in draft DSM Regulations, 2018

11 (3) Any drawl of power by a generating station prior to the COD of a unit for the start-up activities shall be exempted from the volume limit as and when specified by the Commission when the grid frequency is "49.70 Hz and above".

22.2. Comments received

MSEDCL proposed that, no exemption shall be given for power drawn from grid and DSM charges shall be applicable. The concerned generator can avail power from Discom as per the requirement.

22.3. Analysis and Commission's Decision

The infirm power generator is expected to avail power from concerned Discom only, however it shall not be able to schedule its start-up requirement, being its operation intermittent and linked to the commissioning activities. The same shall be governed as per provisions of orders of the Commission. The infirm power generator shall not be exempted from the deviation charges but only additional deviation changes when frequency is above 49.7 Hz.

22.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations.

23. Regulation 12(1): Framework for Operationalising and Monitoring of Deviation Settlement Mechanism

23.1. Proposed in draft DSM Regulations, 2018

12 (1) Framework for Operationalisation and Monitoring of Deviation Settlement Mechanism
The SLDC shall develop and publish on its website procedures and methodologies for the computation of Charges for Deviation and Additional Charges for Deviation for each state entity for crossing the volume limits specified for under-drawl/over-injection and for over-drawl and under-injection respectively.

23.2. Comments received

MSEDCL submitted that, SLDC shall publish the procedures and methodologies for the computation of Charges for Deviation and Additional Charges for Deviation within a time frame of one month from the date of notification of DSM Regulation by the Commission.

23.3. Analysis and Commission's Decision

The Commission notes the submission of MSEDCL. SLDC shall prepare the Operating Procedures for implementation of the DSM Regulations and undertake stakeholder consultation before submission to the Commission for approval within three months from the date of notification of the DSM Regulations.

23.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with suitable modifications.

24. Preparation of Energy Account

24.1. Proposed in draft DSM Regulations, 2018

12 (3)The charges for over-drawl/under-injection and under-drawl/over-injection of electricity shall be computed by the SLDC in accordance with the methodology used for preparation of "State Energy Accounts."

13 (3) The SLDC shall be responsible for preparation of weekly Deviation Charges statement to all pool participants and billing and collection of Deviation Charges from the pool participants in accordance with Regulation 12 of these Regulations.
Provided that Provisional State Energy Account and Statement for Deviation Account Settlement should be available for scrutiny and verification by concerned State Entity for specified time period.

24.2. Comments received

MSEDCL requested to direct SLDC to prepare Monthly State Energy account on regular basis; failure to do so action under section 142 of Act should be initiated for violation of Commission directives. The time line for scrutiny and verification by State Entity needs to be mentioned in Regulation which should be of the order of around 15 days. On expiry of this

period the State Energy Account and Statement for Deviation Account Settlement published by SLDC should be final.

All computations carried out by SLDC should be open to all constituents for checking / verifications for a period of 15 days. If any mistake/omission is detected, the SLDC should forthwith make a complete check and rectify the same. The report of third party audit should also available on SLDC website. All data used to energy accounting purpose should be available on SLDC website.

BEST Undertaking submitted that it is advisable that, the information should be consolidated and should be made available on monthly basis also. It will facilitate utilities to fulfil the needs of various authorities, carry out auditing, submitting data to Regulatory Commission. It is advisable to give sufficient period for scrutiny and the time limit should be decided upon in consultation with the state entities.

24.3. Analysis and Commission's Decision

The Commission notes the submission of MSEDCL and BEST. The timelines for weekly Deviation accounting and Energy accounting shall be specified in the detailed procedure to be prepared by the SLDC and submitted to the Commission for approval. SLDC shall also undertake stakeholder's consultation before submitting the procedure to the Commission for approval.

The preparation of Deviation Account statement will be undertaken on weekly basis. The data of account will be available on SLDC website.

24.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with suitable modifications.

25. Regulation 14: Compliance with Directives of the SLDC

25.1. Proposed in draft DSM Regulations, 2018

14 Notwithstanding anything specified in these Regulations, the Sellers and the Buyers shall strictly follow the instructions of the SLDC on injection and drawal in the interest of grid security and grid discipline.

25.2. Comments received

MSEDCL submitted that, in case of congestion warning issued by NLDC, if SLDC passed any instruction, then DISCOM/Seller supporting relieving congestion should be exempted from congestion charges. Further, additional DSM penalty for violating DSM limit should be waived.

25.3. Analysis and Commission's Decision

The Draft DSM Regulations specifies only DSM Charges applicable in case of Deviation by Buyer or Seller. The applicability all other charges shall be governed by the concerned Regulations or Orders of the Commission from time to time.

25.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

26. Regulation 15: Accounting of Charges for Deviation

26.1. Proposed in draft DSM Regulations, 2018

15 (A) A statement of Charges for Deviations including Additional Charges for Deviation levied under these Regulations shall be prepared by the SLDC on weekly basis by the Thursday of the week and shall be issued to all constituents by next Tuesday, for seven-day period ending on the penultimate Sunday mid-night.

26.2. Comments received

SLDC submitted that, the timeline for settlement shall be subject to availability of 100 % data through AMR. Further, the Bank Account for DSM shall be a current account and will not earn any interest. The clarity needs to be provided on applicability of GST and TDS. The Commission may issue the separate Regulation for utilization of surplus in line with PSDF regulation.

MSEDCL submitted that,a proper mechanism is required to be incorporated in the Regulations for any delay in issue of such commercial bills for any reason.

26.3. Analysis and Commission's Decision

The Commission has noted the submissions. As regards to availability of AMR data, the Commission has already discussed the issue under preparedness for implementation of DSM framework in the State.

The other details such as type of account, clarity on GST or TDS shall be provided in the detailed procedure to be prepared by SLDC for implementation of DSM framework in the State. SLDC should factor in all statutory compliance requirements and propose mechanism for recovery of associated costs, taxes, levies, if any, while formulating the Procedures for settlement of State Deviation Pool Account and any associated costs for such compliance, will be addressed separately.

26.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

27. Regulation 15: Utilisation of surplus in the DSM fund

27.1. Proposed in draft DSM Regulations, 2018

15 (D) An amount of surplus funds in the State Deviation Pool Account at the end of the financial year shall be utilised for the purpose of improvements in power system operations, for undertaking such measures and studies for improvement in reliability, security and safety of grid operations, undertaking capacity building and training programs related to system operations and market operations and for such other purposes or for other schemes as may be devised in consultation with National Load

Despatch Centre, or Regional Load Despatch Centre, with prior approval of the Commission.

Provided that SLDC shall prepare scheme(s) and shall submit annual plan for utilisation of surplus funds and implement the scheme(s) only upon approval of the Commission.

27.2. Comments received

BEST Undertaking submitted that, the fund should be utilised for development and upgradation of the proposed system, ABT software, scheduling software etc and their AMC cost, licensing etc. It may be utilised to raise a corpus fund for making payment of DSM bills, STDA charges, Ancillary charges etc. Also, it should be utilised for developing various applications like generation of weather forecasting tool for all the utilities etc which will effectively help for improvement of grid.

27.3. Analysis and Commission's Decision

The Commission notes the suggestions of Stakeholders. Accordingly, the Commission has specified that, the amount of surplus funds in the State Deviation Pool Account at the end of the financial year shall be utilised for the purpose of improvements in power system operations, for undertaking such measures and studies for improvement in reliability, security and safety of grid operations, undertaking capacity building and training programs related to system operations and market operations and for such other purposes as may be specified by Commission or for other schemes as may be devised in consultation with National Load Despatch Centre, or Regional Load Despatch Centre, with prior approval of the Commission.

Further, in case of shortfall in funds in the State Deviation Pool Account; if any, at the end of the weekly settlement period shall be recovered by levy of additional charge from the State Entities in proportion to Net Deviation Charges Payable by concerned State Entity for the applicable weekly settlement period through supplementary bills. SLDC shall prepare scheme(s) and shall submit annual plan for utilisation of surplus funds and implement the scheme(s) only upon approval of the Commission.

Provision in MERC DSM Regulations. 2019

The Commission has revised the provision of Draft DSM Regulations accordingly.

28. Regulation 16: Schedule of Payment of Charges for Deviation

28.1. Proposed in draft DSM Regulations, 2018

16 (A)The payment of Charges for Deviation shall have a high priority and the concerned State Entity shall pay the indicated amount within 10 days of the issue of statement of Charges for Deviation including Additional Charges for Deviation by the SLDC into the "State Deviation Pool Account".

28.2. Comments received

MSEDCL submitted that, the interest collected from defaulting entity shall be paid to the constituents who had to receive the amount, payment of which got delayed. Persistent payment defaults, if any, shall be reported by the SLDC to the Member-Secretary of the Committee, for initiating remedial action.

SLDC submitted that, the provision of Corpus as is being maintained presently for payment of weekly DSM bills issued by WRPC shall be continued. The entities contributing to corpus shall be all DSM pool participant. Amount of corpus shall be equivalent to average of 4 nos. payable DSM weekly bills issued by WRPC. The provision of LC shall be replaced with corpus amount.

BEST Undertaking submitted that, currently Crores of Rupees of corpus fund collected from SPPs is lying in current account without any interest for many years. Due to non-availability of PAN number in the name of MSPC. There is no clarity whether the account should be operated independently by SLDC with separate account under MSPC PAN Number. An independent MSPC account under SLDC as an autonomous body can earn interest which will help in avoiding DPC charges to the state. Further it can be helpful in reducing the corpus requirement.

28.3. Analysis and Commission's Decision

The suggestions of MSEDCL and BEST may be duly considered by SLDC while preparing the detailed procedure for Energy accounting. SLDC shall examine the suggestions and also seek inputs from RLDCs/SLDCs while preparing the detailed procedure for Energy accounting.

28.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

29. Regulation 17: Governance Structure

29.1. Proposed in draft DSM Regulations, 2018

17(A)The Maharashtra State Power Committee (MSPC) constituted under FBSM framework shall continue to operate under these Regulations subject to the conditions outlined under these Regulations.

29.2. Comments received

SLDC submitted that, constitution of MSPC needs to be changed and generating company having installed capacity 500 MW and above and in case of drawing entity, Discoms having average drawl schedule 100 MW and above shall be eligible for MSPC membership.

MSEDCL submitted that, the Annual compliance report shall be made available on website of SLDC.

29.3. Analysis and Commission's Decision

The Commission has noted the suggestion of SLDC. The Regulation 17 of DSM Regulation has enabling provisions to expand the composition of the MSPC subject to modification of the business rules to be formulated by MSPC with due approval from the Commission. The suggestion of MSEDCL can be considered while proposing amendments to business rules for MSPC and formulating the detailed procedure for Energy accounting to be prepared by SLDC.

29.4. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

30. Other issues contributing to Deviation and leading to consequent financial liability over Discoms

30.1. Comments received

AEML submitted that,

a) Impact of changes in Renewable Generation

Under the MERC (F&S) Regulations, 2018, the Commission has adopted the mechanism where energy credit to Wind and Solar generators is based on actual. This is in contrast to CERC, where the Buyer / Discom receives power as scheduled by the Seller. Effectively, therefore, the variation in the Solar and wind generation contracted by the Discom has to be absorbed by the Discom, because while settling, the SLDC shall consider the actual generation from Solar and Wind generators contracted to the Discom and accordingly change the Scheduled Drawl of the Discom. Therefore, in case of under-injection by these generators, considering there is no demand variation at Discom end, the Discom will appear to be over-drawing, when, in reality, it is not a fault of the Discom, but it simply happened due to under-injection from its Wind and Solar sources.

i) With regard to variability of Wind and Solar Generation, it is suggested that the said variation may kindly be excluded from the deviation limits defined for Discom, as this Deviation does not represent a demand deviation by the Discom. Further, as per MERC (Forecasting, Scheduling & Deviation Settlement for Solar and Wind Generation) Regulations, 2018, 15% deviation from Schedule is allowed at the Pooling Station level, without any financial implication. Therefore, when one Regulation permits relaxation in deviation to the Wind and Solar Generators, another Regulation should not consider the same deviation and penalize the Buyer (Discom) for it.

ii) With regard to the deviation on account of variability of OA generation or on account of migration of consumers, the same needs to be excluded from the deviation limits. The Commission would appreciate that inclusion of variations on account of these issues will incorrectly represent the Discom Deviation and expose it to financial risk and hence the Regulations may kindly devise or task SLDC to specify mechanism / detailed rules to carry out necessary adjustments in the settlement.

b) Failure of embedded OA consumers (Partial OA) to arrange power:

AEML submitted that, during contingencies and major tripping market mechanism will be suspended. Based on inputs from DISCOMs /Generators or Grid conditions SLDC shall

declare such event. For the partial OA Consumers, Discom represents in the State Pool. If OA Consumer fails to arrange power on day ahead basis or during the day due to tripping or any other issue with its contracted source it will result in overdrawl by the Discom and Discom would have to pay charges, even if there is no variation in Discom's own demand.

Tata Power requested to allow Distribution Utility to pass on the impact on account of Deviation charges to the concerned Partial Open Access consumers.

30.2. Analysis and Commission's Decision

The Commission has notified the MERC F&S Regulations for computation of Deviation for variable RE sources like wind and Solar generation. The Deviation of Wind and Solar generation shall be treated under MERC F&S Regulation.

Further, the Commission has specified DSM framework for RE Deviation wherein, deviation impact at state periphery on account of RE deviation shall not be passed on to the Distribution licensee or other stakeholders. The impact of deviation on account of variable RE (wind and solar) generation on aggregate basis at state periphery shall be passed on to the RE generators responsible for Deviation, as per the conditions stipulated under F&S Regulations.

Though RE generators are paid on basis of actual generation as per the provision of existing EPAs, the deviation of RE generators shall be computed against the schedule of RE generation.

Further, the provision of 15% allowance of deviation by RE generators is subjected to their impact in deviation at state periphery. Thus, it is expected that impact of deviation on account of variable RE (wind and solar) on other state entities shall be lower and can be further addressed when the energy accounting of variable renewable energy based transactions are also undertaken on schedule basis. It may be noted that the Commission has already notified F&S Regulations in July 2018 and its commercial operationalisation is expected to commence shortly (i.e. Apr 2019), well ahead of commercial operationalisation of DSM Regulations for conventional generators/Sellers and distribution licensees/Buyers (i.e. Apr 2020). Thus, upon gaining experience of operationalising F&S regime for variable RE, suitable amendments to F&S framework can be explored, upon following due regulatory process.

The embedded OA consumers shall not be visible to SLDC for scheduling purpose. Hence, their schedule shall be part of Discom schedule. Besides, the energy accounting and treatment for deviation of embedded OA generation and embedded OA consumer will have to be dealt by host distribution licensee rather than through state deviation account. The Draft DSM Regulation proposes to continue with treatment to the Deviation Settlement of partial OA consumers under provision of MERC Open Access Regulations and its amendment, from time to time.

The Grid constraint shall not treated as Deviation to the schedule. The Schedule shall be revised accordingly.

30.3. Provision in MERC DSM Regulations. 2019

The Commission has decided to retain the provisions of the Draft DSM Regulations with few modifications.

Sd/-	**Sd/-**	**Sd/-**
(Mukesh Khullar)	**(I. M. Bohari)**	**(Anand B. Kulkarni)**
Member	**Member**	**Chairperson**