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**Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and
Deviation Settlement for Solar and Wind Generation) Regulations, 2018**

STATEMENT OF REASONS

Dated: 20 July, 2018

Preamble:

With large scale integration of renewable energy based generating stations particularly wind and solar generating stations with the state grid in the earlier years and as well as in the near future, managing the state grid will be a daunting task for State Load Despatch Centres (SLDCs). It is essential that the grid operator has visibility into how much renewable energy (RE) is expected to be injected into the grid. This is especially critical for variable and uncertain sources such as wind and solar. Forecasting and scheduling of these generators is critical to anticipate balancing requirements and procure requisite reserves to maintain load-generation balance and grid reliability. At the same time, due to the intermittent nature of these sources, special provisions must be made so that the generators are not unduly penalized.

Central Electricity Regulatory Commission (CERC) notified the 'Framework on Forecasting, Scheduling & Imbalance Handling for Variable Renewable Energy Sources (Wind and Solar) in August 2015 at the inter-state level.

Further, Forum of Regulators (FOR) the apex body of regulators under section 166 (2) of the Act, 2003 has made available model regulations on forecasting, scheduling, deviation settlement and related matters of solar and wind generation sources and circulated the same to the Electricity Regulatory Commissions of all the States and Union Territories.

Maharashtra has been in the forefront of harnessing variety of renewable energy sources with installed RE power capacity exceeding 8 GW as on July 2018 which includes variable RE generation of Wind Energy (4.7 GW) and Solar Power (0.8 GW). With increasing penetration of variable RE Generating sources such as Wind and Solar, the State of Maharashtra is likely to face similar issues of grid management, managing load generation balance, grid security and stability problems in the near future; unless several steps for managing such variable RE

integration into grid are initiated. In order to mitigate the problems that may be affecting various stakeholders including consumers, it is felt necessary to frame a Regulation on forecasting, scheduling, deviation settlement and related matters of solar and wind generation sources that are connected and are likely to connect to the state grid.

Accordingly, the Commission published the draft (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018 (F&S Regulations) on its websites www.mercindia.org.in and www.merc.gov.in and sought suggestions and objections through a Public Notice in daily newspapers Marathi (Maharashtra Times and Loksatta) and English (Indian Express and Times of India) on 28 February, 2018, by 31 March, 2018.

The objective of the Regulations is to facilitate large scale grid integration of solar and wind generating stations while maintaining grid stability and security through forecasting, scheduling and commercial mechanism for deviation and settlement of power supplies of these generators.

Accordingly, in exercise of the powers conferred under sub-section (3) of Section 32, sub-section (4) of Section 33, Clauses (b), (e) and (h) of sub-section (1) of Section 86, and Clauses (g) and (zp) of sub-section (2) of Section 181 of the Electricity Act, 2003 (36 of 2003) and all other powers hereunto enabling, and after previous publication, the Commission has formulated F&S Regulations, namely, Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018.

These Regulations are intended to facilitate Grid integration of Wind and Solar energy generated in Maharashtra while maintaining Grid stability and security as envisaged under the State Grid Code and the Act, through forecasting, scheduling and a mechanism for the settlement of deviations by such Generators.

Total 35 entities have responded to the Notice. The main issues raised during the public consultation process, and the Commission's analysis and decisions on them which as outlined under the Regulations as finally notified are set out below.

1. Enabling Provisions for Draft F&S Regulations

1.1 Comments received

RE generators submitted that, the Provisions of the Draft F&S Regulations are not in line with Section 86(1)(b) and 86(1)(e) of the Electricity Act, 2003. Draft Regulation is proposing charges for deviations in F&S of the solar & wind generation which is beyond their control. Provisions of Draft Regulations shall increase the cost burden on generators for not being able to predict precise Forecasting.

1.2 Analysis and Commission's Decision

Provisions of Section 86(1)(e) of the EA, 2003 mandates the Commission to provide suitable measures for connectivity of RE generators with the grid which also includes the facilitation of grid integration of Wind and Solar generation while maintaining Grid stability and security as envisaged under State Grid Code, through F&S Mechanism.

1.3 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the enabling provisions of the Draft F&S Regulations.

2. Regulation 1.2: Commencement of commercial arrangement specified in the Regulations

2.1 Proposed in draft F&S Regulations, 2018

“1.2 -----

Provided that Regulation 5.14 and the Commercial Arrangements specified in Part C of these Regulations, and the related provisions regarding Deviation Charges and penalty, shall come into force six months thereafter.”

2.2 Comments received

RE generators requested to provide exemption from levy of deviation charges during the first 2 years after implementation considering stabilising period for proposed new F&S regime. Further applicability of the Regulations needs to be linked with implementation of Renewable Energy Monitoring Centre (REMC) to be developed by State Load Despatch Centre (SLDC) and mock exercise for 2 months is required to be undertaken before commencement of commercial arrangement.

2.3 Analysis and Commission’s Decision

The provisions of the Draft Regulations consider 6 month period for ground level preparation by all stakeholders before commencement of commercial arrangement specified in the Regulations which also includes preparation of detailed procedure by SLDC.

Considering the submissions of various stakeholders on procedural part of Regulations, the Commission is directing SLDC to undertake stakeholder’s consultation, before submitting the detailed procedure for approval of the Commission.

Accordingly, the Commission revising the provisions of the Regulations 1.2 of the Draft F&S Regulations and decides to notify the date of commencement of commercial arrangement separately through the Suo-Motu Order within a period of nine months from the date of notification of the F&S Regulations.

Provision in Final F&S Regulations. 2018

“1.2 -----

*Provided that Regulation 5.14 and the Commercial Arrangements specified in Part C of these Regulations, and the related provisions regarding Deviation Charges and penalty, shall come into force **from the date to be notified separately which shall not be later than nine months from the date of notifications of these Regulations.**”*

3. Regulation 2: Additional Definitions to be provided

3.1 Proposed in draft F&S Regulations, 2018

“(m) Inter-connection point” means the interface point of a generation facility with the transmission or distribution system; and shall mean, in relation to a Wind or Solar

Energy facility, the line isolator on the outgoing feeder on the High Voltage (HV) side of the Pooling Sub-Station”.

3.2 Comments received

Proposed to include definition of REMC, Existing Project’ and New Project and revise the definition of Inter-connection point’.

3.3 Analysis and Commission’s Decision

Since the provisions of the Regulations does not discriminate between New RE projects and Existing RE projects, the Commission does not find any merit in defining New Project and Existing Project. Further, SLDC may define REMC in the detailed procedure to be prepared for implementation of the Regulations as it is not considered as Regulatory requirement for implementation of the Regulations.

Definition of Inter-connection point is similar to the definition already specified MERC RE Tariff Regulations, 2015 and MERC RPO-REC Regulations, 2016.

3.4 Provision in Final F&S Regulations. 2018

No any definition is revised or added in the final F&S Regulations.

4. Regulation 2.1 (a): Formula for computation of Absolute Error

4.1 Proposed in draft F&S Regulations, 2018

(a) *“Absolute Error” means the difference between the scheduled and the actual generation injected by Solar or Wind Energy Generators in relation to their Available Capacity in each time block, and may be computed in percentage terms by applying the following formula:*

$$\text{Absolute Error (\%)} = 100 \times [\text{Actual Generation} - \text{Scheduled Generation}] / \text{AvC}$$

OR

(a) *“Absolute Error” means the difference between the scheduled and the actual generation injected by Wind or Solar Energy Generators in relation to their scheduled generation in each time block, and may be computed in percentage terms by applying the following formula:*

$$\text{Absolute Error (\%)} = 100 \times [\text{Actual Generation} - \text{Scheduled Generation}] / [\text{Scheduled Generation}]$$

4.2 Comments received

Majority of RE generators have proposed to consider formula proposed under Option 1 i.e. AvC at denominator considering lesser commercial impact as compare to Option 2.

SLDC and State Distribution Licensee have proposed to consider Scheduled Energy at denominator (Option 2) as Scheduled generation value will be accessible to all the concern utilities and shall be monitored by SLDC. Data of “Available Capacity” (or “AvC”) of Wind or Solar Generators will not be accessible to any utility or SLDC.

Further, deviations in case of thermal generators are also calculated with respect to the Scheduled generation only.

4.3 Analysis and Commission's Decision

The Commission notes that, all RE generators have proposed to adopt the Error formula under Option 1 which is based on AvC at denominator. SLDC and State Distribution Licensee have recommended the Option 2 considering possibility of mis-declaration of AvC by RE generators. The Commission also notes that, Model F&S Regulations of FOR, DSM Regulations of Central Commission and other SERCs and have also considered the error formula based on AvC at denominator.

The Commission is of the view that, the provisions of Regulation 5.23 of Draft Regulations related to Gaming are adequate to avoid the possibility of mis-declaration of AvC by RE generators.

Considering the ease of implementation at the initial stage of F&S Regulations and to ensure uniformity at regional level the Commission finds it appropriate to adopt the Error formula under Option 1 which is based on AvC at denominator to begin with this stage of introduction of F&S framework at the State level. This will also reduce the commercial impact on RE generators and would encourage quick adoption of forecasting and scheduling mechanism at state level. However, upon gaining experience of operationalisation over the period, the Commission may consider, Suo-motu or upon application filed by any stakeholder may revisit and initiate process of revision of Error formulation, Error range and applicable Deviation Charges thereof, as deemed necessary.

4.4 Provision in Final F&S Regulations. 2018

The Commission decides to adopt the Option 1 i.e. AvC at denominator and accordingly, the definition of Absolute Error in the final Regulations shall be as below:

- (a) *“Absolute Error” means the difference between the scheduled and the actual generation injected by Solar or Wind Energy Generators in relation to their Available Capacity in each time block, and may be computed in percentage terms by applying the following formula:*
- $$\text{Absolute Error (\%)} = 100 \times [\text{Actual Generation} - \text{Scheduled Generation}] / \text{AvC}$$

5. Regulation 2.1 (e): Definition of Available Capacity

5.1 Proposed in draft F&S Regulations, 2018

- (e) *“Available Capacity” (or “AvC”) of Wind or Solar Energy Generators means the cumulative capacity rating of the Wind turbines, Solar inverters or Solar thermal generators that are capable of generating power in a given time block”*

5.2 Comments received

RE generators submitted that, Available Capacity for Solar at Night (No Solar Insolation) must be zero and error definition must not be computed at those time block. Further, de-rating of solar or wind projects occurring due to ageing of Plants should be incorporated and considered while determining the Available Capacity of the projects. RE generators also, requested to exempt Solar Thermal projects from applicability of these regulations.

5.3 Analysis and Commission's Decision

RE generators through QCA are expected to submit their schedule on 15-minute time block basis considering available capacity for generation at that particular time block. It is important that concerned RE Generator (Wind or Solar) through QCA declares such Available Capacity considering operational/available wind turbines, Solar inverters or Generating Units for each time block. SLDC shall outline detailed procedures which would cover the information and real time data sharing protocol for the purpose of monitoring and verification of such declared Available Capacity. The intentional mis-declaration shall be verified and ascertained through such monitoring tools and techniques or upon investigations based on information furnished by any party. Further, in case of Solar PV generation it is expected that the Schedule generation during night time will be zero.

With regards to de-rating factor the generators, the Commission has not specified any de-rating factor for Wind or Solar generator in the MERC RE Tariff Regulations, 2015 and subsequent generic RE Tariff Orders based on these on Regulations. The generators are expected to declare their Available Capacity considering the Capacity available for generation at a given time block. Any intentional mis-declaration of Available Capacity shall attract the provisions of the Regulation 5.23 of this Regulations.

There is no any Solar thermal power project currently operational in Maharashtra. The scope and coverage of these Regulations can be reviewed if necessary, at later date considering technology advancements and other market developments.

5.4 Provision in Final F&S Regulations. 2018

The Commission has slightly modified the provisions of the Draft F&S Regulations as under.

Definition of “Available Capacity” (or “AvC”) of Wind or Solar Energy Generators means the cumulative capacity rating of the Wind turbines, Solar inverters or Solar thermal generators that are capable of generating power in a given time block as declared by such Generators or QCA, as the case may be.

6. Regulation 2.1 (o): Definition of Pooling Sub-station

6.1 Proposed in draft F&S Regulations, 2018

4.1 These Regulations shall apply to all Wind and Solar Energy Generators in Maharashtra connected to the Intra-State Transmission System, including those connected through Pooling Sub-Stations, and using the power generated for self-consumption or sale within or outside the State:

Provided that the combined installed capacity of the Solar or Wind Generators connected to a particular Pooling Sub-Station, or that of an individual Generator connected to some other Sub-Station, shall not be less than 5 MW.

6.2 Comments received

RE generators requested to clarify, if the WTGs connected to 33/22 KV sub stations i.e. distribution level and metered at 33/22 kV, be exempted from applicability of this Regulations.

6.3 Analysis and Commission’s Decision

The provisions of Regulations are applicable to all RE generators having installed capacity 5 MW which may be connected to Intra-State Transmission System (InSTS).

6.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

7. Regulation 2.1 (p): Definition of Procurer

7.1 Proposed in draft F&S Regulations, 2018

(p) “Procurer” means a person, including a Distribution Licensee, Trading Licensee or an Open Access consumer, procuring electricity through a transaction scheduled in accordance with the Regulations governing Open Access;

7.2 Comments received

Requested to clarify, if definition includes or excludes Captive Consumers procuring electricity from Wind and/or Solar energy generator in Maharashtra on which this Regulation is applicable.

7.3 Analysis and Commission’s Decision

The definition procurer includes, ‘Open Access Consumer’ which includes Captive Consumer as well.

7.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

8. Regulation 2.1 (s): Definition of Scheduled Drawal

8.1 Proposed in draft F&S Regulations, 2018

(s) “Scheduled Drawal” for a time block or other time period means the Schedule of despatch in MWh ex-bus provide by the state Load Despatch Centre”

8.2 Comments received

Proposed to revise the definition of Scheduled Drawal as Schedule is generally given both in Capacity and Energy terms.

8.3 Analysis and Commission’s Decision

The Commission has noted the submission and considered to revise the definition of ‘scheduled drawal’.

8.4 Provision in Final F&S Regulations. 2018

Definition 2 (s) ‘scheduled drawal’ is revised as under:

(s) “Scheduled Drawal” for a time block or other time period means the Schedule of despatch in MW or MWh ex-bus provide by the state Load Despatch Centre”

9. Regulation 3.3: Objective of Regulations

9.1 Proposed in draft F&S Regulations, 2018

3.3 *“The SLDC shall make use of the flexibility provided by conventional Generating Units and the capacity of inter-Grid tie-lines to accommodate Wind and Solar energy generation to the largest extent possible subject to Grid security.”*

9.2 Comments received

SLDC raised the concern for use of flexibility provided by thermal generators. The present flexible capacity of thermal generators is only 30% and it is not sufficient even in current scenario. The technical minimum capacity of thermal generators is required to lower down in line with CERC Regulations to provide more flexibility.

RE generators proposed that, the Commission may specify the technical minimum for thermal power plants to facilitate must run and accommodation of Wind and Solar energy generation to the largest extent possible. SLDC should follow the provisions of Regulations 3.3 in accordance with must run provision of the Grid Code and SLDC should host real time generation data on its website to confirm that, the provisions of the Regulation 3.3 are strictly followed by SLDC.

RE generators also requested to add New Regulation of Grid security to avoid unnecessary back down of WEGs by the SLDC.

9.3 Analysis and Commission’s Decision

The provisions of Regulation 44.10 of MERC MYT Regulations empowers SLDC to direct Thermal generators to operate as per the requirement of Grid. Further the issues of Technical minimum as per CERC norms has been addressed by the Commission vide its Order dated 1 March, 2018 in Case No. 15 of 2017.

With regards to the Must Run status, the existing provisions of the F&S Regulations and Grid Code are appropriate to ensure Must run status of RE generators.

The Commission is of the view that, the reference of State grid code in the F&S Regulations is for the purpose of bringing in discipline for forecasting and scheduling of Wind and Solar generators to ensure reliable and secure grid operations with increasing penetration of variable renewable energy generation into Grid. The Commission does not find necessity to add any enabling provisions related to technical minimum of thermal generation in the F&S Regulations.

9.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

10. Regulation 4: Applicability of Regulations

10.1 Proposed in draft F&S Regulations, 2018

4.1 These Regulations shall apply to all Wind and Solar Energy Generators in Maharashtra connected to the Intra-State Transmission System, including those connected through Pooling Sub-Stations, and using the power generated for self-consumption or sale within or outside the State:

Provided that the combined installed capacity of the Solar or Wind Generators connected to a particular Pooling Sub-Station, or that of an individual Generator connected to some other Sub-Station, shall not be less than 5 MW.

10.2 Comments received

RE generators have requested to revise the applicability of F&S Regulations to minimum installed capacity of 25 MW as against 5 MW considering the provisions of Indian Electricity Grid Code and relevant CERC Orders. It is also requested to limit the applicability of the Regulations for new RE projects only. If Regulations are to be made applicable to existing RE projects, the lenient view may be adopted by allowing the tolerance limit in the range of +/- 30%.

Further, RE generators also requested that old wind projects are having lower generation on account of lower CUF and applying penalty charges to these WEGs on account of F&S would not be appropriate. Hence, WEGs covered under Group-I and II may please be ignored for penalty purpose till re-powering of the same with advance technology machines.

Some of the RE generators also requested to exempt the RE generators commissioned before March 2015 (CERC F&S Regulations) considering difficulty in collection of data of old RE projects. If old projects are added for F&S, then there will be need of additional capital expenditure for necessary infrastructure for F&S. Wind Developers have made investment based on Regulatory environment wherein such conditions for undertaking mandatory participation in DSM were not in force. The existing RE projects would not be viable on account of additional cost expenses towards F&S and Deviation Settlement. Hence, it is requested to limit the applicability only to the projects with PPAs signed after the effective date of implementation of this regulation or, alternatively, be a pass-through for existing projects.

Consumer Representative submitted that, percentage of total capacity of wind and solar generators presently connected to the distribution network and capacity expected to be connected in the future needs to be considered while deciding the minimum limit of RE generators.

Consumer Representative also submitted that, there will be number of RE generators which are connected to Discom network, for whom, the provisions of F&S regulations will not be applicable. However, their deviation will be reflecting in the overall Deviation Settlement Charges payable by DISCOM. This may cause further financial and operational difficulties for the DISCOM.

Distribution Licensee submitted that, the current Draft Regulations are applicable to generators connected to the InSTS including those connected to the Pooling Sub- Stations. However, by excluding RE generator connected to the Intra-State Distribution System from the ambit of this regulation, it is feared that the very purpose of this regulation is being defeated. Significant number of Solar & Wind Generators with installed capacity less than 5 MW are connected directly to InSTS and Intra-State Distribution System. Such Generators will fall out of provisions of these Regulation.

Distribution Licensee also submitted that, after implementation of “Mukhyamatri Solar Agricultural Feeder Scheme” solar projects as small as 0.5 MW shall be connected to the state grid & Distribution system, hence this Regulations should be made applicable to all RE generators as after implementation of the above-mentioned scheme.

10.3 Analysis and Commission's Decision

The approach paper published with the Draft Regulations, discusses in detail the rationale behind considering the minimum capacity limit of 5 MW for both Wind and Solar generators. As per the data received from SLDC, almost all the Pooling stations having combined installed capacity of 5MW and above and RE generators having individual capacity of 5 MW and above are connected to Intra-State Transmission System. RE generators connected to InSTS will be visible to SLDC and SLDC will be able to receive schedule of these pooling stations with appropriate communication system in place.

As discussed in the approach paper published with Draft F&S Regulations, following are the details of the Wind and Solar Generators Pooling Sub-Stations connected at InSTS as on March, 2016 which are visible at SLDC.

Table: Pooling Sub-Stations and Metering Points

Particulars	No. of Pooling Sub-Stations	No. of interface points/ metering points
Wind power	47	151
Solar power	15	23
Total (Wind and Solar)	62	174

With regards to distinction between Old and New RE generators or Wind and Solar Generators, the Commission is of the view that, there should not be any such distinction as both will have considerable deviation impact on overall load-generation balance. In fact, old RE generators will have more operational experience over New generators. Further, the Commission does not find appropriate to link the deviation of RE generators with lower CUF or lesser generation of RE generators.

10.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

11. Regulation 5.2: QCA for more than one Pooling Sub-Station

11.1 Proposed in draft F&S Regulations, 2018

5.2 The Wind and Solar Energy Generators at each Pooling Sub-Station shall appoint a QCA:

Provided that an individual Generator not connected to a Pooling Sub-Station may opt to be its own or to appoint a separate entity as its QCA.

11.2 Comments received

SLDC proposed that in all cases, QCA shall cover minimum 50 MW of installed RE capacity to reduce the number of QCAs. RE generators proposed that, QCA may represent all the WEGs within the State as the accuracy of forecasting will increase with increase in area and reduce the Deviation Charges. However, some of the stakeholders have requested to retain the provisions of the Regulation 5.2 and not to allow aggregation of forecast.

Some of the RE generators requested to direct SLDC to shortlist the eligible QCAs by forming a committee headed by SLDC. Further, also submitted that, appointing a separate

entity as QCA or acting itself as QCA will result in additional costs for the RE generator. However, there is no provision about recovery of tariff impact of such QCA costs in the F&S Regulations.

11.3 Analysis and Commission's Decision

The F&S Regulations proposes aggregation up to Pooling station. As discussed in the discussion paper, pooling substation is considered as 'basic building block' for the purpose of the scheduling, energy accounting, deviation monitoring and commercial settlement. QCA can undertake forecasting and scheduling for multiple pooling substations, however, scheduling, energy accounting and deviation monitoring has to be undertaken for each pooling substation separately.

With regards to appointment of QCA, the Commission is of the view that, the QCA is expected to represent RE generators, hence, its appointment may be done by RE generators solely at their discretion and the principles outlined under F&S Regulations can be referred for guidance.

11.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

12. Regulation 5.3: Treatment of QCA as State Entity

12.1 Proposed in draft F&S Regulations, 2018

5.3 The QCA shall be treated as a State Entity.

12.2 Comments received

SLDC requested that, if QCA to be assigned State Entity Status, then the functions of QCA needs to be specified by the Commission. Some of the RE generators requested to clarify what it meant by "QCA shall be treated as a State Entity" in the context that an individual generator may opt to be its own QCA.

12.3 Analysis and Commission's Decision

Regulation 5.6 of the F&S Regulations outlines the primary functions of QCA for the purposes specified in the Regulations. The SLDC will have to submit the detailed procedure for the approval of the Commission as specified in the Regulations 5.21, wherein SLDC may propose the expected functions of the QCA in line with the provisions of the Regulations. Further, the Definition 2(t) in the F&S Regulation defines the State Entity as "State Entity" means a Solar or Wind Generator in the area of control of the State Load Despatch Centre and whose metering and energy accounting is undertaken at the State level. An Individual generator not connected to a Pooling Sub-Station may opt to be its own QCA and upon being a QCA, it will be treated as State Entity.

12.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

13. Regulation 5.4: Registration of QCA

13.1 Proposed in draft F&S Regulations, 2018

5.4 Every QCA shall be registered with the SLDC in accordance with the Detailed Procedure prescribed in pursuance of Regulation 5.21.

13.2 Comments received

Considering the provision that, one QCA can have more than one pooling station, SLDC has requested to limit the number of QCAs to 8-10 so as to have proper DSM settlement.

13.3 Analysis and Commission's Decision

One QCA can undertake F&S of more than one Pooling Substation, provided that, separate accounting is maintained for each Pooling Substation and no aggregation of multiple pooling stations is permitted. It may not be appropriate to limit the no. of QCAs by making any specific provision in the F&S Regulations.

13.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

14. Regulation 5.6 (b): Collection of De-Pooling charges

14.1 Proposed in draft F&S Regulations, 2018

5.6 The QCA shall be appointed by the Generators for the purposes specified in these Regulations, including but not limited to the following:

- (a) Meter reading and data collection and its communication, and co-ordination with the Distribution Licensees, the SLDC and other agencies;*
- (b) De-pooling of amounts payable on behalf of the constituent Generator of the Pooling Sub-Station from the State Unscheduled Interchange (UI) Pool account and settling them with each Generator;*
- (c) Settlement of the Deviation Charges specified in these Regulations with the SLDC on behalf of the Generators.*

14.2 Comments received

Some of RE generators, proposed that, De-pooling of deviation charges on behalf of the constituent Generators may be collected by SLDC/Utility which has established mechanism & more legal powers to take stringent action on the defaulting WEG/Solar Generators (SOs). In case collection is done by the QCAs, QCAs shall be given appropriate powers to take necessary action on the defaulting WEGs/SGs. A suitable regulation to that effect may be added.

14.3 Analysis and Commission's Decision

The provisions of Regulations 5.6 and Regulation 16 provides the necessary powers to the QCA for De-pooling and collection of all the necessary charges on behalf of RE generators. Further, provision of Regulation 5.5 of this Regulation specifies that, all the commercial arrangement between the generators and their QCA shall be governed by their inter-se agreement or terms of engagement. Hence, it would not be appropriate to assign the responsibility of collection of De-Pooling charges to SLDC/Utility.

14.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

15. Regulation 5.9: Submission of Real time data to SLDC by QCA

15.1 Proposed in draft F&S Regulations, 2018

5.9 The QCA shall provide real-time data relating to the power system output and parameters and weather-related data, as may be required, real-time to the SLDC.

15.2 Comments received

Some of the RE generators have requested to remove the provision of submission of Weather related data in real time.

15.3 Analysis and Commission's Decision

The Commission notes the submission of RE generator, however, the Commission is of the view that, the real time data shall be required by SLDC for forecasting purpose. SLDC shall formulate detailed procedure covering information/date requirement including generation data and weather related parameters, as necessary.

15.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

16. Regulation 5.10: Metering Arrangement

16.1 Proposed in draft F&S Regulations, 2018

5.10 Meters shall be installed for energy accounting in accordance with the relevant provisions of the Central Electricity Authority (CEA) Regulations governing metering, along with telemetry /communication and Data Acquisition Systems for the transfer of information to the SLDC by the QCA.

16.2 Comments received

SLDC proposed that, all RE feeders emanating from Pooling Station shall invariably have ABT meter and AMR arrangement to receive Feeder wise injection data for deviation settlement.

RE generators have requested to consider Automated Meter Reading (AMR) system for communicating interface data at SLDC instead of SCADA data as there may be slight difference due to line loss.

RE generators also requested to exempt old Wind Power Project Commissioned before 2003 from Forecasting and Scheduling as the turbine SCADA may not be available with them. Further also requested to provide clear guidelines to the generators and OEMs for any such installation before the DSM is implicated on the generators.

16.3 Analysis and Commission's Decision

The Regulation 5.20, provides the responsibility on SLDC to prepare the detailed procedure for implementation of F&S Regulations which also includes the required metering arrangement and related facilities for communication between SLDC and Pooling station. RE generators may submit their specific comments on the metering arrangement which shall be

specified by SLDC under the detailed procedure to be submitted by SLDC within three months from the notification of these Regulations.

With regards to exemption of old generators from the applicability of Regulations, the Commission has discussed the same under para 10 of this SoR.

16.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

17. Regulation 5.11 and 5.13: Aggregation of Schedule by QCA and Creation of Virtual Pool

17.1 Proposed in draft F&S Regulations, 2018

5.11 The QCA shall furnish to the SLDC the aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability.

5.13 The QCA shall aggregate the Schedules of all Generators connected to a Pooling Sub-Station and communicate them to the SLDC.

17.2 Comments received

RE generators have requested to define the term “aggregate schedule” in the Regulation and also submitted that, a state level aggregate pool can accommodate multiple pooling stations managed by one QCA. State level or centralized forecasting may be adopted to obtain better accuracy in Forecasting & Scheduling in the larger geographical area. All wind/solar generators should be treated together as a virtual pool within the state pool and deviations within this virtual pool should be settled first at the rates and methodology stipulated for wind and solar generators. Further, without a large aggregation, the projects will suffer significant financial burden.

Whereas, some of the Stakeholders submitted with statistical analysis that, there should not be any geographical aggregation i.e. aggregation of multiple pooling stations. Single QCA may create monopoly and forecasting accuracy & Grid Stability may be ignored. Further aggregation of different pooling stations irrespective of geographic location affects the transmission and balancing the demand-supply of the grid. Such aggregation neither increases the accuracy of forecast nor reduces the deviation at each pooling station but only reduces the error value by manipulation of Available Capacity (AvC).

Consumer Representative requested to clarify if the individual schedules of each generator are mandated to be maintained. For practical purposes and as a starting step the data should be collected/maintained at Pooling Station level. However, if schedules and actual generation for each generator is maintained then it also has implication for ‘de-pooling principles’. If such data is available, then de-pooling could be done on the basis of actual deviation by each generator rather than in proportion to their actual generation as is suggested by the Regulation 16. Additionally, for commercial settlement of interstate transactions, the schedule and actual generation of each generator behind the pooling station is needed separately.

Further, it is requested to include feature of Virtual Pool in the Regulations which is recommended by the FOR and also discussed in the Approach Paper.

17.3 Analysis and Commission's Decision

The Draft F&S Regulations proposes aggregation up to Pooling Substation. Pooling substation is considered as 'basic building block' for the purpose of the scheduling, energy accounting, deviation monitoring and commercial settlement. QCA can undertake forecasting and scheduling for multiple pooling substations, however, scheduling, energy accounting and deviation monitoring has to be undertaken for each pooling substation separately. Aggregation of multiple Pooling Substation at State level may ignore the transmission constraints during real time despatch of RE power. The same has been rightly pointed out by some of the stakeholders.

The Virtual pool discussed in the approach paper is for the computation of Deviation and not for scheduling purpose as submitted by the stakeholders. As mentioned above, the Aggregation of schedule is allowed upto Pooling Substation only. However, while computing Deviation on account of RE generators at State periphery, SLDC shall consider, impact of Deviation on account of RE generators under Virtual Pool and its contribution to the Deviation Charge at the State Periphery. Further, SLDC shall compute the Deviation Error for each Pooling Substation and accordingly determine the amount payable on account of Deviation Charge as specified in the Regulation 7 and 8 of these Regulations.

The Regulations 5.13 specifies the aggregation of schedules at Pooling Substation level. Individual generator's schedule is not required to be submitted to SLDC by QCA. However, QCA may maintain this data at Pooling Station for preparation of aggregated schedule of its Pooling Substation.

All other the suggestions such as De-pooling in proportion to actual generation, commercial settlement of Inter-state generation at scheduled basis proposed by objectors are already considered in the Draft F&S Regulations.

17.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

18. Regulation 5.12: Forecasting Services by SLDC

18.1 Proposed in draft F&S Regulations, 2018

5.12 The SLDC shall also undertake forecasting of the Wind and Solar energy generation expected to be injected into the intra-State Transmission network at each location, by engaging forecasting agencies if required, so as to enable it to better plan for the balancing resources required for secure Grid operation.

18.2 Comments received

SLDC submitted that, the provision for forecasting of wind and solar generators at SLDC shall be taken care by REMC. REMC has provision for three forecasting service providers and shall generate RE forecast based on weather data input, other parameters and actual generation on 15 minutes time block basis. Further, the decision for adopting SLDC's forecast or providing own forecast shall invariably communicate to SLDC well in advance. Any delay in such communication, may lead to erroneous schedule and lead to conflicts in deviation

settlement. The decision for adopting SLDC forecast or QCA forecast once communicated shall stand for at least one-week period.

Some of the RE generators, submitted that, the commercial arrangements specified in these Regulations, should come into force only after the commencement of independent forecasting by the SLDC as option of accepting SLDC's forecast shall be available to generators only after commencement of forecasting arrangement by SLDC. Further in order to avoid error between SLDC's F&S and QCA's F&S, SLDC should authorise same agency which will be appointed by QCA for forecast.

RE generators also requested to place the detailed terms and conditions along with the Techno-Commercial offer for scheduling by SLDC in the public domain.

18.3 Analysis and Commission's Decision

The Commission notes the submission of SLDC to undertake forecasting activity with the help of REMC. With regards to modalities for acceptance of forecast made by SLDC by concerned RE generators (if necessary), the SLDC may specify conditions /modalities during submission of detailed procedure considering provision of this Regulation.

The Commission notes the submission of RE generators, however, as SLDC has expressed its preparedness by initiating implementation of REMC, it will not be required to defer the commercial arrangement specified in these Regulations.

Further, it is not necessary to authorise same agency by SLDC for forecasting as appointed by QCA. Further, as submitted by SLDC, REMC includes services of 3 forecasting service providers which will improve the accuracy of Forecasting.

18.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

19. Regulation 5.14: Despatch of Generation without Scheduling

19.1 Proposed in draft F&S Regulations, 2018

5.14 No Wind or Solar energy generation shall be considered for despatch by the SLDC if it is not scheduled by the QCA on behalf of the Generators in accordance with the provisions of these Regulations.

19.2 Comments received

SLDC submitted that, Provision of Regulation 5.14 is invariably required to cover each and every RE generator under F&S Regulation. Distribution Licensee submitted that, the Wind/Solar generators are connected to grid and even if not scheduled by SLDC, they will generate. Therefore, it is requested to add the provision in the Regulation that, in such case if any RE generation is injected in to the grid without scheduling, the actual Generation, if any, will get lapsed and accounted towards loss reduction of InSTS.

19.3 Analysis and Commission's Decision

The Commission notes the submission of SLDC and Distribution Licensee. The Commission is of the view that, the existing Despatch related provisions of the Draft F&S Regulation are

sufficient to take care of treatment to be given in case of RE injection in the Grid without any planned scheduling initiative as per provisions of F&S Regulations.

19.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

20. Regulation 5.17: Day ahead and Week ahead schedule

20.1 Proposed in draft F&S Regulations, 2018

5.17 The QCA shall provide to the SLDC a Day-Ahead and a Week-Ahead Schedule for each Pooling Sub-Station or each stand-alone Generating Station, as the case may be, to enable it to assess the Availability of energy and the margin available in the State Grid.

20.2 Comments received

RE generators, requested to delete the provision of Week ahead schedule as Accuracy for Forecasting weather parameters for solar and wind projects is not established for longer time period.

SLDC submitted that, QCA shall provide day ahead schedule to SLDC, however week ahead schedule shall also be provided to Distribution Licensees in order to plan for power procurement on weekly basis. Distribution Licensees are concerned with variations in RE and arrangement of power procurement.

20.3 Analysis and Commission's Decision

The Commission notes the submissions. The week ahead schedule may not be accurate as compared to day-ahead schedule, however it will help the System operator for better planning of system operation, hence the provision needs to be retained.

20.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

21. Regulation 5.18: Amendment of State Grid Code

21.1 Proposed in draft F&S Regulations, 2018

5.18 The Day-Ahead Schedule shall comprise the Wind or Solar energy generation to be scheduled in each 15-minute time block starting from 00:00 hours of the following day, and for all 96 time blocks of that day; and the Week-Ahead Schedule shall contain the same information for the next seven days.

21.2 Comments received

RE generators has requested that, modalities for information exchange and scheduling process between QCAs and the SLDC needs to be incorporated in the Scheduling and Dispatch Code. The scheduling process under State Grid Code needs to be amended simultaneously for implantation of F&S Regulations.

21.3 Analysis and Commission's Decision

The scheduling related provisions of Draft F&S Regulations are in line with the existing provisions of State Grid Code. Further, details of Scheduling related process shall be prepared by SLDC as a part of the detailed procedure to be prepared by SLDC and submit for the approval of the Commission.

21.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

22. Regulation 5.1, 5.19 (b) and (c): Number of revisions in the Schedule and Duration of Revisions of Schedule.

22.1 Proposed in draft F&S Regulations, 2018

5.1 This Forecasting and Scheduling Code specifies the methodology for Day-Ahead scheduling of Wind and Solar Energy Generators connected to the intra-State Transmission Network, its revisions on a one and a half hourly basis, and the treatment of their deviations from such Schedules.

5.19(b) Such revisions shall be effective from the 4th time block following the time block in which notice was given.

5.19(c) There may be one revision for each time slot of one and half hours starting from 00.00 hours of a particular day, subject to a maximum of 16 revisions during the day.

22.2 Comments received

The RE generators submitted that, the solar and wind generation is largely dependent on weather parameters. Limitation of only one revision in one and half hour time slot will reduce the flexibility and result in penalizing the wind generators on account of unforeseen breakdowns or wind generators may back down forcibly by SLDC during any slot. Therefore, opportunity needs to be given to revise the schedule immediately based on revised weather prediction from time to time. The effective revision needs to be reduced from the 4th time block to 2nd time block as the 1st time block being the notice given.

Further, it is also requested that, the no. of revisions for a day ahead schedules may be extended to 24 times as against 16 to facilitate accuracy of forecasting.

SLDC submitted that, One and half hour interval revision may not align simultaneously for all Pooling station's request for revision and SLDC may have to revise schedule for every time block and accordingly revision in the schedule of thermal generators. Hence, it is proposed that, during initial phase, revision of RE schedule revision may be allowed at fixed time interval of one and half hour during a day i.e. revision of schedule at 01:30, 3:00, 4:30 hrs ---- - 21:00, 22:30 hrs. The schedule revision will not be done after 23:00 hrs. till start of new day. Scheduling and re-scheduling charges as approved by the Commission shall be made applicable. Hence, the provision of Regulation 5.19 is necessary to reduce frequent schedule revision of RE generators and subsequently that of conventional generators.

22.3 Analysis and Commission's Decision

The Commission notes the submission of SLDC and RE generators. Scheduling process (including revisions) for RE will have to be aligned with overall scheduling and despatch procedure of SLDC to facilitate grid operations.

The proposed provisions of the Draft F&S Regulations related to no of revisions are in line with IEGC provisions and any change in the process of revisions of schedules at State level will have impact on scheduling at regional level also which may create operational issues for RLDC as well as SLDC.

As specified in the Draft F&S Regulation 5.19 (c) of these Regulations, the revisions for RE will be starting from 0.00 Hrs with fixed interval of 1.30 hrs. (6 time blocks).

Further, SLDC may specify details of Scheduling process for RE generators in the Detailed procedure considering the provisions of these Regulations.

As regards, Fees for revision in schedule shall be applicable as approved from time to time, as part of SLDC Fees and Charges approval process.

22.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

23. Regulation 5.20: Detailed Procedure to be submitted by SLDC for data telemetry.

23.1 Proposed in draft F&S Regulations, 2018

5.20 The plan for data telemetry, formats of forecast submission and other modalities and requirements shall be stipulated in the Detailed Procedure to be submitted by the SLDC within two months, which the Commission shall endeavour to approve within a month thereafter.

23.2 Comments received

RE generators requested that, the appropriate procedure may be laid for rescheduling of the capacity by the generators on the basis of latest weather data and initially no rescheduling charges be levied for such events. Further, requested to provide minimum of 2 weeks' time to the stakeholders for submission of their comments on the detailed procedure submitted by SLDC.

23.3 Analysis and Commission's Decision

Provisions related to revision of Schedules by RE generators are specified in the Draft F&S Regulations and the same has been discussed above under para 22 above of this SoR. The Commission directs SLDC to undertake stakeholder consultation by uploading the Draft procedure on SLDC's website before submission of procedure to Commission for approval.

Further, considering the additional time required for stakeholder consultation by SLDC before submission to the Commission, it will be appropriate to extend the time for submission of the Detailed Procedure to the Commission by one month. Accordingly, the Commission has revised the provisions of the Regulation 5.20 of F&S Regulations.

As regards, Fees for revision in schedule shall be applicable as approved from time to time, as part of SLDC Fees and Charges approval process.

Further, the SLDC may submit all other details such as registration process of QCA, deposition of Bank Guarantees by QCA which are necessary for implementation of these Regulations in the Detailed procedure for approval of the Commission.

23.4 Provision in Final F&S Regulations, 2018

Regulation 5.20 of Draft F&S Regulations is revised with addition of Proviso as under:

*5.20 The plan for data telemetry, formats of forecast submission and other modalities and requirements shall be stipulated in the Detailed Procedure to be submitted by the SLDC within **three** months, which the Commission shall endeavour to approve within a month thereafter.*

Provided that, SLDC shall undertake stakeholder consultation by uploading the Draft procedure on SLDC's website before submission to the Commission for approval.

24. Regulation 5.21 (d): detailed procedure for Energy and Deviation accounting of RE generators

24.1 Proposed in draft F&S Regulations, 2018

5.21(d) The guidelines for energy and deviation accounting of Wind and Solar energy transactions under the State energy accounting framework, with illustrative examples, in accordance with the principles specified in these Regulations.

24.2 Comments received

SLDC submitted that, presently, Scheduling of Non-firm(RE) power is excluded under the provisions of MERC Transmission Open Access Regulations, 2016 and requested to clarify the same.

24.3 Analysis and Commission's Decision

The Provisions of Regulations 16.3 of MERC Transmission Open Access Regulations, 2016 are as under:

*16.3 Renewable Energy generating plants identified as 'non-firm power' under the Commission's Regulations governing Renewable Energy Tariff shall be exempted from scheduling **till such time as the Commission stipulates or specifies otherwise.***

Accordingly, scheduling related provisions of this Regulations shall prevail over above provision of MERC Transmission Open Access Regulations, 2016 to that extent.

24.4 Provision in Final F&S Regulations, 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

25. Regulation 5.23(a) to (d): Mis-declaration of Available Capacity by RE generator

25.1 Proposed in draft F&S Regulations, 2018

5.23

(a) Any intentional mis-declaration of Available Capacity to the SLDC for its own undue commercial gain or that of a Generator shall constitute a breach of these Regulations.

- (b) *The QCA shall be liable to pay a penalty of three times the Deviation Charges that would have been applicable had the Available Capacity been correctly declared.*
- (c) *The amount of penalty shall be payable by the QCA to the State Deviation Settlement Mechanism (DSM) Pool, through the SLDC.*
- (d) *The SLDC may, after giving due notice and as stipulated in the Detailed Procedure, cancel the registration of the QCA upon repeated events of mis-declaration.*

25.2 Comments received

SLDC submitted that, Error formula based on Scheduled Generation in the Denominator shall not result in impact of mis-declaration of available capacity. Distribution Licensee requested to provide clarification on ‘upon repeated events’ mentioned in draft Regulations and requested to define particular number of attempts, beyond which the QCA shall be disqualified. Further, the regulations need to address the scheduling and de-pooling issues arising post-disqualification of QCA (till selection of new QCA).

Distribution Licensee also submitted that, generator selling power outside the State may tweak forecast/schedule to take price advantage. If collective transaction/interstate sale rate is higher, he may forecast higher than likely generation which will have financial implications on all other State Pool Participants. Accordingly, the Regulation 5.24 may be revised and allow any interested party to flag the issue of gaming against any generator/QCA for intentional under/over forecasting to take price advantage which may be impacting State pool.

25.3 Analysis and Commission’s Decision

As regards the rationale for adoption of Absolute Error formula, the Commission has already discussed the same in detail under para 4 of this SoR. Further, with regards to detailed procedure for treatment to the mis-declaration of Available Capacity by QCA, the provisions of Regulation 5.23 authorises the SLDC to initiate the action and application of penalty against such QCA. Distribution Licensees if identifies such incidences may approach SLDC with details, for appropriate actions by SLDC.

Further, the SLDC may submit the procedural details, operating conditions, notice for initiating steps for corrective and penal actions for implementation of the provisions of Regulation 5.23 while submitting the detailed procedure for the approval of the Commission.

25.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

26. Regulation 6: Appointment of QCA

26.1 Proposed in draft F&S Regulations, 2018

6 Principles of appointment of QCA

6.1. The Generators at a Pooling Sub-Station may appoint one amongst themselves or any other entity as a QCA:

Provided that an individual Generator not connected through a Pooling Sub-Station may opt to be its own QCA or to appoint a separate entity.

6.2. *The QCA shall be appointed with the approval of at least a simple majority of the Generators at a Pooling Sub-Station, in terms of their combined installed capacity.*

6.3. *The Generators shall satisfy themselves that the QCA is technically and financially competent to undertake on their behalf the functions and discharge the obligations specified in these Regulations.*

6.4. *The terms of engagement of the QCA shall include provisions on the following aspects:*

a) The respective roles and responsibilities of the QCA and Generators;

b) The metering, billing and energy accounting arrangements;

c) The modalities for recovery of Deviation Charges from the Generators and their settlement, including the principles for de-pooling;

d) The payment security mechanism and related provisions;

e) The events of default and their mitigation.

26.2 Comments received

RE generators have sought clarification that, in case Wind and Solar generator did not appoint QCA and give mandate to SLDC for forecasting, under such scenario who will be the prime responsible to de-pool the energy deviation as well as deviation charges to each generator.

Further, as discussed in the Approach paper, the appoint of QCA may be done with the approval of at least 51% of the Generators at one or more Pooling Sub-stations, in terms of their combined installed capacity connected to the intra-state transmission network at the State level. Once appointed under majority, all the WEGs/SGs shall approve him as the QCA for their pooling station/specific area. The QCA shall be paid by the generators for providing the services as envisaged in their Agreements. Further, the Regulation does not provide the procedure to change the QCA.

Distribution Licensee submitted that, QCAs should have an established team of RE analysts, statisticians, Software developers and a monitoring team to achieve the objective of the Regulations so as to reduce the deviation and thus safeguarding the Grid, the qualification of QCA should be defined and the technical and financial competence needs to be clearly defined in the regulations. Further, the QCA needs to be a company incorporated in India under the Companies Act, 1956/2013.

26.3 Analysis and Commission's Decision

It is necessary that, RE generators appoints a QCA. The Regulations only specify option to adopt forecast done by SLDC. The responsibility of analysing the forecast received from SLDC and submission of schedule to SLDC lies with QCA/RE generators only.

Regulation 6.2 specifies simple majority principle with consent of at least 51% of generators in terms of installed capacity and the same has also been discussed in the approach paper, however for more clarity the Commission finds it appropriate to revise the Regulation 6.2 accordingly.

The Draft F&S Regulations outlines, guiding principles for appointment of QCA. The Commission does not intend to specify detailed criteria for selection of QCA in the Regulations, as the same is the prerogative and desertion of RE generators.

With regards to payment securities proposed by Distribution Licensee, the same may be dealt by SLDC in detailed procedure to be submitted.

26.4 Provision in Final F&S Regulations. 2018

The provision of the F&S Regulation 6.2 is revised as under:

6.2 The QCA shall be appointed with the approval of at least 51% of the Generators at a Pooling Sub-Station, in terms of their combined installed capacity.

27. Regulation 7.2: Deviation Settlement for Intra-State Transactions

27.1 Comments received

RE generators have requested not to impose penalties of deviation charge on wind/solar generators as deviation is beyond their control and submitted that, any incentive/penalty in forecasting should be passed on to the beneficiaries. Specifically, in case of RE generators under Open Access, proposed Deviation charges are much higher than what they receive.

Further if at all it is to be imposed then it is requested to fix the tolerance band of $\pm 15\%$ or more w.r.t Available Capacity (AvC) to start with and the same can be relaxed over a period of time.

With regards to Deviation Charges, RE generators submitted that, recently the tariff discovered in both wind and solar projects bidding across the country in the range of around Rs. 2.45 to Rs.3.0 per unit. In Such scenario, fixing deviation charges as stated in the regulation would amount to more than 50% of the rate at which supplying power to utility. Therefore, the same should be levied in terms of 10%, 20% & 30% in three different slabs. Further, RE generators requested to follow the similar approach as the CERC and revise the deviation band/range accordingly.

Further, some of the RE generators also submitted the case specific simulation for its own project for demonstration of impact on account of deviation charges to paid and submitted that, the implementation of Regulations will make the project unviable.

SLDC submitted that, as the deviation in RE injection impacts the state interchange with national grid and results in deviation at state periphery from schedule, the RE deviation needs to be charged at the fix base rate equivalent to central sector DSM rate at 50Hz frequency i.e. Rs 1.78/kWh

Consumer Representative submitted that, for wind and solar power, the deviation penalties are higher for intra-state transactions compared to interstate transactions. Deviation penalties for intra-state transactions based on absolute values needs to be revised regularly in line with the wind and solar market prices. Further, the allowable error/tolerance bands should also be reviewed each year after careful data analysis of the past year's schedules, actual generation and deviation.

It is also requested to mandate the SLDC to publish the important data such as schedules, actual generation for each pooling station/generator at each 15 min block in readable formats for each week/month depending on the settlement period.

Distribution Licensee, submitted that, the Deviation Charges of Solar and Wind Power should be different as the variable nature of the two sources of power is different and also solar forecasting methodologies are quickly maturing worldwide and have higher accuracy levels than wind forecasting. Distribution Licensee has also submitted the proposed Deviation charges in case of Solar and Wind generation for both error formulas.

One of the RE generators has also submitted the analysis of daily data of actual radiation and the corresponding generation its own solar generation projects at Sakri (Dist. Dhule) and Shirsufal (Baramati), for August-17, Nov-17, Jan-18, Feb-18 & March-18 as representative months for seasonal variations. Based on analysis RE generator has submitted that, the range of variation in radiation data is from 9.9% in fair season month i.e. January to 32% in worst season month i.e. August. This variation is similarly reflected in deviation in actual generation with % deviation ranging from 9.5% to 32%, hence, requested to revise error band slabs for deviation charge accordingly. It is also suggested that until accurate area-wise weather forecasting available, there should be no deviation charge for absolute error (on the basis of available capacity) up to 15%.

27.2 Analysis and Commission's Decision

The Commission in its Approach Paper has discussed in details, the analysis of options with tolerance band of +/- 10% vis-à-vis +/-15% and Deviation charges to be considered for each tolerance band. The Model F&S Regulations prepared by FOR also provides the similar simulation for tolerance band and analysis of deviation charges applicable. Similarly, SoR of the Central Commission for amendment to the DSM Regulations also provides the similar analysis.

The Commission notes that suggestions made by several objectors to specify the Absolute Error with denominator as Available Capacity instead of Schedule Capacity and the Accuracy Band of Absolute Error to be specified as +/-15%, 25%, 35%, >35% instead of +/-10%, 20%, 30%, >30% in view of initial stage of introduction of forecasting and scheduling regime. Further, the Commission has taken note of the stipulations covered under Model F&S Regulations and provisions covered under the F&S Regulations of other states.

Further, as per detailed analysis covered under Discussion Paper, the Commission is of the view that while the Error formula based on scheduled generation may be conceptually logical, it does not cover significant data-points within a reasonable Accuracy Band level.

Moreover, during non-peak seasons, the degree of error in absolute terms would be insignificant but the percentage error value would be significantly higher since forecasts and schedules are much lower. On the other hand, the Error formula based on Available Capacity is not saddled with such large differences and a smaller range of accuracy bands can be followed uniformly despite seasonal variations.

Thus, the Commission has adopted Error formula based on Available Capacity and Accuracy Bands in the range of +/-15%, 25%, 35%, >35%, to begin with and in future with improvement in the forecasting/scheduling techniques and upon gaining operational

experience revision in Error formula and Accuracy Bands can be considered. Accordingly, suitable provisions in the final F&S Regulations have been incorporated.

The Deviation Charges for variable RE as proposed in the Draft F&S Regulations are only fraction of deviation charges otherwise applicable for State. Linking each generator's deviation charges with its PPA rate may not possible and desirable as within same pooling station there may be multiple generators having PPA at different tariff rates. Further for Captive/3rd party sale the PPA rates may not be available to SLDC. Besides, the rates for PPA would vary depending on tenure of contracting arrangement viz short term, medium term or long term. The DSM arrangement should be able to address different types of arrangement.

With regards to SLDC's submission to link the per unit deviation charges with the fixed base rate equivalent to central sector DSM rate, the Commission is of the view that, the deviation charges proposed in the Regulations are to be collected from each QCA and intern from each generator irrespective of its impact on state deviation. Aggregate impact of RE deviation in the overall State deviation at regional level may be different than individual QCA or independent generator's deviation.

Further, as per the provision of Regulation 12, if there is any shortfall in the aggregate amount of RE Deviation Charge payable by RE Generators at the State periphery and the amount receivable from them by the Pool Account shall be paid by the respective QCAs in proportion to their deviation reflected at the State periphery. This provision ensures the zero-sum operation of DSM pool at state level.

The Regulations has already provision for review after two years. Further if required the Commission may review the provisions at any time by under taking the due Regulatory process.

27.3 Provision in Final F&S Regulations, 2018

The Commission has accordingly modified the provisions of the Draft F&S Regulations.

28. Regulation 7.5: Settlement of Deviation Charges by QCA with SLDC

28.1 Proposed in draft F&S Regulations, 2018

7.5 The QCA shall undertake the settlement of the Deviation Charges with the SLDC on behalf of the concerned Generators.

28.2 Comments received

The RE generators requested to revise the provision of Regulation 7.5 and provide the alternate mechanism to recover the charges payable by generators through monthly billing of Distribution Licensee.

28.3 Analysis and Commission's Decision

Since the generators within the Pooling substation may also include the generators which do not have PPA with Distribution Licensee. In such case Distribution Licensee will not be able to recover the Charges through monthly billing. The Commission does not find it be appropriate to assign the responsibility to recover the Deviation Charges through Distribution Licensees.

28.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

29. Regulation 7.6: Generators connected to InSTS and selling/consuming power outside the State.

29.1 Proposed in draft F&S Regulations, 2018

7.6 The Deviation Charges for under- or over-injection by Generators connected to the Intra-State Transmission Network and selling or consuming power outside Maharashtra shall be governed by the Regulations of the Central Electricity Regulatory Commission (CERC) governing the Inter-State Deviation Settlement Mechanism and related matters; and the accounting for this purpose shall be done by the SLDC limited to the deviations in the Intra-State Transmission Network resulting from such under- or over-injection.

29.2 Comments received

SLDC submitted that, the schedule of generators selling power outside Maharashtra will be included in state schedule by WRLDC. As per the Intra-State ABT mechanism the generator selling power outside the state shall become State Pool Participant (SPP) in FBSM and will be treated at par with all other SPPs. In addition to this, the deviation settlement as per the F&S Regulations will also have to be carried out. Hence, the generators selling power outside Maharashtra, shall be subjected to settlement as per Intra-State ABT mechanism (FBSM) as well as specified in current F&S Regulations.

RE Generators submitted that, for Inter-State Transactions, the Commission has proposed stricter norms for deviation in case of Inter-state transaction as compared to the same provided by CERC. Since there is only penalty being imposed on RE Generators, there will always be surplus fund collected in State DSM Pool which is not required to pass on to Central DSM Pool. Therefore, it will result in unjust enrichment of Beneficiaries of State DSM Pool. Hence, it is requested that, the same bands of % Absolute Error may be stipulated as stipulated by CERC.

29.3 Analysis and Commission's Decision

Deviation settlement of RE generators selling power outside the State shall be governed by the CERC DSM Regulations. The present Intra-State ABT mechanism (FBSM) in the State does not specify any Deviation Settlement treatment to RE generators irrespective of selling power within or outside the State. Presently SLDC is not computing any Deviation Charges for RE generators if they are selling outside the State as per Intra-State ABT mechanism. Hence, double counting of Deviation Charges is not expected in case of RE generators selling outside the State, as claimed by the objectors.

Further, the Commission has specified similar deviation band for Inter-State and Intra-State Transactions, considering uniform deviation band to both the generators undertaking Inter-State and Intra-State transactions.

29.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

30. Regulation 8.1: Deviation Settlement for Inter-State Transactions

30.1 Proposed in draft F&S Regulations, 2018

8.1 The sale or self-consumption of power outside Maharashtra by Solar and Wind Energy Generators connected to the Intra-State Transmission Network shall be settled by the Procurers on the basis of their scheduled generation.

30.2 Comments received

SLDC submitted that, in case of Inter-State sale by RE generators the procurer will be at outside State, then it will not be possible to settle the deviation charges by procurer. In such cases Deviation Charges may be passed on to RE generators.

30.3 Analysis and Commission's Decision

Regulation 8.1 specifies the settlement of energy generation on scheduled basis and not the Deviation Charges, whereas Regulation 9.2 clearly specifies the responsibility of QCA to settle the Deviation Charges in either cases.

Further, it may be noted that, while the Procurer is outside the state, RE generator is within the State and shall be assigned to Pooling Station within the State. QCA on behalf of generator shall be responsible to settle the deviation charges.

Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

31. Regulation 8.2: Separate feeder for Inter-State Transactions

31.1 Proposed in draft F&S Regulations, 2018

8.2 Inter-State transactions at a Pooling Sub-Station shall be permitted only if the concerned Generator is connected through a separate feeder.

31.2 Comments received

SLDC submitted that, automatic meter reading for data to SLDC needs to be in place and Metering arrangement for separate feeder shall be in place in case of Inter-State Transactions.

RE generators submitted that, Maharashtra is a power surplus state and it may not require extra wind power for certain reasons. In that case wind power plants should be allowed to sell power outside the state. By restricting Inter-State sale to only those generators connected through separate feeder, the market for Open Access based Inter-State sale is being curtailed which is not the objective of the EA, 2003. The services of the QCA in consultation with SLDC can be used to segregate Intra-State v/s Inter-State schedule and calculate separate DSM penalties. The SLDC may propose a formula for the same.

31.3 Analysis and Commission's Decision

The energy settlement in case of generators undertaking Inter-State transactions shall be on scheduled basis whereas in case of Intra-State transactions it will be on actual generation basis. Accordingly, there must be provision to maintain separate account for both types of transaction which will be only possible if the metering arrangement through separate feeders will be carried out in both cases. This has also been discussed in detail in the Approach Paper.

Further, the Regulations does not prohibit any generator to undertake Inter-State transactions, upon fulfilling the conditions specified in the Regulations.

With regards to metering arrangement, SLDC may specify details during submission of detailed procedure considering provision of this Regulation.

31.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

32. Regulation 8.4: Deviation Settlement account by SLDC for Inter-State Transactions

32.1 Proposed in draft F&S Regulations, 2018

8.4 The SLDC shall prepare the deviation settlement account for such Generator on the basis of measurement of the deviation in the energy injected and its impact at the State periphery.

32.2 Comments received

SLDC submitted that, Deviation Settlement account for the generators undertaking Inter-State transactions shall be prepared as per the provisions of Regulation. However, preparation of the impact of Deviation of such generator at state periphery may not be possible as load generation balance within the State and all generating resources in the State are contributing in deviation of the State with respect to schedule.

RE generators submitted that, the Table A of the Annexure gives deviation charges only for the under injection. The Regulation should also provide Deviation Charges for excess injection and the excess generation shall also be accounted for.

32.3 Analysis and Commission's Decision

As QCA is submitting the schedule of Inter-State and Intra-State transactions separately, SLDC will be able to calculate the deviation impact of Inter-State and Intra-State transactions separately within the Pooling Sub-station. SLDC is expected to calculate the impact of Deviation for each Pooling Substation at State Periphery and not the impact of Deviation of each generator undertaking Inter-State Transactions at State periphery. Regulation 7 and 8 of the Draft Regulations specifies the process for the same.

With regards to Deviation Charges for over injection, separate Table B is provided in the Annexure of the Draft F&S Regulations for Deviation Charges in case of over-injection.

32.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

33. Regulation 8.6: Separate Deviation Charges for Inter-State and Intra-State Transactions

33.1 Proposed in draft F&S Regulations, 2018

8.6 The Deviation Charges for under- or over-injection by Generators connected to the Intra-State Transmission Network and selling or consuming power outside Maharashtra shall be as specified in the Annexure to these Regulations, the accounting for which shall be done by the SLDC.

33.2 Comments received

RE generators submitted that, SLDC is giving only one schedule to RLDC for all RE generators in the State. Hence, there cannot be discrimination between Intra and Inter-State transaction of RE generators. The Deviation Charges of the Intra-State transactions may be made applicable to Inter-State also to the extent it is covered by the regulation.

33.3 Analysis and Commission's Decision

The Draft F&S Regulations specifies that, the energy account of Intra-State and Inter-State transactions shall be maintained separately and SLDC shall compute the Deviation for both separately.

33.4 Provision in Final F&S Regulations, 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

34. Regulation 10: Metering Arrangement

34.1 Proposed in draft F&S Regulations, 2018

10.1 Every Pooling Station and stand-alone Generator with installed capacity of 5 MW or above shall have a Special Energy Meter (SEM) capable of recording the energy in 15-minute time blocks as specified in the CEA Regulations governing metering.

The QCA shall furnish weekly meter readings to the SLDC by 00.00 hours on the Thursday of the previous week, in addition to the data provided to the Supervisory Data and Control Acquisition (SCADA) Centre, for the purpose of energy accounting under these Regulations.

34.2 Comments received

RE generators submitted that, the Commission needs to issue detailed operational guidelines considering metering arrangement related issues for old wind Generators. Further, installation of AMR facilities will be necessary for implementation of these Regulations. The Commission should also include the action plan in the Regulations.

Distribution Licensee submitted that, “every Pooling Station and stand-alone generator with installed capacity of 5 MW or above shall have a SEM capable of recording the energy in 15-minute time blocks as specified in the CEA Regulations governing metering. This contradicts the requirement under Distribution Open Access Regulations (Regulation 17.1, therein) which requires all Open Access consumers and generators to install Special Energy Meters.

Distribution Licensee also submitted that, the applicability of the *ibid* Regulations needs to be relooked. The Metering clause be revised in line with the applicability clause to include all projects under the ambit of the Regulations instead of projects above 5 MW only.

It is further submitted that the Regulations should address the metering related issues such as installation of SEM within the stipulated timelines, installation of backup meter i.e. ‘check meter’, uniformity in software/protocol. A Common Software should be developed / adopted by all the QCAs. It is requested to provide clarity on the same in the final Regulations.

34.3 Analysis and Commission's Decision

The Distribution Licensees, SLDC, and RE generators are expected to comply with provisions of relevant Regulations of appropriate authorities. The provision of Regulation 10.1 related to requirement of SEM for RE Pooling Sub-station having installed capacity 5MW and above needs to be read with applicability of these F&S Regulations. The metering related the provisions of these Regulations does not supersede the metering related provisions of Open Access Regulations. The other OA implementation related issues raised by objectors are outside of the scope of these F&S Regulations.

SLDC may specify metering related implementation details during submission of detailed procedure considering provision of this Regulation.

34.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

35. Regulation 12.1 (d): Zero-Sum operation of DSM Pool

35.1 Proposed in draft F&S Regulations, 2018

12.1(b) The SLDC shall compute the impact of the deviation of the Solar and Wind Energy Generation and its contribution to the Deviation Charge at the State periphery.

(d) Any shortfall in the aggregate amount of Deviation Charge payable by Solar and Wind Energy Generators at the State periphery and the amount receivable from them by the Pool Account shall be paid by the respective QCAs in proportion to their deviation reflected at the State periphery.

35.2 Comments received

RE generators submitted that, according to Regulation 12.1(d) the computation implies that the RE generators would end up dealing with State Level DSM (erstwhile UI) applicable as a Pool of generators instead of the framework proposed under commercial arrangement. This also implies that RE generators will have to deal with two different types of DSM charges:

1. DSM Charges as per the Part-C as proposed under the draft regulation.
2. Additional DSM charges on the account of methodology proposed under Regulation 12.1(d)

DSM charges under Part-C may principally be acceptable by the RE generators, however, the additional DSM charges may not be acceptable by the RE generators.

The proposed framework also implies that the RE generator(s) would eventually end up paying full DSM charges contrary to all the existing model/draft/final regulations published by the CERC, FOR model Regulations and Regulations of other SERCs.

Hence, requested the Commission not to have additional state level DSM linked charges (either positive or negative) to be imposed on the RE Generators. Such an additional charge will add a level of uncertainty that may result in the project not being bankable.

Further, kindly requested to clarify if instead of a shortfall there is a surplus at the end of cycle, in such case whether generators receive the Payments or will they be provided credit for the next DSM cycles?

RE generators also submitted that, the above proposal is against the FOR Model Regulations which stipulates that in case there is deficit in the overall pool at the end of the year, the SLDC may approach the National Funds such as PSDF or NCEF to cover such deficit.

Consumer Representative submitted that, the clause 'd' of the Regulation 12 may be revised to incorporate the provision in case of surplus in the aggregate amount of Deviation Charge.

Distribution Licensee submitted that, the regional level over-drawal or under-drawal incidence of State will be different at different times. Even if State is overdrawing, net deviation of solar/wind may be one of under-drawal and vice-versa, hence it will not be possible to directly compute the deviation charge on account of wind/solar deviation.

In case of under-drawl in Regional pool, the WASMP rate is applicable for such under-drawl quantum in State imbalance pool. Such WASMP rate varies from time block to time block. Thus, to avoid complications and to make this settlement run irrespective of settlement of State imbalance pool the provision of Regulation 12.1(b) is required.

This charge is applicable on the net deviations, hence if forecasting error is normally distributed by all the participants net quantum will be very low. At the same time if all participants are taking some position and doing under/over forecasting, this will act as a deterrent. The SLDC shall compute the impact of the deviation of the solar and wind energy generation and its contribution to the Deviation Charge at the State periphery.

Hence it is proposed to link the rate of Deviation Charge with the State APPC or the actual rate applicable as per RLDC, whichever is higher.

Further Distribution Licensee submitted that, the amounts collected towards Deviation Charges shall be distributed among the State Pool Participants (SPPs) in State, in proportion of the wind & Solar capacity available to them in respective time blocks. Provided that the OA consumer's capacity shall be accounted as available with the Distribution Licensee in whose area the consumer is located, as it is absorbing the variations of such generators.

35.3 Analysis and Commission's Decision

As mentioned in the Objectives, this Regulation is to facilitate Large scale RE grid integration. Regulation 12.1(d) provides for treatment for deviation accounting and virtual pool operation. The virtual pool discussed in the approach paper is for the computation of Deviation and not Scheduling purpose submitted by the Stakeholders.

While computing Deviation on account of RE generators at State periphery, SLDC shall consider, impact of Deviation on account of RE generators under Virtual Pool and its contribution to the Deviation Charge at the State Periphery. Further, SLDC shall compute the Deviation Error for each Pooling Substation and accordingly determine the amounts payable on account of Deviation Charge as specified in the Regulation 7 and 8 of these Regulations.

FOR Model Regulations has suggested support through PSDF/NCEF funds for meeting shortfall in deviation charges collected from Wind/Solar generators vis-à-vis impact of its deviation at state periphery. However, no such notification is in place till date. Hence, in the Draft F&S Regulations, mechanism for treatment for such shortfall and its recovery has been proposed.

Further, the State DSM Pool account shall be prepared for Settlement Period, wherein the Deviation Charges (either Positive or Negative) for RE shall be accounted for and allocated to the Pooling Station in proportion to its impact at State Periphery.

With regards to addition of provision of sharing Deviation Charges among the SPPs, the Commission is of the view that, the methodology specified in the Draft F&S Regulations for treatment to the Deviation Charges collected by RE generators is appropriate to take care the concerns raised by Distribution Licensees.

Further, as per Regulation 5.21 of this Regulations, SLDC shall prepare detailed procedure for Deviation accounting with illustrative example for more clarifications.

35.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

36. Regulation 13.2: Late Payment Surcharge

36.1 Proposed in draft F&S Regulations, 2018

13.2 The Deviation Charges shall be paid within ten days from the issue of the accounts and billing by the SLDC, failing which a late payment surcharge amounting to 1.25% per month shall be levied for the period of delay.

36.2 Comments received

RE generators requested to reduce the late payment surcharge to 0.50% to 0.75% per month and also requested to increase the no. of days to 60 days as generator are receiving payments from Distribution Licensee within 60 days from submission of bill.

36.3 Analysis and Commission's Decision

Interest rate of 1.25% is considered similar to provisions specified in the other Regulations of the Commission such as interest on late payment in RE Tariff Regulations.

36.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

37. Regulation 14.1: Intimation of Curtailment of RE generation

37.1 Proposed in draft F&S Regulations, 2018

14.1 Any curtailment imposed on the energy injection for reliable and secure Grid operation in emergent situations shall be communicated by the SLDC to the QCA through an IT-enabled communication, and no Deviation Charges shall be payable for any consequent deviations if the SLDC fails to do so.

14.2 In case of any curtailment planned and communicated by the SLDC due to line maintenance or other reasons in certain time blocks of a day, the QCA shall be responsible for curtailing the generation at site and amending the Schedule accordingly, failing which the SLDC shall revise the Schedule as required.

37.2 Comments received

SLDC submitted that, each QCA shall furnish required information for communication through electronic media (Emails) to SLDC.

RE generators submitted that, SLDC also needs to communicate the reasons for curtailment. In case SLDC fails to communicate about the curtailment to generators/QCAs, Deviation Charges shall not be levied. The SLDC shall be considering the grid availability during the computation of Deviation Charges.

In case of any curtailment planned and communicated by the SLDC due to line maintenance or other reasons in certain time blocks of a day, the QCA shall be responsible for informing the generator's O&M team or the OEM's team to take necessary action for curtailing the generation at site, and make necessary amendments to the Schedule accordingly, failing which the SLDC shall revise the Schedule as required.

Further, RE generators also requested to include the specific situations for allowing grid curtailment and the provision of compensation for the loss in generation based on the scheduling given by QCA at applicable tariff for each generator in case of curtailment other than the specified reasons.

Further, Emergent situation needs to be defined in the Regulations as National / State grid failure or Natural Calamities alone, which are exclusively beyond human control.

Consumer Representative submitted that, the word 'emergent' may be replaced with 'emergency'. The minimum timeline needs to be specified for SLDC to communicate such planned curtailment to allow timely revision of schedules by QCA.

37.3 Analysis and Commission's Decision

SLDC is expected to take all the necessary steps for reliable and secure real time grid operation. Linking of operational issues with commercial transactions may not be appropriate. Further, there are provisions for revision of schedules in case of any curtailment decision required to be taken by SLDC.

The provisions of F&S Regulations specify about the modalities of communication between SLDC and QCA. The SLDC shall not be responsible for any communication with generators or Generator's O&M team.

Further, there are provisions for revision of schedules in case of any curtailment decision required to be taken by SLDC. SLDC may specify details during submission of detailed procedure considering provision of this Regulation.

With regards to the submission of Consumer Representative, for replacing the word 'emergent' with 'emergency', the Commission has considered the same and revised the Regulation 14.1 accordingly.

37.4 Provision in Final F&S Regulations. 2018

The Commission has revised the Regulation 14.1 of F&S Regulations as under:

*14.1 Any curtailment imposed on the energy injection for reliable and secure Grid operation in **emergency** situations shall be communicated by the SLDC to the QCA through an IT-enabled communication, and no Deviation Charges shall be payable for any consequent deviations if the SLDC fails to do so.*

38. Regulation 15.1: Energy Accounting

38.1 Proposed in draft F&S Regulations, 2018

15.1 All accounts relating to deviations shall be prepared by the QCA on a weekly basis based on inputs from the SLDC, and be accessible to the SLDC through an IT-enabled system and software.

38.2 Comments received

RE generators submitted that, IT Systems are necessary for effective communication of data related with the actual generation recorded in the energy meter, which are under the control of the TRANSCO or the DISCOM, and requested to allow the QCAs to install communication devices in co-ordination with generators and OEMs to get real time data from the energy meters, which will be used for weekly DSM settlement.

38.3 Analysis and Commission's Decision

The SLDC may specify modalities of energy accounting procedures including information/data exchange requirement during submission of detailed procedure considering provision of this Regulation.

38.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

39. Regulation 16: De-pooling of Deviation Charges

39.1 Proposed in draft F&S Regulations, 2018

16 The QCA shall de-pool the energy deviations and the Deviation Charges against each Generator in proportion to its actual generation.

39.2 Comments received

RE generators requested to include the option of De-Pooling by QCA in proportion to Available Capacity as may be mutually agreed between QCA and the Generators.

39.3 Analysis and Commission's Decision

The Commission has discussed the various options for De-Pooling the Approach Paper. While De-Pooling amongst the RE Generators can be easily undertaken on the basis of AvC or Actual Generation, doing so on the basis of other three parameters would require information regarding the schedule for each Generator (turbine or feeder level) to be maintained and be available with the QCA. While forecasts at the turbine level could be available, the schedule at each turbine level or reconciliation of schedule at the turbine or Generator level vis-à-vis the aggregate schedule at the pooling sub-station level would be difficult. Hence, the Proposed Regulations envisage De-Pooling on the basis of Actual Generation (MWh) among the constituent generators at each Pooling Sub-Station.

39.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

40. Annexure: Framework for RE generators connected to InSTS and undertaking Inter-State Transactions

40.1 Proposed in draft F&S Regulations, 2018

“a).....

The fixed rate for Solar and Wind Energy Captive Power Plants or Open Access Generators selling power which is not counted against the Renewable Purchase Obligation (RPO) compliance of the Procurer shall be the Average Power Purchase Cost (APPC) rate at the national level, as determined by the CERC from time to time”

40.2 Comments received

RE generators submitted that, the APPC is many times more than the deviation rates adopted in Regulation 7.2 for the Intra-State transactions which would discriminate the WEGs who are doing Inter-State transactions. Deviation charges as applicable to Intra-State transactions as specified in Table A of Regulation 7.2 may be adopted and reference of APPC may be deleted.

40.3 Analysis and Commission’s Decision

As the RE generators which are connected to InSTS and selling or consuming power outside the State, shall be governed by provisions of the CERC DSM Regulations. The payment of RE generators undertaking Inter-State Transactions are on the Schedule basis whereas for Intra-State it is on actual generation basis. Hence, the different treatment for deviation accounting is necessary as specified in the Annexure of the Draft Regulations.

40.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

41. Operation of proposed RE Deviation mechanism with existing FBSM mechanism.

41.1 Comments received

SLDC submitted that, existing FBSM mechanism shall continue for UI settlement of conventional generators as per current practice and the Proposed F&S Regulations shall take care of deviation of RE from schedules. These two settlement systems shall operate separately. Further deviation charging method for FBSM is based on WASMP and in RE DSM is fixed rate for percentage deviation.

41.2 Analysis and Commission’s Decision

The Commission notes the submission of SLDC.

41.3 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

42. RE power sellers to become SPP in existing FBSM

42.1 Proposed in draft F&S Regulations, 2018

42.2 Comments received

SLDC submitted that, the Inter-State RE power transactions shall have to be considered as State Pool Participants in the existing FBSM.

Further, revision in schedules of Inter-State RE transactions shall be governed by CERC Open Access Regulations.

42.3 Analysis and Commission's Decision

Inter-State RE power transactions shall be governed by CERC DSM Regulations for the purpose of DSM settlement and Deviation Accounting. Revisions of Schedules of Inter-State RE transactions proposed in the Draft F&S Regulations are in line with CERC DSM Regulations amendment.

42.4 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

43. Credit of Intra-State RE power to Distribution Licensee

43.1 Comments received

SLDC submitted that, as per the current practice actual energy injected by RE generators is being credited to respective Distribution Licensees having PPA with RE generators. Same practice of crediting actual energy to the respective Distribution Licensees shall continue.

43.2 Analysis and Commission's Decision

Issue raised by SLDC is out of the scope of the F&S Regulations as F&S Regulations, provides treatment to Deviation settlement for RE generators only.

43.3 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

44. Fund Management – Deviation charges collected by SLDC through RE DSM

44.1 Comments received

SLDC submitted that, under the regime of deviation charging mechanism of F&S regulation, there is possibility of generation of funds through deviation charge collected from QCA. This collected amount for particular period (Weekly) shall be reimbursed to Distribution Licensee in proportion to actual energy injected by their contracted RE generators. This arrangement shall reduce the burden on Distribution Licensees due to RE variation.

Further SLDC submitted that, by virtue of implementation of F&S Regulation, SLDC intends not to generate any fund out of deviation charges collected from QCA.

44.2 Analysis and Commission's Decision

As per the provisions of the Regulation 12 of these Regulations, the Deviation Charges collected by SLDC through RE DSM shall be first used to set off the Deviation Charges payable or receivable for the State as whole.

Presently the Distribution Licensees are absorbing the Charges payable or receivable on account of RE deviation which will be collected from RE generators directly after

implementation of this Regulations. Distribution Licensee's burden is expected to reduce to that extent.

With regards to generation of fund by SLDC, the proposed RE DSM mechanism under the F&S Regulations envisages Zero-sum pool settlement only and does not considers any creation of fund by SLDC for RE DSM.

44.3 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

45. Regulation: Addition of "Tightening of error band"

45.1 Comments received

SLDC submitted that, the proposed error band may be suitable at initial stages of implementation. However, after gaining experience in forecasting and scheduling, the proposed error band needs to be tightened in phased manner after initial period of implementation of about three years.

45.2 Analysis and Commission's Decision

The Regulation 4.2 states the provision of review of Regulations after 2 years and if necessary before two years also.

45.3 Provision in Final F&S Regulations. 2018

The Commission has decided to retain the provisions of the Draft F&S Regulations.

46. Comments on Approach paper and General Comments

The Commission received several General Comments and Comments on the Approach Paper published with the Draft Regulations. The Commission has reviewed the same and appropriate comments have been considered on merit and addressed in this SoR.

Sd/-
(Mukesh Khullar)
Member

Sd/-
(I. M. Bohari)
Member

Sd/-
(Anand B. Kulkarni)
Chairperson