MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE LOAD DESPATCH CENTRE

Minutes of the "**Co-ordination meeting towards implementation of the MERC (Forecasting, Scheduling and Deviation Settlement for Solar & Wind Generation) Regulations, 2018 in the State"** held at Prakashganga, MSETCL, BKC, Mumbai – 400 051 on 26th February' 2019 at 15:00 Hrs.

The "**Co-ordination meeting towards implementation of the MERC (Forecasting, Scheduling and Deviation Settlement for Solar & Wind Generation) Regulations, 2018 in the State"** was held at Prakashganga, MSETCL, BKC, Mumbai – 400 051 on 26th February' 2019 at 15:00 Hrs. The meeting was chaired by **Hon. Chairman and Managing Director, MSETCL.** The list of participants is enclosed as **Annexure -1**.

- The Chief Engineer (MSLDC) welcomed all the participants.
- **Presentation by MSLDC:**
  - The Chief Engineer (MSLDC) briefly informed all the provisions in the MERC (Forecasting, Scheduling and Deviation Settlement for Solar & Wind Generation) Regulations, 2018 and the Procedure approved by Hon'ble MERC for implementation of the said regulations.
  - The activities being carried out by MSLDC for implementation of the said regulations along with status were briefed. The details are as follows:
    - **QCA Registration:**
      Development of web-based QCA management software is under progress; however, offline registration process can be started from 01.03.2019.
    - **Forecasting & Scheduling Software:**
      Development of Pooling Sub-Station-wise forecasting & scheduling software is a part of Renewable Energy Management Centre (REMC). The installation of hardwares at MSLDC is in progress and software development is completed. Once, the hardwares are installed, the Site Acceptance tests of hardwares & softwares shall be completed and project shall be operationalized. It is targeted to commission the REMC project by 31.03.2019.
    - **Deviation Billing Software:**
      Development of Deviation Billing software is under progress, it is targeted to complete the works by 30.06.2019.
  - The participants requested that Software awareness/training program needs to be arranged by MSLDC so as to enable QCAs to become conversant with the software and activities such as Day ahead, Week ahead forecast submission, revision submission can be carried out properly.

    The Chief Engineer (MSLDC) informed that such awareness program for the registered QCAs shall be arranged at MSLDC once REMC Project is commissioned.

- Further, the activity-wise timelines for implementation of the said regulations were briefed.

  The tentative time lines are as follows:

Zero Date: 01.03.2019			
Sr. No.	Particulars	Responsibility	Last Date
1	Identification of Pooling Sub-Stations with combined Installed Capacity above 5 MW	STU, MSEDCL, MSLDC	10.03.2019
2	Submission of Applications as per the Procedure	QCA & Generators	20.03.2019
3	Offline Registration of QCA (As the development of requisite s/w under REMC is in process)	MSLDC	31.03.2019
5	Establishment of REMC at SLDC	PGCIL & MSLDC	31.03.2019
6	Integration of Pooling Sub-Station data with SLDC REMC SCADA	QCA, Generators, PGCIL & MSLDC	31.03.2019
7	Training to all stake holders, Trial Operation of Pooling Sub-Station-wise Forecasting, Scheduling & Deviation Monitoring From 31.03.2019	QCA, Generators & SLDC	15.04.2019
8	Establishment of Online QCA management & RE-DSM Billing Software	MSLDC	30.06.2019

➢ **Scheduling & Re-Scheduling Charges & Registration charges:**

- Almost all the participants raised concern about the high amount of QCA Registration, Scheduling & intraday revision charges in view of permissible 16 revisions which are necessarily required considering uncertain nature of source and to forecast generation with higher accuracy. The levying of revision charges shall defeat the purpose of the regulation to support stability to Grid operation. It was further informed that in other States such as Andhra Pradesh, Rajasthan, Madya Pradesh, Karnataka, etc. Registration charges are not so high and are to the tune of around Rs.5,000/- per Pooling Sub-Station. Also, Scheduling & Re-scheduling charges are not applicable in other States. All the participants requested MSLDC to waive off these charges.
- The Chief Engineer (MSLDC) informed that the Scheduling charges for submission of Day ahead Forecast are not applicable; however, charges for intra-day revisions shall be applicable as approved in the Procedure.

  The Draft Procedure along with comments received from various stake holders was submitted to Hon'ble MERC for approval. In the said comments of stake holders, the issue of Charges & fees was also included. These charges are approved by Hon'ble MERC in the said Procedure.
- Further, all the participants requested MSLDC to approach Hon'ble MERC for review of such charges. In this respect, the Chief Engineer (MSLDC) informed that the issue shall be mentioned in the Minutes of the meeting and the same shall be submitted to Hon'ble MERC. Also, if required, the participants may approach Hon'ble MERC for further review.

➢ **Short time period available for Generators & QCA for implementation:**

- The participants raised concern about the remaining short period available for appointing QCAs and for establishment of required set-up, as the probable date for implementation of the regulation is on or before 20.04.2019.
- The Chief Engineer (MSLDC) informed that as per the regulations, the date of implementation shall not be later than (9) months from the date of notification of the regulations i.e. 20.07.2018. As per regulations, the date of implementation shall not be later than 20.04.2019. Further, the implementation shall be made effective from the date as notified by Hon'ble MERC.

  Also, the regulations have been notified by Hon'ble MERC on 20.07.2018 and the procedure for implementation of regulations has been available on MSLDC website from 07.12.2018. As both, regulations & procedure are available in public domain, it is expected that the Generators had ample time for identification, appointment of QCA and establishment of required set-up.

Meeting concluded with vote of thanks.

(Anil V. Kolap)
Chief Engineer,
SLDC, Kalwa

State Load Despatch Centre, Maharashtra

Implementation of Forecasting & Scheduling Regulations for Wind & Solar Generation

26.02.2019

Overview of the MERC Regulations:

- The MERC (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generations) Regulations, 2018 is notified on 20.07.2018.
- On 15.11.2018 draft procedure submitted to Hon'ble MERC for approval by MSLDC after seeking comments/suggestions from various stake holders.
- On 07.12.2018, Hon'ble MERC issued approval for the draft procedure.
- Approved Procedure is uploaded on MSLDC Website on 18.12.2018.
- As per Regulation No. 1.2 of the said Regulations, the date of implementation of the said Regulations & Commercial arrangements shall be separately notified by Hon'ble MERC, which shall be not later than (09) months from the date of notification of the said Regulations, i.e. on or before 20.04.2019.
- **The said Regulations are likely to be implemented w.e.f. 01.04.2019 by Hon'ble MERC.**

Provisions of the Regulations: *Definitions*

- **Available Capacity (AvC):**

  Cumulative capacity rating of the Wind turbines, Solar inverters or Solar thermal generators that are capable of generating power in a given time block as declared by such Generators or QCA, as the case may be.

- **Absolute Error:**

$$\frac{\text{(Actual Generation – Scheduled Generation)}}{\text{AvC}} \times 100$$

- **Pooling Sub-Station:**

  A Sub-Station consisting of a step-up transformer and associated switchgear to the Low Voltage (LV) side of which several Wind or Solar Energy Generators are Connected:

  Provided that, where a Generating Unit is connected through a common or an individual feeder terminating at a Sub-Station of a Distribution Licensee, the State Transmission Utility or the Central Transmission Utility, such Sub-Station shall be treated as the Pooling Sub-Station for such Wind or Solar Energy Generator for the purposes of these Regulations.

- **Qualified Co-Ordinating Agency (QCA):**

  The agency appointed by the Wind or Solar Energy Generators connected to a Pooling Sub-Station, or by an individual Generator connected directly to a Sub-Station, to perform the functions and discharge the obligations specified in these Regulations.

Provisions of the Regulations: *QCA*

- The Wind and Solar Energy Generators at each Pooling Sub-Station shall appoint a QCA:
  Provided that an individual Generator not connected to a Pooling Sub-Station may opt to be its own or to appoint a separate entity as its QCA
- The QCA shall be appointed with the approval of at least 51% of the Generators at a Pooling Sub-Station, in terms of their combined installed capacity.
- The Generators at a Pooling Sub-Station may appoint one amongst themselves or any other entity as a QCA:
  Provided that an individual Generator not connected through a Pooling Sub-Station may opt to be its own QCA or to appoint a separate entity.
- The Generators shall satisfy themselves that the QCA is technically and financially competent to undertake on their behalf the functions and discharge the obligations specified in these Regulations.
- Every QCA shall be registered with the SLDC
- The QCA shall be the single point of contact between the SLDC and its Generators

Applicability of the Regulations:

Regulations and Procedure shall be applicable to:

- All Solar & Wind Generators in Maharashtra connected to the Intra-State Transmission System including those connected through Pooling Sub-Stations, and using the power generated for self-consumption or sale within or outside the State
- 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

Exclusions:

- Till directions of Hon'ble MERC, the Procedure **shall not be applicable** for projects developed under "**Mukhyamantri Sour Krishivahini Yojana**".

Responsibility of MSLDC:

- Develop **Web-based Software** for the use by QCA with '*Username*' & '*Password*' facility for:
  - Online Registration/De-Registration of QCA.
  - Uploading of Day ahead and Week ahead Generation Forecasts
  - Uploading of the revisions in Schedules in accordance with these Procedures and Regulations.
  - Communication of Grid Constraints and curtailments if any.
  - Mechanism for monitoring deviations in Scheduled & Actual generation along with commercial impact for MSLDC and QCAs', along with acquisition of Meter Reading of all the Nodes in the State for calculation of Deviations and Charges thereof.
- Scheduling, Communication, Co-ordination with QCAs'.
- Grid Monitoring & Operation, Communication of Constraints, Curtailments etc.
- Day ahead Forecasting of Pooling Station-wise Generation for secure Grid operation & monitoring purpose. (*Forecast provided by QCA shall be considered for Accounting & Settlement*)
- Provide forecasting facility to Generators/QCAs on chargeable basis.
- Preparation of Pooling Sub-Station wise Accounts, Statements, Weekly Bills of Deviations.

Responsibility of Generators:

- The Generators in the Pooling Sub-Station shall appoint QCA and give authorization for a period of at least 2 years, for registration of QCA at MSLDC.
- The Generator shall not appoint and authorize multiple QCAs for a particular Pooling Sub-Station. In such case, the authorization provided by the Generator shall be treated as invalid.
- In case of non-consensus among the generators connected through a common feeder for appointment of QCA, then such generators shall take separate connectivity from STU/ DISCOM and furnish the schedules by appointing separate QCA.
- Once the QCA is registered, the generator/s shall not re-appoint another QCA, at least within two (2) years from the date of successful registration of the QCA at MSLDC

  Provided that in case of defaults by the QCA, the generator/s can reappoint another QCA by giving prior notice of three (3) month to MSLDC.
- All the generators shall save and store the block-wise generator injection data or any other data desired by MSLDC and make available the same to their respective QCA so that it could be sent to MSLDC within (7) days from the date of demand from MSLDC.

Responsibility of QCA:

- The QCA shall:
  - Establish round the clock Control Center
  - Control over Wind/Solar injection feeders connected to Pooling Sub-Stations
  - Comply the instructions of the System Operator in normal condition as well as during emergencies
  - Ensure compliance of appropriate decisions taken by the System Operators in view of Grid security and safety
  - Protocol for communication with individual generators to implement the instructions of System Operators and MSLDC
  - Declare Pooling Sub-Station wise Available Capacity (AvC)
  - Submit Pooling Sub-Station wise day ahead, Week ahead Schedules and Intra day revisions
  - Maintain Buyer wise Schedules
  - Provide real time data for power generation parameters (at Pooling Sub-Station level) and real time generation data (turbine and inverter level) and weather data wherever available in coordination with Generator
  - Responsible for metering and data collection, transmission and co-ordination with RLDC, MSLDC, STU, CTU, MSEDCL and other agencies as per IEGC and CERC/MERC Regulations

Responsibility of QCA:

- The QCA shall:
  - Undertake commercial settlement of all deviation-settlement charges.
  - Maintain records and accounts of the time block-wise Schedules, actual generation injected and the deviations, for the pooling sub-station and the individual Generators separately.
  - Prepare deviation accounts on weekly basis as per regulation 15 of the Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation Regulations, 2018.
  - Execute an agreement with MSLDC wherein it is mentioned that QCA shall undertake all operational and commercial responsibilities on behalf of the Constituents as per the prevalent MERC Regulations.
  - Use Automatic meter reading (AMR) technologies for transfer, analysis and processing of interface meter data to MSLDC
  - Perform Commercial Settlement beyond connection point (De-pooling arrangement among each generator in the Pooling Sub-Station
  - Shall furnish the PPA rates on notarized affidavit, for the purpose of Deviation charge account preparation (in case of Inter-State transactions) to MSLDC supported by copy of the PPA

Responsibility of QCA:

- The Control Centre shall have following facilities available for all the 24 hours:
  - Voice communication with MSLDC and Wind/Solar Generators with voice recording facilities
  - Fax machine
  - Internet connection
  - Trained Staff
  - Alternate voice and data communication with MSLDC

Qualifying Criteria for QCA:

- The QCA shall be a company incorporated in India under the Companies Act 1956/2013
- The QCA shall have the capabilities of Modeling wind energy generation potential on seasonal time scales with impact surfaces, a tool to visualize the wind energy generation potential in “Climate Space”
- The QCA shall have the experience in the field of Wind/Solar Power forecasting and scheduling in different terrain and regions for minimum period of one (1) year including pilot project work with appropriate accuracy levels in forecasting
- The Average Net Worth of the QCA for forecasting & scheduling services shall be in positive amounting to at least Rs.1.50 Crores in the current financial year which should reflect from its audited balance sheet or CA's certificate
  (*Net worth = Share Capital + Reserve – Revaluation Reserve - Intangible Asset - Misc. Expenditure to the extent not written off - Carried Forward Losses - Liabilities*)
- It is envisaged that Generators acting as QCA, shall also strive to build requisite skillsets, capacity and technical competence adhering to qualification requirements over the period of two years.

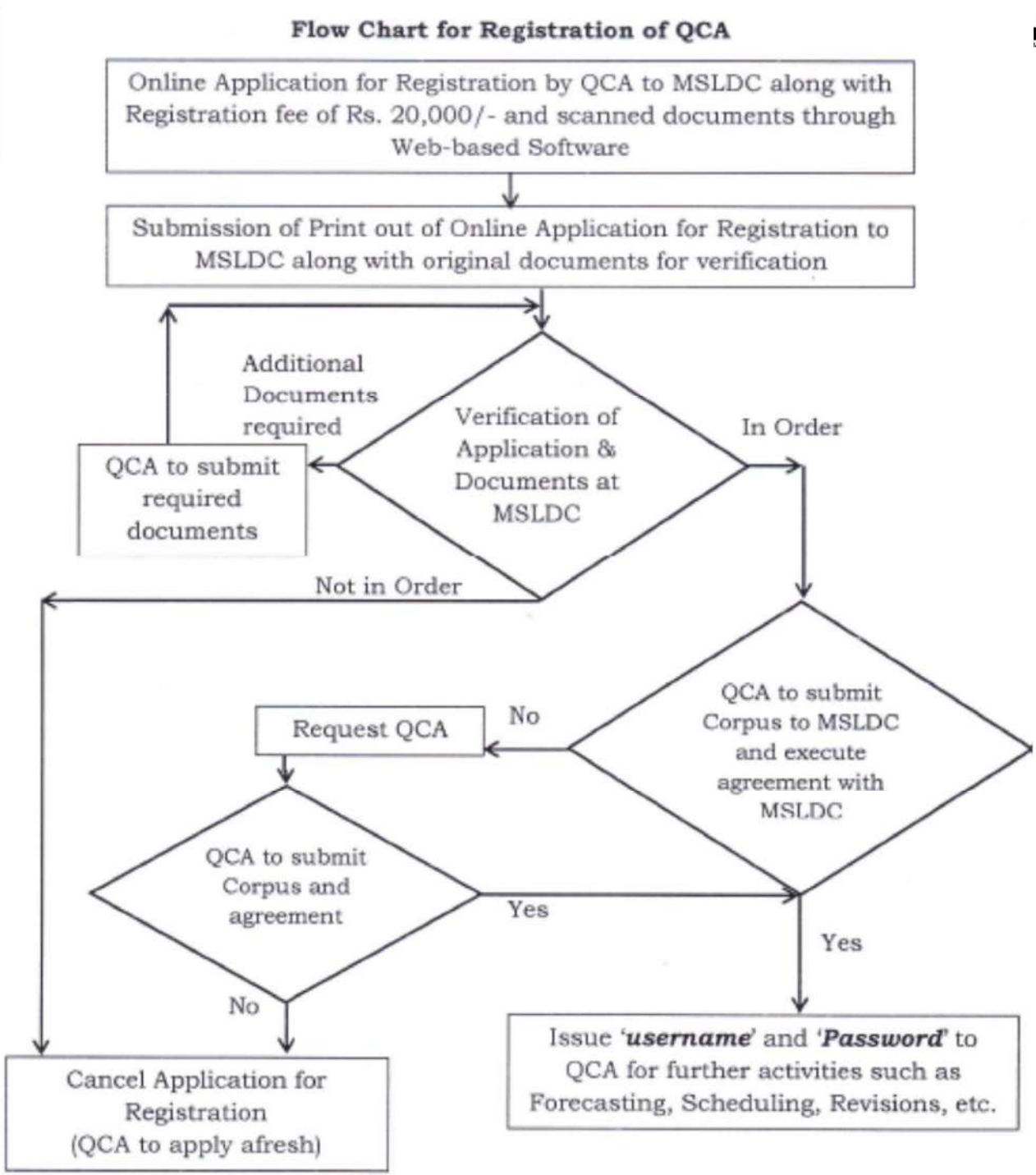
Qualifying Criteria for QCA:

- The QCA shall possess/provide authorization from at least 51 % of the Generators connected in the Pooling Sub-Station in terms of their combined installed capacity for appointment as QCA. (Not applicable if Generator is connected through dedicated inter-connection facility with the Grid) at the time of Registration.

- QCA should have established team of:
  - Renewable resource analyst,
  - Modelling statisticians,
  - Energy model,
  - Software developers
  - 24 x 7 operation and monitoring team,

The corresponding supporting certificates/documents justifying qualification should be submitted along with the application for registration.

Registration of QCA:



De-Registration of QCA:

- **Own De-Registration:**
  - Three (3) months prior notice to be served to all the generators to whom it is representing for de-registration with copy to MSLDC
  - The generator/s shall be responsible for appointing new QCA and ensure registration of new QCA at MSLDC within this notice period, post which generation shall not be scheduled
  - It shall be the responsibility of the QCA to settle all the commercial obligations of both MSLDC and Generators to whom it is representing

- **De-registration due to non-authorization of Generator:**
  - Three (3) months prior notice to be served by the generator to the QCA for non-authorization with copy to MSLDC
  - The generator/s shall be responsible for appointing new QCA and ensure registration of new QCA at MSLDC within this notice period, post which generation shall not be scheduled
  - Before de-registration, the generator shall ensure that all the commercial settlements pertaining to it has been completed by the QCA with MSLDC

De-Registration of QCA:

➢ De-registration under default condition:

- The MSLDC shall initiate the process of de-registration, if the condition of default is violated by the QCA
- The generator/s shall be responsible for appointing new QCA and ensure registration of new QCA at MSLDC within this notice period, post which generation shall not be scheduled

De-Registration of QCA: *Default Conditions*

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➢ **Default conditions:**

- Non-payment or delay in payment of Deviation Charges
- Non-compliance of any of the terms/conditions/rules outlines
- Non-compliance of any of the directives as per the provisions of this regulation issued by MSLDC
- Obtaining registration on the basis of false information or by suppressing material information
- Failure to provide schedules continuously for 1O days
- Non-availability of real time data continuously for three (3) days without justified reason
- Intentional & repeated mis-declaration of Available capacity (Avc)
- Non-submission of accounts to MSLDC relating to de-pooling of deviations charges prepared by the QCA
- Non-payment of RE DSM charges to RE DSM pool by QCA for consecutive three (3) weeks
- In case the QCA become insolvent
- In case of continued default for statutory compliance leading to declaration of willful defaulter by competent Authority

De-Registration of QCA: *Default Conditions*

- **Default conditions:**

  QCA, within seven (07) days, fails to inform the details to MSLDC in case there is any change in:

  - The Generating Station (in case of individually connected generator), Pooling Sub-Station
  - Individual generators in the Pooling Sub-Station
  - Reduction in authorization from generators in a Pooling Sub-Station below 51 % of the total installed Capacity of the Pooling Sub-Station.

Fees & Charges:

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Abstract of Payments to be made to MSLDC by the QCA

Sr. No.	Reason for Payment	Amount (Rs.)	Time of Payment
1	Registration Charges	20,000/-	For each Pooling Sub-Station during Application for Registration
2	Scheduling Charges	2,250/-	For every day
3	Revision in Schedules	2,250/-	For every revision
4	Forecasting services	3,000/-	Per day, if availed
5	Corpus	25,000/- per MW for Solar	During Registration
		50,000/- per MW for Wind	
6	Top-up of Corpus	As required	In the event of reduction in Corpus as per Sr. No. 5
7	Any other charges	As required	As required

Way Forward: *Proposed Action Plan*

Zero Date: 01.03.2019			
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8	Establishment of Online QCA management & RE-DSM Billing Software	MSLDC	30.06.2019

Thank

YOU