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Maharashtra Electricity Regulatory Commission (State Grid Code) Regulations, 2020

STATEMENT OF REASONS

Dated: 2 September 2020

Introduction

The Electricity Act, 2003 (EA 2003) (36 of 2003) mandates the Maharashtra Electricity Regulatory Commission (MERC) under clause (h) sub-section (1) Section 86 to specify the State Electricity Grid Code consistent with the Central Electricity Regulatory Commission's (CERC) Indian Electricity Grid Code (IEGC).

The Commission has notified (No. MERC/Legal/151/State Grid Code/0338) the Maharashtra Electricity Regulatory Commission (State Grid Code) Regulations, 2006 in 2006 and came into effect from 1 April 2006. The SGC 2006 was introduced in line with the IEGC Regulations, 2006. The Central Commission notified the IEGC 2010 on 28 April 2010 superseding the IEGC Regulation, 2006 and amended the principal Regulations from time to time.

The Commission has also reviewed its existing SGC, 2006 and prepared the draft MERC (State Grid Code) Regulations, 2020 (MEGC,2020) considering the provisions of IEGC, 2010 and its amendments and other relevant Regulations. The draft MEGC,2020 along with Explanatory Memorandum was published on the Commission's websites www.merc.gov.in in downloadable format. Also the Commission served a Public Notice in daily newspapers Marathi (Maharashtra Times and Loksatta) and English (Indian Express and Times of India), vide Public Notice (Advertisement No 13/2019-20) dated 1 March, 2020, inviting comments, objections and suggestions on the draft MERC (State Grid Code) Regulations, 2020 from all stakeholders by 23 March, 2020.The Commission extended the date for submitting comments, suggestions and/or objections on Draft MERC (State Grid Code) Regulations, 2020 up to 22 April, 2020 as per the request from STU, MSEDCL, MSLDC stating the reason of lock down because of COVID 19 .

Meanwhile, the Hon'ble ATE issued its Judgment in the matter of Guidelines for Merit Order Despatch (Appeal 78 of 2020) on 4 June 2020, wherein the Hon'ble ATE disposed of the matter as infructuous and granted the liberty to the Appellant to file objections if not yet filed, or additional objections if objections are already filed by them within two weeks . Also, the Hon'ble ATE directed the Commission to consider the submission of the Appellant before proceeding with the final order on the proposed Draft State Grid Code. Accordingly, the Association of Power Producers (APP) (Appellant) filed their objections on the provisions of

Draft MEGC2020 on 19 June,2020. The comments, objections and suggestions on the draft MEGC, 2020 received from all the stakeholders during the public consultation process are considered by the Commission while finalising the MEGC,2020. The Commission has also benefitted from the deliberations, suggestions and recommendations in the Report by Expert Committee constituted by CERC for review of the provisions of the IEGC,2010.

The comments, objections and suggestions received from all stakeholders on the draft MEGC 2020, and the Commission's analysis and decisions on them which underlie the Regulations as finally notified are set out below.

1. Regulation 2: Revision / addition of Definitions

1.1. Comments received

Maharashtra State Electricity Distribution Company Limited (MSEDCL) has suggested that the definition of Bulk Consumer is not used in any Regulation of draft MEGC,2020 and same may be deleted. If it is to be retained, it may be in line with CERC Regulations to incorporate minimum connected load capacity of consumer eligible to be considered as Bulk consumer. The definition of "Forced Outage" should include the word "*excluding Fuel & Water shortage"* as presently outages of Units withdrawn under Coal or Gas shortage i.e. fuel shortage as well as Water Shortage are currently classified by SLDC under Forced Outages. But these outages need to be classified separately as either fuel shortage or Water Shortage. MSEDCL has also suggested to include definitions of *'Minimum Turndown Level', 'Primary Reserve', 'Secondary Reserve', 'Tertiary Reserve', 'Hot Start', 'Cold Start'* and *'Warm Start'* in line with report of the expert committee for review of IEGC.

State Transmission Utility (STU) has suggested to include the definition for Solar/Wind Power park developer, as present Renewable Energy (RE) Policy of Government of Maharashtra recognises the developer to obtain connectivity in case of Solar/wind power park on behalf of individual generator coming in the park.

Prayas has suggested to include definition of SLDC, ALDC and (Renewable Energy Management Center (REMC) and functions of Sub-LDC and ALDC should be elaborated in the Operating code, metering code etc. As REMCs have been set up as part of SLDC, its functional description needs to be provided in the MEGC,2020. MSLDC has suggested to revise definition of InSTS User, as Transmission Licensee cannot be considered as "InSTS user".

1.2. Analysis and Commission's Decision

Definition of Bulk Consumer is modified to exclude the reference of minimum MW capacity. The definition is used in the connectivity code for submission of connectivity application by Bulk Consumer. Definition of "Forced Outage" proposed in the Regulations is in line with the provision of IEGC 2010 ("Forced Outage" definition clause 2.1 (45)). The definition of SLDC, is provided in the EA, 2003. The definitions already provided in the EA, 2003 or any other Regulations may not be required to be reproduced in the MEGC. The definition of ALDC is

provided in Regulation 2.1(7) of MEGC, 2020. The Sub-LDC/ALDC, are supportive centres for operational convenience of SLDC and cannot be considered at par with SLDC which is just not a centre, but essentially an entity to discharge statutory functions. Further, the REMC is integral part of SLDC and not separate entity, hence need not be defined specifically. The Definitions such as Primary Reserve, Secondary Reserve Tertiary Reserve are related to Ancillary services. The Commission has not specified the Ancillary Services framework in the MEGC,2020.

Commission has noted the suggestion to include the definition of Solar/Wind Power Park Developer (SPPD) as it approaches the STU for connectivity as per the provision of the RE Policy of the State. Accordingly, the definition of Solar/Wind Power Park Developer (SPPD) is added in the MEGC, 2020.

The definition of InSTS User is modified to exclude transmission license. The definitions of Hot Start, Warm Start and Cold Start are specified under the CEA Regulations for construction of electric plant and lines, hence not included in the MEGC,2020. The definition of Technical Minimum, Resource Adequacy are added in the MEGC, 2020.

1.3. Provision in MEGC, 2020

The definition of "Solar/Wind Power Park Developer (SPPD"), "Resource Adequacy" and "Technical Minimum" are added and the definition of "Bulk Consumer" and "InSTS User" are revised.

2. Regulation 3 and 4: Objective and Scope of MEGC, 2020

2.1. Comments received

Tata Power has suggested that, Ancillary Services are integral part of IEGC. Similar provisions need to be included in MEGC. AEML has suggested to cover Trading Licensee under the scope of the MEGC,2020 as they will be undertaking scheduling, settlement etc. on behalf of Consumers/Generators/Buyers/Sellers. STU has suggested to include RE power park developers in the scope of MEGC, 2020.

2.2. Analysis and Commission's Decision

MEGC,2020 is not intended to cover Ancillary Services. The CERC has notified separate Regulations for Ancillary Service. The Commission may also introduce Ancillary Services framework though separate Regulations as and when required.

Trader is expected to act on behalf either of Buyer or Seller. The trader has no separate role in operationalization of the MEGC, 2020.

The applicability of MEGC, 2020 is extended to cover RE Power park developers.

2.3. Proposed in MEGC,2020

The Scope of MEGC, 2020 Regulations is extended to include RE power park developers.

3. Regulation 5.4: Constitution of Grid Co-Ordination Committee (GCC)

3.1. Comments received

MSEDCL has suggested that the procedure or guidelines formulated by GCC should be implemented only after approval of the Commission and also has requested to clarify if there will be only one member from all private Distribution Licensees including Deemed Distribution Licensees and how it will be selected. STU has proposed to continue "SLDC" as member convener as per the provisions of existing State Grid Code. STU has also requested to include representative of QCA in GCC. SLDC has suggested to include separate representative of wind and solar generators, Bagasse based Co-generators and long-term Open Access consumer.

Adani Transmission (India) Limited & Maharashtra Eastern Grid Power Transmission Company Limited have requested to clarify selection criteria for member for GCC and whether all licensees will have their member or it will be on the basis of some criteria-viz: no of assets. Prayas has suggested to include technical staff from MERC as member of the GCC to ensure proper implementation of MEGC and provide feedback towards future improvements of the Grid Code. Prayas has also suggested to include separate member for IPPs and CPPs as issues of IPPs and CPPs are different.

Tata Power has suggested to include representative of Privately- Owned Transmission Licensees, Privately-Owned Distribution Licensees including Deemed Distribution Licensees having threshold peak demand of at least 350 MW, Private-owned generating companies including IPPs and CPPs in the State having threshold generation portfolio of at least 500 MW. Such organizations will be selected in rotation restricting more than adequate representation to one group. The term of each such member, selected in rotation, shall be two years. Further, there may be possibility that members identified under sub-clauses (j) to (m) may either be selected from one group or one group gets large representation in such members. There may be possibility of selecting MSETCL and STU both as separate members thereby denying representation to private transmission licensees altogether. There should be a minimum threshold peak demand for Privately-Owned Distribution Licensee and a minimum threshold generation portfolio to become member of GCC as such members are aware of complex issues of grid operations.

AEML has suggested that, Transmission Licensee connecting to multiple InSTS Users (say > 4) need representation such that the important operational / planning aspects are addressed properly. Distribution Licensees representing the larger set of consumers (say demand > 500 MW) should have representation such that the core issues related planning, quality of supply (frequency of tripping, voltage dips) etc get sufficiently represented for maintaining highest quality & reliability of Transmission system. In States like Delhi, Gujrat, West Bengal where Private Distribution Licensees operate all the Distribution Licensees have permanent membership & not rotational.

3.2. Analysis and Commission's Decision

With regards to the convenor of the GCC, the Commission notes the submission of STU. The SLDC will be more conversant with day to day operational issues and frequently interacting with all state entities. SLDC would be able to identify issues which need deliberations in the GCC. As representative of STU is chairperson of GCC, it would be appropriate to consider the representative of SLDC as Member Convenor of GCC.

With regard to the MSEDCL's submission, most of the procedures or guidelines will be for meeting the operational requirement and undergo revisions /modifications considering the operational requirement, it is clarified that the provision of stakeholder consultation is specified in the MEGC,2020.The Commission is not required to approve every procedure/guideline to deal with operational aspects under MEGC,2020, which GCC or STU or SLDC or competent authority may do upon following due process, however the Commission may issue the necessary practice directions/guidelines, as and when required on case to case basis. Further, the competent authority needs to ensure that the procedure/clauses are not contradictory or in contravention to any of the provisions of the MEGC 2020 or relevant Regulations/orders of the Commission.

With regard to the comments on the selection of members of GCC, the Commission is of the view that, the mandate of the GCC is to address the key issues which state entities may face while implementing Grid Code. Though all state entities may not be members of GCC, they may approach the GCC with their issue/suggestions on implementation of MEGC,2020. The Commission is proposing the two-tier structure of GCC, where there would be Core Group of seven (7) members which would participate in regular meetings of the GCC and Conference of GCC. Additionally, there would be Grid Co-ordination Conference under GCC, where most of the state entities would be members based on certain selection criteria.

The members of the Core Group are proposed based on their share in the overall demand of the State, generation capacity within state, share of transmission network in the state and statutory role and responsibilities assigned to these entities. All members of the Core Group shall also be members of the Grid Co-ordination Conference. The other members of the Grid Co-ordination Conference shall be selected based on following criteria:

1. Representative of WRLDC;
2. Representative of each Distribution Licensee in Mumbai/MMR region;
3. Representatives of the Indian Railways in the State;
4. Representative of Private Transmission Licensees – Two private transmission licensee having highest transmission network in Circuit-Km in the previous financial year.
5. Representative of Private-Owned Generating Companies Including IPPs and CPPs in the State – All IPPs /CPPs generators having own installed capacity 500MW and above (excluding RE installed capacity portfolio).
6. Representative of Deemed Distribution Licensees – One representative having highest non-coincident peak demand (NCPD) during last financial year.
7. Representative of RE generators in the State -

a. Wind generator having highest own installed capacity in the State

b. Solar generator having highest own installed capacity in the State

c. SHP generator having highest own installed capacity in the State

d. Biomass generator having highest own installed capacity in the State

e. Bagasse based Co-gen having highest own installed capacity in the State

The nomination of Mahagenco will not be considered for RE generator, as it will represent through member of Core Group.

The Members of the Core Group shall meet at least once in three months and invite other members as special invitee as and when required.

General body meeting of Grid Co-ordination Conference shall be held at least once in a year and all member of grid co-ordination conference shall be invited for the meeting. All the proceedings of the Core Group meetings and GCC Conference shall be shared in transparent manner with all members and also published on STU/SLDC website from time to time.

3.3. Proposed in MEGC,2020

The Commission revised the provision of Regulations 5.4.1 to 5.4.6 and 5.5 accordingly.

4. Regulation 6: Grid Code Review

4.1. Comments received

Prayas has suggested to incorporate the provision that, the recommendations submitted by the GCC and its functional committees or sub-committees should be publicly available on the STU's website.

4.2. Analysis and Commission's Decision

The provision of the Regulation 6.3 is modified to include a clause to cover publication of the recommendations of GCC on STU website to bring more transparency and accountability in the functioning of the GCC.

4.3. Proposed in MEGC,2020

The following provision d) is included in the Regulation 6.3.

d)All reports, recommendations and Minutes of the GCC shall be published by SLDC and STU on their websites.

5. Regulation 7.1: Functional Committees/Sub-Committees Under GCC

5.1. Comments received

AEML has submitted that, since the InSTS covers entire state of Maharashtra, preferably the

members of the Committee should be predefined. The Maharashtra Transmission Committee (MTC) should also handle clearances from the State Government /other Government Agencies centrally to help in expediting the development of InSTS as per plan. MSEDCL has suggested that MCC committee shall also be responsible for Communication Code in addition to Metering Code.

5.2. Analysis and Commission's Decision

The Right-of-Way (*RoW*) is the responsibility of respective Transmission Licensee only. The role of MTC is advisory in nature and not executive to undertake responsibility of execution issues like RoW. The functions of MCCC are extended to include the communication code and provision of the Regulation is revised accordingly.

5.3. Proposed in MEGC,2020

The Commission included the provision of the Regulation 7.1(d) in Regulation 7.1 as below:

d) ***Metering and Communication Coordination Committee (MCCC):*** *The Committee shall be responsible for the implementation of provisions of Metering Code* ***and Communication code & related issues"****.*

6. Regulation 7.3: Maharashtra Transmission Committee (MTC):

6.1. Comments received

MSEDCL has submitted that, one of the important functions of the MTC is to coordinate maintenance schedule, by periodic review on quarterly basis. MTC is also expected to monitor transmission related projects. Delay in project execution not only leads to cost escalation but also may result in overloading or congestion in existing system for which new projects are being implemented. Hence it is suggested that, MTC shall meet at least once in every 3 months.

Further, sometimes, during real time operation, SLDC needs to operate hydro generation, for reliving congestion due to transmission constraint which leads to loss on account of opportunity cost of Hydro. The MTC needs to review such cases of Transmission constraint noticed by MSLDC & action taken to resolve such issues. MTC should also regularly review the status of InSTS lines and identify if these lines are used for ISTS and follow up with WRPC for declaration of such lines as ISTS line.

Prayas has suggested that with the pace of investments and changes in the RE sector and changes in trends across time and locations, it is crucial that transmission planning take cognizance of such developments. The MTC should set up a representative stakeholder forum which could meet at least twice a year to deliberate medium to long-term RE capacity addition and associated infrastructure planning. The committee could include representatives from the Distribution Licensees, transmission licensees, solar and wind park developers, renewable energy generators as well as captive and open access consumers. The deliberations of the Committee can be shared with the MTC for its consideration. Further it has suggested that one

of the functions of the MTC includes studying areas of persistent congestion or bottlenecks in the state and developing a plan to invest in demand side measures and capital works/ technologies to ease congestion.

AEML has suggested that, the Committee should look at all the prospective projects excluding the projects which are already part of current Five-year plan of STU. The projects already allowed to be executed by the Transmission Licensees are not expected to review by MTC as it would considerably delay the execution. STU has suggested that ISTS transmission plans and suggestions to be made to Regional Committee shall be discussed in MTC.

6.2. Analysis and Commission's Decision

The maintenance schedule is the routine activity of the Transmission Licensees. MTC is not expected to plan the routine maintenance schedule of transmission lines. The role of MTC is to co-ordinate and address the specific issues brought before MTC. The MTC is free to conduct the meetings as per the requirement. The MEGC,2020 specifies the minimum frequency of the meeting by MTC which is once in six months.

Further, the transmission constraints are expected to be reviewed by Operational Coordination Committee (OCC) and if required may be referred to MTC, for additional transmission lines that are required to be planned. Accordingly, the function of review of transmission constraints is added under OCC instead of MTC.

The co-ordination of Inter-State Lines is one of the core functions of STU. The STU may refer any specific issue related to Inter-State Lines in MTC for discussions and deliberations. The STU shall publish the transmission plan on its website and stakeholders may provide their suggestions/comments to the STU. Separate forum may not be required to be constituted under the MTC.

With regard to AEML's submission, the MTC is expected to co-ordinate planning and execution of transmission lines which includes ongoing transmission projects as well. MTC is for facilitating the execution of transmission projects in the interest of InSTS and not for delaying the projects.

6.3. Proposed in MEGC,2020

No change in the provision of MEGC, 2020 Regulations.

7. Regulation 7.4: Operation Coordination Committee (OCC)

7.1. Comments received

Prayas suggested that, as RE generation is expected to increase sharply in the coming years, sometime there may be high RE generation and possibility of RE curtailment. It would be appropriate that, the OCC may also review the RE curtailment and formulate the means to avoid/reduce the same. MSEDCL suggested that, OCC shall also review the events of

Transmission constraint and action taken by SLDC in real time.

7.2. Analysis and Commission's Decision

The Commission notes the suggestions of stakeholders and accordingly added the additional functions of OCC.

7.3. Proposed in MEGC,2020

The Regulation 7.4.2 of the MEGC, 2020 is revised to include additional functions as below:

…….

7.4.2 g) Review renewable energy curtailment and formulate means of avoiding/reducing it.

h) Review of Transmission constraint cases noticed by SLDC and suggest the recommendations.

8. Regulation 7.6: Metering and Communication Coordination Committee (MCCC)

8.1. Comments received

MSEDCL has submitted that, one of the most important requirements for SLDC for real time grid management from communication point of view is real time SCADA visibility. At present less than 20% of MSETCL substations are having SCADA installed. The absence of real time visibility of all drawal & injection point, the SLDC's functions become difficult. Due to real time visibility issues of SCADA installed on ISTS points, State has incurred huge loss in the past and in future also to avoid such loss concrete action needs to be taken for strengthening real time visibility of all drawal as well as injection points. The Commission is requested to direct STU to prepare plan for installation, commissioning of SCADA on interface points on which DSM of each individual Entity will be computed by SLDC on post facto basis from meter data.

AEML has suggested that MCC should review correctness and efficacy of the assessment methodology used for Metering defects, data loss etc by SLDC as such issues have large commercial implications and also impact the Transmission loss computation which is one of the important performance parameters of InSTS and significantly affects the cost of power delivery for the Distribution Licensees.

8.2. Analysis and Commission's Decision

The Commission has introduced intra-state DSM framework in the state which is under implementation stage and is expected to be commercially operationalised from October 2020. MSETCL is also implementing the project for installation of SEMs at all interface points in the state with AMR facility and Meter Data Acquisition System (MDAS). The project is expected to be completed by March,2021.

The Commission in its Statement of Reasons (SOR) to DSM Regulations has dealt with the issue of SCADA visibility and preparedness for DSM implementation. The Commission has also directed the Working Group constituted for implementation of DSM framework to ascertain the preparedness of SCADA Visibility. Further the Commission has also added the

additional functions of MCCC in the MEGC for periodic review of SCADA visibility of all Drawal & injection points.

With regard to the comments of the AEML, the Commission notes that the issue is related to DSM accounting. The DSM procedure specifies the methodology of metering assessment in case of loss of meter data or defect. However, in case of specific issues around metering deficiencies and loss of data the same can be deliberated under aegis of MCCC. Accordingly, suitable modification in MEGC 2020 with sub-clauses under Clause 7.6.4 has been incorporated as functions of MCCC.

8.3. Proposed in MEGC,2020

The Commission added the following functions of MCCC, and Regulation 7.6.4 is revised accordingly.

……

d) Review correctness and efficacy of the assessment methodology used for Metering defects, data loss etc.

f) To issue guidance on the interpretation and implementation of the Metering Code.

i) Periodic review of SCADA visibility of all Drawal & injection points; and

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9. Regulation 8.1: Role of STU:

9.1. Comments received

Prayas has suggested that the Regulation 8.1.2 mentions about possible separation of SLDC from STU. This is also provided in Section 31 (2) of the Electricity Act (2003). SLDC has the crucial role of ensuring coordinated operation of a variety of actors in generation, transmission, distribution and market operation. Hence it is important to implement this separation at the earliest, similar to POSOCO's formation and autonomic operation. The Regulation 8.1.2 shall indicate a deadline of two years for the Government of Maharashtra to carry out this separation.

9.2. Analysis and Commission's Decision

The provision of the Regulation 8.1.2 is in line with the provision of the Electricity Act, 2003 (EA, 2003). The creation of statutory entity is the responsibility of Government. The Commission has already directed the STU for implementation of Pradhan Committee report which includes ring fencing of STU and SLDC. It may not be appropriate to set any specific timelines through MEGC Regulations

9.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

10. Regulation 8.2: Role of SLDC:

10.1. Comments received

MSEDCL has submitted that integration of huge RE generation is main challenge before SLDC for which SLDC would require reserve power sources. It is necessary to include in role of SLDC to ensure adequate primary, secondary and tertiary reserves.
Similar to the provision of the Regulation 7.6 of the CERC Communication Regulation 2017, the SLDC shall be the nodal agency for the integration of communication system in the InSTS network at SLDC end for monitoring, supervision and control of power system. At regional level same role has been assigned to RLDC by a Regulation. The RLDC daily publishes the SCADA visibility report and sends to the concerned entities for taking corrective action.
Tata Power has suggested that the collection of congestion charge and utilisation of the same is to be added in the functions of SLDC. AEML has suggested to revise provision of Regulation 8.2.1(a) to add reference of other Regulations such as MEGC,2020 also in addition to scheduling and despatch code.

10.2. Analysis and Commission's Decision

The SLDC is empowered to collect various charges as may be specified by the Commission from time to time under various Regulations such as DSM Regulations, MYT Regulations, and Open Access Regulations. Further the Regulation 44.1 third proviso of the MEGC specifies the applicability of congestions charges.

The Regulations 14.4 specifies the requirement of planning for spinning reserves. Maintaining spinning reserves is joint responsibility of Sellers, Buyers and SLDC. Further, as specified under Regulation 14.4.4, SLDC (in consultation with GCC) shall prepare detailed procedure to operationalise provisions related to spinning reserve margin and submit the same to Commission upon stakeholder consultation within six months from the date of notification of MEGC. The real time monitoring and availability of information to stakeholders is crucial for operations under DSM regime. STU is responsible for maintaining SCADA system for real time data availability at SLDC. The SLDC shall publish the daily SCADA report, which would facilitate all stakeholders to take corrective actions. Also, feasibility of such introduction needs to be ascertained and hence the timeline for such introduction may be decided in consultation with GCC. A suitable clause is added to the MEGC to incorporate the revised provision.

The Scheduling and Despatch Code is part of MEGC, 2020.The SLDC is expected to take into account all the relevant provisions of the MEGC and other Regulations as may be applicable for optimum scheduling. The provision of Regulation 8.2.1 a) is revised to add the MEGC instead of the Scheduling and Despatch Code.

10.3. Proposed in MEGC,2020

The Regulation 8.2.1 a) in the MEGC Regulations, 2020 is revised as under:

8.2.1 a) Be responsible for optimum scheduling and despatch of electricity within a State, in accordance with the provisions of these Regulations, MERC DSM Regulation and the

contracts entered into with the licensees or the generating companies operating in that State.

Regulation 8.2.6 is added in the MEGC, 2020 for provision of publishing daily report on SLDC website.

8.2.6 From the date to be notified separately in consultation with GCC, SLDC shall publish on its website daily report of availability of SCADA to ensure adequate data availability in real time covering interface points and highlight the deficient interface locations.

11. Regulation 8.5: Role of Generator:

11.1. Comments received

STU has requested to include RE Generators /developers & Role of developer in MEGC,2020.

11.2. Analysis and Commission's Decision

The Commission vide its Order dated 19 September 2019 in Case No. 235 of 2019 had directed STU to formulate a detailed procedure for RE Sources/Generators and submit to the Commission for approval in view of the upcoming large RE Generation. In view of the recommendations of STU, the role of RE generators is included as a Regulation 8.5 in the MEGC, 2020.

11.3. Proposed in MEGC,2020

The Role of Generator included as Regulation 8.5 in the MEGC, 2020 as under:

8.5 -------

Role of RE Generator/RE Developer:

RE Generator/RE Developer connected (directly or through Pooling Station) to and/or using the InSTS for evacuating its generation shall inform the STU and SLDC about the contracts entered into with different parties for exporting power along with its schedule at Pooling Station level. It shall follow the relevant provisions of the MEGC, F&S Regulations, DSM Regulations and assist the SLDC in real time operation and control of the system and scheduling of generation. It shall also develop the transmission system including the pooling station within the premises of the park.

12. Regulation 10: Objective of Planning Code:

12.1. Comments received

MSEDCL has submitted that, in the last 3 years, MSEDCL's long term contract quantum has increased from 5560 MW to 7655 MW (including 1055 MW MTOA for Solar & Wind). The rise in ATC has to be commensurate with increase in LTA & MTOA contracted capacity from ISTS network. If rise in ATC is not commensurate with rise in LTA/MTOA, then restriction

will be imposed on central sector drawal which may lead to real time curtailment of STOA transaction and thereby need to implement load shedding to curtail drawal from ISTS. Planning code should consider the issues of restrictions of ATC in real time power flow and address the same.

Further, MSEDCL and Prayas have requested to clarify, which will be the designated agency and if it is to be STU, the word "designated agency", may be replaced with "STU".

12.2. Analysis and Commission's Decision

The provisions of Regulation 10.1 (g), 10.1 (h) and 10.1 (i) are revised as proposed by stakeholders. The designated agency is STU only. For better clarity, the word "Designated Agency" in the Regulations is substituted by the word "STU" and the Regulation 10.1 (d) is revised accordingly.

12.3. Proposed in MEGC,2020

The Regulation 10.1 (d), 10.1(h) is revised and 10.1(j) is added as below:

……..

d) Probabilistic assessment by the STU for future demand (short, medium and long-term) pattern under different scenarios;

……….

h) Validation of adequate power transfer capability to be carried out for the entire grid ***and across each flow gate*** *in a comprehensive manner by STU;*

i) ***Import and export capability across ISTS and STU interface***

13. Regulation 11: Generation Resource Planning:

13.1. Comments received

MSEDCL has submitted that, the generation resource adequacy should be in term of peak demand as against Long term contracted capacity. High dependency on Short Term power purchase will not lead to development of adequate Transmission network. It has requested to clarify the "demonstrable resource adequacy" as well as the nature of capacities to be taken for assessing resource adequacy. While ascertaining the resource adequacy, STU may additionally consider the impact of distributed energy resources on transmission system and exchange of power with Retirement of ISTS generators

STU has requested that, the Cut-off date for submission of data should be specified as 31st December.

Prayas has submitted that, while resource adequacy is important for safe and reliable operation of the grid, it is important that the adequacy is ensured via efficient power procurement strategies such that consumers are not saddled with persistent long-term off-peak surplus capacity in the future. Strategies to ensure short-term, medium-term and long-term resource

adequacy should also include efforts to shift load to off-peak hours, contribution of solar + storage projects, power procurement from power exchanges and the DEEP portal and inter-DISCOM banking practices. The resource adequacy should be determined keeping in mind generation sources of long-term open access users as well as captive consumers as well. With the stricter DSM framework and availability of ancillary services, DISCOMs will be encouraged to ensure resource adequacy as well.

The integrated resource plan needs to consider generation flexibility, demand response, need for energy storage systems, generation reserve requirement and system inertia. The integrated resource plan (IRP) needs to be finalised based on insights from power system modelling tools. The need for power system modelling tool for finalising IRP needs to be specified in the final Regulation. Also, it has requested to provide definition of resource adequacy as it refers to the availability of sufficient dispatchable capacity with the Distribution Licensee /buyer to meet demand and how it can be ensured. Further, STU needs to finalise the IRP only after public consultation process. Further, STU should use appropriate power system modelling tools for generation resource planning. The generation resource adequacy under the Planning code for submission of the adequacy statement by the Distribution Licensee to the STU is as per the Report of the Expert Group on Review of Indian Electricity Grid Code published on January 2020, The statement " Adequacy statement with list of such resources along with associated capacities" implies that Distribution Licensee shall include short, medium and long term capacities availability while submitting the plan to the STU for its integrated resource plan and the same shall be forwarded to CTU. System transmission planning should be as per the CEA's Manual on Transmission Planning.

13.2. Analysis and Commission's Decision

Generation Resource adequacy is important for safe and reliable operation of the grid. Distribution Licensees shall ensure demonstrable resource adequacy using short-term, medium and long-term capacities available for RTC, peak and off-peak durations. Distribution Licensee may exercise the options likes RE generation with Storage for meeting the resource adequacy requirement. The integrated resource plan needs to consider generation flexibility, demand response, need for energy storage systems, generation reserve requirement and system inertia.

The integrated resource plan (IRP) needs to be finalised based on insights from power system modelling tools. The distribution Licensee should submit the details of resource adequacy planning to STU and also publish the same on its website. The power system modelling shall be as per the CEA's National Electricity Plan (Volume II Transmission) Regulations 3.4.2. However, STU may be free to use any power system modelling tools for developing Integrated Resource Plan. It may not be appropriate to specify the same in the Regulations.

13.3. Proposed in MEGC,2020

The definition of the "Resource Adequacy" is added in the definitions as below:

(81) "Resource Adequacy" means a measure of an electric system's ability to provide adequate generation to meet all firm load obligations.

The Regulation 11 (i) and 11 (ii) are revised as follows

11.(i) Each distribution licensee shall ensure demonstrable resource adequacy as specified by the Commission for the next five (5) years starting 1st April of the next year. ***Resource adequacy can be met using short-term, medium and long term capacities available for RTC, peak and off-peak durations****. Adequacy statement containing a list of such resources along with associated capacities shall be submitted to the STU* ***by 31 December of each year and made publicly available on its website****.* ***Efforts to shift load, inter-DISCOM banking and storage should also be considered while preparing the adequacy statement. The adequacy statement should be revised every year in the five-year period and monthly reports should be submitted to the STU regarding compliance with the adequacy statement.***

11(ii) Based on the generation resource plans of distribution licensees, STU in consultation with SLDC shall develop Integrated Resource Plan for next five years for the state. While developing such Integrated Resource Plan, STU ***shall use appropriate power system modelling tools and*** *may consider the following from grid operation perspective.*

14. Regulation 12.0: InSTS Planning:

14.1. Comments received

MSEDCL has suggested to add planning guidelines for augmentation of Transmission Network. As per the international practices such as European Network of Transmission System Operators for Electricity (ENTSO-E), short term planning is for period of one year and for operational decisions whereas, medium term planning is for investment decision for a period of five years and long term for a period of 10 years for policy decisions. The CEA has prepared NEP for five years while perspective transmission plan is created for a longer period. Planning process should accordingly be aligned to CEA's planning process and approval of business plan by the Commission.

STU has submitted comment that the Regulation 12.9 submission of report shall be on yearly basis MSEDCL has submitted that the report should be quarterly instead of six monthly, as MTC meeting are proposed at frequency of 3 months. The short-term period plan will bring in clarity of execution time frame and will reflect in Tariff whereas medium term plan will reflect the needs of transmission system users and will be prepared as per the five-year demand projections made by TSUs. Long term plan will consider the changes likely to happen over longer period and create multiple scenarios and planning options over a long-term period. For Regulation 12.12, the Frequency of updating /revision shall be as follows;

i. Short Term Plan – Yearly
ii. Medium Term Plan- Biyearly (Once in Two years)
iii. Long Term Plan – Biyearly (Once in Two years)

Prayas in order to make tracking of ongoing transmission projects easier for the MTC, SLDC and MERC, has suggested that STU should develop a portal where regular updates of ongoing projects are provided in a systematic manner. The Regulations should explicitly state that the

progress reports of actual capitalisation, reasons for deviation prepared by STU and the same submitted to the Commission should be publicly available on the STU website. It is suggested that Regulation 12.9 should be amended accordingly. Integrated Resource Plan (IRP) and the perspective transmission plan are crucial for investment planning and capacity addition in the state. Given the wide range of stakeholders in the state power sector, it is vital that these plans are finalised only after considering suggestions received via public consultation process. The Regulation 12.10 is required to be amended to ensure that the Perspective plan which is updated every year by the STU should explicitly state that the information should be publicly made available on the STU website. The Submission of perspective plan to the Commission (Regulation 12.10) specify timelines/ deadlines/ frequencies for reporting.

While the MEGC emphasizes the need for medium- and long-term planning, the future generation capacity and its location, especially for renewables (with short gestation periods**)** is not clearly known before-hand. Currently, the renewable purchase obligation (RPO) is notified only until 2025. While there is a guiding national target of 450 GW of RE by 2030, there are no clear guidelines for state targets for the next 10/15 years. To provide more clarity for future planning, the Commission should advise the Government of Maharashtra (GoM) to set up guiding medium and long term RE targets in consonance with their evolving policy. MERC should also advise the GoM to set up a process for long term development of solar parks, which would aid in transmission planning. In addition, the Commission should also outline indicative/guiding renewable energy targets with some scenarios for the next 10/15 years which the STU should consider while formulating and updating the perspective plan.

AEML has submitted that generally, the requirement of bays/outlets from the Distribution Licensee is done to cater to the new load and/or load growth. The new load development is not totally controlled by licensee and it is undertaken by Consumer based on large number of factors including real estate demand, economy etc hence lead time is uncertain. Distribution Licensee will not be able to give firm requirement only with 6 months lead time as substation development laying of cables/OH lines such CAPEX job spreads across years. Even for development of Transmission substation right from planning, material order till commissioning has long gestation period, hence it is practically impossible to consider firm requirement only up to 6 months while planning the new Substation. Further it may lead to economic inefficiencies in terms of lead time, Order quantity etc. It has requested to change the time limit for commissioning of bay to six months from date of request.

14.2. Analysis and Commission's Decision

Commission added the guidelines for augmentation of transmission system in line with provision of the CERC (Planning, Coordination and Development of Economic and Efficient Inter-State Transmission System by Central Transmission Utility and other related matters) Regulations, 2018 in the Regulation 12.2 of MEGC. The Regulation 12.1k) is revised appropriately to add provision of RPO targets.

STU shall publish the draft Integrated Resource Plan (IRP) and the perspective Transmission Plan on its website and all stakeholders may submit the comments on the same to STU.

Distribution Licensee needs to do the planning for future demand estimation by considering various aspects including new load development in its area. The development of new transmission bay needs to be aligned with the requirement of distribution bays at downstream to avoid the creation of unutilized bays and stranded investment in transmission system which may further increase the transmission tariff.

As regards the tenure for short term, medium term, long term planning, the Commission finds it appropriate to consider the suggestion of STU, being a planning authority. Accordingly, the transmission planning tenure for short, medium and long terms are revised.

The Commission notes the suggestion of STU for submission of progress report on yearly basis instead of six-monthly basis. However, the Commission is of the view that, the MEGC proposes the constitution of MTC under the aegis of GCC which would assist the STU to track the progress of the projects on regular basis and STU would be able to submit the progress report on 6-monthly basis.

With regard to suggestion of Prayas for the development of portal by STU to track progress of all ongoing projects, it may not be necessary to specify the same through MEGC. The STU may develop the portal to track the status of the ongoing projects by stakeholders and such portal may provide the project-wise details.

The Commission is of the view that, the preparation of Perspective Transmission Plan is the statutory function of STU. The STU may publish the plan on its website for information of the stakeholders and consider the suggestions if any received from the stakeholders.

MSEDCL comments that the transmission planning shall be short term, medium term and long term and that it would be appropriate to specify the updating frequency for these plans are accepted. Accordingly, the Commission has revised the Regulation 12.12.

With regard to comments by Prayas on RPO targets that a longer term RPO trajectory should be specified by the Commission, the Commission has already specified the RPO targets up to 2025. The Commission is of the view that, specifying the RE capacity addition targets through Renewable Energy Policy for the State is out of the preview of the Commission.

14.3. Proposed in MEGC,2020

12.1 k) Renewable capacity addition plan/policy issued by Ministry of New and Renewable Energy Sources (MNRE), Government of India and State target as per Government of Maharashtra Policy and ***the RPO targets as notified by the Commission.***

Regulation 12.2 is added in the MEGC, 2020 as follows

12.2 Augmentation of transmission system:

The STU shall, while planning to augment InSTS in the form of expansion or upgradation shall consider the following:

(a) New and emerging technologies;

(b) Cost-benefit analysis outcome;

(c) Likely shutting down of old/ inefficient generating stations;

(d) Renewable capacity addition;

(e) Renewable Purchase Obligation;

(f) System adequacy from the perspective of black start/ start-up supply;

(g) Requirement of reactive power;

(h) Optimal utilization of resources to ensure an efficient and economical system with due consideration to power market, regional interconnection or any other policy initiatives of Government of Maharashtra.

(i) Retirement of obsolete / unnecessary /idle network from the system as well as books of account.

A Second Proviso is added to the clause 12.7 in the MEGC, 2020 as follows;

12.7 STU may consult stakeholders ----------

Provided further that, the STU shall publish the draft of Integrated Resource Plan (IRP) and the perspective transmission plan on its website and invite the comments of stakeholders

Regulation 12.8 has been revised in MEGC 2020 as follows
12.8 STU shall prepare transmission system plan based on the data obtained from the users and internal sources for:

*a) Short term period i.e. up to **3 years***

*b) Medium Term period i.e. up to **5 years***

*c) Long Term Period i.e. up to **10 years***

The Regulation 12.13 has been revised in MEGC, 2020 to incorporate the frequency of updates.

12.13 STU shall submit the investment plan for transmission system for approval of the Commission. STU/transmission licensees while submitting an application under subsection (1) of Section 64 of the Act to the Commission for approval, shall submit an investment plan based on the identified intra-state transmission schemes and system strengthening schemes projected in the transmission system plan:

Provided that the transmission system plan shall be updated by the STU as below

i) Short Term Plan – Yearly
ii) Medium Term Plan- Biyearly (Once in Two years)
iii) Long Term Plan – Biyearly (Once in Two years)

Provided further that, the transmission system plan shall be published in the manner as specified in Regulation 12.14 of this Regulation annually by 31st December and shall cover a plan period of five years commencing from the financial year immediately following the year

in which it is published.

Provided also that, transmission plans shall be updated to accommodate the revisions in the load projections and generation capacity additions.

15. Regulation 13.1: Technical Planning Criteria:

15.1. Comments received

Prayas has submitted that in Para 4.5 of the Explanatory Memorandum (EM), in the context of the technical planning criteria, it is mentioned that, the overall average utilization of the grid shall not be less than 40% for off peak load". It is requested to provide rationale for the 40% criteria. MSEDCL has submitted that the Technical Planning Criteria should include study of N-2 contingencies, planning of system in coordination with CTU to capture the changes due to economic despatch and resilience in terms of black start resources.

15.2. Analysis and Commission's Decision

The technical planning criteria for planning of new transmission planning process proposed in explanatory memorandum are suggested with a view that, STU should consider the overall optimal utilisation of the grid while planning. The planning should consider the future load growth and also in terms of providing relief to existing overloading of transmission assets.

With regard to the study of N-2 contingencies under technical planning criteria, the CEA's report (Part – A) on Advance National Transmission Plan for 2021-22 suggests that though the planning criteria provides 'N-1-1' reliability criteria for 400 kV system and practically 'N-1' for 765 kV systems, however, for the inter-regional corridor requirements 'N-2' criteria for both 400kV and 765kV may be considered. The N-2 criteria is expected to be studied for inter-regional corridors which is in in the preview of CTU. The other provisions, such as, co-ordination with CTU and resilience in terms of black start resources is STU's routine work which may not be required to be specified through MEGC.

15.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

16. Regulation 13.2: Financial Planning Criteria:

16.1. Comments received

Prayas has submitted that in compliance with the proposed Regulation 13.2.2, the STU has to develop and publish information on the zone-wise transmission capacity utilisation index and voltage variation index. The methodology to calculate the indices are to be formulated by the GCC. Given the crucial nature of these indices especially for optimal planning, the STU should discuss the proposed methodology for transmission planning in the GCC and publish for public consultation before it is finalised. the Regulations should specify timelines/deadlines/ frequencies for reporting of the same. Timelines are required to be specified for formulation of

guidebook for operationalisation of the planning code.

16.2. Analysis and Commission's Decision

The GCC may discuss the methodology to calculate the indices for zone-wise transmission capacity utilisation index and voltage variation index among the stakeholders. The GCC may invite the experts for consultation as and when required.

The Regulation 13.2.6 specifies the time period of three months from the date of notification of MEGC to formulate the guidebook.

16.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

17. Regulation 13.3: EHV Substation Planning Criteria:

17.1. Comments received

MSEDCL has submitted that, if maximum short circuit level is limited to 80%, then the required number of substations will increase where there is concentrated load like in major cities. Additional land will be required for erection of new substation which is major issue in urban area. Hence, this condition should not be made applicable for urban area. The maximum capacity mentioned in Regulation is as per Draft CEA (Technical Standards for construction of Electrical Plants & Electric Lines) Regulation which is yet to be finalised by CEA. It is suggested that maximum capacity should be as per CEA Regulations. If fault level as well as capacity of ICT/Power transformer is restricted, it would be dual restriction in planning. Hence such restriction should not be imposed at least in urban area. Further such type of restriction over & above CEA standard will only lead to increase in capital cost & thereby additional financial burden on consumer.

STU has suggested to include additional three more bus switching scheme for both AIS and GIS and also for the generation switchyards.

17.2. Analysis and Commission's Decision

The fault level of the Intra-state network system at specific voltage level is expected to increase with addition of generation station in the system at respective voltage level. National Electricity Plan for Transmission (January,2019) specifies that the maximum short-circuit level on any new substation bus should not exceed 80% of the rated short circuit capacity of the substation. The 20% margin is intended to take care of the increase in short-circuit levels as the system grows**.** The other options such as splitting of bus system also need to be exercised before initiating the planning of new EHV Substations. The proposed 80% criteria are not to restrict the loading of the sub-station to 80%, but to initiate the planning for new substation by STU. During the time required for planning and actual commissioning of EHV substation, the fault level may increase beyond 80%.

The Regulations are in line with the NEP for Transmission(Jan,2019) which specifies that, effort should be made to explore possibility of planning a new substation instead of adding transformer capacity at an existing substation when the existing sub-station has reached its full capacity. Further, the CEA's transmission plan also specifies that, while augmenting the transformation capacity at an existing substation or planning a new substation the fault level of the substation should also be kept in view. If the fault level is low the voltage stability studies should be carried out.

Commission accepts the suggestion of MSETCL and the Regulation 13.3.9 is revised accordingly to add additional bus switching schemes. The typological errors related to rated breaking capacity in the table under Regulation 13.3.3 is revised in line with NEP-Volume -II (2019). The provision of short circuit study by STU is added in Regulation 13.3.1 for planning of EHV substations.

17.3. Proposed in MEGC,2020

13.3.1. STU shall conduct short circuit studies for symmetrical and asymmetrical faults to evaluate short circuit levels at existing as well as proposed new EHV substations and voltage stability studies as required after considering the fault level.

13.3.2. STU shall take measures such as bus splitting, series reactor or any other commercially available technology to limit the short circuit levels at existing substations wherever they are likely to cross the designed limits.

The table under clause 13.3.3 in revised as follows in the MEGC, 2020.

Voltage Level	Rated Breaking Capacity
132 kV	25 kA / 31.5 kA
220 kV	31.5 kA / 40 kA
400 kV	**50 kA / 63 kA**
765 kV	**40 kA / 50 kA**

The following additional sub-clauses are added to the clause 13.3.9

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b) *400 kV and 765 kV level – 'One and half breaker' scheme* ***or Double Bus Scheme for AIS and GIS Substations respectively ;***

c) Generation attached 220kVswitchyard: Double Main & Transfer

d) 220kV Switchyard with more than eight feeders: 'Double Main & Transfer' scheme or 'One and a half breaker 'and

e) 220kV Switchyard with & up to eight feeders: 'One Main & Transfer' Scheme.

18. Regulation 13.4: Additional Planning Criteria for Wind and Solar Projects:

18.1. Comments received

STU has submitted that the N-1 criteria cannot be waived for step up transformers at grid

stations.

18.2. Analysis and Commission's Decision

The Commission notes that the Generation Transformer of Wind / Solar projects should comply with the N-1 criteria. However, such criteria may not be applied to connectivity with InSTS. Regulation 13.4.2 is revised accordingly.

18.3. Proposed in MEGC,2020

13.4.2 *'N-1' criteria may not be applied to the immediate connectivity of wind and solar projects with InSTS, i.e., the line connecting the projects to the grid.*

19. Regulation 13.5: Additional Planning Criteria for HVDC Transmission System:

19.1. Comments received

AEML has submitted that the scheme for Bulk Power Transmission should be decided based on necessity and significance of ensuring grid integrity for urban areas. In urban areas the distance and quantum may not be the only criteria, other factors such as ROW for overhead lines etc would also need to be considered.

19.2. Analysis and Commission's Decision

The provision of the Regulations are in line with the NEP for Transmission(Jan,2019) which specifies that, the option of HVDC Bipole may be considered for transmitting bulk power (more than 2000 MW) over long distance (more than 700 km). HVDC transmission may also be considered in the transmission corridors that have AC lines carrying heavy power flows (total more than 5000 MW) to control and supplement the AC transmission network. Further, additional condition of technical consideration or area specific requirement subject to detailed study has been incorporated without restriction of quantum and distance for power transmission. Hence, suitable revision in the provision of Regulation 13.5.1 have been incorporated.

19.3. Proposed in MEGC,2020

13.5.1 Option of HVDC Bipole may be considered for transmitting bulk power (more than 2,000 MW) over a long distance (more than 700 km) ***or based on the specific technical considerations /area specific requirement after detailed study.*** *HVDC transmission may also be considered in the transmission corridors that have AC lines carrying heavy power flows (total more than 5000 MW) to control and supplement the AC transmission network.* -------

20. Regulation 13.11: N-1 criteria for 220kV/132kV double circuit lines:

20.1. Comments received

AEML has submitted that in the daily Order dated 28 February, 2017 in Case No. 5 of 2017 the Commission directed that, STU is required to submit various scenarios based on non-

availability of embedded Mumbai Generation (considering Unit-wise/Plant-wise non-availability of embedded generation of TPC-G and RInfra-G, or non-availability of partial or entire embedded generation); and also whether the islanding scheme is still, required for the operation of the Distribution Licensees in Mumbai considering N-2 Reliability in the system". Further, in the Order in Case No. 159 of 2011 the Commission has mentioned that, "transmission system needs to be in the ring system to create redundancy and avoid any black out like situation''. In space constrained city like Mumbai, underground cables are placed in the same corridor which are prone to simultaneous failures. It is suggested that, alternate source/ N-2 criteria should be mandatory, ensuring power supply availability.

The Transmission Licensees need to undertake planning based on the actual load + Proposed load if any from the InSTS Users as they have to cater to the load as requested by them. Further from planning to execution there is a lead time therefore the capacity addition has to be done considering the anticipated load as well to make the capacity available in a timely manner.

20.2. Analysis and Commission's Decision

AEML has referred the directive of the Commission vide daily order in Case No. 5 of 2017, however, the final Order in Case no. 5 of 2017 does not specify any such directives. The Provisions of the MEGC shall supersede the provisions of the daily Order limited to planning Criteria.

With regard to planning of new substations, there may be possibility that the utility may start planning too early with estimated load growth (may be when transformers are only 50% loaded). This may lead to early capex investment which will be passed on to the consumers through tariff. This may operate the existing transformers in underloading conditions. At the same time, one will have to consider the expected lead time for execution so that planning process should factor in such future load growth. Further, financial planning criteria would take care of the commercial aspects/implications in the matter. No change in the provision of the Regulations.

20.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

21. Regulation 14.4: Spinning Reserve Planning

21.1. Comments received

MSEDCL has submitted that as per CERC order, reserves are to be maintained in the primary, secondary and tertiary forms. The latest report of Expert Group also envisages a frequency control continuum wherein primary response will commence immediately after occurrence of an event, followed by secondary response and then tertiary response. The section may be aligned accordingly. Further, demand response should also be made part of reserves planning.

MSLDC has submitted the 3% margin as spinning reserve in day ahead Schedules of Generators as per De-Centralized MoD. This means the specified generators are to be scheduled by SLDC lower than its Declared Capacity. The guidelines (such as Capacity/Merit

Order/Type of Fuel) for deciding such generators by Distribution Licensees may be given in Regulation.

AEML has submitted that the Regulation 14.4.3 assumes that the contracted capacity is greater than the demand of the licensee and anticipates that spinning reserves will be maintained. However, if the total availability from contracted generation is lower than the demand during specific period, Distribution Licensees will have to purchase short-term power and same should be specifically mentioned so that it helps Distribution Licensees / SLDC in operational decisions making.

Tata Power has submitted that the Mutually agreed terms for sharing spinning reserve resources will require the Commission's approval. Hence, it is suggested that the Commission specifies the commercial terms for settlement of the capacity being utilized as spinning reserves based on the direction of the SLDC in the final Regulation.

IEX has submitted that the CERC (IEGC) (Sixth Amendment) Regulations, 2019 , Regulation 6.5(A)(c) provide the generators to sell the URS share of their power tied up with the procurers Under Section 62 or 63 of the Act in the day-ahead market of exchange. This opens up an additional avenue for the generators to optimize their PLF and for the Distribution Licensees to optimize their power purchase cost. The Commission is requested to consider introduction of similar provisions for the Intra-state Generating stations in the present MEGC Regulations, 2020.

CER – IITK has submitted that as per the Regulation 14.4, SLDC needs to keep spinning reserve margin equivalent to 3% of the system peak demand. It is not clear how this reserve margin capacity would be 'procured' and paid for by the SLDC, and how the associated cost would be recovered from all system participants (especially load serving entities). If the intrastate generators are to provide this margin, they should be able to recover such investment as the reserve margin would not be part of the Declared Capacity (DC) which is available for scheduling for the beneficiaries.

21.2. Analysis and Commission's Decision

The CERC Order referred by MSEDCL is applicable to regional level reserves. At regional level, the Ancillary services for tertiary reserves is already in existence and CERC has also directed POSOCO for implementation of primary and secondary reserve support through Automatic Generator Control (AGC). Accordingly, POSOCO and NTPC have already initiated the pilot operation for AGC. For implementation of such provisions at state level necessary preparedness of all stakeholders is required.

The Commission is presently in the process of implementing DSM framework in the state. By introducing spinning reserves and FGMO through Grid Code, the requirement of Primary reserves and secondary reserves will be met. The provisions of tertiary reserves through Ancillary services could be introduced in due course.

With regard to submission of IEX, the existing provision of MEGC, DSM Regulations and MYT Regulations do not restrict the Distribution Licensees to sell their excess generation

(URS) to the power exchange. This is also applicable to merchant generators also. Since the generators are under PPA with Distribution Licensees, the decision of relieving the URS generation to go for exchange lies with the Distribution Licensee only.

With regard to cost recovery issue raised by CER-IITK, the SLDC is only scheduling entity and not procuring any spinning reserve margin from generators. The question of paying separately to the generators for reserve margin does not arises. However, in future when state level Ancillary Service Regulations are notified, such arrangements of SLDC procuring Ancillary Service and compensation for the same could be deliberated and covered through state PSDF account or any other alternate mechanism for recovery of such costs of ancillary services.

With regard to clarification requested by SLDC it is clarified that the generators who declare DC for day ahead scheduling and considered for scheduling by SLDC under De-centralised MoD (Buyer wise) shall be scheduled by keeping 3% or such other percentage (to be specified) for spinning reserve margin (upon notification of such date).

With regard to clarification requested by Tata Power, the Regulation 14.4.5 specifies that, the Distribution Licensee may share the spinning reserve margin on mutually agreed terms and conditions. The Commission has not envisaged any approval for such mutually agreed terms and conditions. It is expected that, such term and conditions would be in the interest of consumers of Distribution Licensees.

The Commission expects that, SLDC shall prepare detailed procedure to operationalise provisions related to spinning reserve margin and submit the same within six months to Commission upon stakeholder consultation wherein the SLDC shall also suggest the requirement of spinning reserve margin to be maintained. The applicability of this provision shall be stipulated through separate Order or Practice directions by the Commission. Accordingly, the relevant provisions of the Regulations are revised.

21.3. Proposed in MEGC,2020 Regulations

14.4.1 SLDC will need to ensure maintenance of adequate Spinning Reserve Margin equivalent to 3% of the System Peak Demand or such other percentage to be stipulated through separate Order or Practice directions for the purpose of day-ahead load generation balance and intra-day operations. For preparation of day ahead Schedule of Generators as per De-Centralised MoD Principles, the SLDC shall maintain the spinning reserve margin in the specified Generator(s) up to 3% of Installed Capacity or such other percentage to be stipulated through separate Order or Practice directions for the management of ramp up as per the requirement of the Grid.

Provided that such requirement of spinning reserve shall be operationalised with effect from the date to be notified separately by the Commission in consultation with SLDC and GCC.

14.4.2 During day ahead scheduling, SLDC shall provide target despatch schedule for such specified generator(s) after allowing for maintenance of spinning reserve margin up to 3% of Installed Capacity or such other percentage to be stipulated through separate Order or Practice directions.

Provided that Distribution Licensee having hydro generating stations (excluding small hydro power) under long term/medium term power purchase agreement/arrangement may offer to provide spinning reserve margin from such hydro generator in consultation with SLDC.

14.4.3 The Distribution Licensees may share the spinning reserve resources on mutually agreed terms.

14.4.4 SLDC shall prepare detailed procedure to operationalise provisions related to spinning reserve margin and submit the same to Commission upon stakeholder consultation within six months from the date of notification of applicability of MEGC.

22. Regulation 19: Application for Connection:

22.1. Comments received

Tata Power has submitted that the definition of users includes consumers connected to the InSTS also. Further Regulation 19.1 requires the users to submit application to the STU for InSTS connectivity, however, a bulk consumer of the Distribution Licensee should apply for connection to the concerned Distribution Licensee operating in the area. Connectivity permission with InSTS of these consumers should be the obligation of the concerned Distribution Licensee only otherwise consumers have to make separate application for connection to Distribution Licensee as well as STU. Therefore, a proviso may be added to facilitate these bulk consumers.

22.2. Analysis and Commission's Decision

The Commission has accepted the suggestion of Tata Power and the Provision of Regulation 19.1 is revised to add a proviso accordingly .

22.3. Provision in MEGC,2020 Regulations

19.1 Application for establishing new arrangement or modifying the existing arrangement of connection to and/or use of InSTS shall be submitted by the concerned Transmission Licensee or User to the STU in accordance with a standard format for application as stipulated by the STU.
Provided that, bulk consumers shall submit application for connection to the concerned Distribution Licensee of its area.

23. Regulation 20 and 21: Metering and Connection Arrangement:

23.1. Comments received

MSEDCL has submitted that if any consumer of the Distribution Licensee is directly connected to 33kV bus of EHV substation (i.e. express feeder consumer) and if metering arrangement is to be provided as per the draft Regulations, then there should be provision in metering code for interface point for consumer except EHV consumer and secondly, if such consumer has to provide metering at 33KV of EHV Substation, then as per metering code, LV side of Power

Transformer is already defined as T<>D interface point. Under such circumstance, there is ambiguity about T<>D interface point. It has requested clarification if this Regulation is applicable to consumer directly connected to 33KV bus of EHV substation through express feeder arrangement. Further, in compliance of the CEA Regulations, measurement of harmonic content, DC injection and flicker shall be done at least once a year in presence of the parties concerned and the indicative date for the same shall be mentioned in the connection agreement.

23.2. Analysis and Commission's Decision

The provision of Regulation 20.1 is applicable to the EHV Consumers directly connected to InSTS (T<>D) interface at EHV level. In addition to provisions of MEGC,2020, the InSTS Users need to comply with the provisions of the CEA Regulations for technical and safety related provisions. There may be other provisions in the Connection agreement such as statutory compliances which may also be applicable to both the parties and both the parties need to adhere to the same.

23.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

24. Regulation 24: Data and Communication Facilities:

24.1. Comments received

MSEDCL has submitted that, there is no SCADA installed in more than 75% of MSETCL EHV Substations, which is posing problem to SLDC to monitor each Distribution Licensee on actual drawal & also for real time demand forecasting. In absence of the same, SLDC is presently compelled to derive real time drawal of MSEDCL from generation which is neither correct method for DSM monitoring of MSEDCL nor from grid security point of view. As per provision of IEGC 2010, it is the responsibility of STU to provide SCADA data visibility, however same is not complied in respect of all substations of STU. Hence provision in State Grid Code shall be made, to make mandatory for STU to provide SCADA visibility of all Drawal points of all Distribution Licensees which are defined as T<>D interface points as per Metering Code. Further grid code should specify timelines for 100% SCADA data visibility of all drawal points.

As per Metering code, in case of T<>D interface point, LV side of Power Transformer is considered. This Power Transformer is ownership of STU and hence STU needs to provide SCADA visibility of these point. Further STU shall also be not allowed to connect any new Transmission line, Reactor, SVS system, Power Transformer, ICT, any Transmission element to grid unless SCADA visibility is provided to SLDC for the same.

24.2. Analysis and Commission's Decision

Real Time monitoring and availability of information to stakeholders is crucial for operations under DSM regime. STU is responsible for maintaining SCADA system for real time data availability at SLDC. The Commission in its Statement of Reasons (SOR) to DSM Regulations

has dealt with the issue of SCADA visibility and preparedness for DSM implementation. The Commission has also directed the Working Group constituted for implementation of DSM framework to ascertain the preparedness of SCADA Visibility. SLDC shall publish on its website, daily report of availability of SCADA data in real time covering interface points and highlight the deficient interface locations. For establishing connectivity and communication link at T<>D interface for drawal point of Distribution Licensee to ensure visibility to SLDC is responsibility of STU. No separate mandate for STU is necessary in that sense.

24.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

25. Regulation 28.0: Operating Conditions:

25.1. Comments received

Prayas has suggested that, reporting timelines/ frequencies should be specified for development of online tracking and monitoring system for distributed generation including rooftop solar PV systems above 100 kW by Distribution Licensee. MSLDC has submitted that the Solar generation commissioned under Mukhyamantri Saur Krushi Vahini Yojana may be considered in the distributed generation as that of Roof Top Solar PV. CER – IITK has submitted that, the cost associated with tracking and monitoring of 100 kW and above Solar Photo Voltaic Rooftop System would be paid by Distribution Licensee. Recovery of such investment should also be provided by the Commission. Further, for systems above 10 kW and up to 100 kW, the sampling based monitoring system needs to be developed to bring visibility to such small scale capacity as increase in small scale solar rooftop system would remove a significant part of the load from visibility and constrain Distribution Licensee/SLDC to effectively forecast and manage the schedule. Further, in light of development of Solar Photo Voltaic Rooftop System under the KUSUM Scheme a significant capacity may be added by the PV system less than 100 kW. As such systems would be geographically spread, stratified sampling would help ensure a broader coverage of the geographical area.

25.2. Analysis and Commission's Decision

The online tracking and monitoring system for distributed generation including rooftop solar PV systems above 100kW within its license area of Distribution Licensee shall help the Distribution Licensees for facilitating decisions of revision of drawal schedule during intra-day operation. The Commission expects that, the Distribution Licensees to set up such monitoring systems in their own interest at the earliest i.e. within one year from the date of notifications of the MEGC.

However, for such monitoring system, the Solar PV generators are required to provide necessary data communication system with the monitoring system of Distribution Licensee. The Distribution Licensees may submit the necessary DPRs for capex investment to develop such monitoring system and such capex investment shall be passed on through the tariff mechanism. The small solar PV rooftop systems below 100kW may not be able to provide such

connectivity to the monitoring system, hence it may not appropriate to include Solar PV generators below 100kW under the monitoring system in the initial phase of implementation.

The Solar PV generation above 100kW commissioned under Mukhyamantri Saur Krushi Vahini Yojana shall be covered under such monitoring system as it is not covered under applicability of MERC F&S Regulations.

25.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

26. Regulation 30: Operation of Generators Connected to InSTS:

26.1. Comments received

MSEDCL submitted that this Regulation specifies only primary response on account of governor action. It should also specify performance parameters for SLDC to keep frequency within the band and governor action by generators. The Commission may initiate Suo-moto action for non-adherence to the performance parameters.

The primary response from thermal is likely to reduce due to high penetration of RE in future. It is recommended that, RE may be mandated to give primary response through additional capacity or battery storages. Also, SLDC is recommended to monitor the inertia of the system constantly to prevent activation of relays due to RE penetration. CERC has directed NLDC vide its Order dated 28th August 2019 to replicate Automatic Generation Control (AGC) pilot project (Secondary Response) in at least one station in each region. In view of the same, it is requested to issue necessary directive for implementation of AGC at state level as well. Further it is proposed that, SLDC shall also monitor frequency response i.e. RGMO/FGMO response. The RLDC at regional level is monitoring RGMO/FGMO response and apprise the same in monthly OCC meeting of Western Region. Similar provision should be made in Regulation for monitoring of RGMO/FGMO response in real time basis from all eligible generators and apprise the same in monthly OCC meeting for taking corrective action. The report should also be submitted to Commission for taking decision in matter of reduction of 1% RoE by Commission under provision 29.5 of MYT Regulations, 2019. Further as mentioned in CEA (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019, RE generator should also provide frequency response. Accordingly, it is suggested that certificate for frequency response should also be mandatory for RE generators.

For implementation of RGMO/FGMO, it is suggested that provision should be introduced in terms of incentive to all generator whose frequency response is more than 80% and similarly penalty should be levied on all generators whose RGMO/FGMO response is less than 50% (or as decided by Commission) The incentive collected from generator toward RGMO/FGMO response should be paid by generator liable for penalty under RGMO/FGMO. Unless such kind of stringent steps like proposed commercial mechanism & 1% RoE reduction are not imposed, generators will not be inclined to give desired RGMO/FGMO response.

Purpose of the Regulation14.4 is mainly to control over-drawal of DISCOM in real time. RGMO/FGMO is correlated to Spinning reserve, then as per Expert Committee report of Spinning Reserve it can be seen that RGMO or FGMO is primary response which should be automatic and which will immediately come into service through governor action of the generator in the event of sudden change in frequency. This reserve response shall start instantaneously and attain its peak in less than 30 seconds and shall sustain up to 5 minutes. Whereas spinning reserve which is required to be maintained as per Regulation is Tertiary reserve which needs to be activated by SLDC to control overdrawal of concerned DISCOM by picking up the said generation in which such spinning reserve is kept.

For hydro generation, during peak inflow, hydro generating stations may have to be scheduled to 110% of their capacity. Hence, the first proviso of 30.7 may be modified accordingly.

Tata Power has further submitted that FGMO operations, along with DSM have an inherent drawback. For example, if the frequency is 49.5 Hz (less than 50 Hz) & it is increasing at certain rate then FGMO mode drops the load. Hence, in this condition the FGMO operation will increase the under injection by the generating unit for which it will also be penalised. Whereas in RGMO if the frequency is less than 50 Hz only load pick up is allowed (load drop is not allowed). As above, it appears that the operation of generating units in FGMO mode will increase its DSM liabilities and may lead to instances where it may counter the DSM action. The Commission should also allow the operations in RGMO mode. Further it has requested that, presently it may not be possible for Unit 5 & 7 to go up to 105 / 110 % of its MCR rating due to them being old Units. Older Units should be exempted from the above. Also, in view of catastrophe of Unit 8 earlier, efforts are being made to restrict the loading to 100% of MCR rating. In view of the above, The Commission is requested to allow relaxation to operate Unit 5, 7 & 8 at or up to 100% of their Maximum Continuous Rating.

AEML has requested to include provision of backing down instructions that may be initiated by the buyer or the SLDC. Further, the schedules should be based on the average across the time block and not based on the value at which the generator will reach considering ramp rate. This is required to be defined, as the generators will be subjected to DSM Regulation deviations if not considered.

APML has submitted that, as per IEGC it is stipulated that instantaneously maximum up to 105% of their MCR is required to be picked up when frequency falls suddenly, and not up to 110 %.

CER-IITK has submitted that as per Regulation 30.6, generator requires instantaneous picking up of the generation to 105% and 110% in case the frequency falls suddenly. For operational clarity, 'sudden' fall of frequency should be specified. Further, generating units have technical ramp up limits (of 1-1.5% per minute) and hence 'instantaneous' ramping is infeasible. The near instantaneous ramping need can be implemented through fast response ancillary services, particularly battery storage, which are not economical now. The Commission may direct the SLDC to develop a commercial/market-based mechanism for intra-state ancillary services wherein flexibility associated with various system constituents can be appropriately priced. Development of a Demand Response Program that can also permit 'load curtailment' including

that at a shorter notice. For. e.g. agricultural cold storage facilities which can respond by immediate load curtailment for a duration of a few minutes without compromising their services.

26.2. Analysis and Commission's Decision

The operational frequency band is already specified in the Scheduling and Despatch Code. Frequency is the function of simultaneous behavior of generators and drawee entities in the InSTS and activities at regional/national grid. Various entities including Distribution Licensees need to follow the instructions of SLDC from time to time. In this context, Commission observes that many of the suggestions of the stakeholders which deal with operational aspects and improvements in overall performance in the best interest of grid management, grid security etc. should be deliberated as part of OCC/GCC review meetings and specific action points should be evolved through such deliberations for further implementation in timely manner. Further, it may be noted that financial, operational and technical performance of SLDC shall be scrutinized and governed as per MYT Regulations.

The Commission in its explanatory memorandum clause 4.9 has already discussed the directives of the CERC for implementation of AGC at national level. The Commission is well aware of the developments that are taking place at national level for large scale RE integration and flexibility of the thermal power plants. Further, the Commission is of the view that, for implementation of any framework, the preparedness of all entities is necessary. The Commission has introduced F&S framework and DSM framework which is in implementation stage and through this DSM framework, generators are being covered for the first time under DSM regime (earlier only merchant generators were covered). Further, the generation payment is also changed from actual basis to schedule basis through MYT Regulations.

The Commission vide this MEGC,2020, is introducing the Spinning reserves and moving from RGMO to FGMO. This will be useful for meeting the primary and secondary reserve requirement. The Commission would like to prefer taking calibrated and measured approach for introducing the frameworks Grid management including fast response Ancillary services as suggested by stakeholders. With regard to Tata Power's request to continue with RGMO, the Commission in its explanatory memorandum has already explained the necessity of shifting from RGMO to FGMO. The Expert Group constituted by CERC for review of IEGC has recommends that RGMO may be phased out and replaced with 'speed control with droop'. Further, the dead band of +/-0.03 Hz (ripple factor in IEGC) may be gradually phased out. The new draft Grid Code prepared by the expert committee also proposes free governor mode of operation (FGMO) for all generating units in the country in order to arrest sudden fall in the frequency in the event of a major grid disturbances.

The Commission is introducing the FGMO operation through MEGC, 2020. The Commission believes that, all stakeholders shall comply with provisions of the Regulations in letter and spirit. Further, there is provision of compliance monitoring under Regulation 70 of MEGC and the responsibility of compliance monitoring is also specified. The Commission is not inclined to specify any specific penal mechanism for non-compliance at this initial phase of implementation.

Regarding the issue of deviation by generator, the operation of governor is primarily for frequency stability and grid safety. The subsequent deviation of generator is settled under DSM framework. Further, the Commission in its DSM Regulations, has specified volume limit of 30MW to the generators for applicability of Additional DSM charges and generators will be payable or receivable depending upon the under injection or over injection and other parameters such as frequency.

The Commission in the MEGC has specified the mechanism for self-certification regarding compliance with governor mode of operation and submit it to the SLDC on monthly basis. The SLDC is expected to analyse the governor response submitted by generators as its routine work. Further, members of OCC may discuss such issues in the meetings.

With regard to comments on applicability of CEA's RE related Regulations, the CEA's Regulations are applicable to RE generators as well and hence it may not be required to specify all such provisions in these Regulations.

With regards to the suggestion of APML, the Commission has accepted the same and the Regulation is revised accordingly in line with IEGC 5th Amendment.

Regarding, sudden fall of frequency, for any fall in grid frequency, generation from the unit should increase as per generator drop up to a maximum of 5% of the generation subject to ceiling limit of 105% of the MCR of the unit having regard to machine capability.

26.3. Proposed in MEGC,2020

The Regulation 30.6 has been revised in MEGC, 2020 to be in-line with IEGC Regulations.

30.6 All coal/lignite based thermal generating unit s of 200 MW and above, Open Cycle Gas Turbine / Combined Cycle generating stations having gas turbines of more than 50 MW each and all hydro units of 25 MW and above operating at or up to 100% of their Maximum Continuous Rating (MCR) shall have the capability of (and shall not in any way be prevented from) instantaneously picking up to ***105% (coal), 105% (OGT/CCGT)*** *and* ***110% (Hydro)*** *of their MCR, respect lively, when the frequency falls suddenly.* ----------

27. Regulation 31: Declaration of date of Commercial operation of InSTS:

27.1. Comments received

MSEDCL has suggested to include Regulations regarding the Date of Commercial Operation and trial run procedure for RE generating stations. Regulation 31 should additionally provide Regulations regarding De-Commissioning procedures to facilitate retirement of generating units. It is suggested that in addition to this provision for COD declaration of RE generator should also be mentioned in the present grid code. On Similar Line, procedure for Declaration of COD of RE Generators should be made in the present State Grid code.

AEML has submitted that CoD should be specific with respect to asset commissioned by Transmission Licensees as the non-performance of one Transmission Licensee should not affect the CoD of the performing Licensee.

Tata Power submitted that the transmission system should also be prevented from regular service on or before the Scheduled COD for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned downstream distribution system of the Distribution Licensee. Therefore, Hon'ble Commission is requested to add distribution system in Regulation 31.3.1 (d).

27.2. Analysis and Commission's Decision

As regards commercial operation date for RE projects, the Commission is of the view that, the provisions of Competitive Bidding guidelines / RFP shall be applicable or if RE generator is developed under provisions of MERC RE Tariff Regulations, the provision of MERC RE Tariff Regulations shall be applicable.

The Role of RE generators specified in Regulation 8.7 includes responsibility of Users to provide compatible equipment along with an appropriate interface for uninterrupted communication with the concerned control centres at their own cost and Users shall be responsible for successful integration with the communication system provided by STU for data communication. STU / SLDC are expected to verify if Users have complied with the requirement of Communication network before connecting the User with InSTS Network.

With regard to de-commissioning of RE projects the appropriate guidelines of the Authority shall be applicable.

In case if the transmission project includes multiple activities by multiple licensees /stakeholders, there should be necessary co-ordination among the licensees involved in the project. The MEGC has specified the requirement of such co-ordination by MTC.

The Commission notes the comments of Tata Power and the provision of Regulation 31.4.1(d) is revised accordingly.

27.3. Proposed in MEGC,2020

Regulation 31.4.1(d) is revised to delete the reference of MERC MYT Regulations,2019.

31.4.1 (d)"In case a transmission system or an element thereof is prevented from regular service on or before the Scheduled COD for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system of other Transmission Licensee or ***downstream distribution system of distribution Licensee,*** *the Transmission Licensee shall approach the Commission through an appropriate application for approval of the COD of such transmission system or an element thereof."*

Provided that, the Transmission Licensee while executing the Transmission, System shall endeavour to match the construction schedule of the generator or downstream network as the case may be to avoid the idling of the assets.

Provided further that, in case of an existing Transmission Licensee, such request may be filed

under the provisions of the MYT Regulations;

28. Regulation32: Demonstration of DC of the Generating Units in the State:

28.1. Comments received

MSEDCL has suggested to add circumstances like variation in DC of generator who has declared its DC under fuel shortage or generator is continuously declaring higher DC on day ahead basis and revising same in real time operation by downward revision or frequent upward revision for the reason of improvement in coal quality and downward revision on poor coal quality or wet coal to ask generator to demonstrate DC. Further, the Regulations should also specify criteria for critical & supercritical coal stock, minimum water stock (sufficient in no. of days terms to run station) required to declare DC.

The re-demonstration of higher DC by generator should be next day only and with prior intimation to both SLDC & contracted Distribution Licensee at least 10-time blocks in advance. If InSGS generator re-demonstrates DC any time, it will affect power planning of Distribution Licensee and decision taken thereof and will also impact purchase of power or sale of power in market through RTM.

SLDC has submitted that during the demonstration period, the earlier schedule of the generating Unit under demonstration shall be replaced by the actual generation. The generator will submit the revised DC for remaining time blocks of the day after completing the DC demonstration. The detailed procedure in the Annexure may be revised accordingly. Clause 4.9 of Annexure 3 and proviso of Regulation 32.4 are contradictory. i.e. generator should not be allowed to re-demonstrate DC on the same day and DC should be capped to such value till the generator re-demonstrates the higher DC than the actual generation demonstrated during testing. Hence, clause 4.9 of Annexure-3 needs to be modified in line with the provisions of Regulation.

Prayas has submitted that the Regulation places a restriction on SLDC's discretion to ask generating units to demonstrate the maximum DC such that the SLDC cannot exercise this discretion more than once every quarter. The circumstances identified in draft Regulation 32.1 are indicative and not exhaustive which increases the need for the use of SLDC's discretionary power to call for demonstration of maximum DC. Given that seasonal variations also need to be factored, it is suggested that SLDC's discretionary power may be limited to once a month instead of once every quarter.

CER_IITK has submitted that, in case of failure of a generating unit to demonstrate its max DC, there should be a provision for reduction in Annual fuel Charges (AFC).

28.2. Analysis and Commission's Decision

The additional circumstances as proposed by MSEDCL may not be visible to SLDC for asking generator to demonstrate DC. The Distribution Licensee may exercise the provisions of Regulation 32.1.4 and request SLDC to instruct generator to demonstrate the DC.

With regard to restrictions on the SLDC's discretion to ask generator for DC demonstration, the proposed provision of the Regulations enables seeking DC demonstration on random occasion also. There are other circumstances listed in 32.1.1 to 32.1.4 wherein the generator may be required to demonstrate the DC more than once in a quarter.

The treatment to the annual fixed charges in case of failure of DC demonstration has been provided in the Regulation 32.3(a) of MEGC,2020.

The Commission accepts the suggestion of MSEDCL as regards prior initiation of 10-time block for re-demonstration of DC. The provision of Regulation 32.4 is revised accordingly to add the provision of 10-time blocks advance intimation.

The Commission accepts suggestion of SLDC. The provision of clause 4.9 of the Annexure 3 is revised in line with provision of the Regulation 32.4 of MEGC,2020. The word schedule in Regulation 32.1.1 to 32.1.3 are replaced with DC.

28.3. Proposed in MEGC,2020

The clause 32.1.1 to 32.1.3 has been revised in MEGC, 2020 as follows

*32.1.1. In case the **DC** by generator for a particular Unit during peak hours is lower than off-peak hours;*

*32.1.2. In case the **DC** for a particular generating unit during the low demand period during the year is higher than the **DC** during the high demand period during the year;*

*32.1.3. In case the variation in minimum and maximum **DC** by any generator for a particular generating unit during various time-blocks of the day is more than 30% of contracted capacity;*

The Clause 32.4 is revised in MEGC, 2020 as follows

***32.4** The generator which fails to demonstrate the DC shall require to re-demonstrate the DC for which it had failed to demonstrate with prior request to SLDC and concerned beneficiary **at least 10 time blocks in advance** as per the detailed procedure specified in Annexure-3 of these Regulations. The costs associated with re-demonstration of DC shall be borne by such Generator.*

Provided that, such generator shall not be allowed to request for re-demonstration of DC on the same day.

Provided further that the SLDC shall cap the DC of such generator to the actual generation demonstrated during test for the remaining time-blocks of that day or till such time the generator re-demonstrate the higher DC than the actual generation demonstrated during testing.

29. Regulation 33: Principles of Merit Order Despatch for Operation of InSGS Connected to InSTS:

29.1. Comments received

Rattan India Power Limited has submitted that the signed PPAs under S.63 of the EA,2003 are under Tariff Based Competitive Bidding (TBCB) route. As per PPA, terms of recovery of any change in law component will happen post approval from the Commission. MSEDCL has liberty to challenge the Commission's Order before higher authorities and courts without paying the same to the generators. The joint reading of the Clause 33.5, 33.6 and 33.10, suggests that RPL/IPPs will have to consider the impact of all change in law items for MOD without being sure of actual recovery from MSEDCL. This will doubly penalize the generator as it will lose its competitive position in the MOD stack and further delayed recovery from MSEDCL (actual recovery will happen only after change in law is approved by MERC and is admitted by MSEDCL). Ideally, the impact of only that change in law events for which the distribution company has admitted and paid after approval by the Commission ought to be considered for determination of Merit Order. Hence, it is requested to kindly modify the Clause 33.6 and 33.10 to consider the change in law items which are approved by the Commission and admitted by MSEDCL for payment.

Further, the present clauses are similar to the one incorporated in the draft as stipulated in MOD guidelines which is subjudice before APTEL (DFR NO. 1762 OF 2019 – APP v. MERC & Ors.). Hence, it is requested not to finalize the Grid Code till the matter is finalized by the APTEL. Also, it is requested to grant time of 30 days post judgement by APTEL, for submission of necessary suggestions/comments to MERC.

APML has submitted that the Merit Order preparation has to be on a uniform methodology across the country. Adoption of different approaches by various Commissions will lead to uneconomical power purchase when such non-uniform methodologies are followed by SLDCs and RLDCs. A generating station supplying power to more than one State will have two different Merit Orders stack. This approach of having different methodologies for preparing MOD stack is not justified particularly in the context of energy being accounted on dis-placement method in an integrated power system.

Further, the Draft Grid Code 2020 proposes the generator to project unit-wise Variable Charge for the next month. This is in complete deviation to the methodology being followed for the last 15 years and also not consistent with the methodology being followed at the regional level. Moreover, it is practically not possible to accurately estimate the projection of the Variable Charge for the next month by the Seller since it depends on many factors which are not in its control viz. extent of coal supply that would be available under the linkage, the demand-supply position of the Dis-com/Procurer and factors affecting the fuel cost etc. Without the information from the Discom/ Procurer as to what would be the schedule for the next month from each of the Units, the Seller cannot estimate or project the Variable Charge for the next month.

With regards to the issue of inclusion of impact of Change in Law there is no clarity as what exactly is proposed to be considered in the Merit Order stack. In our view the Commission shall consider the impact of Change in Law only to the extent being approved and being paid by the Procurer to the Seller.

It is further submitted that it is may not be appropriate for the Commission to undertake the process of notifying the Grid Code Regulations when the Merit Order Despatch (MOD) Guidelines (covered under the proposed Grid Code) are stayed and the matter is sub-judice before APTEL in Appeal No. 78 of 2020; more particularly when the Commission's Application dated 17.03.2020 for disposal of the Appeal is still pending before APTEL. It is humbly requested that the Commission should keep the process of notifying the Grid Code Regulations, 2020 in abeyance till the disposal of Appeal No. 78 of 2020 by APTEL. It is not out of place to request the Commission to take lead in the Forum of Regulators to ensure that a uniform Merit Order Despatch methodology is being followed in order to achieve the objective of the EA, 2003 of economic power purchase .

Even after any Change in Law event is approved by the appropriate Commission, the Discoms/Buyer does not make payment towards such Change in Law despite not being challenged in higher forum or if challenged, no stay being granted. Therefore, only those Change in Law events which have been paid / admitted for payment should be considered.

While the draft Grid Code proposes to consider projected variable charge for IPPs, it proposes to consider the FSA 'billed' for Mahagenco stations. Thus, the Commission proposes to adopt different approaches for IPPs and Mahagenco stations which is not permitted under the EA, 2003 and which issue is pending adjudication by APTEL in the Appeal No. 78 of 2020. It is not appropriate and fair for the Commission to get such contentious issues implemented indirectly through a different Regulation when the subject matter is subjudice. Further this provision is also contrary to the affidavit filed by the Commission in Appeal No. 78 of 2020 wherein it has undertaken to modify and issue revised guideline by addressing concerns raised in the said Appeal and/or rectifying the defects in Impugned MOD Guidelines. However, as seen from many provisions in draft Grid Code it is evident that the draft Grid Code is not in line with the Affidavit filed by the Commission in Appeal No.78 of 2020. In our view it is therefore necessary for the Commission to review and withdraw the draft Grid Code. Even after any Change in Law event is approved by the appropriate Commission, the Discoms/Buyer does not make payment towards such Change in Law despite not being challenged in higher forum or if challenged, no stay being granted. Therefore, only those Change in Law events which have been paid / admitted for payment should be considered for preparing the MOD Stack.

Further, the proposed provision of Regulation is not only arbitrary but the same is also beyond the scope of the Competitive Bidding Guidelines, which are statutory in nature. Section 63 PPAs provide a framework qua Change in Law. The proposed Regulation virtually amends the said Change in Law provision across the board for all the generating companies, without the consent of the parties seeking to modify the terms of the PPA, which is not in accordance with law as this negates the principle of restitution as provided in the Change in Law provision under

the PPA. Therefore, it is proposed that the said Proviso should be deleted.

Tata Power has submitted that the present practice of using (N-2) for preparation of MOD stack is now getting revised to (N-1) plus projection of any change in the variable cost due to change in the law of various authorities. The Commission should consider (N-1) for MOD. There should not be any projection part introduced in the variable cost for preparation of MOD as it can be misused for gaming. If at all there is any change in the variable cost due to change in law, it will get reflected in the corresponding month variable cost which will be also used for preparation of MOD of subsequent month. It has requested the Commission to consider the actual billed cost for either (N-1) or (N-2) for the preparation of MOD stack.

AEML has submitted that the generating plants performing better than the normative parameters generate efficiency gains and 2/3rd of this gain is passed on to the Distribution Licensees. The effective variable charge of these plants is therefore lower than what would be determined using normative performance parameters. For e.g. Efficiency gains passed on by DTPS is ~ 20 paise / kwh. If the MOD operation is undertaken only considering the variable charges based on normative parameters, then such efficient plants will be backed down and it is against all economic principles. The assessment of exact impact may be possible only when the detailed information is available. Also, it may be noted that it is bound to have some adjustments at the end of the year post final audit of all expenses. The Regulation should have provision of allowing variation up to +/-20%, as pass through in case of generating stations whose tariff is adopted by the Commission.

AEML has further submitted that (1) Distribution Licensees undertake MOD operation based on day ahead basis whereas during real time operations multiple stakeholders (SLDC, DL, Seller, RE Generators) keep on taking decisions, hence decisions should be verified based on Ex-ante basis (2) After the availability of bills by the generator, Distribution Licensees have a limited window within which they have to exercise due diligence on the cost claimed by the Sellers, as well as to account the same for FAC computations. Further, whether appropriate due diligence was exercised by the Buyers at such time is difficult to establish, as more information might have been available when the Commission undertakes prudence check, which may not have been available at the time of presentment of bill by the Seller. Therefore, to put onus of any lack of due diligence on the Buyers and to make them accountable for the same may not be reasonable. It is proposed that, at the time of true-up of power purchase cost of Buyers, the Commission should consider the adherence to MoD principles followed by Buyers on Ex-ante basis to ensure overall efficacy of the power procurement by Buyers. Further, the Variable Charges for MOD purposes should be provided up to three decimal places similar to provision of MERC MYT Regulations.

MSEDCL has submitted that, in case of Intra-State generator, it is proposed to consider projected variable cost in MoD and in case of ISGS, N-1month actual landed variable cost will be considered. It is not clear why different philosophy /Principle is applied for MoD principle. It is suggested that principle applied to both InSGS as well as ISGS should be same & same should be based on actual N-1month variable rate. If any generator fails to provide its variable

rate for N-1 within time frame i.e. before 14th of month, then any financial impact of account of such non communication needs to be pass on to the concerned generator only.

Further, it is requested that, SLDC should monitor & control individual Discom deviation as per decentralised MoD principle and only in the event of system exigencies case like grid parameters including frequency, voltage, transmission line loading, substation loading conditions or State volume limits (presently +/-250 MW) deviate beyond permissible operating range as specified in the Scheduling and Despatch Code, will operate system as per centralised MoD principle.

IEX has submitted that in the present power market scenario there is a strong case for consideration of Power Exchange prices for cost optimisation while framing Merit Order Despatch for next day as cheaper marginal cost generation is available at Power Exchanges as compared to variable cost of long term power. Whenever, Exchange prices are lower than the variable charge of long-term sources, there is huge potential to replace costlier power by sourcing power from the Power Exchanges. States like Gujarat, Madhya Pradesh, Bihar, Delhi, Rajasthan, Uttar Pradesh etc. are already optimising their power procurement cost utilizing Exchange platform.

The Commission has not considered Power Exchanges including Short term sources as source of power for optimizing cost which holds inevitable and significantly important place in the power procurement process in present scenario. The Commission is requested to formalize and introduce the optimization through Power Exchange by incorporating weekly Average IEX price in the Daily Merit Order Despatch (MOD). The weekly average will be less volatile than the daily average and will give a closer reflection of the market determined prices.

The above proposal will benefit the consumers of Maharashtra, and there is no probable instance of loss to the Distribution Company which may be incurred due to this proposal. In this process, the Discoms will identify high variable cost power plants to replace it with IEX power by bidding price lower than the variable cost of such plants. The Discom's bid will clear at the exchange, only when exchange price is equal to or less than the bid price. Further, in case the bid is not cleared, Discom will have enough time to schedule such quantum from its long-term generators.

CER-IITK has submitted that the Centralised Despatch to be prepared on an intra-day basis is akin to the intra-state SCED framework, which further optimizes cost of power procurement over all the buyers in the state. However, the resultant revision of the schedule and the associated energy charges, and the cost savings are to be shared in a transparent and fair manner. Further, the 'frequency' of centralized MOD preparation needs to be clarified. Ideally this should be at the beginning of each of 15-minute block. Practically, this can be done on a rolling basis for 5 blocks at a time. Apart from variable charges, a daily MOD stack should be prepared by SLDC for the day ahead scheduling purpose. This should be prepared on the basis of DC of the generating plants (and the buyer's share), buyer's demand profile, ramp up/down rate of generating units, transmission losses, and transmission constraints. Also, SLDC should also provide all technical parameters like capacity, ramping rates, technical minimum, start up

& down cost etc. for each generating unit through its portal. This would help researchers develop modelling solutions for Maharashtra's power system.

In pursuant to Hon'ble APTEL Judgement dated 4 June 2020 in Appeal No. 78 of 2020, Association of Power Producers (APP) vide its submission dated 19 June,2020 submitted that, if projected impact of change in law, which is yet to be approved by the Commission, is considered for inclusion in the MOD stack, it may result in uneconomical power purchase in the event the change in law is ultimately not approved by the Commission. It may also result in erroneous backing down of generating station and consequently result in poor performance and efficiency loss. Such a situation will violate the mandate given under the Electricity Act, 2003 that the power purchase has to be done on most economical basis. It is for this reason, in the draft State Grid Code the Commission also has rightly considered the actual FSA billed for generating stations whose tariff is determined by the Commission. The same principle needs to be followed for generating stations supplying power under competitive bidding also rather than considering projected costs. Further, as per RRAS Procedure notified by CERC on 21.11.2016 also the MOD stack at National level is prepared based on past billed energy charge and not the projected rates. The APP has suggested following revised provisions

33.5 For preparation of MoD Stack, seller whose tariff is determined by the Commission or seller whose tariff is adopted by the Commission shall intimate the unit wise variable charge for the month for which MoD is to be prepared.

33.6 The seller shall also submit to the buyer, all the computations and supporting documents considered for variable charge for the month

Provided that, the seller shall consider the variable charge approved/ adopted by the Commission and FSA billed during latest month/ impact of all the change in laws already approved by the Commission and billed during the latest month.

SLDC has submitted that the SLDC may have to operate De-Centralized MoD for particular Discom in case of major loss/addition of contracted resources before operating Centralized MoD. Further, it has requested that, the SLDC needs sufficient time for preparation of MoD stack and buyers need to submit the variable charge information to SLDC for preparation of MoD stack by 13th day of every month.

29.2. Analysis and Commission's Decision

The Commission has specified the principles of scheduling, energy accounting and deviation accounting under existing FBSM framework and DSM Regulations and Scheduling and Despatch (S&D) Code formulated thereunder. For Scheduling and Despatch of generators, merit order stack needs to be prepared. The principles of merit order of despatch needs to be laid down clearly in the interest of reliable, safe, economic dispatch of available generation capacity addressing concerns of all stakeholders – i.e. Buyers, Sellers, System Operators and consumers at large.

In this context, the Commission observes that several stakeholders have submitted their

objections, comments, suggestions on the MoD principles stipulated under Draft MEGC 2020, which essentially cover following aspects:

a. Premise for preparation of Merit Order stack including requirement of supporting documents to be clearly outlined.
b. Alignment of the principles/provisions in line with procedures, practices and Regulations prevalent at National/Regional level.
c. Uniform and non-discriminatory treatment amongst class of generators whether operating under competitive regime (S63) or under cost plus route (S62) including central sector/ISGS.
d. Chances of variation in settlement rate for actual payout vis-à-vis VC/EC considered for merit order stack to be minimized.
e. Scope and purpose of prudence check for regulatory approval for variances from MoD stack operation to be articulated to minimize risks for Sellers as well as Buyers.
f. Adherence to the guidance/ principles enunciated by Hon'ble ATE under its Judgment dt. 4 June 2020 in pursuance of the Appeal no. 78 of 2020.

In addition, the Commission has considered the provisions under Regulations, procedures and practices for energy accounting and settlement as followed for merit order operations in case of Reserve Regulatory Ancillary Service (RRAS) and Security Constrained Economic Dispatch (SCED) as operational at National/Regional level. The Commission has also taken note of the practices followed in other neighboring states and the rationale thereof, while stipulating principles for operationalizing merit order dispatch at the state level.

Further, in this context, it is worthwhile to refer to the observations made by the Hon'ble ATE while disposing of the appeal (Appeal no. 78 of 2020) filed by Association of Power Producers challenging the erstwhile MoD Guidelines. The relevant extract of the Hon'ble ATE Judgment dt. 04 June 2020 is as under:

"……

Before proceeding with the finalisation of the proposed amendments, the Respondent-Commission must hear and consider the objections raised by all the stake holders including the Appellant or its members. Apart from that, they shall consider the procedure, Practice Note or any Regulation or Rules which are binding on the State Commission, issued by the Central Authority like CERC, so that the amendment proposed by them is not in conflict with such procedure, Regulation or Practice Note.

In the light of the above observation, since the applicant/Commission has specifically undertaken at Para-6 of its affidavit dated 03.06.2020 that they will not implement the impugned guidelines, so also in due course of time, the guidelines have become unenforceable.

We are of the opinion that nothing remains for us to consider in the instant Appeal on merits. In other words, the course of action which arose for the present Appeal does not survive any more. In that view of the matter, the Appeal becomes infructuous and therefore, we are of the opinion, no purpose would be served by keeping the Appeal pending.

Accordingly, we pass the following order:

The Appeal is disposed of as infructuous. The Appellant-Association of Power Producers is at liberty to challenge the proposed amendment at the right time before the right forum. However, the Appellant is given two weeks' time to file objections if not yet filed, or additional objections if objections are already filed by them and the Respondent-Commission shall consider the same before proceeding with the final order on the draft proposed so far as the State Grid Code is concerned.

Consequently, pending IAs, if any, shall stand disposed of.

Thus, the Commission has taken into consideration the objections/suggestions/comments made by various stakeholders including that of APP (received through email on 19 June 2020). In the course of objections/suggestions/comments filed by objectors on Draft MEGC 2020 in respect of Regulation 33 outlining [Principles of Merit Order Operation], few objectors (incl. APP) has drawn attention to the affidavit filed by Commission before the Hon'ble ATE on 25 May 2019, in respect of then prevalent MoD Guidelines[1], relevant extract of which is reproduced as under:

1. *Considering the issues raised during arguments before Hon'ble Tribunal,* ***the Commission is in a process of suitably amending and/or revising 2.5(b) and 2.5(c) of the MoD Guidelines regarding the change-in-law impact.***

2. ***In the interregnum, the Commission has decided to seek permission of this Hon'ble Tribunal to implement the impugned MoD Guidelines subject to modification of 2.5(b) &2.5(c) to the effect that change-in-law impact will be taken into account for preparation of the MoD stack only after approval of the Commission of such impact as notified by the generator to the Distribution Licensee .***

3. *As regards the issue of reduction of the Technical Minimum and the compensation in lieu thereof, the Commission submits that it has initiated a process of devising the compensation mechanism in line with the compensation mechanism introduced by CERC vide its Order dated 5 May,2017…….*

As the references are made to Clause 2.5(b) and Clause 2.5(c) of then prevalent MoD Guidelines under dispute, it is important to place on record the provisions of Clause 2.5 (b) and Clause 2.5 (c) of said Guidelines, which are reproduced hereunder only for sake of ready reference. Further, the attention is also drawn to the fact that as per submission made under affidavit dt. 25 May 2019 which states that these clauses 2.5(b) and 2.5 (c) shall be suitably amended. Hence, it is important to clearly highlight how the principles for merit order dispatch now enunciated through MEGC (Regulation 33) are adhering to submissions made under affidavit dt 25 May 2019. Relevant extract of Clause 2.5 (b) and Clause 2.5 (c) of then prevalent MoD Guidelines under dispute are as under:

2.5(b) The impact of any Change in Law event for the event, which have been already approved by the Commission for a particular Generating Company, such as changes in taxes, levies, cess, procurement of coal from alternate sources to meet the shortfall in coal

[1] MoD Guidelines are infructuous and not in operation [ref. ATE Judgment dt. 04-Jun-2020]

from original envisaged source, etc, affecting the Energy Charge, should be submitted by the Generating Company to the Distribution Licensee within one month of its occurrence. For e.g., if the Commission has already approved the levy of clean environment cess as Change in Law event, any variation in clean environment Cess should be submitted by the Generating Company to the Distribution Licensee within one month from the date of notification towards such variation in clean environment cess. ***The Distribution Licensee should take into account such impact of Change in Law in the Variable Charge that it intimates to MSLDC for preparation of the MOD Stack. However, the payments for such Change in Law claims will be made by Distribution Licensee after the approval of the Commission in accordance with the provisions of PPA***.

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

Further, the stakeholders like APP, Ratan India, APML, Tata Power, AEML submitted that, the impact of only that change in law events for which the distribution company has admitted and paid after approval by the Commission ought to be considered for determination of Merit Order. The provision of Draft Regulations needs to be modified to consider the change in law items which are approved by the Commission and admitted by Distribution Licensee for payment.

The Commission has taken note of the submissions/objections made by the objectors and has accordingly modified the provisions under draft MEGC while addressing the concerns of Sellers (i.e. Generating companies) as well as taking note of the concerns expressed by Buyers (i.e. Distribution Licensees). The issue of compensation for part load operation up to technical minimum for thermal generating stations has been separately addressed through suitable modification to Regulation 34 of Draft MEGC to be consistent with the provisions stipulated under IEGC by Central Commission.

The Commission observes that as per Section 32 of the EA 2003 the SLDC has to ensure optimum scheduling and despatch of electricity within State, in accordance with the contract entered into by Distribution Licensees and Generating companies. Further, as per Section 86 (1) (h) and Section 61 of the EA 2003, the Commission is empowered to specify State Grid Code to be consistent with IEGC specified by Central Commission and while discharging its function the Commission shall be guided by factors that would encourage competition, efficiency, economical use of resources, good performance and optimum investments.

In view of above, the Commission is of the considered view that, the Variable Charge /Energy Charge considered for MoD stack preparation should be as close to Variable Charge /Energy

Charge considered for payment by buyer to the seller. If the difference is significant, the MoD considered for despatch would not be realistic least cost despatch of generating stations and economic despatch principle would not be adhered to in true sense.

In view of the above and considering the objections/suggestions received from stakeholders, the Commission has strived to strike balance between seemingly conflicting demands of Buyers & Sellers and accordingly revised the provisions of the Draft MEGC to address the concerns raised by all stakeholders. The Commission is proposing that, for preparation of MoD Stack, the seller whose tariff is determined by the Commission or seller whose tariff is adopted by the Commission shall consider following components while submitting the unit wise variable charge for the next monthly period[2] for which MoD is to be prepared:

a) Variable charge/Energy charge as per tariff/ PPA including FSA billed during previous or latest month as may be applicable,

b) impact of the claim for approved change of law,

and the seller shall submit the same to the buyer with whom it has PPA by 8th day of every month (Nth month) in the Format specified in the Regulations.

While submitting the VC/EC the seller shall consider the variable charge approved/adopted by the Commission and FSA billed during previous month [i.e. (N-1)th month] or latest month in case FSA for (N-1)th month is not available, and impact of claim towards change in law already approved by the Commission.

While submitting the information to buyer, the seller shall submit impact of both components separately alongwith supporting details. The supporting documents shall include amongst other things following:

a) Approved variable charge as per the tariff order including fuel surcharge for previous (N-1) month or Applicable Energy Charge as per PPA for previous month (N-1) month;

b) Landed Cost of Fuel/Bills for (N-1) month;

c) Supplementary Bills for (N-1) month;

d) All computations and supporting documents considered for computation of variable charge for the Nth month;

e) Other supporting documents in line with existing FAC guidelines.

The buyer shall scrutinize the variable charge/energy charge submitted by seller considering the supporting documents submitted by the seller alongwith computation of VC/EC. The buyer may request for additional supporting information, if required. The Commission is of the view that, the impact of both components separately submitted by the seller would provide likely impact on its power purchase cost during the Nth month and buyer may be able to take appropriate measures in advance to optimize its power purchase cost for Nth month. Upon detailed scrutiny, the buyer shall submit the following details to SLDC for the purpose of MoD

[2] Monthly period shall mean 16th day of Nth Month to 15th day of (N+1)th Month.

stack alongwith its consent:

a) variable charge/energy charge as per tariff/ PPA including FSA billed during previous or latest month as may be applicable,

b) impact of claim for approved change of law,

The buyer shall submit the scrutinized variable charge/energy charge to the SLDC for preparation of MoD stack by 13th day of every month (Nth month) with intimation to seller with whom it has PPA. The Variable Charge for MOD purposes shall be provided up to three decimal places.

The SLDC shall prepare the MoD Stack on the 15th day of every month (Nth month), which would be effective from the 16th day of the Nth month till the 15th day of the subsequent month unless revised by SLDC. SLDC shall upload the monthly MoD Stack on its website by 15:00 hours on the 15th day of every month (Nth month) in the prescribed format.

MoD Stack uploaded on the 15th of the month may be subsequently revised by SLDC during the monthly period in the following circumstances:

a) Commencement of supply of power by a generating unit under a new arrangement/bilateral agreement/Short term agreement in between period of preparation of MoD stack for the monthly period,

b) Revision of variable charges for preparing the MOD Stack due to Tariff Order issued by the Commission for state generating stations or by the Central Commission for central generating stations,

c) Impact of change in law in the PPAs as approved by the Commission.

Further, for central sector generating stations (CSGS), the variable charge for MOD purpose of Nth month shall be landed variable charge at the state periphery for the immediately preceding month (N-1), including the injection losses, drawal losses of CTU and other such charges like electricity duty/ cess of exporting state.

In case of claim for un-approved change of law, the Commission has also taken note of the concerns expressed by buyers (i.e. Distribution Licensees) that, chances of variation in settlement rate for actual pay out vis-à-vis VC/EC considered for merit order stack to be minimized. The Commission recognises that processing of claims towards change-in-law including regulatory approval thereof in time bound manner is in the best interest of all stakeholders viz. Sellers/Buyers and most importantly the consumers so that the actual despatch represents realistic merit order/economic operation and the claims towards carrying/(holding) cost on this count are minimised.

Accordingly, the Commission is of the view that, the Seller/Generating Company should file Petition for approval of its claims towards change in law within reasonable time period not exceeding period of one month from the date of its first occurrence with intimation to the concerned Buyer/Distribution Licensee. Buyer/Distribution Licensee shall submit its say on the same without delay and in any case not later than 15 days so as to facilitate expeditious disposal of the same upon due regulatory process.

In case, Seller/Generating Company does not file Petition seeking approval for the same within reasonable time period not exceeding one month from the date of its first occurrence for entitlement

of its claim, the Commission may take appropriate view, while approving the claim of Seller/Generating Company towards principal component of claim of change of law or its claim of carrying cost thereof or both**.**

Upon approval (if approved) by the Commission, the Seller/Generating Company shall consider the same as part of component (b) [viz. impact of claim towards approved change of law], for the purpose of preparation of MoD stack. The Seller/Buyer shall strive to incorporate the revision in the MoD stack preferably within seven days from the date of approval by the Commission or from next Monthly Period of MoD operation, whichever is earlier.

It is clarified that the claims towards further variation in rate of already approved change in law on account of statutory taxes, duties, levies, cess shall be deemed to be approved by the Commission unless otherwise disputed by either of the party (viz. Seller/Buyer). Such deemed approved component shall be considered as part of component (b) [viz. impact of claim towards approved change of law] for the purpose of Merit Order stack preparation and payment to the Seller/Generator.

Further, at the time of true-up of power purchase cost of buyers, the Commission shall consider the adherence to MoD principles followed by buyers to ensure overall efficacy of the power procurement by buyers. During truing up process, the buyer shall also submit the relevant documents to justify the deemed approval of change in law as specified in second proviso to Regulation 33.11 of MEGC, 2020.

Regarding concerns raised by stakeholders for delay in payment by Distribution Licensee, the MoP has introduced payment security mechanism for protecting the generator payment against scheduling. The generators are expected to be considered for scheduling if adequate payment security mechanism is submitted by the beneficiary, as per conditions stipulated under scheme for payment security mechanism outlined by MoP and subject to provisions of PPA.

As regards proposal in the draft MEGC to consider single part tariff of Intra-State Open Access transactions of Buyers/Distribution Licensees as variable cost for purpose of MOD stack operation, no objection or suggestion has been filed in the matter by any stakeholder. Further, the Commission is of the view that, treating a part of single part tariff at normative (or fixed) percentage as its variable cost for such intra-state open access transaction for the purpose of MoD stack preparation provides unfair advantage to such short term intra-state open access Sellers vis-à-vis those Sellers/Generating Companies operating under long term/medium term contract with two part tariff arrangement. Hence, the Commission has retained the provisions as covered under draft MEGC.

With regard to submission of IITK, the Security Constraint Economic Despatch (SCED) framework is thin layer of optimisation on top of the day ahead scheduling & intra-day revisions after gate closure. The SCED framework at national level is in pilot stage and Central Commission has introduced the SECD framework through separate Order, where operation of SCED pilot is extended till March 2021. The Commission has introduced the DSM framework and it is in implementation stage. The introduction of multiple frameworks simultaneously may increase the complexity of implementation and preparedness of all stakeholders needs to be ascertained incl. readiness for trial operations prior to its introduction. MERC DSM

Regulations and scheduling and Despatch code specifies the conditions under which MSLDC is expected to operate centralised MoD.

With regard to SCADA visibility, the Commission in DSM Procedure and Scheduling and Despatch Code has specified the requirement of SCADA for real time visibility for operation of the Grid. The STU is responsible for maintaining SCADA system for real time data availability at SLDC. The Commission in its Statement of Reasons (SOR) to DSM Regulations has dealt the issue of SCADA visibility and preparedness for DSM implementation. The Commission has also directed the Working Group constituted for implementation of DSM framework to ascertain the preparedness of SCADA Visibility. Further, the principles of De-centralised operation and centralised operation are specified the scheduling and despatch code which are finalised by the Commission upon due stakeholder consultation.

With regard to comments of MSEDCL and IEX, the provisions of MERC DSM Regulations specify that day ahead Scheduling, shall be as per De-Centralised MoD Stack considering the PPAs/contracted/scheduled capacity by the concerned Distribution Licensee. The generator specific information, such as ramp rate will be considered by SLDC while preparing schedule of the generator. Transmission constraints are separately considered in scheduling and despatch code. The Commission has already specified the data formats and report formats to be published by SLDC under Scheduling and Despatch code.

Further, the existing scheduling and despatch code considers power procured from market as well. The Distribution Licensees and other Buyers are free to participate in power exchange transactions. The details of collective transactions are received by SLDC, which SLDC considers while finalizing the day ahead schedule for Buyers/Sellers.

MoD principle considers the least cost generation for Despatch as per load generation balance finalized on day ahead basis. Further, MoD stack shall be prepared on monthly basis (16^{th} Day of month to 15^{th} day of next month) and not on daily basis, as of now. variable charge for MOD purposes shall be provided up to three decimal places. Further, revision in frequency of MoD stack preparation can be considered at later date upon gaining operational experience and upon careful consideration of associated factors and upon following due stakeholder consultation process.

The Commission is of the view that, with commencement of Real Time Market, the Distribution Licensees in the State would be able to optimise their power purchase cost during intra-day operation as well. The proposed MoD principles does not restrict any market transaction as can be undertaken by the Distribution Licensees to optimise their power purchase cost.

Further, the Commission clarifies that, the process of merit order stack preparation specified in the MEGC,2020 shall also be applicable for preparation of MoD stack under existing FBSM framework subject to operational governing principles and commercial settlement mechanism under FBSM regime. The Commission is of the view that, transitory period will be required to be provided to all the stakeholders for implementation of the principles of MoD stack preparation specified in these Regulations. The Commission proposes to provide transitory period of at least one month from the date of notification of these regulations for preparedness

of all stakeholders. The Commission shall separately notify the date of implementation of principles for merit order stack specified under these Regulations.

29.3. Proposed in MEGC,2020

33.1. SLDC is responsible for coordinating the scheduling of buyers and sellers within its control area. SLDC shall also be responsible for preparation of Merit Order (MOD) stack for day ahead scheduling for each month considering the principles specified in these Regulations and least cost despatch principles.

33.2. For preparation of MoD Stack to be operational for the monthly period, the seller whose tariff is determined by the Commission or seller whose tariff is adopted by the Commission shall consider following components while submitting the unit wise variable charge or energy charge for the next monthly period[3] for which MoD is to be prepared:

a) variable charge/energy charge as per tariff Order/ PPA including FSA billed during previous or latest month as may be applicable,

b) impact of the claim for approved change of law,

Provided that Seller shall submit the same to the buyer with whom it has PPA by 8th day of every month (Nth month) in the Format- 5S enclosed as Annexure -8.1 to these Regulations.

Provided further that, the seller shall consider the variable charge approved/adopted by the Commission and FSA billed during previous month [i.e. (N-1)th month] or latest month in case FSA for (N-1)th month is not available, and also consider the impact of claim towards change in law already approved by the Commission.

Provided further that, seller shall consider the impact of both components on the VC/EC separately and submit to the buyer alongwith following supporting details:

a) Approved variable charge as per the tariff order including fuel surcharge for previous (N-1) month or Applicable Energy Charge as per PPA for previous month (N-1) month;

b) Landed Cost of Fuel/Bills for (N-1) month;

c) Supplementary Bills for (N-1) month;

d) All computations and supporting documents considered for computation of variable charge for the Nth month.

f) Other supporting documents in line with existing FAC guidelines.

33.3. Buyer shall scrutinize the variable charge/energy charge submitted by seller. The buyer may request for additional supporting information if required. Upon detailed scrutiny, the buyer shall submit the following details to SLDC for the purpose of MoD stack

[3] Monthly period shall mean 16th day of Nth Month to 15th day of (N+1)th Month.

alongwith its consent:

a) variable charge/energy charge as per tariff Order/ PPA including FSA billed during previous or latest month as may be applicable,

b) impact of claim for approved change of law,

33.4. Buyer shall submit the scrutinised variable charge/energy charge to the SLDC for preparation of MoD stack by 13th day of every month (Nth month) with intimation to seller with whom it has PPA in the Format- 5B enclosed as Annexure-8.1 to these regulations.

33.5. For central sector generating stations (CSGS), the variable charge for MOD purpose shall be landed variable charge at the state periphery for the immediately preceding month (N-1), including the injection losses, drawal losses of CTU and other such charges like electricity duty cess of exporting state.

33.6. For Intra-State Open Access transactions having single part tariff, total tariff shall be considered as variable charge for MOD purpose.

33.7. Variable charge for MOD purposes shall be provided up to three decimal places.

33.8. SLDC shall prepare the MoD Stack on the 15th day of every month (Nth month), which would be effective from the 16th day of the Nth month till the 15th day of the subsequent month [i.e.(N+1)th month] unless revised by SLDC. SLDC shall upload the monthly MoD Stack on its website by 15:00 hours on the 15th day of every month (Nth month) in the Format- 5B and Format-6B enclosed as Annexure -8.1 and Annexure-8.2 to these Regulations.

33.9. MoD Stack uploaded on the 15th of the month may be subsequently revised by SLDC in the following circumstances:

a) Commencement of supply of power by a generating unit under a new arrangement/bilateral agreement/Short term agreement in between period of MoD operation,

b) Revision of variable charges for preparing the MOD Stack due to Tariff Order issued by the Commission for state generating stations or by the Central Commission for central generating stations,

c) Impact of change in law in the PPAs as approved by the Commission.

33.10. In case of claim for un-approved change of law, the Seller/Generating Company shall file Petition before the Commission with its claim for un-approved change of law for purpose of incorporation in the merit order stack within reasonable time period not exceeding period of one month from the date of its first occurrence with intimation to the concerned Buyer/Distribution Licensee, failing which the Commission may take appropriate view, while approving the claim of Seller/Generating Company towards principal component of claim of change of law or its claim of carrying cost thereof or both.

33.11. Buyer/Distribution Licensee shall submit its say on such Petitions in timely manner but not

later than 15 days from filing of Petition to facilitate expeditious disposal of the same upon due regulatory process.

Provided that, upon approval (if approved) by the Commission, the Seller/Generating Company shall consider the same as part of component (b)[viz. impact of claim towards approved change of law], for the purpose of preparation of MoD stack subject to condition that the Seller/Buyer shall strive to incorporate the revision in the MoD stack preferably within seven days from the date of approval by the Commission or from next Monthly Period of MoD operation, whichever is earlier.

Provided further that, claims towards further variation in rate of already approved change in law on account of statutory taxes, duties, levies, cess shall be deemed to be approved by the Commission unless otherwise disputed by either of the party (viz. Seller/Buyer). Such deemed approved component shall be considered as part of component (b) [viz. impact of claim towards approved change of law] for the purpose of Merit Order stack preparation and payment to the Seller/Generator.

Provided also that, the Buyer/Distribution Licensee shall be vigilant and shall inform the SLDC in writing so as to ensure that such deemed approved claim is included for the purpose of Merit Order stack preparation and payment to Seller/Generator.

33.12 At the time of true-up of power purchase cost of buyers, the Commission shall consider the adherence to MoD principles followed by buyers to ensure overall efficacy of the power procurement by buyers. During truing up process, the buyer shall also submit the relevant documents to justify the deemed approval of change in law as specified in second proviso to Regulation 33.11of MEGC,2020.

33.13 The process of merit order stack preparation specified in Regulation 33 shall also be applicable for preparation of MoD stack under FBSM framework subject to operational governing principles and commercial settlement mechanism under FBSM regime.

Provided that transitory period of at least one month from the date of notification of these Regulations shall be provided to all the stakeholders for implementation of the principles of MoD stack preparation specified in these Regulations. The Commission shall separately notify the date of operationalisation of principles for merit order stack as specified under these Regulations.

30. Regulation 34: Technical Minimum Schedule for Operation of InSGS Connected to InSTS:

30.1. Comments received

SLDC has submitted that, the Technical Minimum capacity has to be 55 % of Full load Ex-Bus capacity corresponding to MCR loading or Installed capacity. The draft Regulations need to be revised accordingly.

MSEDCL has submitted that, although it is mentioned at second para that no compensation

for SHR degradation or increase in AEC shall be payable if the AUL for the generating station for the computation period works out to be more than or equal to 70%, but in subsequent tables compensation for Heat rate as well as AEC even between 85 to 75 % loading is given. Hence correction is needed in the said table., wherein for Unit loading between 75 to 85% should be considered as NIL.

As per latest CEA flexibilization of power plants report, generating stations are being tested for technical minimum at 40%. MERC may similarly encourage operation of thermal power plants at 40% technical minimum**.**

At present there is no compensation mechanism for part loading up to 70% of MCR loading. Hence if any generator submits its inability for compliance with this Regulation, the compensation for part loading of such generators should not be worked out as per methodology finalised in annexure -4 of this state Grid Code.

Presently, Uran Gas station and TPC Unit -7A & 7B are Gas based Thermal Station. Although both stations are listed in MoD stack but during real time operation both stations are not subject to Backdown from SLDC. However lower Gas availability, Average unit loading of these stations may go below 70% during the month. The DISCOM are no way responsible for such less average loading. Hence it is requested that Compensation for gas station should not be worked out till these stations are operated at 55% Technical Minimum by SLDC as per MOD principle of operation.

If it is assumed that, there are two units where Average unit loading worked out as 64% and other as 55%. Then as per table mentioned in clause 34.3 (a), compensation will be 6 % for both units assuming both units are sub-critical units. This method doesn't look appropriate. Hence it is requested to consider the methodology proposed by the expert committee in its report for Review of IEGC. It can be seen that there is large difference in compensation for SHR degradation. In view of the above, it is suggested to adopt above methodology to compute SHR for AUL falling between range of SHR

Further, the compensation to Thermal Unit due to operation under centralised MoD principle from SLDC should also be calculated and same should be paid from state DSM pool. At regional level, NLDC is implementing "Security Constraint Economic Dispatch (SCED)" wherein National level MoD principle is used for rescheduling of generator to optimise cost of generation. In the said concept also, compensation to generator due to part loading is worked out & payment is made from SCED pool. At present at regional level, there is no provision for computation of compensation due to part loading in respect of generator providing power under Short term either through bilateral or collective transaction. It is suggested that at State Level also, such generator shall be excluded. Some of reasons for exclusion are as under

1. Merchant generator is expected to bid considering all market & operating threats like lower scheduling than contracted.
2. Under standard document for STOA Purchase by PFC, there is provision of penalty in case total take from generator is less than 85%.
3. If there is no sufficient schedule to merchant generator to meet its Technical Minimum,

generator takes out unit from grid. If this is considered as Zero schedule (as DISCOM schedule become zero after lapse of contract period), then DISCOM will also be required to pay compensation to merchant generator, which is not actual zero schedule given by discom.

4. At present, mechanism of compensation for part loading at central level , although it is mentioned that said mechanism is also applicable in respect of generator whose tariff is not determined by CERC but there is no clarity whether to give compensation to generator having PPA under Long term, / medium term(where fix cost is part of tariff) or generator having PPA under Short term is also eligible. There are many LTA/MTOA whose tariff is not determined by CERC, like in case of Maharashtra GMR Warora (EMCO)but scheduling is from RLDC. Now as per this mechanism also, said generator is not covered as it is not InSTS connected generator. The said generator at present is not following ISGS provision of 55% Technical Minimum.

APML has submitted that the CERC Order dated 05.05.2017 specifies the mechanism for compensation due to Part Load Operation. Para 4.1 (vi) of Order specifies that no compensation will be provided if AUL is more than 85%. However, the Commission in these Regulations has proposed that no compensation will be allowed for AUL above 70% which is incongruent and contrary to the provisions of Section 61 of the EA, 2003 which specifies that SERCs shall follow the CERC while framing Guidelines/Regulations etc.

Further, CERC on 28.5.2019 constituted an Expert Group to review “Indian Electricity Grid Code and other related issues” wherein all stakeholders including IPPs have made detailed submissions with regard to the need for 15 minute time-block wise compensation for part load operation of generating units. It is also relevant to submit that similar suggestions/comments were submitted to SLDC/Maharashtra also that the compensation for partial load operation has to be computed on 15-time block basis.

Tata Power has submitted that it provides for no compensation for SHR degradation or increase in AEC if Average Unit Loading (AUL) works out to be more than or equal to 70%. Similar dispensation is made by CERC in - "Approval of the detailed procedure for taking unit(s) under Reserve Shut Down and Mechanism for Compensation for Degradation of Heat Rate, Aux Compensation and Secondary Fuel Consumption, due to Part Load Operation and Multiple Start/Stop of Units - with AUL more than or equal to 85%. 85% is the Normative Availability Factor for coal-based power stations in CERC Tariff Regulations, 2019 Similar dispensation should be made available here. Hence, 70% has to be replaced by 85% [Target Availability in MYT Regulations, 2019] everywhere.

AEML has submitted that, Compensation for degradation of Heat Rate (SHR) and Auxiliary Energy Consumption (AEC) needs to be considered based on existing time Block of 15 Min basis instead of averaging at the end of month and finally at the end of year since any loss in a given time block is already incurred by the Generator and shall not be offset by better operation of the plant in subsequent time blocks. The Compensation is the consideration which is to be paid to the Generator for something which has been lost which is required to be measured on

time block basis since the operations at low load will be given on time block basis and not on cumulative basis for entire year, hence, it is imperative that performance is measured and compensated on time block basis only. Further, it appears to be typographical error since Regulation 34.30 (a) & (b) provides for compensation for degradation in SHR & Aux. consumption is not allowed beyond 85% loading. Further, it may be noted that the Hon'ble CERC has prescribed that no compensation shall be provided if AUL is more than or equal to 85%. Further, all the target performance parameters have been allowed at normative loading factor of 85%. if the intention is to restrict compensation after 70% AUL, it is requested to the Hon'ble Commission that norms such as SHR, AUX. & Specific Oil consumption shall also be revised considering 70% loading factor.

MSLDC has submitted that there is no compensation for SHR degradation or increase in AEC is applicable between 70 % to 85%, however table given in proviso a) of 34.3 provides figures for degradation of SHR for computation of compensation above 70% capacity. The table may be corrected accordingly.

Prayas has submitted that the draft Regulation 34.3 specifies that plants which operate below normative plant availability factor, but above technical minimum will be provided with compensation for part loading. Regulation 34.3 (f) states that the compensation computed should be borne by the entity that caused the plant to operate at normative availability. Such attribution could be challenging for plants which have multiple buyers. This would especially be the case for IPPs contracted by MSEDCL and Mumbai utilities. As multiple factors are at play including variation in demand, MEGC should also specify the formulation of a mechanism for attribution of the compensation payment. Given the multiple issues and extent of part load operation, the Commission should clarify that the details of the compensation for part loading should be reported separately in filings for fuel surcharge approval and in tariff filings of the generators and the contracting distribution utility to ensure clarity in the contribution of such compensation.

Association of Power producers vide their submission dated 19 June,2020 has submitted that the Commission is required to follow the CERC grid code provisions in terms of Section 86(1)(h) of the Electricity Act. The Hon'ble Supreme Court also has held this in its Judgment in Central Power Distribution Co. v. Central Electricity Regulatory Commission [(2007) 8 SCC 197]. The relevant extract of the said judgment is reproduced below:

*"(17) ……**It also provides that the function of the State Commission to specify State Grid Code under Section 86(1)(f) should be consistent with the Grid Code specified by the Central Commission and therefore the power of the State Commission is subservient to the power of the Central Commission.**"*

The CERC Mechanism for Compensation under the IEGC specifies that no compensation will be provided if Average Unit Loading is more than 85%. However, the proposed mechanism in the MEGC,2020 specifies that no compensation would be paid if the Average Unit Loading is more than 70%. Therefore, in view of Section 86 (1) (h) and the Hon'ble SC judgment, it is requested to revise the provision in MEGC,2020 to revise the trigger level for compensation to 85% instead of 70%.

30.2. Analysis and Commission's Decision

The condition of technical minimum of 70% for intra-state generating stations has been under operation for some time. The state generating stations, if operated at technical minimum of 55% as per the requirement of the system, the necessary flexibility will be available with SLDC for addressing the variability of upcoming RE generation. Accordingly, the Commission in its MEGC,2020 proposed to provide compensation when InSGS operated below 70%, in line with the existing practice in the state.

As regards technical feasibility of operations of thermal power plants below 70%, the Commission observes the pilot studies of flexible thermal power operations, recommendations/observations of the Expert Committee for review of IEGC, deliberations during FOR/technical committee meetings on the subject and acknowledges the need and feasibility of stipulating technical minimum below 70%. The Commission also recognises that it is necessary to ensure flexible operations of thermal power plants in light of changing dynamics of grid operations with increasing level of penetration of variable renewable energy resources and with changing pattern of demand with integration of distributed renewable resources and varying pattern of load shape. The Commission also recognises the need to allow for suitable compensation for such cyclic operations of thermal power plants up to technical minimum.

In this context, the Commission had filed its submission before the Hon'ble Tribunal on 25 May,2019 wherein, the Commission had mentioned that, it had initiated a process of devising the compensation mechanism in line with the compensation mechanism introduced by CERC vide its Order dated 5 May,2017. The CERC in its mechanism has provided the compensation for part load operation below 85%. The mechanism specified by the CERC considers that, there is an increase in heat rate and auxiliary consumption for part load below 85%. Considering the provisions of the CERC compensation framework, the Commission finds it appropriate to align the conditions for operationalising technical minimum and other associated conditions including compensation mechanism with CERC framework. Accordingly, the Commission is revising the provision of the MEGC and allowing the compensation for part load operation below 85% in line with CERC compensation framework.

Further, regarding computation of compensation on time block basis, the Commission has adopted the CERC's framework for specifying the compensation mechanism. The CERC's compensation mechanism also computes the compensation on monthly basis and not on time block basis. The compensation for technical minimum below 85% shall be calculated unit-wise. The Unit-wise loading shall be considered for computation of compensation in line with CERC framework.

With Regard to Gas based generators, the compensation shall be decided based on the characteristic curve provided by the manufacturer and after prudence check of actual operating parameters of Station Heat Rate, Auxiliary Energy Consumption, etc. Further, the Regulations specify that, the InSGS, who will be directed by SLDC to operate below normative plant availability factor but at or above technical minimum, shall be compensated. The gas-based

generators if operating below 85% on its own due to lower gas availability, the same shall not be considered for compensation as it is not as per the instructions of MSLDC.

Further, the centralised MoD operation of generators will be in the specific cases only as specified in the DSM Regulations and procedure. it will not be appropriate to calculate separate compensation for reduction of Technical Minimum under centralised MoD operation at this stage, which is envisaged for limited duration under specific grid conditions unlike that considered under SCED operation for optimized dispatch at national level.

Further, with regards to Prayas's submission, for computation of compensation for generator supplying power to multiple utilities, the compensation shall be calculated as per the same mechanism specified in the Regulations and its Annexures, and the total charges computed shall be allocated among the beneficiaries of the generator in proportion to their implemented schedule for that period. The Generators shall maintain separate account for the claims submitted to beneficiaries for operation of Unit below 85% as per the instructions of SLDC. Such information and details shall also be submitted while submitting the FAC claims to the Commission for approval and also during tariff filing process.

With regard to operation below 55%, the SLDC is not expected to instruct the generator to operate below 55%. The option of operating below technical minimum (55%) or go for Reserve Shut down (RSD) is left with generator only. The option of RSD with generator is only in case schedule goes below technical minimum level.

The Regulation 34.4 of MEGC, specifies that, in case of a generating station whose tariff is neither determined nor adopted by the Commission, the concerned generating company shall have to factor the above provisions in the PPAs entered for sale of power to claim the compensation for operating at the technical minimum schedule. Accordingly, the proposed compensation framework shall be applicable only for the generators whose PPAs have such provision of compensation to be paid by beneficiary.

With regard to SLDC's submission for consideration of Auxiliary Consumption in computation of technical minimum, the definition of technical minimum as specified in the IEGC, considers the deduction of normative auxiliary energy consumption while calculating technical minimum capacity of TPS. Accordingly, the definition of the technical minimum is added in the final Regulations in line with IEGC.

Reference of MYT Regulations,2019 is already specified in the detailed mechanism for computation of compensation provided as Annexure -4 of MEGC.

Further, the Commission clarifies that, the applicability of the provisions of Technical Minimum at 55% as specified in these Regulations shall also be applicable under existing FBSM framework subject to operational governing principles and commercial settlement mechanism under FBSM regime. The Commission is of the view that transitory period will be required to be provided to all stakeholders for implementation of the provisions of Technical Minimum at 55% specified in these Regulations. The Commission proposes to provide transitory period of at least one month from the date of notification for preparedness of all stakeholders. The Commission shall separately notify the date of implementation of provisions of Technical Minimum at 55% specified under these Regulations.

30.3. Proposed in MEGC,2020

Definition of Technical Minimum is added in the final Regulations.

100)"Technical Minimum" for operation in respect of a unit(s) of a Thermal Generating Station shall be 55% of Maximum Continuous Rating or MCR loading or installed capacity of the units on bar at the generating station after deducting the normative Auxiliary Energy Consumption plus Auxiliary Energy Consumption compensation ***as per the provisions of the MEGC2020.***

34.2 InSGS may be directed by SLDC to operate its unit(s) at or above the technical minimum but below the normative plant availability factor on account of grid security or due to the fewer schedules given by the buyer.

Provided that, for computation of compensation for generator supplying power to multiple buyers, the compensation shall be calculated as per the same mechanism specified in these regulations and its Annexures-4, and the total charges computed shall be allocated among the buyers of the generator in proportion to their implemented schedule for that period.

Provided further that, the generators shall maintain separate account for the claims submitted to buyers for operation of Unit below 85% as per the instructions of SLDC. Such information and details shall be also submitted to the Commission while submitting the FAC claims to the Commission for approval and during tariff filing process.

34.3. InSGS, whose tariff is either determined or adopted by the Commission, will be directed by SLDC to operate below normative plant availability factor but at or above technical minimum, shall be compensated depending on the Average Unit Loading (AUL) duly taking into account the forced outages, planned outages, PLF, generation at generator terminal, energy sent out ex-bus, number of start-stop, secondary fuel oil consumption and auxiliary energy consumption, in due consideration of actual and normative operating parameters of station heat rate, auxiliary energy consumption and secondary fuel oil consumption etc. on monthly basis duly supported by relevant data verified by SLDC.

Provided that no compensation for SHR degradation or increase in AEC shall be payable if the AUL for the generating station for the computation period works out to be more than or equal to 85%.

34.7 The provisions of Technical Minimum at 55% specified in Regulation 34 shall also be applicable under FBSM framework subject to operational governing principles and commercial settlement mechanism under FBSM regime.

Provided that transitory period of at least one month from the date of notification of these Regulations shall be provided to all the stakeholders for implementation of the provisions of Technical Minimum at 55% specified in these Regulations. The Commission shall separately notify the date of operationalisation of provisions of Technical Minimum at 55% as specified under these Regulations.

31. Regulation 35 and 36: Guidelines for 'Zero Schedule' /RSD for InSGS Connected to InSTS:

31.1. Comments received

MSEDCL has submitted that this Regulation 35 is guideline which should not be treated as Regulation. Due to increasing RE and corresponding must run status, there will be increased instances of backing down. Discoms should not be made liable to bear the costs on account of such backing down. Discoms have to demonstrate resource adequacy for all time blocks. Owing to high RE, discoms will have to enter into PPAs to ensure optimal generation mix. Thus, any implication of zero scheduling without backing down will only increase the financial burden on the discoms. Further, it may not be possible for Distribution Licensee to give prior notice of 24 hours as revision of schedules is allowed upto 4-time blocks before the actual delivery. The generator should have an uptime of 8 hours to come on bar for necessary flexibility. As per CEA construction standards, thermal generators should be capable of load cycling and two shift operations.

The zero schedule is presently being implemented by MSEDCL only. The main reason is huge variation in peak demand & minimum demand on hourly basis as well as seasonal basis. There is difference of more than 50% between minimum & Maximum demand. Moreover, there is seasonal variation in Wind & Solar generation. The present contracted capacity which is under MOD is 20750 MW & with 70% technical minimum, MSEDCL can achieve about 14,500MW minimum demand. Hence when demand falls below 14,500MW, unless Units are taken out from bar, it will not be possible to meet minimum demand to extent of 9000MW or so. Discom in order to make economic Load generation balance as well to optimise power purchase cost, needs to take units under zero schedule. The decision of zero scheduling not only depends on forecasted demand and forecasted availability from RE like Wind & Solar but also depends on many other factors such as, expected rate of power from Market (which depends on demand & supply of power in Market) availability from conventional generator tie up under long term, medium term as well short term, congestion etc. These parameters may affect decision taken for zero scheduling on any odd day but as decisions are continuously monitored, corrective action is initiated on daily basis.

Further, in some cases, the Distribution Licensee may not be able to implement the zero schedule to specific generating unit due to transmission constraints. Such transmission constraints may limit the benefits on power purchase cost of Distribution Licensee. It is suggested that, the Commission should specify Standard of Performance to transmission Licensee & penalty for failure to take corrective action on concerned Transmission Licensee.

MSEDCL is presently giving intimation of zero schedule with notice of 8 hrs. as per RSD procedure at Regional level approved by CERC. From the provisions of regional procedure, it can be seen that for day ahead scheduling generator needs to take out unit for next day after intimation from RLDC at 21:00 Hrs. For real time scheduling no specific time is given but being schedule is less than technical minimum, generator withdraw unit under RSD as early as is technically possible. Further it is also mentioned that once any unit is taken under RSD, generator will specify period for which it will remain under RSD & the said unit can be revived any time after 8 Hours. Hence it is suggested that present timeline of 8 hrs. intimation should

be continued.

Regarding, recalling generator on bar, MSEDCL has submitted that, the decision of zero schedule is taken based on demand forecast & expected availability from available sources. Hence in case 72 hrs. intimation is given and due to sudden change in weather, demand drops than forecasted of D-3 basis or More than expected RE generation, then decision of revival of units will not be correct. If there is restriction of 72Hrs in bringing unit on bar from zero schedule, Distribution Licensee may require purchasing power from Market in case outage of large capacity unit like 660MW or force outage of multiple units within 72 Hrs. Further at regional level, there is approved procedure of the CERC for taking unit under RSD. There is specific time for revival under different condition of start like hot start, cold start & Warm start. The said time varies from 6 hours to 24 hours under various conditions. It is suggested that, instead of making intimation time as 72 hours, it should be kept as 8 hours which MSEDCL informed to generator and generator normally brings unit. Otherwise procedure in line with Regional level shall be framed.

MSEDCL has submitted that in case of compensation due to frequent start stop, there is provision in Regional level RSD compensation mechanism that cost of secondary oil required for start-up after 7 RSD start/stop operation should be borne by concerned generator. In line with the same, if Discom gives zero schedule instruction to any unit during a year that involves more than 7 start /stop operation, then pass through of such expenditure should not be allowed. In all other case, pass through should be allowed as RSD/Zero schedule is being implemented by DISCOM as a cost optimisation methodology & most economic Load generation balance.

Further, no maintenance activities on unit under RSD should be undertaken by the generating station so that the RSD unit is always readily available for revival/synchronization. If a generating station requires maintenance on any machine under RSD, then the same should be done in due consultation with SLDC & DISCOM. The DC shall be reduced appropriately. In case the machine is not revived as per the revival time declared by the generating station under different types of start, the machine shall be treated under outage for the duration starting from the likely revival time and the actual revival time. SLDC shall ensure that intimation is sent to the generating station sufficiently in advance keeping in view its start-up time. DC of unit going under Zero schedule will be average DC of last 24 Hours prior to zero scheduling as in absence on any regulatory provision, generator are declaring maximum Ex-bus generation during zero schedule, irrespective whether such DC is achieved by said generator at least once in a last 24 Hours.

TATA Power has submitted that the guidelines for Zero Schedule for InSGS connected to InSTS includes commercial settlement for the optimisation of power purchase cost of the Distribution Licensees. However, the prime objective of the grid code is to ensure the grid stability and security. MYT Regulations, 2019 deals with the power purchase cost optimisation by the Distribution Licensees. Therefore, same may be covered under MYT Regulations instead of grid code. It is requested to remove the Regulation 35.2 related to true up of ARR of the Distribution Licensee. Further, the generator should be intimated in advance for cold start. In case of warm start and hot start, generating plant need sufficient time to start scheduling

power. Therefore, the Commission is requested to include the advance intimation time required for warm and hot start in case of zero schedule by the Distribution Licensee.

Prayas has submitted that the Regulations should explicitly state that, details of zero scheduling as submitted by the Discom should be publicly available on the SLDC website. The draft Regulation provides Discoms the option of zero scheduling generators in surplus scenario. While it is fair that Discom can opt for zero scheduling generators, the details of the process including the reasons should be part of the request given by the Discom to SLDC, which has to give concurrence, as per draft Regulation. SLDC should include such requests in their reports, which should be available on its website and should be part of its reports to the GCC. SLDC should provide its concurrence to the proposed "Zero Schedule" by Distribution Licensee considering the demand-supply position and transmission constraints. Discom should report the details of zero scheduling to the SLDC, which should put it up on its website and report it to GCC. Discom should indicate the period for which it proposes to zero schedule the generator.

Re-scheduling the generators, which have been 'zero scheduled' should happen only by consensus between the Discom and the generator. This will provide the generators the flexibility to sell un requisitioned power in the power exchanges or in the DEEP portal with the guarantee that the DISCOM will not exercise its right to recall once it has opted for zero-schedule. In case a particular Unit is, in fact, required to be scheduled during the pre-declared Zero scheduling period, the Distribution Licensee shall intimate the generator at least 72 hours in advance for the Unit(s) to come on a bar in cold start. Re-scheduling of a generator shall be operationalised only after generator also agrees with the proposal.

Rattan India has submitted that, at least one generating unit or the pro rata capacity as per PPA (if aggregated PPA is less than the unit MCR), whichever is higher must be on bar at respective Power station. Complete blackout at any station should be avoided. Once a unit is brought on bar after Zero Schedule, it should be allowed to run for minimum 30 days before giving zero schedule again.

AEML has submitted that, the Distribution Licensees should undertake Real-time Scheduling and Despatch decision based on surplus availability and the economics such that surplus generation does not impact Grid Security. If Distribution Licensee does not take proactive steps then it will result in surplus and the power will go to pool where it will receive NIL amount from pool, whereas it will have to pay full cost to Generator which will be higher than cost applicable in case of RSD. To avoid above situation Distribution Licensees should be encouraged to take economic decisions by making suitable provisions in the Regulation.

Mahagenco has submitted that, as long as the generator has adequate fuel availability and the concerned unit has capability to deliver full load generation (i.e. no equipment failure or no constraint on any sub-system to operate at maximum load), similar to any normal situation, the generating company should be allowed to declare maximum possible ex-bus capacity also during such "zero schedule shutdown" or "reserve shutdown" period and the same needs to be considered as deemed availability for further computation of cumulative availability for the generating station/unit. By restricting generator from declaration of capacity to the last 24 hours

declaration deprives generator of its claim for availability. It is requested to consider sufficient previous period maximum capability of the generating unit instead of 24 hours as provided in procedure for RSD, as this will even out the generation capability related issues, if any, just prior to the "Zero Schedule"/"RSD" instruction. If required, the SLDC can confirm such capabilities from the actual load sharing data also.

31.2. Analysis and Commission's Decision

Provision of zero schedule is option available with Distribution Licensee to optimise the power procurement cost when demand is reduced considerably. If all generators are operating at technical minimum and there is no further option to reduce the generation to manage the low demand, the Distribution Licensee is expected to exercise the provision of zero schedule to any of the generator. This decision needs to be taken by Distribution Licensee only as it will have better estimation of demand for next day or couple of days. The decision of zero schedule includes multiple issues such as provision of PPAs, expected demand for next day, fuel related issues which SLDC may be able to deal with. The timelines to recall the generator from zero schedule will be depending upon status of generator whether it is in hot start, warm start or cold start. The provisions of zero schedule are suggestive as it provides guidelines to the Distribution Licensee to opt for the zero schedule in specific cases.

The guidelines of zero scheduling clarify that, the decision of zero scheduling will be taken by Distribution Licensee based on the projection of demand for remaining day or next day on next couple of days. The decision of zero schedule should benefit the Distribution Licensee to optimise its power purchase cost. If there is no case for any optimisation in power purchase cost by exercising the provisions of zero schedule, at least there should not be adverse impact on power purchase cost. Further, the decision of zero schedule should not have any adverse impact on the reserve margin to be maintained as the provisions of the Regulations.

The Regulation 35.2 of MEGC specifies that, the Commission shall verify the decisions of zero scheduling of unit vis-à-vis power procurement cost from alternate sources during truing up of ARR of Distribution Licensee. The ARR petition of Distribution Licensee is available to public for scrutiny and comments. Further the Commission directs MSLDC to include the zero scheduling of generators in the daily generation report published by SLDC on its website.

The Commission is of the view that, the decision zero scheduling is to be taken by Distribution Licensee considering the projection of demand for next day or couple of days. The Commission has noted the provisions of CERC Order for zero scheduling and accordingly has revised the notice period to 8 hours as against 24 hours, considering that, once notice is received from Distribution Licensee to withdraw unit under Zero schedule, the SLDC also needs to review the availability of other generators and ensure the load generation balance for the future period.

Under zero scheduling the generator is expected to go in cold start to reduce the auxiliary consumption. As per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 the Hot start is expected less than 8 hours, warm start expects shut down period about 24 hours and cold start expects minimum 72 hours shutdown.

The Distribution Licensee needs to specify the status of generator (hot /warm or cold start) expected during zero scheduling period. Accordingly, the provision of Regulation 35.7 is revised to accommodate the provision of cold, hot and warm start.

The generator under PPA with Distribution Licensee shall not be able to sell the power on DEEP portal or power exchange under zero schedule period or reserve shut down period. However, Distribution Licensee instead of instructing the zero schedule for generator, shall be able to schedule the power of such generator by offering it for sale on the DEEP Portal or energy exchange for maximizing the benefits.

The provision of Regulation 35.9 specifically refers to cost implications of zero schedule related PPA conditions. In some cases, there may be minimum fuel off-take conditions which may entail penalties. If there are any such implications of zero scheduling, the Distribution Licensee needs to take it into account while proposing the unit for zero schedule.

Further, any cost implication on account of frequent start and stop under zero schedule shall be also borne by the Distribution Licensee. It is expected that, the Distribution Licensee needs to take into account all such costs applicable while proposing the unit under zero schedule.

The zero-scheduling decision is taken by Distribution Licensee on commercial principles. If all the units of stations are higher in merit order the Distribution Licensee may require proposing the zero scheduling for all units as per the requirement of projected demand.

The Distribution Licensee is free to instruct zero scheduling for the same unit again, based on commercial considerations if required.

With regard to MAHAGENCO's submission, there may be short term failure of Auxiliary in last 24 hour which may have forced the generator to declare reduced DC. Upon clearing such fault/failure the unit may be capable of declaring desired DC during RSD period. However, at the same time there may be possibility that, the generator which was not able to declare rated DC during last few days due to fuel or water shortage may declare rated DC during RSD/Zero Schedule period as it knows that it will not schedule at rated capacity. This may lead in paying fixed charges to generator for which it is not entitled. In view of this, the Commission in revised MEGC,2020 has added the condition that, Declared Capacity of generation unit under Zero Schedule shall be considered as higher of (a) Average Declared Capacity for immediate one week prior to Zero Schedule instructions or (b) Maximum Declared Capacity (for minimum 3 hours period) for last 24 hours before commencement of Zero Scheduling.

31.3. Proposed in Regulation 35 of MEGC,2020

35.6 The distribution licensee shall give 8 hours prior notice of the Zero Scheduling to the generator on bar to enable it to take steps for smooth removal of the Unit from the Grid.

35.7 In case a particular Unit is, in fact, required to be scheduled during the pre-declared Zero scheduling period, the distribution licensee shall intimate the generator at least 72 hours in advance for the Unit(s) to come on a bar from cold start ***and at least 8 hours in advance for hot start and at least 24 hours in case of warm start condition***.

35.8. Declared Capacity of generation unit under Zero Schedule shall be considered as higher of Average Declared Capacity for immediate one week prior to Zero Schedule instructions or Maximum Declared Capacity (for minimum 3 hours period) for last 24 hours before commencement of Zero Scheduling.

35.9. No maintenance work shall be carried out when the generating unit will be under Zero Scheduling.

Provided that, if a generating station/unit requires any maintenance under Zero Scheduling, same shall be done in due consultation with SLDC.

Provided further that, the Declared Capacity of such generating station/unit shall be reduced appropriately.

35.10. Zero scheduling shall be carried out by the distribution licensee considering its roles and obligations including capacity charges liabilities under the corresponding PPAs.

31.4. **Proposed in Regulation 36 of MEGC,2020:**

36.4.SLDC shall give 8 hours prior notice of RSD to the generator on bar to enable it to take steps for smooth removal of the Unit from the Grid.

36.5.Declared Capacity of generation unit under RSD shall be considered as higher of Average Declared Capacity for immediate one week prior to Zero Schedule instructions or Maximum Declared Capacity (for minimum 3 hours period) for last 24 hours before commencement of RSD.

36.6.No maintenance work shall be carried out when the generating unit will be under RSD.

Provided that, if a generating station/unit requires any maintenance under RSD, same shall be done in due consultation with SLDC.

Provided further that, the DC of such generating station/unit shall be reduced appropriately.

36.7.The proposed RSD shall be minimum for the period of 72 hours and may be extended as per the system condition. The ramping up and ramping down at the specified rates should be allowed for bringing back the unit on bar and the DC for this period shall be preserved. However, generator would make all efforts to minimize the lit-up time.

36.8.In case the machine is not revived as per the revival time declared by the generating station under different types of start, the machine shall be treated under outage for the duration starting from the likely revival time and the actual revival time. SLDC shall ensure that intimation is sent to the generating station sufficiently in advance keeping in view its start-up time.

36.9 SLDC shall prepare appropriate Guidelines for Instructing RSD of Generating Unit in line with the provisions of Regulation 36 of these Regulations within one month of notification of these Regulations.

32. Regulation 37: Voltage Control and Reactive Power Management:

32.1. Comments received

MSEDCL has submitted that, the regular review of healthiness of reactor and capacitor shall be taken in OCC meeting along with its impact on system. This will enable effective focus in bringing reactor/capacitor in service. Further as highlighted earlier Standard of performance for transmission licensee needs to be framed for timely attending problem related to replacement or installation of new reactor or capacitor bank.

As per the Commercial mechanism, generator shall not be paid from pool for providing reactive compensation within its capability curve even in case SLDC instructs the same. There is no such provision at Regional level for payment to ISGS generator for providing required reactive compensation at the request of RLDC also. It is duty of generator as per Regulation to inject or absorb reactive power based on bus voltage. Nobody is required to be compensated for compliance of Regulation if it has no financial implication on the said entity. The payment shall only be made of generator in case generator provide reactive compensation beyond its capability curve where it has to sacrifice its active component of power. It is also suggested that wherever such situation occurs, SLDC shall bring to the notice of all concerned to take effective steps to avoid reactive compensation by generator beyond its capability curve.

Further, as per Regulation 6.6(6) if IEGC -2010, the ISGS and other generating station connected to regional grid shall generate/absorb reactive power as per instructions of RLDC, within capability limit of respective generating units, that is without sacrificing on the active generation required at that time. No payments shall be made to the generating companies for such VAr generation /absorption. In line with IEGC code InSGS generating station shall be given responsibility to VAr generation /absorption as per instructions of SLDC that too without any payments.

The Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019 was notified on 6 February 2019. This amendment has several provisions in respect of RE generation. The amendments would be applicable to all new generating units commissioned after 6th August 2019. Prior to this amendment, one amendment was notified by CEA on 15th October 2013 and effective for all units commissioned after 15th April 2014. Considering huge RE capacity additions at state and regional level ensuring adherence and compliance to CEA Regulations is required. Compliance to CEA Regulations (Amendments) by RE generators to be monitored as described below and may be adopted at state level also. As per CEA Regulation, “the generating station shall be capable of supplying dynamically varying reactive power support so as to maintain power factor within the limits of 0.95 lagging to 0.95 leading”. It is suggested that the power factor should be based on voltage at the respective node i.e. In case voltages in below 97% then Wind generator shall maintain 0.98 PF leading (injecting) and in case voltage at node is above 103% then Wind generator shall maintain 0.98 PF lagging (absorbing). The old generator not having said provision shall be given timeline for required changes, if technically possible otherwise such generator shall be decommissioned and replaced with new. Further, in case of commissioning of new Wind & Solar generators, as a part of commissioning documents, generators needs to submit

measurement report of harmonic current injection at PCC, DC offset current injection measurement report at PCC and Flicker measurement report at PCC.

Further it is observed that there are many reactive elements not in operation due to being faulty since long and in spite of review of taking these units in service in many OCC meeting, no timely action is being taken by STU. Such delay in installation of Reactor is posing high voltage issues in respective area.

There is SoP to Discom for releasing New connection as well as attending fault; failing to attend the same, penalty is imposed. There is no SoP set out for Transmission company in any Regulation even at Regional Level. The only factor considered is availability factor. But loss which system incurred due to such delay on the part of Transmission licensee is not being addressed. Hence it is requested to frame SoP for Transmission Licensees for not completing work within specified time.

Further, MSEDCL has submitted that it is general observation that Tap changing of ICT or Power Transformer are not being done. Hence in order to have periodic review of Tap Changing of ICT & Power Transformer and Reason for the same needs to be maintained in a logbook either by Respective Transmission Licensees or by SLDC. Such report should be one of the agenda points for monthly OCC meeting. Hence it is suggested to added relevant provision in Grid Code for maintaining Tap Changing report & review of same in monthly OCC meeting. The SLDC needs to develop SCADA screen whereby operating staff in real time can monitor voltages and VAr injection/absorption at various point; at least important point and software should prompt SLDC operator to initiate action by sending message to concerned substation for corrective action.

SLDC has submitted that the provision of Regulation may be re-visited, since power factor penalty clause exists in PPA executed by Wind/Solar generators with Discoms. The Sub-Group for carrying out System Studies may be formed under GCC comprising of members from STU, SLDC, Transmission & Distribution Licensees. The Sub-Group may be assigned a responsibility of joint studies related to Reactive Compensation requirements, Yearly/Quarterly TTC/ATC for transmission network, requirements for maintaining voltage limits within limits during operations, etc. As per Regulation 37.4, TSU has to maintain Reactive Power injection/drawl as per Bus Voltage band. Any additional injection/drawl on instruction of SLDC shall only be compensated.

Adani Transmission (India) Limited and the Maharashtra Eastern Grid Power Transmission Company Limited have submitted that the voltage reference should be local bus and switching operations should be beyond voltage range of 97% to 103%.

Tata Power submitted that a Generating Station be allowed the reactive energy exchange irrespective of the receipt of direction from SLDC in the interest of grid stability as the Generating Station will be able to do so only if it has capacity available for reactive energy exchange without compromising on the delivery of active energy.

Prayas has submitted that the Regulation 37.13 provides the permissible voltage variation limits from 765 kV to 11 kV AC systems. Since there are also HVDC systems in the grid, this

Regulation should specify voltage limits for HVDC Systems as well.

32.2. Analysis and Commission's Decision

Regular review of healthiness of reactor and capacitor is the routine work of STU and transmission licensees need to maintain the healthiness of reactive power compensation devices. There is no need to provide any specific directives in the Regulations.

The Commission clarifies that for monitoring the voltage, the reference voltage shall be voltage of local bus and switching operation shall be as per the instructions of SLDC only.

The generators are allowed reactive power exchange as per the system condition, however the Regulation 37.8 specifies that the Reactive energy exchange, only if made as per the direction of SLDC, for the applicable duration shall be compensated / levied by the SLDC to the Generating station. The reactive power exchange other than for SLDC instructions shall not be considered for compensation. The provision of Reactive power compensation as per the instructions of SLDC is already specified in the MERC MYT Regulations.

The provisions of the Regulation 37.10 refer to applicability of specifications of Central Electricity Authority (CEA) for reactive power compensation by RE generators. However, for clarification the Regulation 37.10 is revised. With regard to the comments of MSLDC, the provision of the Regulations shall supersede the provisions of PPA.

Commission notes the comments of the MSEDCL and is of the view that the provisions of the Regulations do not discriminate between new and old RE generators.

The Regulation 37.12 specifies the requirement of compliance of IEEE standards 512-1992 for provisions related to harmonics. The Commission is of the view that it may not be required to specify the details of requirement of Commission reports in the Regulations. The appropriate authorities are expected to take care of the same.

The Voltage limits specified in the Regulations are in line with CEA (Grid Standard) Regulations, 2010. However, CEA (Grid Standard) Regulations, 2010 does not specify the voltage limits for HVDC system. The Commission clarifies that, though the voltage limits for HVDC system are not specified in the MEGC,2020, the Voltage limits as specified by the CEA from time to time shall be applicable.

Commission notes that the issue raised by MSEDCL is operational and execution related issue and out of the purview of the existing regulatory process initiated by the Commission to frame the State Grid Code. The provisions of MEGC empowers the GCC to form the sub-group or working group as per the requirement to conduct such studies.

Commission observers that maintaining appropriate tap at ICTs is the responsibilities of concerned transmission licensees. The Regulations have specified requisite enabling provision. The GCC/OCC are expected to maintain the appropriate record/reports on the compliance of the provisions of Regulations.

Commission observers that the Regulations have specified the enabling provision for maintaining the appropriate voltages at bus level and reactive power within limits as specified in the MEGC. The development of necessary infrastructure including SCADA for monitoring

and controlling the voltage levels is the responsibility of concerned authorities such as STU, SLDC.

32.3. Proposed in MEGC,2020

A Proviso is added to Regulation 37.5: as follows

Provided that, for the purpose of tap changing, voltage of local bus shall be considered as reference voltage.

37.10 Wind generating stations connected to InSTS shall be capable of supplying dynamically varying reactive power support, so as to maintain power factor at their grid inter-connection point for all dispatch scenarios by providing reactive compensation as specified by the Authority from time to time.

37.19 ---------

Provided that there shall not be any drawal of VArs from the EHV grid under low-voltage condition.

33. Regulation 38: Demand Estimation:

33.1. Comments received

Prayas has submitted that the draft Regulation specifies the information regarding demand estimation that needs to be submitted to the SLDC. The term *'buyer'* is repeatedly used but not defined in the draft MEGC. This term should be disambiguated to ensure clarity especially as there are several open access and captive consumers embedded in the Distribution Licensees' network with no visibility at the SLDC level that are also 'buying' power from various generators. Just like in draft Regulation 12.3, it should be clarified that the Distribution Licensee as a buyer will also be submitting demand estimates for all embedded open access and captive consumers.

MSEDCL has submitted that presently weather forecast up to fifteen days is available. Hence in case of RE generator also whose generation is based on weather forecast has to be mandated by Regulation to forecast on weekly basis. Hence it is suggested that demand forecast in which weather plays an important role, only weekly demand forecast shall be on hourly basis and for other period, tentative hourly forecast for each month based on historical demand pattern shall be required to be submitted. Further reactive power at some node may be leading and at some node may be lagging. Hence effective reactive power cannot be forecasted. Further at present, there is no such data of nodewise or T<>D interface pointwise reactive power, same is not possible to forecast. Moreover, demand has to be met in term of active power for which DISCOM contracts with various generators in term of active power only. The reactive power requirement at different node will vary with time of day & which in turn depends on load as well as voltage at respective node. Hence it is suggested that in demand forecasting only active power shall be forecasted in term of MW & MWh. The format shall be formulated by SLDC

by taking stakeholder consultation

The SLDC should be instructed to share T<>D interface pointwise 15-minute time block wise data to MSEDCL. Further SLDC has to operate state generation as per demand forecast for state as a whole, it is necessary that SLDC must develop online estimation/forecasting of demand for managing system. There is provision in IEGC-2010, wherein task of demand forecasting for real time basis is assigned to SLDC. The Commission is requested to relook into this proposed provision of Demand forecasting. All proposed responsibility has been assigned to DISCOM in this State Grid code and SLDC has been kept away from Demand forecasting which is actually SLDC's most important responsibility as security of grid lies with SLDC. Unless SLDC develops online estimate of demand, how can it even manage centralised MOD. In view of above, it is requested to modify the provision under Demand forecast and instead of DISCOM, SLDC shall be replaced. The Commission in addition to SLDC, may decide giving certain responsibility of demand forecasting to DISCOM.

However if the Commission wants, DISCOM to also carry out such exercise, then it is suggested that nodewise demand forecasting shall not be introduced immediately for DISCOM & shall be introduced in future say after 2 years for date of Notification of this State grid code or as decided by the Commission as presently there is no nodewise historical data in case of MSEDCL. In absence of 15 min time block wise data, it is not possible to forecast nodewise demand at present. In future once such data is made available through new DSM mechanism, such forecasting may be possible. Hence it is suggested that nodewise demand forecasting shall not be introduced immediately and shall be introduced in future say after 2 years from date of Notification of this State grid code or as decided by the Commission.

Further, the SCADA visibility of each node (drawal & Injection) is very important. The SLDC needs to start computation of real time availability of ATC/TTC which will be possible only if SLDC has complete real time SCADA data visibility of all nodes. This activity is presently lacking from SLDC due to lack of all point SCADA visibility. Further skilled manpower needs to be developed at SLDC for use of software for computing ATC/TTC in real time. Presently such computations are carried out at regional level and NLDC declares ATC/TTC for each corridor for carrying out short term power transaction. In fact, now for RTM market ATC/TTC computation is very important part. Looking into future trends in power sector, SLDC, shall also start computing ATC/TTC for real time and declare same on its website.

Further, it is submitted that the Sub-Group for carrying out System Studies may be formed under GCC comprising of members from STU, SLDC, Transmission & Distribution Licensees. The Sub-Group may be assigned a responsibility of joint studies related to Reactive Compensation requirements, Yearly/Quarterly ATC/TTC for transmission network, requirements for maintaining voltage limits within limits during operations, etc.

STU has submitted that, to facilitate estimation of Total Transfer Capability/Available Transfer Capability (ATC) on three-month ahead basis, all Transmission Licensees and distribution licensees shall furnish monthly estimated demand and availability data to SLDC directly with a copy to STU for better operational planning for InSTS Network.

SLDC has submitted that the Sub-Group for carrying out System studies may be formed under

GCC comprising of members from STU, SLDC, Transmission & Distribution Licensees. The Sub-Group may be assigned a responsibility of joint studies related to Reactive Compensation requirements, Yearly/Quarterly TTC/ATC for transmission network, requirements for maintaining voltage limits within limits during operations, etc.

APML has submitted that each buyer should publish projected daily / weekly / monthly / yearly demand in MW & MWh on SLDC Maharashtra website due to which generator / seller can plan maintenance of any equipment during low demand period to reduce chances of forced outages and also help them to make generation available during high demand period.

33.2. Analysis and Commission's Decision

Definition of buyer is provided in the Regulation 2.1(e) of MERC DSM Regulations,2019 and Scheduling and Despatch Code already approved by the Commission. The S&D code shall be part E of the MEGC,2020. The definition of Buyer covers the Distribution Licensee as Buyer.

The long term, medium term and short-term demand estimation is the responsibility of Distribution Licensee. The Distribution Licensees are expected to develop the necessary tool and models for demand estimation. The reactive power estimation is also necessary for system operation planning. Active and reactive power planning needs to be done simultaneously as generators are main sources for both active and reactive power. Distribution licensees need to develop methodologies for estimation of both active and reactive power for future demand.

The perspective of term demand estimation at national level and state level are different. IEGC specifies the responsibility of Demand estimation on SLDCs as for national level demand estimation, state is considered as one node. However, for intra-state demand estimation individual Distribution Licensee's area is considered as one node. The Distribution Licensees need to develop the methodology for feeder wise demand estimation based on the historical data and consumer behavior and other parameters.

The necessary interface metering data of drawal of Distribution Licensees on 15 minutes basis can be made available by SLDC and STU. The STU has initiated the project of interface metering under implementation DSM Regulation. The Commission has been informed that, presently more than 98% interface meter data (on 15 minutes basis) is available on the web-based portal prepared by the SLDC. Distribution Licensees may collect the same from SLDC for demand estimation.

The provisions of MEGC empowers the GCC to form the sub-group or working group as per the requirement to conduct such studies.

33.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

34. Regulation 39: Demand Management:

34.1. Comments received

MSEDCL has submitted that, it is normally observed during summer month that 400 kV Jejuri

–Lonikand and 400 kV Talegaon PG-Chakan line get overloaded. To relieve overloading, Koyna Hydro is picked up irrespective of backdown in state. This unnecessarily causes wastage of Koyna water. In view of above, not only generation resource planning & adequacy is important but Transmission line adequacy is also important. In view of the same, it is requested to incorporate above provision in this Regulation. Further there is need to also frame Standard of Performance for Transmission Licensee.

AEML has submitted that the Load curtailment should be the last resort. In case any user is overdrawing because of its tripping and if any other generation is backed down same should be utilised before proceeding for load curtailment. In an interconnected Grid operation, there will always be overdrawal or underdrawal to some extent and same is unavoidable. Based on the Grid parameters the load curtailment needs to be initiated in consultation with SLDC, when Grid is operating within normal operating range.

34.2. Analysis and Commission's Decision

The scheduling and despatch code specify the principles of day ahead scheduling and intra-day operation of grid in details. The SLDC is expected to utilise all available options within the provisions of the relevant Regulations before initiating the load curtailment.

34.3. Proposed in MEGC,2020

No change in the provision of MEGC,2020 Regulations.

35. Regulation 40: Periodic Reports:

35.1. Comments received

AEML has submitted that the Monthly CPD/NCPD data is one of the important aspects for Grid operations and also from commercial perspective. Hence same should be specifically mentioned for clarity.

35.2. Analysis and Commission's Decision

SLDC should incorporate the monthly Coincident Peak. Demand (CPD) and Non-Coincident Peak Demand (NCPD) in the InSTS performance report.

35.3. Proposed in MEGC,2020

40.3 A monthly report covering the performance of the InSTS ***including Monthly CPD/NCPD*** *shall be prepared by SLDC and shall be made available on the website.*

36. Regulations 46.2: Reporting Procedure:

36.1. Comments received

MSEDCL has submitted that as most of generators' capacity is more than 210MW, each and every generation outage event will be required to be informed to the Commission by SLDC. Further seasonal demand of agricultural consumers of Maharashtra goes up by more than 9000MW. Hence to manage Agricultural load, presently AGLM schemes are implemented. At

present, Division wise AGLM groups have been formed with average load in each AGLM group as 200MW. The switching of AGLM is with 5-minute interval. Hence in a 15-minute time block, switchover of AG load of more than 100MW is presently happening. Hence it is suggested that instead of reporting the events affecting a generation capacity or a load of more than 100 MW to Commission**,** the event affecting a generation capacity or a load of more than 1,000 MW shall only be reported to the Commission and also such reports should be at least half yearly basis.

STU has submitted that the events to be reported to Commission shall be 1000MW instead of 100MW load or generation in line with existing code.

36.2. Analysis and Commission's Decision

The Commission has accepted the suggestions and the provision of Regulation 46.2.4 is revised accordingly.

36.3. Proposed in MEGC,2020

*46.2.4 Events affecting a generation capacity, or a load of more than **1,000 MW** shall immediately be reported in writing to the Commission by the SLDC/Transmission Licensee/User, as the case may be: -------*

37. Regulation 58: Boundary of Communication System

37.1. Comments received

Tata Power has submitted that there may be captive generators or group captive generators connected to the InSTS in the state, therefore, captive generators should also be part of intra-state communication system.

37.2. Analysis and Commission's Decision

The Commission is of the view that, the responsibility of installation of the necessary communication system needs to be given to Captive Generator /consumer as the cost of such communication system cannot be socialized.

37.3. Proposed in MEGC,2020

58.1 Intra-State Communication System shall cover:

a) SLDC control rooms

b) STU (InSTS network)

c) Distribution Companies and Buyers within the State

d) State Generating Stations, IPPs including RE generators connected to InSTS

e) Substations of STU and State Transmission licensees

f) Nodes of ISTS with InSTS

g) Captive Generators / consumers

38. Regulation 59: Periodic Testing of Communication System:

38.1. Comments received

MSEDCL has submitted that the CEA has recently notified CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020. In the said Regulation under clause 20, guidelines are given for Maintenance and Testing. It is suggested to mention reference of CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020 in this provision.

38.2. Analysis and Commission's Decision

The Commission has accepted the suggestion of MSEDCL, and the Regulation is revised accordingly.

38.3. Proposed in MEGC,2020

59.2 *STU shall prepare the procedure for testing and maintenance of Communication network security system including third party system if* ***any in accordance with the provisions of CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020*** *within 60 days from the date of notification of these Regulations and approved by GCC.*

39. Regulation 62: Communication System Availability and Backup:

39.1. Comments received

MSEDCL has submitted that there is provision under Regulation 29.4 & 29.5 for reduction of 1% RoE depending on report of SLDC. Hence, the SLDC shall be assigned duty of maintaining record of communication availability and 1%RoE shall be deducted for all assets whose communication network is not established yet.

MSPGCL has submitted that the main thrust of the communication code is on availability of data from Grid management point of view. For proper implementation of Deviation Settlement Mechanism, availability of the access to metered data (especially the import & export power at G<>T interface which is being used for DSM computations), needs to be provided to the concerned utility, especially generators, for reference and for timely monitoring as well as corrective actions, if any. While the data will be available with SLDC, the generators are not having access to data at all such points. The Communication code should cover facilitation of such 'to & fro' data transfer also.

39.2. Analysis and Commission's Decision

The Commission has accepted the suggestion of MSEDCL. The Regulation 62.2 is added for maintaining the record of the communication system availability by SLDC. With regard to the comments of MSPGCL, Real time monitoring and availability of information to stakeholders is crucial for operations under DSM regime. STU is responsible for maintaining SCADA system for real time data availability at SLDC. STU shall ascertain the feasibility of sharing the SCADA to generators for real time operation and discuss it in the GCC.

39.3. Proposed in MEGC,2020

62.2 The SLDC shall maintain the record of communication system availability and submit to the Commission on yearly basis.

40. Regulation 64: Cyber Security:

40.1. Comments received

Prayas has submitted that the Regulation mentions that SLDC shall prepare a crisis management plan and/or procedure. It is equally important to prepare a cyber-security Standard Operating Procedure (SOP) which will include details such as periodic checks/audits to be done, regular tracking of emerging cyber security threats (see point 4 for more details), a protocol/procedure for 'inducting' a new software or hardware into the 'system' with proper audits etc., a protocol/procedure for identifying and reporting anomalies, guidelines for creating, sharing and updating passwords, encryption, where to store such information, who should have access to it etc. To ensure such systems are set up in a time-bound manner, the MEGC should mention that the SLDC should submit the SoP accounting for the above-mentioned protocols to the Commission within 2 months of the notification of the MEGC.

The New cyber security threats keep emerging all the time. There are well known public websites (e.g. https://cve.mitre.org/) which serve as an information store for all publicly known cybersecurity vulnerabilities; these are updated on a daily basis. Most large organisations have a cyber security team (part of their IT team) and one of this team's charter is to identify vulnerabilities and assess how these affects, if at all, the various IT resources in the organisation. If it is determined that a specific vulnerability does affect some IT resources, the team also needs to recommend what actions need to be taken to mitigate the risk of those resources being exposed by that vulnerability. The team also needs to keep track of when a remedy/fix for such a vulnerability becomes available and then ensure that this fix/patch is actually deployed on all affected systems. The MEGC should stipulate that the SoP to be prepared by the SLDC also specifies such a team to monitor emerging threats monitor the latest.

The Regulation mentions that periodic mock drills, cyber audit etc. are to be carried out by all "Users". While this is necessary, this provision is to be extended to STU and SLDC also. They have complex and critical control systems

The Regulation refers to an abnormal event without much explanation or delineation. This should be clarified. Further, the MEGC should clearly define what all constitute a security event. In addition, MEGC should also stipulate that the SLDCs should frame plans/define procedures to ensure detection of different types of security events in real time. Such plans should be submitted to the Commission within 2 months of the notification of the MEGC.

The Regulation covers cyber audit of critical plants and substations, the same needs to be extended to SLDC and STU also. For critical control systems at plants, substations and SLDC, there should be manual override of any automatic decision-making software/hardware. Relevant staff should be periodically trained to safely operate the system with minimal interruption, even in the manual

mode. In addition to training the cyber-security / IT team on a regular basis to upgrade their skills, the SOP manuals of Users as well as the SLDC/STU should ensure that regular training should also be provided to all users of control/IT systems. They should be periodically trained to identify potential threats / incursions etc. and report them to the cyber-security team. Otherwise, even detection of the problem may happen too late. Cyber-audit reports should be made publicly available on the websites of all Users as well as SLDC/STU. This transparency measure will help to get corrective feedback on the IT systems, which will be having an increasing and critical role in the years to come.

40.2. Analysis and Commission's Decision

The Commission appreciates the suggestions of Prayas on cyber security threats. The STU and SLDC while preparing the standard operating procedure for cyber security shall consider the suggestions of Prayas and shall develop the team to monitor emerging threats. The SOP shall include the procedure to ensure detection of different types of security events in real time.

The Regulation 64.3 is revised to include cyber-security Standard Operating Procedure (SOP) by STU and the Regulation 64.6 and 64.7 is revised to include STU and SLDC under the provision of Regulations of mock drill and cyber audit.

The Commission is in the view that the currently all IT application system developed shall be tested and audited by an IT security agency before being made commercial. If any, issues found during the security audit, it is responsibility of the concerned entity/application developer to fix the issues before making the application for commercial use. Also, such practices shall be covered as part of the Standard Operating Procedure and shall not necessary be stated in the MEGC.

40.3. Proposed in MEGC,2020

64.3 *STU in assistance with SLDC shall prepare a* ***standard Operating procedure for Cyber Security,*** *Crisis Management Plan and/or procedure in line with Information Technology (IT) Act 2002, as amended from time to time and any other rules or policy or guidelines relevant to the subject, within six months from the date of notification of these Regulations, to ensure that adequate Cyber Security mechanism is available with all Users to prevent any potential cyber-attack on the systems and submit for approval of the GCC.*

64.6 Regular cyber vulnerability test/mock drills/cyber audit/and other measures as per the crisis management plan of the Indian Computer Emergency Response Team (ICERT) shall be carried out regularly by all Users, ***SLDC and STU****. The frequency of such audits/mock drills shall be decided by STU in the procedure /guidelines stipulated as per Regulation 64.3.*

64.7 *A cyber audit specifically to detect malware targeting Industrial Control Systems (ICS) shall be conducted at critical plants and substations,* ***SLDC and STU*** *control rooms after any abnormal event.*

41. Regulation 65: Guidelines or Procedures to be issued by different Entities:

41.1. Comments received

MSEDCL has submitted that CEA has recently notified CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020, wherein clause 5 deals with Interface requirement, clause 19 deals with centralised supervision and clause 20 deals with maintenance and testing of communication system. It is suggested that, the reference of CEA Regulations shall be added in this Regulations which will be helpful while preparing relevant procedures.

41.2. Analysis and Commission's Decision

The Commission accepts the suggestion of the MSEDCL and a reference of CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020 in added in Regulation 67.1

41.3. Proposed in MEGC,2020

65.1 *Following entities shall be responsible for preparation, consultation and finalisation of the Guidelines/Procedures required under these Regulations which shall be in line with the* ***Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020*** *and Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 and amended from time to time.*

a) SLDC shall prepare Guidelines on "Interfacing Requirements" in respect of terminal equipment, RTUs, SCADA, PMUs, Automatic Generation Control (AGC), Automatic Meter Reading (AMR) Advanced Metering Infrastructure (AMI), etc. and for data communication from the User's point to the respective control centre(s) based on technical standards issued by CEA;

b) STU shall prepare Procedure for "Centralized supervision for quick fault detection and restoration" as per the Regulation 63.3 and on "Testing and Maintenance communication system" in terms of Regulations 59.2;

c) STU shall prepare Guidelines on "Availability of Communication System" in consultation with SLDC and other stakeholders and submit to GCC.

42. Regulation 66: Protection Code:

42.1. Comments received

MSEDCL has submitted that the CEA has recently notified CEA (Technical Standards for Communication system in Power System Operation) Regulation 2020. This technical standard also included communication system standard required for protection. It is requested to include these standards in the Regulation 66.8.

42.2. Analysis and Commission's Decision

The Commission has accepted the suggestion and the reference of CEA (Technical Standard for Communication system in Power System Operation) Regulation 2020 in added as clause (e) to the Regulation 68.8.

42.3. Proposed in MEGC,2020

66.8 *e) CEA (Technical Standards for Communication system in Power System Operation) Regulation 2020*

43. Regulation 95: Simulation and Analysis studies:

43.1. Comments received

Prayas has submitted that the Regulation 95 covers Load flow studies. From the wording it appears that the Regulation is intending to cover different types of simulation and analysis studies like steady state load flow, transient stability studies, outage simulation studies, protection studies, operation planning studies, using online data collection from SCADA etc. For grid operation and planning such studies as well as modelling and simulation studies are essential. But load flow study is not the appropriate term to describe all such studies. It is suggested that this Regulation be reworded to *"Simulation and Analysis studies"* and should include brief description of a wide variety of modelling, simulation and analysis studies required for planning and operation of the grid.

MSEDCL has submitted that the Load flow studies shall also be carried out by SLDC for Transmission outage management. At RLDC, there is separate team which deals with system study and recommend outage to be approved, precaution to be taken while taking said outage if any critical element is involved and also gives it input on Transmission planning.

MSLDC has submitted that the Sub-Group for carrying out System Studies may be formed under GCC comprising of members from STU, SLDC, Transmission & Distribution Licensees. The Sub-Group may be assigned a responsibility of joint studies related to Reactive Compensation requirements, Yearly/Quarterly TTC/ATC for transmission network, requirements for maintaining voltage limits within limits during operations, etc.

APML has submitted that the Dynamic data and machine parameters should be commonly available to all the stakeholders for study of respective ends.

43.2. Analysis and Commission's Decision

The Commission notes that the load flow study/system studies shall cover different types of simulation and analysis studies like steady state load flow, transient stability studies, outage simulation studies, protection studies, operation planning studies, using online data collection from SCADA etc. The Regulation about Load Flow studies is revised for better clarity and renamed as Simulation and Analysis studies. SLDC may suggest constitution of the sub-group for such studies under the GCC in the GCC meeting.

43.3. Proposed in MEGC,2020

95. Simulation and Analysis studies

95.1 STU shall carry out periodic simulation and Analysis studies of the network to facilitate future expansion and augmentation of the network. The study shall encompass both transient as well as steady state studies. The transmission licensees shall mandatorily use the latest load flow data while proposing any additional infrastructure.

95.2 SLDC will also conduct "Simulation and Analysis studies" for operation planning. Such study shall cover studies namely, steady state load flow, transient stability study, transmission outage simulation study, protection study, operation planning study. Such studies shall be based on historical as well as real-time SCADA data.

95.3 The STU and SLDC shall take the requisite measures for capacity building and training of their personnel engaged in planning and operation for such studies.

44. Regulation 96: Data Acquisition:

44.1. Comments received

MSEDCL has submitted that the Realtime data of all interface points as per metering code definition is required to monitor individual entity Deviation from actual. Hence same shall be also included in this Regulation.

The timeline needs to be specified for STU/ transmission licensee as presently only about 20% Power Transformer, RTU is installed for SCADA data and in absence of all T<>D interface (which is basically LV side of power Transformers) , MSEDCL drawal is derived from state generation. Presently, in SCADA screen of SLDC, State Generation also includes some generation points which are connected at Distribution substation like 33/11 KV substation i.e. Distributed generation but still those generation are counted as State generation at STU periphery. Hence, MSEDCL T-D drawal is wrongly being computed as stated earlier.

AEML has submitted that for effective operations under DSM Regulations and MEGC Regulations additional online data is required such as discom AMR, Demand MW & MVAr (with Feeding point data) and Voltage at these feeding points, Scheduled Power, Frequency and Maharashtra Exchange.

44.2. Analysis and Commission's Decision

The Commission notes the suggestions of stakeholders. However, for receiving real time data of all interface points and availability of AMR data in real time the preparedness of STU and SLDC should be ensured. The Commission notes that as part of implementation DSM Regulations, STU/SLDC has taken advanced steps to put in place the necessary hardware/software and communication infrastructure to gain access to real time data. Further, it is envisaged that STU and SLDC should establish necessary protocol and assess preparedness for providing such data requested by stakeholders and deliberate the challenges, if any, in the GCC for making this data available to stakeholders as requested.

The Regulations specify the necessary provisions for installation of SCADA and RTU for data from receiving stations to SLDC. The issue raised by MSEDCL is implementation issue which is out of the purview of the regulatory process initiated by the Commission for formulation of MEGC.

44.3. Proposed in MEGC,2020

No change in the provision of MEGC, 2020 Regulations.

Sd/-	**Sd/-**
(Mukesh Khullar)	**(I. M. Bohari)**
Member	**Member**