

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

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Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024

STATEMENT OF REASONS

Dated: 3 July 2024

Introduction

The Maharashtra Electricity Regulatory Commission (“MERC” or “the Commission”) notified the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2018 (“MERC F&S Regulations, 2018” or “the Principal Regulations”) on 20 July 2018. The Commission notified the said Regulation in exercise of the power conferred under sub-section (3) of the Section 32, sub-section (4) of Section 33 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) (EA 2003) and all other powers hereunto enabling, and after previous publication.

The provisions of the MERC F&S Regulations, 2018 aimed to introduce scheduling discipline and mandated Renewable Energy Generators (Solar and Wind) to provide advance scheduling to facilitate real time operation of grid by the Maharashtra State Load Despatch Centre (MSLDC). Having gained experience in implementation of forecasting and scheduling for Solar and Wind Generators, the Commission in exercise of the powers conferred under Regulation 4.2 of the Principal Regulations has reviewed the aspects related to formulation of Absolute Error, Accuracy Band and Deviation Charges as stipulated under Part C of the Principal Regulations and other associated parameters. Further, based on inputs shared by the Deviation Settlement Mechanism (DSM) Working Group and Maharashtra State Power Committee (MSPC), regulations framed by the Central Electricity Regulatory Commission

(CERC) and aspects specific in the context of Maharashtra for forecasting & scheduling for Solar and Wind Generators, the Commission proposed the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2023 (“Draft MERC F&S First Amendment Regulations, 2023” or “Draft Regulations”).

The rationale for the various proposed provisions were elaborated in the Explanatory Memorandum (EM) published along with the Draft MERC F&S First Amendment Regulations, 2023.

Accordingly, the Draft MERC F&S First Amendment Regulations, 2023 and the associated Explanatory Memorandum were published on the Commission’s website www.merc.gov.in in downloadable format on 22 December 2023. A Public Notice was also published in daily newspapers Marathi (Maharashtra Times and Lokmat) and English (Times of India and Indian Express), inviting comments, objections and suggestions from all stakeholders to be submitted to the office of Commission on or before 22 January 2024.

A total of 24 stakeholders have submitted their comments/suggestions/objections on the Draft MERC F&S First Amendment Regulations, 2023. The list of stakeholders who offered their comments/suggestions/ objections on the Draft MERC F&S First Amendment Regulations, 2023, which have been considered by the Commission while finalising the Regulations, is placed at **Annexure-I**.

The main comments/suggestions/ objections and views expressed by the stakeholders through their written submissions and the Commission’s views thereon have been summarized in the following paragraphs. It may be noted that all the suggestions given by the stakeholders have been considered and the Commission has attempted to elaborate all the suggestions as well as the Commission’s decisions on each suggestion in this Statement of Reasons (SOR). However, certain suggestions may not be specifically elaborated, but are considered. Further, some stakeholders have suggested changes on Syntax/phrase/addition of word(s)/rewording related changes, etc. which have been suitably incorporated, wherever necessary.

Wherever possible, the comments and suggestions or objections have been summarised clause-wise, along with the Commission’s analysis and ruling on the same. However, in some cases, due to overlapping of the issues/comments, the clauses have been combined in order to minimise repetition.

Some comments and suggestions were not directly related to the Draft Regulations on which inputs were invited. While the Commission has summarised such comments and suggestions or objections briefly in this Statement of Reasons (SOR), specific rulings on the same have not been provided, as the same are outside the scope of these Regulations.

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

1 Enabling Provisions for Draft MERC F&S Amendment Regulations, 2023

1.1 Comments received

Bajaj Finserv Limited submitted that, the Provisions of the Draft MERC F&S Amendment Regulations, 2023 proposing to shift from actual generation based to scheduled generation based settlement regime is against the Section 86(1)(e) of the Electricity Act, 2003.

Hetero Med Solutions Limited submitted that, the penalty framework in practice and as per the proposed amendment are in complete violation of the provisions of the EA 2003 which distorts layered approach but also prejudiced to one party. It is suggested to ensure no statutory violation in this regard while specifying the penalties under any regulations.

RE generating group companies of Apraava Energy Company submitted that, the Draft Regulations violates 'Principles of Regulatory Certainty' under Articles 14 and 19(1)(g) of the Constitution of India as existing practices were conceptualized and commissioned on applicable / prevalent technical norms and parameters at the time of bidding of the project. RE generators submitted that provisions of the Draft Regulations changing penalties and standards for imposition of penalties shall increase impact on existing projects.

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 the State Grid Code, through Forecasting and Scheduling mechanism.

Having gained experience in implementation of forecasting and scheduling for Solar and Wind Generators, the Commission in exercise of the powers conferred under Regulation 4.2 of the Principal Regulations has reviewed the aspects related to formulation of Absolute Error,

Accuracy Band and Deviation Charges as stipulated under Part C of the Principal Regulations and other associated parameters. Further, based on inputs shared by the Deviation Settlement Mechanism Working Group and Maharashtra State Power Committee (MSPC), regulations framed by the Central Electricity Regulatory Commission and aspects specific in the context of Maharashtra for forecasting & scheduling for Solar and Wind Generators, the Commission framed the Draft MERC F&S Amendment Regulations, 2023.

1.3 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the enabling provisions of the Draft MERC F&S Amendment Regulations, 2023.

2 Regulation 1.2: Parallel/Simulated operation under scheduled generation based settlement regime under Trial Mode

2.1 Introduction of second and third proviso after Regulation 1.2 of the Principal Regulations:

“Provided further that proviso to Regulation 7.1, Regulation 7.2B, proviso to Regulation 13.1, proviso to Regulation 16 and the related provisions regarding scheduled based settlement shall come into force from the date to be notified separately, which shall not be later than fifteen (15) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2023.

Provided further that until notification of such date as referred hereinabove under second proviso to Regulation 1.2, the arrangement referred under proviso to Regulation 7.1, Regulation 7.2B, proviso to Regulation 13.1, proviso to Regulation 16 and the related provisions regarding scheduled based settlement, shall be implemented in parallel for Pooling Sub-station(s) in Trial Mode starting from the date immediately after the lapse of three (3) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2023. The Trial Mode may be operated for a period of twelve months or any such period as may be decided by the Commission.”

2.2 Comments received

Adani Electricity Mumbai Ltd. submitted that commercial operation of MERC F&S Regulations, 2018 was commenced from January 2020 and substantial operational experience of Forecasting, scheduling, operation and billing of RE DSM has been gained by the

stakeholders. Also, necessary groundwork in terms of establishing QCAs, infrastructure like metering and communication etc. has already been established. Therefore, change in regime could be aligned with next Multi Year Tariff (MYT) Control Period starting from 1 April 2025 such that individual stakeholders will bear the cost towards their own deviation from new MYT Control Period.

Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) referred to the Commission suo-motu Order dated 2 August 2022 in the matter of commercial implementation of the MERC DSM Regulations, 2019 wherein MSETCL/ STU was directed to ensure that action plan for implementation of SCADA to ensure required real time visibility (132 kV level substation) is implemented within the timelines set. MSEDCL submitted that accordingly, MSETCL/SLDC shall provide real time visibility of interface meters to state Discom at the earliest to enable them to assess the real time demand and take corrective action so as to minimize the deviation. MSEDCL submitted that in case of shift to scheduled based payment regime for Wind and Solar generator, then MSEDCL may be unable to predict its demand accurately unless STU and RE generators provide relevant real time data. MSEDCL requested to increase frequency of real-time data fetch and submitted that during Trial Mode STU shall upgrade communication network to fetch data of all T<>D point in every block. It further submitted that through this regulation framing exercise proper instruction to STU shall be passed for sharing real time data immediately.

ReNew Private Ltd. submitted that scheduled generation based settlement regime would necessitate SLDC to update its own existing IT enabled communication platform and software, in addition to the development of new web based application for QCA. It is expected that complexities arising due to evolving power sector in future would be better managed with development of good software design. Further, Trial Mode is expected to provide various inputs from the concerned stakeholders on various issues to be resolved subsequently, and lessons and learning are validated through trial run results and corrective actions thereof would be followed through actual transition. Therefore, it is requested that the Commission to grant at least 24 months from date of notification to complete all necessary arrangement or infrastructure to undertake all the necessary activities related to metering arrangement.

Adani Green Energy Limited submitted that QCA and RE generators have to bear the additional cost for operating the parallel mechanism for 12 months. The Commission may kindly clarify the mechanism for recovering the additional cost incurred by RE generators on account of change in law/regulation. Further, implementation of scheduled generation based settlement in parallel may cause further delay in the issuance of DSM statement by SLDC.

Therefore, SLDC may be directed to implement ‘Schedule generation based settlement’ on its own and at the cost to SLDC, without imposing any commercial loss/burden on the RE generators.

2.3 Analysis and Commission’s Decision

The Commission at the time of framing of Principal Regulations has discussed the issues related to preparedness of all entities for implementation of F&S Regulations in the State. The issue of delay in communication system and SCADA is specific operational issue which cannot be dealt through the provision of Regulations. This matter would be dealt further separately under the proceeding related to DSM implementation.

It is understood that necessary groundwork in terms of establishing QCAs, infrastructure like metering and communication etc. has already been established. However, the Commission opines that the metering arrangements, communication arrangement and protocol including software development for granular level of information schedules/data/information exchange between QCA and generators, updating of SLDC procedure as envisaged in the proposed regulations need to be completed/ascertained. The Commission decides that upon notification of amendment regulations, 3 months’ period towards metering/infrastructure arrangement as well as for software development and at least twelve months’ period for Trial Mode would be required.

Accordingly, the Commission shall review the status of required preparedness and decides to notify the date of commencement of commercial arrangement in above referred regulations separately through the suo-motu Order which shall not be later than fifteen months from the date of notification of the MERC F&S First Amendment Regulations, 2024. The submission of Trial Mode implementation results, its analysis and recommendation to the Commission by the MSPC has been dealt in Para 4 of this SoR.

As regards the software cum dynamic web based application between QCA and generators, SLDC is directed to develop and operationalise the web based dynamic portal within 3 months from the date of notification of the MERC F&S First Amendment Regulations, 2024 and the same has also been dealt in Para 19 of this SoR.

SLDC is directed

- a) to approach the Commission with a detailed activity-wise implementation plan for time-bound implementation of MERC F&S Regulations, within 15 days of notification of amendment regulations.

- b) to provide the status of preparedness, as required by the Commission from time to time.
- c) to inform readiness to shift to scheduled generation based settlement regime under Trial Mode as well as its commercial implementation considering the provisions of these Regulations.

As regards additional cost for operating parallel regime, on account of change in law/regulation, the Commission is of the view that cost required towards grid security, operation with grid, especially metering cannot be under scope of change in law. However, any aggrieved party shall be required to approach the Commission for seeking approval of such Change in law, as per provisions of Power Purchase Agreement and relevant regulations which shall be subject to prudence check on case to case basis.

2.4 Provision in Final MERC F&S First Amendment Regulations, 2024

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

“Provided further that proviso to Regulation 7.1, Regulation 7.2B, proviso to Regulation 13.1, proviso to Regulation 16 and the related provisions regarding scheduled generation based settlement shall come into force from the date to be notified separately, which shall not be later than fifteen (15) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024.

Provided further that until notification of such date as referred hereinabove under second proviso to Regulation 1.2, the arrangement referred under proviso to Regulation 7.1, Regulation 7.2B, proviso to Regulation 13.1, proviso to Regulation 16 and the related provisions regarding scheduled generation based settlement, shall be implemented for Pooling Sub-station(s) in Trial Mode starting from the date immediately after the lapse of three (3) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024.”

3 Regulation 2.1(f)(a): Definition of Contract rate

3.1 Introduction of Regulation 2.1(f)(a) after Regulation 2.1(f) of the Principal

Regulations

“2.1(f)(a) “Contract rate” means the tariff for sale or purchase of power, as determined under Section 62 or adopted under Section 63 or approved under Section 86(1)(b) of the Act by the Commission or the price as discovered in the Power Exchange, as the case may be; in case of multiple power purchase/sale agreements, the Contract rate shall be the weighted average of rates in such multiple power purchase/sale agreements”

3.2 Comments received

Adani Electricity Mumbai Ltd. submitted that in case of multiple generators connected to a Pooling sub-station (PSS), the Contract rate at PSS level needs to be determined based on the Contract rate of individual generator connected to that PSS. It is to be evaluated as weighted average of rates in the ratio of contracted capacity or actual energy. However, since the actual energy may not be available at the time of PSS level billing by SLDC, hence contracted capacity can be considered. And, the definitions should be revised as under:

“2.1(f)(a) “Contract rate” means the tariff for sale or purchase of power, as determined under Section 62 or adopted under Section 63 or approved under Section 86(1)(b) of the Act by the Commission or the price as discovered in the Power Exchange, as the case may be; in case of multiple power purchase/sale agreements at the Pooling Sub Station level, the Contract rate shall be the weighted average of rates in such multiple power purchase/sale agreements in the ratio of the contracted capacity.”

3.3 Analysis and Commission’s Decision

The Commission has noted the submission and considered to revise the definition of “Contract rate”.

3.4 Provision in Final MERC F&S First Amendment Regulations, 2024

Definition 2.1(f)(a) “Contract rate” is revised as under:

“(f)(a) “Contract rate” means the tariff for sale or purchase of power, as determined under Section 62 or adopted under Section 63 or approved under Section 86(1)(b) of the Act by the Commission or the price as discovered in the Power Exchange, as the case may be; in case of multiple power purchase/sale agreements at the Pooling Sub-Station level, the Contract rate shall be the weighted average of rates in the ratio of the contracted capacity in such agreements;”

4 Regulation 2.1(x)(a): Definition of Trial Mode

4.1 Introduction of Regulation 2.1(x)(a) after Regulation 2.1(x) of the Principal Regulations

“2.1(x)(a) “Trial Mode” means the operation of provisions related to the forecasting, scheduling and a mechanism for the settlement of deviations by Generators and all other aspects specified in these Regulations for smooth and successful implementation of mechanism specified in the Regulations, wherein settlement by the Procurers is on the basis of their Scheduled Generation.”

4.2 Comments received

SLDC submitted that during the Deviation Settlement Mechanism trial operation period, the Deviation bills were prepared as per the MERC (Deviation Settlement Mechanism and related matters) Regulations, 2019 as well as per earlier applicable mechanism. However, the actual payments were made as per earlier regime. Therefore, SLDC requested that clarification in this regard may be provided in the regulations and definition of Trial Mode may provide clarity about the actual payments mechanism to be followed during trial mode operation period.

4.3 Analysis and Commission’s Decision

The Commission has noted the submission. The detailed modalities of Trial Mode are discussed by the Commission in the Explanatory Memorandum, however, for more clarity the Commission finds it appropriate to revise the definition of Trial Mode with addition of new Regulation 9.3.

Further, SLDC to ensure that parallel/simulated operation of scheduled generation based settlement mechanism does not affect existing activities undertaken by it under existing mechanism.

As elaborated in EM, the MSPC is directed to monitor the Trial Mode operations closely to evaluate its results and to address any difficulties faced by the stakeholders, including the SLDC.

4.4 Provision in Final MERC F&S First Amendment Regulations, 2024

Definition 2.1(x)(a) “Trial Mode” is revised and Regulation 9.3 is introduced as under:

“(x)(a) “Trial Mode” means the temporary and parallel/simulated operation of provisions related to the forecasting, scheduling and a mechanism for the settlement of deviations by Generators and all other aspects specified in these Regulations for smooth and successful implementation of mechanism specified in

the Regulations, wherein settlement by the Procurers is on the basis of their Scheduled Generation, in the manner specified in Regulations 9.3 of these Regulations.”

“9.3A The Trial Mode may be operated for a period of twelve (12) months or any such period as may be decided by the Commission. The modalities for carrying out Trial Mode shall include but not limited to following provisions:

- (a) Payments and receipts on account of energy accounting as per Regulation 7.1 and Deviations would be settled on the basis of Actual Generation as per Regulation 7.2A. The Procurer(s) shall pay to the Seller(s) on the basis of the Actual Generation. The De-pooling of Deviation Charges shall be as per Regulation 16;*
- b) Additionally, computation of payments and receipts on account of energy accounting and Deviations shall be undertaken on the basis the Scheduled Generation in accordance with Regulation 7.2B for the purpose of analysis and record;*
- c) The SLDC shall prepare State Deviation Pool Account both on the basis of Actual Generation based settlement and Scheduled Generation based settlement;*
- d) The SLDC shall publish the Wind and/or Solar Generators Schedule, Energy Accounting Statement and Wind and/or Solar Generator DSM account Statement (including mock DSM bills) on its website for each QCA and every Pooling Sub-Station, separately;*
- e) Additional bills computed as per clause (b) above shall be issued to QCAs, however, QCAs shall not be required to recover and pay the deviation charges against such deviation bills during Trial Mode period;*
- f) The QCA shall also undertake de-pooling of the energy deviations and the Deviation Charges (of Bills issued as per clause(b) above) against each Generator/ Contract, in accordance with the proviso to Regulations 16 or in the manner directed from time to time, for the purpose of analysis and record;*
- g) QCAs shall provide information about the Deviation charges and de-pooling of Deviation Charges under the Scheduled Generation based settlement with the Generator/ Contract to the SLDC on monthly basis;*
- h) The SLDC to submit Trial Mode implementation results along with supporting data to the MSPC on quarterly basis;*

- i) *The MSPC to submit Trial Mode implementation results, its analysis and recommendation to the Commission in the manner as directed from time to time;*
- j) *Any other aspects not explicitly covered above shall be addressed by SLDC in its procedure.*

9.3B *During Trial Mode, if any difficulty arises in giving effect to the provisions of the Trial Mode, the Commission may, if it deems appropriate, either suo-motu or on a petition filed by the SLDC, pass an appropriate order for removing the difficulty:*

Provided that the Commission may initiate proceeding under these regulations based on the Petition filed by any affected party/concerned party subject to the condition that such party has raised issue(s) before the MSPC and there is no resolution on such issue(s) by the MSPC.”

5 Regulation 4: Applicability of Regulations

5.1 Regarding applicability of the MERC F&S Regulations to projects under MSKVY (Explanatory Memorandum-Para 4.2.1)

“4.2.1 In accordance with Regulation 5.20 of the MERC F&S Regulations, the MSLDC had submitted the Amended Detailed Procedure to the Commission which was duly approved on 19 December 2019. As per the applicability of the Procedure, relaxation for projects developed under the ‘Mukhyamantri Sour Krishivahini Yojana’ was granted. The relevant extract of the Procedure is reproduced below:

“1.2. APPLICABILITY OF THE PROCEDURE:

1.2.1. All Wind and Solar Energy Generators in Maharashtra connected to the Intra-State Transmission System, on or after the date notified by the Commission of coming into force of the Regulations, 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.

Provided further that till further direction in this matter this Procedure shall not be applicable for Solar power generation projects

developed under ‘Mukhyamantri Sour Krishivahini Yojana’ as these projects are load serving embedded generation connected to distribution network of distribution licensee.” (emphasis added)

*In this context, as already mentioned earlier, the GoM seeks to ensure stable daytime electricity to agriculture consumers through decentralised solar power projects. To achieve this, the Industries, Energy and Labour Department, GoM has notified MSKVY 2.0, under which at least 30% (thirty percent) of agricultural feeders are proposed to be solarised by 2025 and faster capacity addition will be facilitated in the “Distributed RE Mode”. The GoM intends to develop decentralized solar projects with a cumulative capacity of 7000 MW in the State of Maharashtra. It may be noted that as on 30.09.2023, the Wind and Solar (excl. Rooftop and off-grid) capacity in Maharashtra is 8,156 MW. With the proposed addition of 7,000 MW under MSKVY, the installed capacity in the State is set to double. With increasing penetration of variable RE Generating sources such as Wind and Solar, issues of grid management, managing load generation balance, grid security and stability problems in the near future would become more complex; unless several steps for managing such variable RE integration into grid are initiated. **Therefore, the Commission is of the opinion that the projects set up under the MSKVY should also be brought under the ambit of the MERC F&S Regulations. Accordingly, the MSLDC to undertake implementation of this revision (removal of relaxation) immediately and start implementing it as soon as amendment regulations are notified and given that this proposed change would have undergone necessary stakeholder consultation process, the same should not be brought up again at the time of stakeholder consultation process required to carried out for amending the Detailed Procedure.”***

5.2 Comments received

MSEDCL submitted that at present, the quantum of project capacity under MSKVY is less and hence, same may not have major impact at InSTS / STU level. The commercial implications of these regulations not be enforced on solar power generation projects established under MSKVY/ captive embedded project of DISCOM, at present. The deviation and penalty of embedded MSKVY projects may be calculated on trial basis only. In future with increase in MSKVY project capacity, if it is observed that, such projects are having substantial impact at InSTS/ STU periphery then the regulation may be revised accordingly.

SLDC submitted that in view of Regulation 14 (Intimation of Curtailment) and as per Section 32(2)(d) of EA 2003, SLDC is responsible for supervision and control over the Intra-State

Transmission System. The network of 33 kV and below operated by Distribution Licensee is neither visible nor monitored by SLDC for operational aspects. Also, the weekly billing regime for PSS connected at InSTS are getting delayed due to non-availability of timely meter data of PSS connected to distribution network. The Regulation 28.3 of the MERC (State Grid Code) Regulations, 2020 has provisioned the creation of Distribution Licensee Control Centre. Further, the DSM Working Group has recommended that MSEDCL need to develop a state of art technology equipped Distribution System Operation Control Centre to improve the scheduling operation and deviation management practices. The draft National Electricity Policy, 2021 has discussed the need for “Distribution System Operator” (DSO). With the increased quantum of distribution network connected generation, the nature of distribution grid will be changing in to an active distribution system. Monitoring such expanded grid would need multi-layered control centres architecture rather than a single point of control. Therefore, it is beneficial that a DSO may be constituted and be given the responsibility of carrying out forecasting scheduling and deviation accounting activities for all the RE generation capacities connected to the distribution network in line with the envisaged regulations.

Hetero Med Solutions Limited submitted that wind generators with a connectivity less than 15 MW may be completely exempted with the applicability of F&S Regulations because of the size and tolerance band. It further submitted that the regulatory provisions cannot be applied on plant retrospectively commissioned but for new plants.

Adani Green Energy Limited requested to exempt new RE generators from DSM charges for one year from commissioning/ commercial operation date of the plant. It further requested to incorporate Wind and Solar Hybrid and Energy Storage system in the definition of ‘New RE Projects’.

5.3 Analysis and Commission’s Decision

The issue of distinction between old and new RE generators and the rationale behind considering minimum capacity limit of 5 MW for both Wind and Solar generators were already deliberated and decided at the time of framing of Principal Regulations.

As regards delay in current weekly billing regime for PSS connected at InSTS due to non-availability of timely meter data of PSS connected to distribution network, as stated in EM, the Commission in its suo-motu Order dated 29 May 2023 had already directed MSEDCL to complete such metering. MSEDCL is hereby directed to submit the status of compliance within 3 months from the date of notification of these Regulations. The Commission shall decide on inclusion of such PSS under the scheduled based regime under Trial Mode based on status of

compliance/infrastructure readiness along-with suitable disciplinary action in case of non-compliance.

The Commission observed that at the time of framing Principal Regulations, Distribution Licensee had emphasized the need for bringing small generators under the ambit of the Regulations and requested to make regulations applicable to all RE generators after implementation of “Mukhyamatri Solar Agricultural Feeder Scheme”. However, now it is being submitted that quantum is less and hence there is no impact and therefore commercial implications of this regulations should not be enforced, at present.

As stated in the explanatory memorandum and subsequent developments, with the proposed addition of around 8,000 -10,000 MW under MSKVY, the installed capacity in the State is likely to double. With increasing penetration of such variable RE generating sources such as Solar and Wind, issues of grid management, managing load generation balance, grid security and stability problems in the near future would become more complex; unless several steps for managing such variable RE integration into grid are initiated. Towards this, Distribution Licensees are hereby directed to propose contour of Distribution Licensee Control Centre or Distribution System Operator in line with Regulation 28.3 of the MERC (State Grid Code) Regulations, 2020, mainly addressing aspects related forecasting, scheduling and deviation accounting activities for all the RE generation capacities connected to the distribution network, in the separate proceeding before the Commission within 3 months from the date of notification of these Regulations.

Further, Distribution licensees are hereby directed to ensure future preparedness of RE generation capacity connected to the distribution network for metering, communication and with respect to their compatibility to exchange data, etc. in line with MERC F&S Regulations. Distribution Licensee to submit the status of metering, communication and with respect to their compatibility to exchange data, etc. in the manner directed by the Commission.

Accordingly, the existing Proviso granting relaxation for projects developed under the ‘Mukhyamantri Sour Krushi Vahini Yojana’ under the approved Procedure is incorporated in the Regulations and can be made operative at later date, based on readiness of supporting infrastructure.

5.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to add second proviso after first proviso to Regulation 4.1 of the Principal Regulations as under:

“Provided further that these regulations shall be applicable in case of Solar Energy Generators set up under ‘Mukhyamantri Sour Krushi Vahini Yojana’ or ‘Mukhyamantri Sour Krushi Vahini Yojana 2.0’ from the date to be notified separately.”

6 Regulation 4.2: Review of Regulations

6.1 Substitution of Regulation 4.2 of the Principal Regulations

“4.2 The Commission may review these Regulations, including formulation of Absolute Error, Absolute Error Bands and Deviation Charge thereof as stipulated under Regulation 7.2A, 7.2B and Annexure, every year, if it considers necessary, to further improve the Forecasting and Absolute Error bands based on changes in electricity sector.”

6.2 Comments received

ReNew Private Limited submitted that as the Solar and Wind Generators will get more and more operational experience and with the combination of advanced technology and availability of past data, the window of deviation should be reduced in a graded manner and therefore, RE being an intermittent source of generation and given the constantly evolving sector, upcoming capacity addition and policy level changes, frequent amendments in Absolute Error band will jeopardize the potential Solar and Wind investors in the country and subsequently impact the country RE target of 175 GW by 2030. It requested to retain the existing provision of review after every two years, or earlier if it considers necessary for future revisions in Absolute Error bands.

ReNew Private Limited requested the Commission to allow capital expenditure to Solar and Wind generators in cases where there is a technological advancement in the forecasting tools and techniques to improve the forecasting and Absolute Error bands based on changes in the electricity sector.

6.3 Analysis and Commission’s Decision

The existing Regulation 4.2 mandates the Commission to review the Principal Regulations after two years or earlier. The proposed draft amendment is more flexible, as the Commission may review every year, if it considers necessary. However, in view of the suggestion of a

stakeholder, the Commission has reviewed proposed provisions of regulations and decided to align frequency of review MERC F&S Regulations with the Control Period specified in the MERC (Multi Year Tariff) Regulations, 2019, as amended from time to time or any such period as it considers necessary. Accordingly, the Commission has retained the existing Regulation 4.2 as per Principal Regulations with suitable modifications.

As regards suggestion of a stakeholder to allow capital expenditure to a generator in cases where there is a technological advancement in the forecasting tools and techniques to improve the forecasting, such generator may approach the Commission for seeking approval, as per provisions of Power Purchase Agreement and relevant regulations which shall be subject to prudence check on case to case basis.

6.4 Provision in Final MERC F&S First Amendment Regulations, 2024

“4.2 The Commission shall review these Regulations, including formulation of Absolute Error, Absolute Error Bands and Deviation Charge thereof as stipulated under Regulation 7.2A, 7.2B and Annexure; at the end of the Control Period specified in the MERC (Multi Year Tariff) Regulations, 2019, as amended from time to time or any such period as it considers necessary.”

7 Regulation 5.6

7.1 Comments received

QCA submitted that meter reading, data collection and its communication should not be under the scope of QCA as these data depends on the availability from generator end, whereas RE generators submitted that such activities should be under the scope of distribution licensee only.

7.2 Analysis and Commission’s Decision

The Commission observed that comments and suggestions were not directly related to the Draft Regulations on which inputs were invited. Further, this aspect has been decided at the time of framing of Principal Regulations. The Commission does not find necessary to revisit this aspect at this juncture.

8 Regulation 5.9

8.1 Comments received

SLDC submitted that average real time visibility of Wind and Solar PSS at SLDC is around 60.02%. RE Generators, QCAs and Developers have informed that due to remotely located sites they are facing issues in communication link availability for providing real time data at

SLDC. Therefore, it needs to be made mandatory for QCA to provide real time visibility of each WTG/ Invertors for each PSS through redundant communication links/channels in accordance with CEA Regulations related to Communication. Also, provisions for non-compliance towards non-maintaining redundant links and real time data needs to be considered.

MSEDCL referred to Regulations of CERC and Central Electricity Authority on Communication System and Regulation 62 of the MERC (State Grid Code) Regulations, 2020 and submitted that there shall be penalty to RE generator if they fail to maintain the minimum percentage visibility as specified in the referred regulations.

8.2 Analysis and Commission's Decision

As discussed in Para 18 of this SoR, the Commission has incorporated provision related to metering and communication infrastructure.

9 Regulation 5.11, 5.13 and 5.17: Manner of providing Schedule

9.1 Substitution of Regulation 5.11, 5.13 and 5.17 of the Principal Regulations

*"5.11 The QCA shall furnish to the SLDC the **individual as well as** aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability. **SLDC shall modify/develop and maintain a dynamic web-based application for the purpose of day-ahead scheduling, revision of schedules and display of real-time information.***

...

*5.13 The QCA shall **provide individual as well as** aggregated Schedules of all Generators connected to a Pooling Sub-Station and communicate them to the SLDC **on the dynamic web-based application.** QCA can undertake forecasting and scheduling for multiple pooling substations, however scheduling, energy accounting and deviation monitoring for each pooling substation of wind or solar power generation shall be undertaken separately.*

...

*5.17 The QCA shall provide to the SLDC a Day-Ahead and a Week-Ahead **individual generator-wise** 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."*

9.2 Comments received

Bajaj Finserv Limited requested the Commission to consider existing metering arrangement and cost impact on generators and suggested to remove draft amendments related to scheduling

at individual Generator. It submitted that instead it should be at the billing Metering level of the generator or PSS level.

Manikaran Analytics Limited and RE Generators submitted that submission of individual generator-wise schedule is not a realistic approach as there are generators with a single turbine and small installed capacity. They submitted that aggregated schedule at a PSS shall be considered in place of individual generator-wise schedule.

Mahindra Susten Pvt. Ltd. and Sembcorp Green Infra Ltd. submitted that the Commission may consider state level aggregate approach based on actual energy settlement for F&S and its impact on grid stability and DSM Penalty. Sustainable Projects Developers Association submitted that the Commission should adopt the approach followed by Karnataka Electricity Regulatory Commission, which emphasize the importance of forecasting at the regional periphery.

ITC limited submitted that scheduling at PSS level is operating quite efficiently and individual generator level scheduling does not add any value to grid stability and further it will complicate the present mechanism resulting in chaos between generators, SLDC and distribution licensee. Therefore, it is suggested that the Commission should retain F&S at PSS level only as practiced in other states.

9.3 Analysis and Commission's Decision

As regards the issue of aggregation of multiple Pooling Substation at State level, the same was already deliberated and decided at the time of framing of Principal Regulations. Further, post implementation of the MERC F&S Regulations, forecasting has undergone a qualitative change on aspect of gaining forecasting operational experience.

Existing Regulations 5.13 specifies the aggregation of schedules at Pooling Sub-station level. As per existing Regulations, individual generators schedule is not required to be submitted SLDC by QCA. However, at the time of framing of Principal Regulations the Commission suggested that QCA may maintain this data at Pooling Sub-Station for preparation of aggregated schedule of its Pooling Substation.

The proposed draft amendment regulation envisages transition from actual generation based payment to scheduled generation based settlement mechanism wherein the generator payments are linked to scheduled energy and Deviation Charges are linked to Contract Rate. In view of this, the Commission has reviewed aspect of schedule submission and decided that instead of

submission of individual generator-wise (i.e. wind turbine wise, solar inverter or generating units wise) schedules contract-wise schedule submission is necessary for implementation of scheduled generation based settlement mechanism. It is to note that the existing REMC scheduling software also requires contract-wise schedule. Accordingly, the regulations have been suitably modified, requiring QCA to provide contract-wise as well as aggregated forecasts of all generators connected to a Pooling Sub-station and communicate them to SLDC. However, it is suggested that QCA may maintain records and accounts of the time block-wise schedules, the actual generation injected and the deviations, for individual Generators unit-wise schedules (i.e. wind turbine wise, solar inverter or generating units wise) separately.

9.4 Provision in Final MERC F&S First Amendment Regulations, 2024

“5.11 The QCA shall furnish to the SLDC the contract-wise as well as aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability. SLDC shall modify/develop and maintain a dynamic web-based application for the purpose of day-ahead scheduling, revision of schedules and display of real-time information.

...

5.13 The QCA shall provide contract-wise as well as aggregated Schedules of all Generators connected to a Pooling Sub-Station and communicate them to the SLDC on the dynamic web-based application. QCA can undertake forecasting and scheduling for multiple pooling substations, however scheduling, energy accounting and deviation monitoring for each pooling substation of wind or solar power generation shall be undertaken separately.

...

5.17 The QCA shall provide to the SLDC a Day-Ahead and a Week-Ahead contract-wise Schedules 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.”

10 Regulation 5.19: Revisions in the Schedule

10.1 Substitution of Provisos to Regulation 5.19 of the Principal Regulations

*“ Provided that, such revisions shall be effective from the 4th time block, **counting the time block in which the request of revision has been received by SLDC to be the first one;***

Provided further that, 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;

Provided further that, till such time settlement of sale of power within Maharashtra by Solar and Wind Energy Generators connected to Intra-State Transmission network is on the basis of actual generation, revision in Schedule of such Generator(s) shall not be allowed if the revision is less than two (2) percent of previous Schedule.”

10.2 Comments received

On 1st and 2nd proviso:

Mahindra Susten Pvt. Ltd. requested to provide clarity on maximum revisions, whether this will be for both solar or wind or on individual level. Hero Future Energies Pvt. Ltd. submitted that more number of forecast revisions need to be allowed in view of proposed absolute error bandwidth.

Bajaj Finserv Limited, Pune requested to allow QCA to revise his schedule without 4th time block restriction but limited to 16 revisions per day.

Adani Green Energy Limited submitted that current restriction in the revision would potentially increase the forecasting error, leading to high deviations and increasing chances of grid instability and requested to align provision of draft regulations with the CERC regulations so as to remove the restrictions on revision under schedule-based settlement and allow the QCA to revise the schedule without any restriction.

SLDC submitted that as per draft Regulation 11.4(b), generators are also permitted to submit schedules and revisions thereof. There are 16 revisions permitted for each Pooling Sub-Station and the revision will be implemented in 4th time block, in such case each generator may ask QCA to revise schedule at any time block, however, QCA can revise the schedule only at one and half hour interval. In order to avoid disputes among generators and QCA, separate treatment for revision of schedule/capacity declaration by individual generator and by QCA at Pooling Sub-Station level needs to be defined.

On 3rd proviso: Limiting frequent minor revisions (under actual generation based payment mechanism)

REConnect Energy requested to provide clarity on specific metric such as total capacity, energy output or another relevant parameter used for calculating 2% threshold and clarity on any

scenarios or circumstances such as force majeure event or emergencies exempted from 2% rule.

ReNew Private Ltd. submitted that the revisions of RE schedule are being allowed at the interval of six time blocks. The limitation of the frequent minor revisions will reduce the flexibility and result in penalizing wind and solar generators on account of unforeseen breakdowns on revised weather prediction from time to time. Therefore, requested to remove or delete third proviso

ITC limited submitted that introduction of narrow bands of 10% to 12% and 12% to 15% in between and simultaneously restricting revision of schedule are contradictory to the improvements envisaged and suggested to remove such unfavourable restrictions on the generators.

Sembcorp Green Infra Ltd. submitted that in many cases 2% and below revision, if not allowed, may result in change of deviation band and accordingly, result in higher penalty for no fault of generator. Therefore, it requested that all revisions irrespective of quantum should be allowed, as there is already restriction on number of revisions allowed in any case.

10.3 Analysis and Commission's Decision

The Commission notes the submission of SLDC and RE generators. As already clarified in the EM that the Scheduling process (including revisions) for RE will have to be aligned with the overall scheduling and despatch procedure currently followed/implemented by SLDC to facilitate grid operations. Further, as per current practice, QCA can revise the schedule only for each time slot of one and half hours for respective PSS based on individual generator schedules. It is expected that all generators authorize QCA to modify and submit their schedule onwards to SLDC. Accordingly, the Commission has decided to retain proposed 1st proviso.

The Commission notes suggestions on limiting frequent minor revisions, and has reconsidered the above 3rd proviso and is of the view that contradictory provision can be avoided. Hence, the Commission has decided to delete the proposed 3rd proviso in the draft Amendment.

Further, at present, it is not necessary to revise existing number of revisions allowed during the day.

As already clarified in the EM, this Regulation is a part of the existing MERC (State Grid Code) Regulations, 2020 and necessary change in the MERC (State Grid Code) Regulations, 2020 shall be undertaken as and when said Regulations are taken up for amendment.

10.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain proposed 1st proviso while removing proposed 3rd proviso of the Draft MERC F&S Amendment Regulations, 2023.

“Provided that, such revisions shall be effective from the 4th time block, counting the time block in which the request of revision has been received by SLDC to be the first one;

Provided further that, 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.”

11 Regulation 5.20: Submission of updated Detailed Procedure by SLDC

11.1 Substitution of Proviso to Regulation 5.20 of the Principal Regulations

“Provided that, after the notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2023, the SLDC shall submit the updated Detailed Procedure, stipulating the revised plan for data telemetry, revised formats of forecast submission and other revised modalities and requirements, within two months from the date of such notification of the First Amendment, which the Commission shall endeavour to approve within a month thereafter.

Provided further that, SLDC shall undertake stakeholder consultation by uploading the Draft Procedure on SLDC’s website before submission to the Commission for approval.”

11.2 Comments received

Adani Green Energy Limited submitted that existing Procedure need to revisited in view of various issues viz., inability to change QCA for a period of 2 years even in case of unsatisfactory performance of QCA in forecasting, QCA responsibilities in case of renewal of registration and course of action in case QCA fails, QCA changeover be permitted within 15 days from notice and QCA obligation before getting relieved and 3 months’ timelines for submission of new BG, clarity in case of QCA event of default, provision for mandatory blacklisting of QCA by SLDC in case of continued default, modalities seeking SBLC/BG/Payment security and additional payment security by SLDC, modalities of

encashment of payment security and reinstatement thereof, manner of calculating BG amount in case of hybrid plant, penalty for QCA in case of delay in submission of invoices, etc.

Bajaj Finserv Limited requested to resolve issues of pending corpus and State periphery amount with old QCA.

SLDC submitted that the provision of market suspension in line with the MERC DSM Regulations, 2019 may be included in the regulations.

Mahindra Susten Pvt. Ltd. requested to incorporate the provisions for start-up power & auxiliary power during non-generation time as per IEGC 2023 in alignment with CERC DSM regulations and to provide detailed procedure of BESS hybrid projects.

11.3 Analysis and Commission's Decision

The Commission notes the suggestions of objectors. In view of submission of various stakeholders on procedural part of Regulations, the Commission is directing SLDC to undertake stakeholder's consultation by uploading the updated draft procedure on SLDC website before submission of the detailed procedure for approval of the Commission considering provision of this Regulation.

As regards provision of market suspension, SLDC may incorporate necessary provision(s) in the Detailed Procedure after discussion with stakeholders and Western Regional Load Dispatch Centre.

As regards suggestion to incorporate the provisions for start-up power & auxiliary power during non-generation time as per IEGC 2023 in alignment with CERC DSM regulations, the Commission shall initiate the Regulatory process separately for amendment of State Grid Code in line with IEGC 2023.

Further, SLDC may submit all other details which are necessary for implementation of these Regulations in the Detailed procedure for approval of the Commission.

11.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the provisions of the Draft MERC F&S Amendment Regulations, 2023.

12 Regulation 5.20A: Re-submission of updated Detailed Procedure by SLDC during Trial Mode

12.1 Introduction of Regulation 5.20A after Regulation 5.20 of the Principal Regulations

“5.20A During or after completion of the Trial Mode, the SLDC may re-submit the updated Detailed Procedure, stipulating the revised plan for data telemetry, revised formats of forecast submission and other revised modalities and requirements, which Commission shall endeavour to approve within fifteen days thereafter.

Provided that, SLDC shall undertake stakeholder consultation by referring the updated Draft Procedure to the Maharashtra State Power Committee before submission to the Commission for approval.”

Explanatory Memorandum- Para 3.10.1:

“3.10.1 Implementation of Scheduled generation based payment regime in Phases

...

Stage-IV – Undertaking Trial Mode operation of Scheduled generation based payment mechanism

...

The Trial Mode shall be implemented for at least twelve months under the proposed regulations. The stakeholders shall conduct the test runs for the entire cycle of day ahead & week ahead forecasting and scheduling process, real-time load-generation balancing, revision in schedule, metering, energy accounting and settlement of energy /deviation accounts for multiple settlement periods on trial run basis. The limitation of process and error/bugs (if any) noticed through various stages shall be addressed carefully to avoid implementation difficulties and chances of litigation in future.

It is proposed that, during and after the end of the Trial Mode implementation, if any further changes, modifications or revisions are required in the relevant provisions of regulations pertaining to the scheduled generation based payment, and if the same are brought before the Commission by the concerned stakeholders i.e. MSLDC or MSPC, the Commission shall use its inherent power to incorporate appropriate such changes in the regulations and it is proposed that such changes in regulations brought before the Commission need not undergo the “detailed” stakeholder consultation process again, as required under previous publication procedure.”

12.2 Comments received

ReNew Private Limited submitted that it appreciates the intent to formulate new web based application, however, during and after the end of Trial Mode period, the Commission to use its inherent power to incorporate changes in the regulations, if required, to any significant changes, modifications or revisions as suggested by concerned stakeholders pertaining to the scheduled generation based settlement.

12.3 Analysis and Commission's Decision

The suggestion of ReNew Private Limited is accepted. Trial Mode is expected to provide various inputs and taking timely corrective action arising therefrom is imperative for proper implementation of Trial Mode and transition to scheduled generation based settlement mechanism. However, in cases where any changes/modifications/revision sought by any affected party /concerned party, the Commission may take up such matter, subject to the condition that such party has raised issue(s) before the MSPC and there is no resolution on such issue(s) by the MSPC. This is important considering implementation aspects and operational complexities in the scheduled generation based settlement mechanism, constitution of MSPC which has wider representation of stakeholders and role of MSPC in DSM implementation as well as under F&S Regulations. Further, MSPC is expected to have necessary deliberations or further review/monitoring Trial Mode implementation and address such operational issues with the constituents from time to time, along with providing the recommendation(s) to the Commission. Accordingly, for more clarity the Commission finds it appropriate to incorporate Regulation 9.3B.

The Commission has decided to retain proposed Regulations 5.20A and also incorporated new Regulations 9.3B to the Principal Regulations. The Regulations 9.3B is already provided at Para 4.4 of this SoR.

12.4 Provision in Final MERC F&S First Amendment Regulations, 2024

“5.20A During or after completion of the Trial Mode, the SLDC may re-submit the updated Detailed Procedure, stipulating the revised plan for data telemetry, revised formats of forecast submission and other revised modalities and requirements, which Commission shall endeavour to approve within fifteen (15) days thereafter.

Provided that, SLDC shall undertake stakeholder consultation by referring the updated Draft Procedure to the Maharashtra State Power Committee before submission to the Commission for approval.”

13 Regulation 5.23: Treatment of mis-declaration of Available capacity

13.1 Substitution of Regulation 5.23 of the Principal Regulations

“5.23 SLDC shall continuously monitor the AvC declared by QCA. In case of any adverse observation on declaration of AvC by SLDC, the following treatment for mis-declaration of Available Capacity shall apply:

- (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 Pool Account**, 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.”*

13.2 Comments received

ReNew Private Limited and others requested to provide clarity on AvC declaration in case of any sudden breakdown/tripping/ forced error at PSS level where QCA is not allowed to revise the schedule on immediate basis. Adani Green Energy Limited submitted that once the revision is submitted and breakdown occurs, there is no provision of updating the revision for that time block. It sought to clarify the definition of mis-declaration and allow waiver from the DSM charges from 6 time blocks prior to force majeure event till 6 blocks from the cessation of force majeure event. Mahindra Susten Pvt. Ltd. requested to provide clarity on Deviation Charges waive offs in case of grid voltage disturbance.

Adani Green Energy Limited submitted that a penalty of three times the Deviation Charges is very stringent and will cause additional financial burden. It further requested to notify SLDC to inform the QCA in case of mis-declaration of capacity and allowing the QCA to revise the AvC on the REMC Portal instead of burdening the RE generators and discouraging RE generation.

SLDC submitted that the generator-wise visibility and the onus of payment of deviation charges is the responsibility of the individual generator, hence, in the treatment of intentional mis-declaration of AvC may also be made applicable to the individual generator along with QCA and accordingly suggested changes in the regulations.

Adani Electricity Mumbai Ltd. submitted that at present, there are no procedures or mechanisms to monitor or identify mis-declaration of AvC. SLDC need to be have procedures and systems in place to identify gaming in a timely manner to avoid impact on other stakeholders and the regulations should be modified as under:

“5.23 SLDC shall continuously monitor the AvC declared by QCA. SLDC to develop appropriate system & procedure to monitor and identify mis-declaration in a timely manner. In case of any adverse observation on declaration of AvC by SLDC, the following treatment for mis-declaration of Available Capacity shall apply:

... ”

13.3 Analysis and Commission’s Decision

As regards provision of penalty of three times the Deviation Charges, the same was already decided at the time of framing of Principal Regulations. The suggestion to notify SLDC to inform the QCA in case of mis-declaration of capacity and allowing the QCA to revise the AvC, is not accepted, as it defeats the purpose of this Regulations.

The Commission at the time of framing of Principal Regulations clarified that SLDC shall outline detailed procedure which would cover the information and real time data sharing protocol for the purpose of monitoring and verification of such declared Available Capacity. Further, 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. Additionally, the Commission at the time of framing of Principal Regulations has suggested SLDC to 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. The Commission notes the suggestions of stakeholders on lack of appropriate mechanism to monitor or identify mis-declaration of AvC. Accordingly, suitable modifications have been incorporated in the regulations.

Further, the Commission observes that Clause 13.4, 13.6 and 13.7 of existing Procedure does provide certain reporting requirement in case of planned/forced outages. However, further

clarity need to be provided in the Detailed procedure. SLDC shall submit all other details which are necessary for implementation of these Regulations in the Detailed procedure for approval of the Commission.

As stated in the EM, the Commission in the draft regulations also introduced additional regulations 5.23A in order to strengthen the existing provisions related to gaming. The same have been retained and incorporated in the Principal Regulations.

13.4 Provision in Final MERC F&S First Amendment Regulations, 2024

“5.23 The SLDC shall continuously monitor the AvC declared by QCA. The SLDC shall develop appropriate system and procedure to monitor and identify mis-declaration in a timely manner. In case of any adverse observation on declaration of AvC by SLDC, the following treatment for mis-declaration of Available Capacity shall apply:

- (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 Pool Account, 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.”*

14 Regulation 7.1: Scheduled generation based settlement regime

14.1 Introduction of a proviso after Regulation 7.1 of the Principal Regulations

“Provided that the sale of power within 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 from the date to be notified separately by the Commission.”

14.2 Comments received

QCA and RE generators submitted that CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2022 notified on 14 March 2022 came into effect on 5 December 2022, and again relaxed on 6 February 2023 implying that it will require time for existing DSM formulated by CERC to be proven as effective and just. They further requested the Commission not to disrupt an existing practice unless substantial discrepancies are reported and suggested that MERC should continue with existing practice. Few others suggested that existing regime may be continued till time the Generator and QCA queries are resolved.

QCA and RE generators submitted that in case of CTU connected PSS, generators are of higher capacity, number of generators and contracts are limited making it feasible to establish separate schedules and calculate charges based on Contract rate at Central level and also maintain forecast accuracy. In contrast, generators for InSTS typically smaller capacity and entities with multiple generators.

RE generators submitted that such provisions if implemented it will have larger complexities and financial viability of existing (mainly of wind) will get affected including future growth of RE.

QCA and RE generators also raised concern regarding efficacy of proposed regime in improvement of grid stability. Whereas, Bajaj Finserv Limited raised concern regarding objective that would be achieved by introduction of scheduled based payment regime in Maharashtra, especially when no other state has taken such implementation. It further requested the Commission to keep F&S and energy transactions independent as per old regulations.

REConnect Energy submitted that before transition to schedule based generation based payment regime several prerequisites such as metering, communication, data transparency through one-year Trial Mode, verifying contract registration etc. need fulfilment. Subsequently, potential issues also need to be discussed before commercial implementation.

JSW Neo Energy Limited suggested that scheduled generation settlement regime should be made applicable only in case of Inter-State transactions i.e., State connected RE projects supplying power outside the State.

Adani Electricity Mumbai Ltd. submitted that 37 PSS at 33 kV are present in MSEDCL distribution network forming a major capacity which is not directly connected to InSTS. However, as per existing regulations these PSS are also part of F&S and hence, they need to

be covered under the amendment. Accordingly, the draft provision should be modified as under:

*“Provided that the sale of power within Maharashtra by Solar and Wind Energy Generators **scheduled under these Regulation** shall be settled by the Procurers on the basis of their Scheduled Generation from the date to be notified separately by the Commission.”*

14.3 Analysis and Commission’s Decision

The Commission is of the view that discrepancies (schedule replacement, pool deficit issue, grid security, etc.) observed in the existing mechanism have already been brought out by key stakeholders in past before the Commission in various proceedings. The EM clearly mentions that concept of bringing RE generators under scheduled generation based settlement mechanism is not opened recently and it has been under active discussion for last few years at various level. Further, based on deliberations and recommendations of the DSM Working Group and MSPC, the Commission felt appropriate to take steps in the process of shifting to scheduled generation based settlement regime. The details of which have been covered in detail in the explanatory memorandum. Also, submissions of other key stakeholders i.e., Distribution Licensee and SLDC have been covered in the EM.

The Commission in Para 3.9 of the explanatory memorandum has already deliberated and addressed most of the concerns raised above by objectors. Additionally, Para 3.9.9 and Para 3.10 of the explanatory memorandum has highlighted need for such Trial Mode and transition/shift shall happen through Trial Mode implementation.

As elaborated in EM, the MSPC is directed to monitor the Trial Mode operations closely to evaluate its results and to address any difficulties faced by the stakeholders, including the SLDC.

14.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the provisions of the Draft MERC F&S Amendment Regulations, 2023.

15 Regulation 7.2: Deviation Settlement for Intra-State Transactions

15.1 Comments received

On Regulation 7.2A:

National Solar Energy Federation of India and other submitted sample analysis of solar and wind farms for FY2022-23 (till December 2023) and stated that impact of Deviation Charges as per proposed regulations will be higher as compared with the existing regulations.

RE generators submitted that the Deviation Charges specified under the existing F&S Regulations is already high and with implementation of draft provision it will increase more. Further, if proposed regulations is implemented, it will affect financial/commercial viability of project. Considering the forecasting technology limitation, existing error bands shall be kept same with revised lower Deviation Charges as suggested by them.

ReNew Private Ltd. submitted that as compared to other states, the Commission has drastically reduced error band vis-à-vis existing error band and tolerance band of 10% will result into commercial unviability of the projects and requested to continue with existing deviation limits.

QCA and RE generators submitted that narrow band gap of 10% -12% & 12%-15% will not improve performance of grid stability of the state, but will create unnecessary penalty burden on the generators. Tightening of error bands should be in gradual manner and also deviation charges linked to tighter error bands should be on the lower side as suggested.

Bajaj Finserv Limited submitted that Deviation Charges should be limited, with an aim of grid stability. It requested to remove narrow error band of 2% (10% to 12%) in case of wind, as even IMD cannot accurately predict and review the error bands with lower Deviation Charges as suggested by it.

REConnect Energy submitted that given the inherently volatile nature of RE generation imposing a stricter error bands, when deviation is beyond this range and maintaining Deviation Charges as similar to existing regulations not only complicates process but demotivates RE generators. It is suggested that to reduce the Deviation Charges from the existing levels by narrowing down the error bands similar to Gujarat.

ITC limited suggested that CERC and other state Regulations need to be followed in entirety, not selectively, and accordingly introduce separate error bands for Wind and Solar, remove narrow intermediate bands of 10% to 12% and 12% to 15% and levy Deviation Charges in line with other major RE rich states like Karnataka, Tamil Nadu and Gujarat. RE Generators also submitted that more flexibility need to be given to wind projects, in line with CERC, as it very difficult to project.

Few RE generators suggested their own Error Bands along with corresponding Deviation Charges. Hero Future Energies Pvt. Ltd. submitted that uniform error bands as suggested by them should be adopted to help generator adopt quickly to weather changes, thereby reducing Deviation in schedules and better grid security.

Adani Electricity Mumbai Ltd. suggested that Solar generation is firmer, more predictable and hence same can be forecasted with more accuracy and therefore, to be made more stringent in line with philosophy adopted by CERC and suggested error bands of +/- 7%, 12%, 15%, >23%.

MSEDCL requested to adopt the “Absolute Error” formula based on scheduled generation as denominator and suggested that the tolerance band of 10% in draft regulation to be revised to 5% for solar generators. It further suggested that in case existing “Absolute Error” formula is retained, then the error bands need to be tightened to 5% and 3% for Wind and Solar generators respectively.

Alfanar Power Private Limited suggested two season-wise different error bands, March to August and September to February, to address the higher variability of RE generation during low resource availability. Few RE generators requested to introduce separate deviation band during monsoon season to avoid unnecessary Deviation Charges burden on the generators for the reasons beyond their control.

Few RE Generators also requested to introduce separate deviation bands for wind, Solar, Wind - Solar Hybrid systems, with and without storage, etc. Few RE generators submitted that such bands should be based on separate, scientific and realistic assessment of the forecasting error based on the weather data and forecasting tools available. Bajaj Finserv Limited submitted that study need to be conducted based on PSS connected capacity also.

On Regulation 7.2B:

Stakeholders comments on shifting to scheduled generation based settlement regime are captured under Para 14.2 of this SoR.

QCA and RE generators submitted that proposal linking Deviation Charges to PPA rate can lead to operational and accounting challenges. The difference in PPA between multiple generators connected at same PSS will be very high, which would unnecessarily increase complexities in calculation, possible dispute and lack of transparencies even if weighted average PPA rate is considered, the Deviation Charges will not be proportional to the individual PPA rate.

Adani Green Energy Limited submitted that Ceiling Rate may cause under-recovery and revenue loss to RE generator and requested that the Commission to revise the Absolute Error bands so as to have uniform Deviation Charges for under and over-injection. A RE generator requested that the Commission to come up with a more uniform Deviation Charges structure to accommodate the diverse PPA rates without causing administrative burden.

JSW Neo Energy Limited suggested that in view of relaxed regulation of CERC, proposed tables for over-injection and under-injection should be replaced to the same that for wind and solar as notified by CERC regulation for WS seller category.

Sustainable Projects Developers Association submitted that currently generators hire QCAs, who, in turn, engage forecasting teams to maintain schedules for grid stability. Generators invest substantial resources in meeting grid requirements, and any penalty should be proportionate. It is suggested that generators to be encouraged to contribute positively to grid stability, not just imposing penalty.

ReNew Private Limited requested the Commission to continue with existing tolerance band of Absolute Error to be specified as +/- 15%, 25%, 35%, >35% instead of +/- 10%, 12%, 15%, 25%, >25% for Deviation Charge when sale of power is settled on the basis of Scheduled Generation.

MSPGCL suggested to provide two different limits for two weather seasons, i.e., during monsoon, and the error band needs to be maintained at 15% and Deviation rate matrix as per prevailing Regulations and for non-monsoon season, the error band & Deviation rate matrix can be modified as proposed. Further, Alfanar Power Private Limited also suggested two season-wise different error bands along with corresponding Deviation Charges, March to August and September to February.

MSEDCL suggested that instead of contract rate, all deviation charges shall be linked with the State DSM rates as applicable for that time block to bring more discipline in RE generators and to reduce pool deficit.

SLDC submitted that generator is mandated to submit Contract Rate on notarised affidavit to SLDC as well as QCA. In order to avoid any errors in computation of deviation bills, provision of validation of these rates through the contracted Discoms/Buyers needs to be considered.

Further, considering large number of contracts that too variable on monthly basis, timelines need to be set for validation by the Discoms / Buyers.

SLDC submitted that clarity on applicable rates in case of transactions under third party Open Access and Captive use may be provided, i.e. Contract rate between Seller and Buyer or weighted average ACP rate is to be used.

Over-injection:

In case of Deviation charges applicable for over-injection, QCA and few RE generators interpreted that Deviation charges mentioned for error band of '> 15%' similar to that mentioned in the error band '>12% but <=15%' is a typographical error.

Sustainable Projects Developers Association suggested that the proposed regulation may incentivize generators to over-inject power, as they receive 80% of the PPA rate for over-injection greater than 15% and 50% of the PPA rate for under-injection less than 15%.

Sembcorp Green Infra Ltd. submitted that proposal of no revenue for deviation beyond 15% is huge setback for generators and relaxed regulation of CERC allows over-injection upto 20% in case of wind to be paid from Deviation Pool Account to generator recognizing inherent difficulties in Wind forecasting & generation.

ReNew Private Limited submitted that proposed regulations are biased against over-injection by including Ceiling Rate which would result into larger errors and consequently give rises to the grid stability.

Ceiling Rate: (ceiling rate or Ceiling price)

QCA and RE generators questioned the basis for putting Ceiling Rate in case of over-injection and submitted that the generator may end up losing significant amount as receivable though PPA has been signed with different criteria without considering Deviation Charge at generator end. Few generators requested to remove the such Ceiling Rate while a generator sought clarity on the mechanism to recover the cost of generation by RE generators having PPA tariff higher than cap of Rs. 2.5/unit

MSPGCL submitted that Ceiling Rate of Rs. 2.50/unit in case of over-injection is not acceptable as the contracted tariff for most of the capacities before FY 2019-20 are significantly higher. It further submitted that for solar generators, over-injection is most likely to take place only due to estimation error and rarely on account of operational efficiency improvement on

instantaneous basis. It suggested that the provision for Ceiling Rate may be made applicable only for Over injection on account of maintaining CUF higher than the PPA-agreed CUF.

Adani Green Energy Limited submitted that under the scheduled generation based settlement, DSM charges include revenue component corresponding to actual energy injected over and above the Schedule. Currently the DSM statements are published by SLDC with delay of 4-5 months which will lead to additional working capital cost to RE generators. It requested to provide necessary clarity to compensate RE generators for this additional cost due to such proposed change in regulations. It further requested that to ensure that there no material impact on RE generators in view of proposed regime, SLDC may be directed to adhere to proposed timelines and in case delay to pay LPS @ 0.04% per day of DSM charges to RE generators and to pay LPS @ 0.04% per day of Energy Bill amount to RE generators.

MSPGCL submitted that there is need for provision for carrying cost/ interest to be paid to the seller entities for delayed receipts of the receivables.

Adani Green Energy Limited submitted that necessary clarification may be provided for SLDC to ensure zero-sum DSM pool account under the proposed amendment.

MSPGCL submitted that as the prevailing MERC F&S Regulations, 2018 have come into force much after the tariff determination for units commissioned till 2019, the QCA costs are not factored in the approved tariff for such RE station. It is requested to allow pass through of such increased QCA charges as ‘Change in Law’ claim in tariff subject to prudence check on case to case basis.

15.2 Analysis and Commission’s Decision

The Commission in its EM has discussed in detail, the overall analysis for purpose of revision in Error Bands which is based on technology (wind, solar and hybrid), seasonal (monsoon, non-monsoon, wind and non-windy) and RE capacity connected to PSS and Deviation Charges to be considered for each Error Band. The said analysis is based on historical trend in the State, analysis submitted by SLDC, and various other issues/factors mentioned in the EM.

As regards suggestion by MSEDCL to adopt the “Absolute Error” formula based on scheduled generation as denominator, issue was already deliberated and decided at the time of framing of Principal Regulations. Further, the Commission has again reviewed this issue in the EM and decided to continue with existing formula, with introduction of additional regulations which strengthen existing provisions related to gaming.

As regards the suggestion to introduce separate technology wise deviation bands, the separate Error Bands for Solar or Wind or Hybrid (Wind – Solar) are proposed in EM/ draft Regulations, but at same level. The EM has also highlighted that the FOR observed in the year 2015 itself, while framing the Model Regulation, that 10% accuracy is quite achievable with the framework of QCA at Pooling Station.

As regards concerns raised by stakeholders regarding viability, it is to note that deviation settlement is a deterrent mechanism and as such basing project viability on revenue from deviation settlement cannot be considered a sound business decision. Further, it is a common knowledge that Regulations are subject to change periodically and it is expected that the generators/project developers duly factor in these realities while conceptualising a project.

However, based on suggestions received from several objectors, the Commission has decided to review tolerance band in case of Wind and relaxed it to +/-12% as against +/-10% proposed in draft Regulations and Error Band of Absolute Error to be specified as +/-12%, 15%, 20%, >20% instead of +/-10%, 12%, 15%, 25%, >25% proposed in the draft regulations when sale of power is settled on the basis of Actual generation. Further, the Commission has noted the suggestion on Deviation Charges and accordingly, reduced corresponding Deviation Charges suitably.

The Commission retained the tolerance band in case Solar or Hybrid (Wind-Solar) at same level i.e., +/-10%, 12%, 15%, 25%, >25% as proposed in the draft regulations when sale of power is settled on the basis of Actual generation, however, in view of suggestions received from several objectors, the Commission has reduced corresponding Deviation Charges suitably.

Unlike the existing regulations, the proposed Regulations distinguish between Solar and Wind Generators for forecasting, scheduling and deviation accounting. Therefore, in case of Hybrid (Wind – Solar) Plants, energy accounts required to be maintained separately for the purpose of Wind and Non-Wind (Solar) RPO assessments. Accordingly, separate generator metering need to be ensured. The SLDC may specify modalities of energy accounting procedures including information/ data exchange requirement during submission of updated detailed procedure considering provision of this Regulation.

Since, the Battery ESS/Storage technologies are at nascent stage, the Commission has decided to exclude standalone BESS/Storage from the F&S Regulations, at present. Generator at its

own discretion may opt for Battery ESS to manage its deviation and deviation charges, however, in such cases respective Solar or Wind Error Bands would prevail/applicable.

Sale of power is settled on the basis of Scheduled Generation:

As elaborated in the EM, proposed scheduled generation based settlement mechanism along with the proposed error bands and corresponding Deviation Charges is proposed based on separate holistic study which in turn was as per expert group recommendations.

The draft amendment Regulations proposed Error Bands at same level for Solar or Wind or Hybrid (Wind- Solar). In line with approach adopted in case of actual generation based mechanism, the Commission has incorporated the separate Error Bands for Solar or Hybrid (Wind-Solar) and Wind for scheduled generation based settlement mechanism also.

The Commission of the view that irrespective of payment/settlement regime (Actual/scheduled) generators should instil scheduling behaviour in such a way that grid security and stability is maintained. Therefore, technology-wise tolerance Bands (+/-10% in case of Solar or Hybrid (Wind-Solar) and +/-12% for Wind) and initial Error Bands should be same between actual and scheduled generation settlement regime for like to like comparison in Trial Mode. Accordingly, the Error Bands proposed in the draft amendments in case of Solar are retained whereas in case of wind tolerance band relaxed to +/-12% with outer Error Bands set at +/-20% in line with CERC as against the proposed +/- 15%.

Further, various concern raised by the stakeholders regarding various operational difficulties such as contract mapping and information sharing process, Contract Rate validation, schedule certification, etc. As explained in the EM, most of operational difficulties should get streamlined once the Dynamic web-based application for granular level of information schedules/data/information exchange between QCA and generators is put in place. Further, SLDC shall submit all operational/procedural details which are necessary for implementation of these Regulations in the Detailed procedure for approval of the Commission.

In case of Deviation charges applicable for over-injection, the Commission clarifies that the Deviation charges mentioned for error band of '> 15%' similar to that mentioned in the error band '>12% but <=15%' is not a typographical error and the same have been capped.

As elaborated in EM, unlike existing mechanism, under the proposed scheduled generation based settlement mechanism, Deviation Charge in case of over-injection would be payable from the Pool Account. Considering impact on the Pool Account and State Deviation Pool

Account, a Ceiling Rate of Rs. 2.50/unit is proposed under the draft amendment. The Commission notes the suggestions of stakeholders. The Commission decided to retain the provision to apply the Ceiling Rate in case over-injection, however, no Ceiling Rate to be applied during Trial Mode so that only likes can be compared. After completion of Trial Mode, the Commission may approve/notify such Ceiling Rate as deemed appropriate. The Commission may notify such rate considering recommendations of SLDC/MSPC based on Trial Mode results.

As regards applicable rates in case of transactions under third party Open Access and Captive use may be provided, EM has already clarified that weighted average ACP of Day Ahead Market to be considered to ensure neutrality. SLDC should submit its views after Trial Mode implementation to ensure that there is no gaming. It is clarified that the term 'or in the absence of the Contract rate' incorporated at appropriate places in the regulations is to be construed in true spirit that is in the cases where Contract rates are not available and not in the cases where generators fail to furnish such Contract rate as per Regulation 7.2B.5.

As regards submission of a stakeholder seeking to allow pass through of such increased QCA charges as 'Change in Law', the Commission is of the view that costs required towards grid security, operation with grid, especially metering cannot be under scope of change in law. However, any aggrieved party shall be required to approach the Commission for seeking approval of such Change in law, as per provisions of Power Purchase Agreement and relevant regulations which shall be subject to prudence check on case to case basis.

Further, as discussed in Para 6.3 of this SoR, the Commission has aligned frequency of review MERC F&S Regulations with the Control Period specified in the MERC (Multi Year Tariff) Regulations, 2019, as amended from time to time or any such period as it considers necessary.

Further, as per Regulation 5.21 of the Principal Regulations, SLDC shall prepare updated detailed procedure for Deviation accounting with all relevant illustrative example for more clarifications.

15.3 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has accordingly modified the provisions of the Draft MERC F&S Amendment Regulations, 2023.

16 Regulation 8.2: Separate feeder for Inter-State Transactions

16.1 Introduction of a proviso after Regulation 8.2 of the Principal Regulations

“Provided that Inter-State transaction(s) at a Pooling Sub-station may be permitted even when the concerned Generator is not connected through a separate feeder, if the sale of power by all other Generators connected to such Pooling Sub-Station is actually settled on the basis of their Scheduled Generation.”

16.2 Comments received

National Solar Energy Federation of India and Khandke Wind Energy Pvt. Ltd submitted that, generators whose PPA are at the end of Contract period, may wish to shift to Open Access Sale of power outside the state. The Regulation 8.2 indirectly makes it difficult to the generator who is in such Pooling sub-station and wishes to shift to Open Access. If other IPPs’ in the Pooling sub-station do not wish to shift to Scheduled based settlement for sale of power, then the generator cannot shift to Open Access for interstate sale of power. ITC limited requested to remove such restriction in order to enable generators to wheel energy to other states in high wind months during which excess generation is lapsed owing to monthly banking restrictions. Torrent Power Limited submitted to consider inclusion of term “including sale of power at Power Exchanges” after word “Provided that Inter-State transaction(s)” to avoid any ambiguity and for optimum utilisation of available resources in the State.

16.3 Analysis and Commission’s Decision

The Commission observed that most of the comments are related to the Principal Regulations 8.2 instead of draft proviso to Regulation 8.2 on which inputs were invited. The Commission at the time of framing Principal Regulations as well as in subsequent Orders and EM has clarified the need for separate feeder. As per existing regulatory framework, the energy settlement in case of generators undertaking Inter-State transactions is on scheduled basis whereas in case of Intra-State transactions it is on actual generation basis. Provision for separate feeder is aimed at establishing separate accounting for such two types of transactions under the existing regulatory framework, i.e., Inter-State and Intra-State transactions. The Commission in Case No. 245 of 2022 has also ruled that in absence of an opportunity to sale power under Inter-State transaction, the option for selling under Intra-State transaction is already there. The proposed draft proviso provides relaxation from separate feeder condition in some form.

It is clarified that Inter-State transaction(s) including sale of power at the power exchanges at a Pooling Sub-station may be permitted even when the concerned Generator is not connected

through a separate feeder, if the sale of power by all other Generators connected to such Pooling Sub-Station is actually settled on the basis of their Scheduled Generation.

16.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the provisions of the Draft MERC F&S Amendment Regulations, 2023.

17 Regulation 8.6 and Annexure to the Principal Regulations: Deviation Settlement for Inter-State Transactions

17.1 Substitution of Regulation 8.6 of the Principal Regulations

“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 limited to the deviations in the Intra-State Transmission Network resulting from such under- or over-injection.

...

Annexure

...”

17.2 Comments received

Reliance Power Limited submitted that drastic changes in proposed absolute error bands for over-injection as well as under-injection will lead to higher Deviation Charges making projects commercially unviable. Therefore, the absolute error band and Deviation Charge must be retained as per Principal Regulations. Further, due to Ceiling Rate of Rs. 2.50/unit in case of over-injection generator may end up losing significant amount as receivable.

17.3 Analysis and Commission’s Decision

The Commission in its Explanatory Memorandum has discussed in detail the rationale for proposed Error Bands and Deviation Charges in case of Solar and Wind Generators connected to the Intra-State Transmission Network and selling or consuming power outside Maharashtra. Accordingly, as the proposed regulations envisage transition from actual generation based settlement to scheduled generation based settlement, Error Bands and Deviation Charges for aforementioned inter-State projects have been aligned with the Error Bands and Deviation Charges for intra-State projects when sale of power is settled on the basis of scheduled generation discussed above under Para 15 above of this SoR.

17.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the provisions of the Draft MERC F&S Amendment Regulations, 2023 with suitable aligning with Regulation 7.2B.

18 Regulation 10: Metering Arrangement

18.1 Substitution of Regulation 10.1 of the Principal Regulations

“10.1 Metering

Every Pooling Station, along with Wind or Solar Energy Generators connected to a such Pooling Sub-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.”

18.2 Comments received

MSEDCL sought a revision in the metering regulations to align it with the Applicability clause, to include all projects under the ambit of the Regulations instead of projects above 5 MW only. It is further suggested that the regulations should address the metering related issues such as installation of the Special Energy Meter (SEM) within the stipulated timelines, installation of a 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.

Bajaj Finserv Limited submitted that recently RE generators has installed AMR on the MSEDCL meter for noting meter remotely. It suggested the Commission to direct MSEDCL/ SLDC to use such facility for monitoring generation records and should not insist wind generators install any additional devices that will be a financial burden on old projects.

ITC Limited sought exemption from proposed weekly meter reading for captive generators by maintain the current practice of levy of DSM fixed charges on the error bands.

SLDC submitted that the Commission may reframe the regulation by specifying that Special Energy Meter (SEM) capable of recording the energy in 15-minute time blocks “(or any other shorter interval as specified by the Commission)”.

18.3 Analysis and Commission’s Decision

As regards issues submitted by the MSEDCL, the similar issues were raised and decided at the time of framing of Principal Regulations. As regards SLDC suggestion to add enabling term related to SEM capability to record any other shorter interval, the Commission does not find necessary to incorporate such changes in the F&S Regulations at this juncture. However, it is suggested that a generator who is planning for new metering infrastructure may ensure that SEM compatible of recording the energy in 15-minute time block or any other short interval.

As discussed in Para 9.3 of this SoR, instead of submission of individual generator-wise (i.e. wind turbine wise, solar inverter or generating units wise) schedules, contract-wise schedule submission is necessary for implementation of scheduled generation based settlement mechanism.

If generating stations has multiple generating units, there may be cases wherein some units have arrangement under IPP route or some other captive route or some under open access and some under other offtake route. In such cases, distinguishing and establishing generation from each respective units becomes difficult. Further, common SEM if installed creates billing complications and is prone to disputes in case of captive wheeling and third party wheeling. thereby, necessitating all generating units should have generation unit-wise SEMs installed.

Moreover, the proposed draft amendment regulation envisages transition from actual generation based payment to scheduled generation based settlement mechanism wherein the generator payments are linked to scheduled energy and Deviation Charges are linked to Contract Rate. Although, the proposed mechanism being implemented at PSS level, for the purpose of energy payment by the Procurer as well as the for de-pooling of deviation charge and in view of various generator connectivity’s in vogue on ground and various types of contract that would be undertaken, individual generator unit-wise metering would be required.

However, in case of a generating company/Station and connected to common Pooling Sub-Station, having single or multiple generating units supplying power under a single or multiple contracts but having same contract rate, a common SEM for its procurer-wise contract at generator end would suffice for the purpose of scheduled generation based payment mechanism.

As discussed in Para 2.3 of this SoR, metering/infrastructure arrangement need to be ensured within 3 months' from the date notification of amendment regulations.

The Commission is of the view that considering importance of metering in implementation of scheduled generation based settlement mechanism, ensuring contract-wise/individual generator wise metering need to happen in time-bound manner. Accordingly, for more clarity the Commission finds it appropriate to revise the metering related clauses with addition of new Regulation 10.1A.

It is understood that necessary groundwork in terms of establishing QCAs, infrastructure like metering and communication etc. have already been established. The same need to be ensured, further the Commission in its EM has already sensitized the concerned stakeholders on the need for metering. The Commission finds it appropriate to entrust MSPC to check the compliance. Further, to ensure the adherence and timely compliance with the metering of generators, the Commission has introduced the provision whereby in case of non-compliance to the Regulations SLDC may consider non-inclusion of wind or solar energy generation of generating company/station in the dispatch schedule till the time compliance ensured.

SLDC may stipulate metering related implementation details during submission of detailed procedure considering provision of this Regulations.

The Commission has accordingly modified Regulations/ provisions of the Draft MERC F&S Amendment Regulations, 2023 and introduced new Regulations 10.1A & 10.1B.

18.4 Provision in Final MERC F&S First Amendment Regulations, 2024

“10.1 Metering

Every Pooling Station, along with Wind or Solar Energy Generators connected to such Pooling Sub-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, within three (3) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024:

Provided that a Generating Company/Station, having single or multiple generating units supplying power under a single or multiple contracts but having

same contract rate and connected to a common Pooling Sub-station, may install at their cost, a common SEM for its procurer-wise contract at generator end, within three (3) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024, in accordance with requirements stipulated by the SLDC:

Provided further that the installed SEMs shall be available for inspection by the Distribution Licensee or STU or the SLDC at any time:

Provided also that such Generating Company/Stations connected to Transmission or Distribution System, as the case may be, shall bear the cost of communication arrangements for its integration into the Control Centre as per the technical specifications stipulated by the SLDC.

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.

10.1A. Within four (4) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024, the MSPC shall check compliance with Regulations 10.1 and submit contract-wise status of compliance to the Commission.

10.1B. In case of non-compliance to the Regulations 10.1 by a Generating Company/Station, SLDC may consider non-inclusion of wind or Solar energy generation of such Generating Company/Station in the dispatch schedule till the time compliance with aforesaid Regulations has been ensured by such Generating Company/Station.”

19 Regulation 5.11, 5.13, 11.2, 11.3 and 11.4: Dynamic web-based application

19.1 Substitution of Regulation 5.11, 5.13, 11.2, 11.3 and 11.4 of the Principal Regulations

*“5.11 The QCA shall furnish to the SLDC the **individual as well as** aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability. **SLDC shall modify/develop and maintain a dynamic web-based application for the purpose of day-ahead scheduling, revision of schedules and display of real-time information.***

- ...
- 5.13 *The QCA shall **provide individual as well as** aggregated Schedules of all Generators connected to a Pooling Sub-Station and communicate them to the SLDC **on the dynamic web-based application**. QCA can undertake forecasting and scheduling for multiple pooling substations, however scheduling, energy accounting and deviation monitoring for each pooling substation of wind or solar power generation shall be undertaken separately.*
- ...
- 11.2 *The SLDC shall equip itself with **a dynamic web-based application along with the necessary Information Technology (IT)-enabled communication platform and software for communication between it and the QCA.***
- 11.3 *The SLDC shall be responsible for developing and maintaining a dynamic web-based application for QCA and enabling and supervising the integration of such web-based application with dynamic web-based application of SLDC along with other modules.*
- 11.4 *The QCA shall operate a dynamic web-based application and provide its log-in access to the SLDC, Sellers and Procurers for undertaking the following:*
- a) *To enable the SLDC to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges;*
 - b) *To facilitate Sellers to upload their Generator-wise schedules, revision of schedules, Generator outages and their reasons;*
 - c) *Upload site characteristics and details of the Wind Turbines, Solar Inverters, etc.;*
 - d) *Certification of final implemented schedules of individual Generators by the QCA;*
 - e) *Communication between the QCA and the Sellers to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges.*

Provided that the detailed modalities of the web-based application operated by the SLDC and the QCA shall be provided in the updated Detailed Procedure to be stipulated by the SLDC in accordance with the proviso to Regulation 5.20. ”

19.2 Comments received

SLDC submitted that Considering large no. of generators and its real time revision, it will be difficult to maintain generator-wise schedules in the existing REMC system. SLDC submitted

that in case of generator-wise scheduling total data values of 3,08,816 being handled currently in software will be increased by around 19 times. In case of scheduled based regime, sizing, scaling and computation of speed of the system will have to be critically designed to handle such huge data.

SLDC submitted that as per its current assessment of requirements, existing REMC Scheduling and RE-DSM software would not be capable of handling huge data of generator-wise schedules and accounting. Further, there are limitation of hardware installed in the REMC project. As per primary assessment, as against 90 days envisaged in EM, tentative period of 12 months will be required for software development for live deployment from date of notification of amendment regulations (6 months for software development period + 2 months for additional software stabilization period + 3 months for administrative approval, MERC DPR approval + Tendering activities). This assessment assumed that punching/uploading of processed meter data of each generator in the Dynamic web based application to be carried out by QCA and development of MDAS as done for DSM is not considered. SLDC further submitted that based on previous experience in DSM software development and involvement of stakeholder along with un-anticipated scenarios during development, the timelines may further extend.

SLDC submitted that Regulation 11.4 may be reframed as under:

*“11.4 The **MSLDC** shall operate & **maintain** a dynamic web-based application and provide its log-in access to the **QCA**, Sellers and Procurers for undertaking the following:*

- a) To enable the SLDC to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges **at PSS level**;*
- b) To facilitate Sellers to upload their Generator-wise schedules, revision of schedules, Generator outages and their reasons;*
- c) Upload site characteristics and details of the Wind Turbines, Solar Inverters, etc. **by the QCA**;*
- d) Certification of final implemented schedules of individual Generators by the QCA;*
- e) **To upload Generator-wise meter data & de-pooling accounting data by the QCA**;*
- f) Communication between the QCA and the Sellers to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges.*

Provided that the detailed modalities of the web-based application operated by the SLDC and the QCA shall be provided in the updated Detailed Procedure to be stipulated by the SLDC in accordance with the proviso to Regulation 5.20.”

REConnect Energy suggested to add certain features such as actual generation, Scheduling Portal escalation, shutdown/tripping escalation, etc. on the dynamic web-based application. It further submitted that it is essential to obtain authenticated information, with emphasis is placed on the imperative that Discoms adhere to prescribed protocol, ensuring the maintenance and enforcement of proper procedures to communicate shutdown or maintenance activities to the generators.

REConnect Energy submitted that it recommends the SLDC to include the provision for scheduling through API for QCA's. Primary scheduling through API and secondary scheduling through the REMC web-based scheduling tool.

Adani Electricity Mumbai Ltd. submitted that currently, REMC Registration, Green Open Access Registry portal, Open Access Portal and REMC scheduling portal are operating in isolation and stakeholders are required to enter similar information multiple times on all these portals. As all portals are developed by SLDC or SLDC has direct access to them, therefore, there is need for seamless integration among them, which will ensure faster processing of Open Access, correct and timely settlement. Accordingly, the regulations 5.11 should be modified as under:

*“5.11 The QCA shall furnish to the SLDC the individual as well as aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability. SLDC shall modify/develop and maintain a dynamic web-based application for the purpose of day-ahead scheduling, revision of schedules and display of real-time information. **The Dynamic web based application should also be integrated with SLDC, STU, Green Open Access Registry Portal etc.**”*

19.3 Analysis and Commission's Decision

The Commission is of the view that considering importance of development of Dynamic web-based application in implementation of scheduled generation based settlement mechanism, its development need to happen in time-bound manner.

Further, SLDC has already got enough operational experience in the existing REMC/DSM software development and operation. Therefore, SLDC is directed to develop and operationalise the software cum dynamic web based application for granular level of information schedules/data/information exchange between QCA and generators within 3

months from the date of notification of these Regulations. SLDC to submit the progress of software development to the Commission on monthly basis.

As already stated in the explanatory memorandum that as power sector will evolve, scheduling will become more complex, but development of good/robust Dynamic web-based application will help situation. SLDC shall develop modalities while developing functional requirement specifications of Dynamic web-based application before engaging IT solution/ service provider. Such modalities shall also include future complexities envisaged under this SoR such as inclusion of MSKVY capacity addition/ distributed generation, etc.

As regards suggestion to integration of Dynamic web-based application with other module, the regulations have been suitably modified.

SLDC shall submit cost of development of Dynamic web-based application, cost of Trial Mode operation in accordance with the applicable regulations and same shall be allowed based on prudence check.

19.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has accordingly modified the provisions of the Draft MERC F&S Amendment Regulations, 2023.

“11.2 The SLDC shall equip itself with a dynamic web-based application along with the necessary Information Technology (IT)-enabled communication platform and software for communication between it and the QCA.

11.3 The SLDC shall be responsible for developing and maintaining a dynamic web-based application for QCA. The SLDC shall develop such web-based application within three (3) months from the date of notification of the Maharashtra Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) (First Amendment) Regulations, 2024. The SLDC shall ensure the integration of such web-based application with existing applications of SLDC along with other modules.

11.4 The SLDC shall operate a dynamic web-based application and provide its log-in access to the QCA, Sellers and Procurers for undertaking the following:

- a) To enable the SLDC to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges;*
- b) To facilitate Sellers to upload their Generator-wise schedules, revision of schedules, Generator outages and their reasons;*

- c) *Upload site characteristics and details of the Wind Turbines, Solar Inverters, etc. by the QCA;*
- d) *Certification of final implemented schedules of individual Generators by the QCA;*
- e) *To upload Generator/Contract-wise meter data and de-pooling accounting data by the QCA;*
- f) *Communication between the QCA and the Sellers to access live data of all Schedules and Deviations and facilitate the timely billing and payment of Deviation Charges.*

Provided that the detailed modalities of the web-based application operated by the SLDC and the QCA shall be provided in the updated Detailed Procedure to be stipulated by the SLDC in accordance with the proviso to Regulation 5.20.”

20 Regulation 16: De-pooling of Deviation Charges

20.1 Introduction of a proviso after Regulation 16 of the Principal Regulations

“Provided that, after to notification of the date pursuant to the second proviso to Regulation 1.2 from which the settlement of sale of power within Maharashtra by Solar and Wind Energy Generators connected to the Intra-State Transmission Network by the Procurers shall be on the basis of their Scheduled Generation, the QCA shall de-pool the energy deviations and the Deviation Charges against each Generator in proportion to their Absolute Error;

Provided further that the QCA shall provide information of scheduled based settlement with the individual Generators during the Trial Mode to the SLDC.”

20.2 Comments received

Adani Electricity Mumbai Ltd. submitted that the mechanism adopted by SLDC at PSS level needs to be replicated or option may be given to QCA/ Generators to mutually agree on certain methodology for de-pooling in-line with the draft procedure at the regional level and the draft regulations should be modified as under:

“Provided that, after notification of the date pursuant to the second proviso to Regulation 1.2 from which the settlement of sale of power within Maharashtra by all Intrastate Solar and Wind Energy Generators, scheduled under these Regulations, by the Procurers shall be on the basis of their Scheduled Generation, the QCA shall de-pool the energy deviations and the Deviation Charges against

each Generator in proportion of their deviations considering the sign of deviation as done by SLDC at Pooling Sub-station level OR any other method mutually agreed between the QCA and the generators

...”

20.3 Analysis and Commission’s Decision

The draft procedure at Central level provides several options for apportioning the Deviation Charges between the RE Generators at a Pooling Sub-Station, i.e. based on: Injected energy or Scheduled energy or Actual Deviation or mechanism developed between QCA and Generators. The Trial Mode is envisaged to gain experience on operating scheduled generation based settlement regime and its impact on Pool Account, State Deviation Pool Account and QCA/Generators, as the aggregation at Pooling Sub-Station (QCA) level and de-pooling at individual generators may not be a zero-sum game. Further, the Commission is of the opinion that providing options on ‘de-pooling principle’ during Trial Mode itself may defeat the purpose of Trial Mode, thereby necessitating the same de-pooling principle is followed by all QCAs at least during Trial Mode. Hence, the proposed Regulations envisage that during Trial Mode de-pooling shall be on the basis of the Absolute Error among the constituent generators at each Pooling Sub-station. During or after completion of the Trial Mode, SLDC shall suggest to the Commission specific ‘de-pooling principle’ to be adopted based on Trial Mode implementation results.

20.4 Provision in Final MERC F&S First Amendment Regulations, 2024

The Commission has decided to retain the provisions of the Draft MERC F&S Amendment Regulations, 2023 with minor modifications.

**Sd/-
(Surendra J. Biyani)
Member**

**Sd/-
(Anand M. Limaye)
Member**

**Sd/-
(Sanjay Kumar)
Chairperson**

Annexure- I

Sr. No.	Name of Stakeholders
1	Manikaran Analytics Limited
2	National Solar Energy Federation of India
3	Torrent Power Limited
4	Bajaj Finserv Limited, Pune
5	Khandke Wind Energy Pvt. Ltd.
6	Adani Green Energy Limited
7	Sembcorp Green Infra Ltd.
8	JSW Neo Energy Limited
9	Hero Future Energies Pvt. Ltd.
10	Sustainable Projects Developers Association
11	Alfanar Power Private Limited
12	ITC Limited
13	ReNew Private Limited
14	Reliance Power Limited
15	Adani Electricity Mumbai Ltd.
16	Hetero Med Solutions Limited
17	Apraava Renewable Energy Private Limited
18	Gale Solarfarms Limited
19	Apraava Wind Energy (Khandke) Private Limited
20	Maharashtra State Load Despatch Centre
21	REConnect Energy
22	Mahindra Susten Pvt. Ltd.
23	Maharashtra State Power Generation Co. Ltd.
24	Maharashtra State Electricity Distribution Co. Ltd.