TRANSMISSION CORPORATION OF TELANGANA LIMITED
VIDYUTSOUDHA:: HYDERABAD-82

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For Perusal
Secretary
Chairman
14/11

TSERC, HYDERABAD
INWARD
13 NOV 2018
No. 1727 Signature

From
The Chief Engineer,
SLDC, TSTRANSCO,
Vidyut Soudha,
Hyderabad- 500082.

To
The Commission Secretary,
TSERC,5th floor,11-4-660,
Singareni Bhavan, Red Hills,
Hyderabad-500004.

15/11/18
JD(T&C)

Lr No .CE/SLDC/F.RE (F & S)/ D.No.472/18, Dt : 12.11.2018

Sir,

Sub: TSTRANSCO – TSSLDC - Procedure for implementation of the Framework on Forecasting, Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generators (RE DSM Procedure) as per Regulation No: 3 of 2018 –Submission -Requested for Approval - Regarding.

Ref: TSERC Regulation No:3 of 2018.

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As per the directions of Hon'ble TSERC in the regulation cited above, the procedure for "Implementation of the Framework on Forecasting, Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generators (RE DSM Procedure)" has been prepared covering the following:

a) Role of QCA, Qualification Criteria of QCA and Registration of QCAs/Generators (which are not part of QCA).
b) Metering, Data Collection & Data Exchange between QCA / Generator and SLDC.
c) Forecasting and Revisions.
d) Covering plan for Data Telemetry and Data Acquisition System.
e) Calculation of Energy Deviations & Deviation Charges, De-pooling of Deviation Charge and State pool account.
f) Formats for submission of the schedules with revisions by Generators, formats for Technical Specifications of Generators developed by SLDC.

In this regard, I am directed to submit the same to the Hon'ble Commission for approval.

Encl: 1. RE DSM Procedure -16 pages
2. Annexures -20 pages

Yours faithfully,

Chief Engineer/TSSLDC

CSE 383 14/11/18 SE 305 14/11/18

Copy submitted to

1. SE/Technical to The Chairman and Managing Director/TSTRANSCO.
2. PS to The Joint Managing Director (Finance, Commercial & HRD)/TSTRANSCO.
3. PO to The Director/Grid Operation/TSTRANSCO.

TRANSMISSION CORPORATION OF TELANGANA LTD

TELANGANA STATE LOAD DESPATCH CENTER, HYDERABAD

Procedure for implementation of the Framework on Forecasting, Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generators as per Regulation 3 of 2018 of Hon'ble TSERC

1. Objective:

1.1 The main objective of the Forecasting & Scheduling is to provide advance prediction of Wind and Solar Power generation close to actual, so as to assist the System Operator in smooth grid operations, enhance Grid Security & Dispatch the energy in most economical way.

1.2 In view of large scale integration of RE power into the grid, the accurate forecasting of the RE power for week ahead/day ahead/ Intra day has became utmost important, which will help the SLDC in planning the conventional generation scheduling, balancing needs, ancillary services and operation of state grid in most optimal economic manner.

1.3 The Procedure is issued in pursuance to clauses 4.2,7.5,8.11 & 10 of Regulation : 3 of 2018 *Telangana State Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generation Sources) Regulation, 2018,* herein after called the " **Procedure for implementation of the framework on Forecasting , Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generators** " or in short **"RE DSM Procedure"**.

1.4 The Regulation No:3 of 2018 of TSERC is in force with effect from 04.07.2018.

Provided that the commercial arrangements specified in this Regulation and the related provisions regarding deviation charges and penalty, shall come into force in line with the time specified in the clause 21 of this Regulation.

2. Scope:

The Procedure shall be followed by State Load Dispatch Centre (SLDC), Solar and Wind generating stations connected to the State Grid directly **or** through pooling stations and supplying power to the State DISCOMs, **or** to the third parties through open access **or** for captive consumption and selling power within **or** outside the state and the Qualified Coordinating Agencies (QCAs).

Unless the subject matter **or** context otherwise requires, words and expressions used in this procedure shall have the meaning assigned to them in the Electricity Act, 2003, TSERC (Forecasting, Scheduling, Deviation Settlement and related matters of Solar and Wind Generation Sources) Regulation No: 3 of 2018 and other relevant Regulations amended from time to time.

3. Applicability:

This Regulation shall apply to all Solar or Wind generators (excluding Rooftop PV Solar power projects) in Telangana connected to the intra-state transmission system, including those connected through pooling stations and supplying power to the DISCOMs, **or** to third parties through open access **or** for captive consumption through open access, and selling power within **or** outside the State.

Provided that, the combined installed capacity of the Solar or Wind generators Connected to a particular sub-station/pooling station or that of individual Generator connected to some other sub-station shall not be less than 5 MW.

4. The Qualified Coordinating Agency (QCA):

4.1 "Qualified Coordinating Agency or QCA" means agency appointed by Solar/Wind Generators registered with SLDC to act as a coordinating agency on behalf of wind or solar generators connected to a pooling station and one of such generators can also be such agency.

Provided such agency has no statutory role and is not recognized as such under the Act, 2003, accordingly under this regulation also. Any action or inaction on the part of the Solar or Wind generator shall be attributable to such generator or other stakeholders as the case may be only, thus leaving the QCA to be simple facilitator or coordinator only.

4.2 The QCA shall be appointed by Solar or Wind generators, who may be one of the Generators or any mutually agreed agency.

4.3 The QCA shall be appointed with the approval of at least 51% of the generators at Pooling station/Grid sub-station (which are having common Interface Billing Meters) in terms of their combined installed capacity and the remaining generators shall also accept the same as QCA and the generators shall also inform SLDC to this effect.

The Generators shall not be allowed to provide individual schedules, which are

having common interface billing meter at Pooling station / Grid sub-station. They shall appoint a QCA and that QCA shall give single schedule for that pooling station / grid sub-station on behalf of its coordinated generators and shall undertake forecasting and scheduling at feeder level, however deviation accounting shall be undertaken for Pooling station / Grid sub-station as a whole.

4.4 The Solar or Wind generators, which are having separate dedicate feeders and separate interface billing meters also may appoint a QCA and there is no such condition that all the generators connected to such substation shall accept that QCA. The unwilling generator(s) may appoint another QCA or register with SLDC as QCA and shall undertake the works, as mentioned in the regulation.

The QCA appointed by generators connected to a grid sub-station having dedicated feeders shall give single schedule at that sub-station and individual schedules of its coordinated generators.

4.5 The Generators which have not appointed any QCA and having dedicated feeders shall register with SLDC as QCA. They shall provide the schedules with periodic revisions as per the regulation and undertake the works as mentioned in the Regulation.

4.6 The QCA shall provide separate schedules for Solar and Wind generators connected to same Sub-station/Pooling station.

4.7 Any commercial impact on account of deviation from the schedule based on the forecast made available by the generator or its QCA shall be borne by the wind or Solar Generator either by itself or through their representing QCA.

5. Qualifying criteria For QCA:

5.1 The QCA shall have the experience in the field of Solar/Wind Power forecasting and scheduling for a minimum period of 1 year with appropriate accuracy levels in Forecasting.

5.2 The QCA shall have fully functional Forecasting & Scheduling tools to obtain desired outputs.

5.3 The QCA shall have capability to handle multiple plant owners connected to a pooling Sub Station in order to be well positioned to de-pool deviation charges.

5.4 The QCA shall have experience in working in different terrain & regions as Solar or Wind generation depends on these factors and such experience facilitates better

Scheduling.

5.5 QCA shall have an established team of Renewable Resource Analysts, modeling Statisticians, Energy models, Software developers and 24X7 operation and monitoring team.

5.6 The QCA shall have equivalent systems in place for seamless flow of information to and from SLDC in order to facilitate scheduling, revision of schedule, intimation of outages/grid constraints, curtailment etc.

5.7 The QCA shall have capability to provide real time monitoring systems (SCADA) in place for seamless flow of information to and from SLDC.

5.8 The QCA shall have established alternate voice and data communication with SLDC.

5.9 The QCA shall establish protocol for communication with Individual Generators to implement the instructions of System operator and SLDC.

5.10 The QCA shall have a designated and qualified operator available Twenty four (24) hours a day, every day for contact and Communication with the SLDC, in accordance with SLDC instructions and other communication policies and protocols.

6. Registration of QCA:

The procedure for registering a QCA is as follows:

a) The QCA shall submit application accompanied with Registration Fee of Rs. 5000/- for each Interconnection Point, as per the proforma **(Annexure-I & IA)** for the registration.

b) QCA shall submit declaration on the Letter Head and Rs.100/- Non-judicial stamp paper as per **Annexure-II.**

c) The QCA shall submit consent letters of its coordinated generators on their letter heads and on Rs. 100/- Non-judicial stamp paper as per the proforma attached in **Annexure-III.**

d) QCA shall submit an undertaking on Rs. 100/- Non- Judicial stamp paper from time to time in regard to compliance of TSERC Regulations and its procedure amended from time to time as per **Annexure-IV.**

e) QCA shall submit individual bank guarantees of its coordinated generators obtained from public sector bank and/or revolving letter of credit given by a

scheduled commercial bank, for the amount equivalent to **Rs. 33,750/- per MW** for Solar Generation and **Rs. 67,500/- per MW** for Wind Generation as per **Annexure-VII**.

f) The Bank Guarantee submitted shall be valid for a period of 2 years and should be issued by a Public Sector Bank, branch situated in the state of Telangana and shall be extended from time to time as required. The payment security may be amended from time to time by the SLDC based on actual incidence of DSM charges.

g) Once QCA submits the application along with bank guarantees of its coordinated generators and Registration Fee, the same may be accepted by the SLDC and QCA may be allowed to schedule power for its constituent generators /pooling stations for which the necessary login ID and password shall be provided by SLDC.

h) In case QCA has obtained Registration on the basis of false information or by suppressing material information and the Registration of such entity is revoked.

i) The registration of the QCA will be revoked on the request of 51% of generators at pooling station/Grid sub-station (which are having common interface billing meters) in terms of their combined installed capacity.

j) The QCA may cancel their Registration by submitting NOC from the concerned Generators. The Generators shall choose another QCA and got it registered before issuing NOC to old QCA.

k) In the event non-compliance of any of the terms/conditions/rules outlined under Regulation No. 3 of 2018 by QCA then the registration of the QCA will be revoked by the SLDC.

7. Role of QCA:

7.1 QCA shall be facilitator between SLDC and all the generators connected to Pooling Station/Grid Sub Station (which are having common Interface Billing Meters) for the following purposes.

a) Providing schedules with periodic revisions as per the regulation, on behalf of all the Solar/Wind generators connected to the Pooling Station/Grid Sub-Station.

b) Co-coordinating with the DISCOM / STU / SLDC, as the case may be in respect of metering, data collection, communication and issuance of instructions for despatch of power/ curtailment thereof.

c) Undertaking commercial settlement on behalf of the generators pertaining to generation of power injected into the grid, deviations in generation or drawl by either of the parties, apart from payment of deviation charges to the State Pool Account.

d) Undertaking de-pooling of payments received from the State Pool Account on behalf of the generators and settling them with the individual generators in accordance with these Regulations.

e) All other ancillary and incidental matters arising out of or in connection with generation, supply, dispatch and payments, as may be required to be, on behalf of the Generators.

Provided that in case of QCA appointed by Wind /Solar generator for forecasting and scheduling work, the QCA shall facilitate the payment of the sum payable on behalf of the generator. The individual generator and QCA shall execute an agreement specifying that the QCA shall be the facilitator for compliance of all obligations and liabilities arising out of the scheduling, forecasting and other activities to be carried out by the wind / solar generator and a copy of such agreement shall be submitted to SLDC.

7.2 The QCA shall facilitate all the payments liable to be payable on behalf of the Solar /Wind Generators as appointed by the generator. The generators are responsible for payment of dues to the DISCOMs or SLDC as the case may be and have a right to recover any sums due from the DISCOMs or SLDC, in doing so the QCA will be the facilitator. In case of non-compliance of payments or receipts of either of the parties, the QCA shall facilitate and ensure compliance of this Regulation as also the payments.

7.3 QCA shall have to ensure confidentiality of all the data provided by the SLDC and the data shall not be shared without written permission from SLDC.

7.4 Solar and Wind generators shall provide, Technical specification of the generating units and all other equipment of the Solar/Wind farms, either by themselves or represented by a QCAs to SLDC, as per the **Annexure V** for Solar and **Annexure VI** for Wind Generating Stations within the timelines as per the regulation and

whenever there is any change in such Technical specifications, the same shall be communicated to SLDC.

7.5 The QCA shall share the forecasting model with the SLDC.

7.6 The QCA shall accept the Energy and Deviation accounts for inter-State and Intra-State transactions prepared by the SLDC.

7.7 QCA shall de-pool energy deviations as well as deviation charges to each generator connected at a respective pooling station in proportion to energy injected in each time block by each generator and upload the statement of de- pooling to SLDC on Monthly basis in the SLDC Web-portal and also through E-mail.

7.8 The QCA shall maintain historical data (Wind Velocity, Wind Direction, Power generation in MW etc, for Solar and Wind Insolation, Power generation in MW etc, for Solar), all necessary and required records, registers and accounts in respect of forecasting, scheduling and deviation settlement in accordance with this Regulation and shall furnish to SLDC on request.

7.9 QCA shall record and transmit the data of LVRT & HVRT on monthly basis to SLDC.

7.10 QCA shall ensure periodical testing and calibration of Interface Billing Meters of its Generators as per the CEA Metering Regulations and Procedures of TSTRANSCO.

7.11 QCA shall have the Forecasting Tool which has Forecasting accuracy analysis and support in uploading Forecasts to SLDC tool, information delivery to scheduling tool, support visualization of real time generation forecasts as well as provide platform to exchange required necessary information like Real time data etc. for accurate Forecasting through SCADA.

8. Metering, Data Collection & Data exchange between QCA/ Generator acting as QCA and SLDC:

8.1 The Solar and Wind Generator shall install the meters in accordance with the CEA (Installation and Operation of Meters) Regulations, 2006 as amended from time to time.

8.2 The distribution licensee(s) have power to examine the metering arrangements including, installations in the premises of wind or solar generator whenever required. It may also require the generators to take steps to remedy any short comings noticed it in compliance of any rules or regulations that are in force under the intimation to the SLDC and the Commission.

8.3 The QCA shall install Special Energy Meters (SEM) i.e. ABT compliant meter,

capable of recording the energy in 15-minutes time block (with provision of 5-minutes integration) and the energy accounting shall be done taking into consideration of such meter data.

8.4 The generators shall enter into an agreement after nominating a QCA and such agreement shall provide specifically the following conditions.

a) Install modem on existing ABT meters for getting data on 15 minutes basis (with provision of 5 minutes integration).

b) Access to the API link for getting the data from the meter to the QCAs central server to facilitate better Forecasting.

c) Install parallel ABT meter on the existing CT/PT set to facilitate acquisition of Real time data so that best Schedule can be submitted to SLDC.

8.5 QCA shall submit such Agreement copy entered with Generator to SLDC.

8.6 The QCA shall forward monthly meter readings to the SLDC for energy accounting purpose under this Regulation.

8.7 SLDC shall validate, process the SEM data and computing the net injections by each pooling station. The SLDC will monitor such that there is no Gaming (gaming is an intentional mis-declaration of AVC by any Generating station or QCA in order to make an undue Commercial gain).

8.8 The QCA shall install appropriate Telemetry/Communication system and Data Acquisition System for transfer of required information for implementation of provisions of these Regulations so as to retrieve the same on real time basis by the SLDC.

8.9 The QCA shall have a designated and qualified operator available twenty four (24) hours a day for contact and Communication with the SLDC, in accordance with SLDC instructions and other communication policies and protocols.

8.10 The QCA shall communicate Day ahead, Week ahead & intra-day Schedules & Available capacity (AVC) along with revisions to SLDC through the E-mail and Web portal developed by SLDC.

8.11 The QCA and Generator shall inform Real time generation at Pooling Station and/or at Individual Generator level, as required.

8.12 The QCA shall provide information of Grid constraints and Curtailments from SLDC side to the Generator.

8.13 The QCA shall inform to SLDC on generation outage with reason for such outage

through the E-mail and Web portal developed by SLDC.

8.14 SLDC shall intimate the Deviation charges at the Pooling Station and Generators to the QCA through the Web portal and E-mail.

8.15 The QCA shall provide basic information of the site and Turbines/Inverters as per the static sheet through the E-mail and Web portal.

8.16 SLDC should be able to view state level schedule along with actual generation being handled by the QCA in the Web portal.

9. Forecasting & Revisions :

9.1 Forecasting shall be done by every wind and solar generator connected to the state grid directly or through pooling station, either by itself or by a QCA on its behalf, provided that the QCA while doing forecasting on behalf of generator, shall obtain a written consent of satisfaction of the generator before submitting such data to the SLDC.

9.2 The forecast done by a wind or solar generator or the QCA as the case may be, shall be provided separately for each pooling station. Each QCA shall coordinate the aggregation of schedules of all its generators connected to a pooling station and communicate the same to the SLDC.

9.3 QCA shall upload and access the Forecasting related Data (Power forecast, Schedules and AVC on Week ahead, Day ahead as well as Intra-day basis in 15 minutes time blocks with periodic revisions) in the Web portal and through the E-mail as per Regulation: 3 of 2018 of Hon'ble TSERC.

9.4 The SLDC shall also undertake forecasting of Solar and Wind power that is expected to be injected into the Grid with the objective of ensuring secure grid operation by Planning for the requisite balancing resources.

9.5 In case QCA avails the services of SLDC forecast, the SLDC shall recover the charges for such services from the beneficiary generator/QCA as approved by the Commission. The amount recovered from this service by SLDC shall be considered as other income and shall be given effect in the ARR of SLDC.

9.6 SLDC is no way responsible for accurate forecasting, which is to be undertaken by the Generator through QCA or Generator duly establishing the required Forecasting tools and QCA/Generators shall not plea that the error was reflected in the Scheduling due erroneous Forecast by SLDC.

9.7 QCA/Generators may prepare their schedule based on the forecast done by SLDC

or their own Forecast. Any commercial impact on account of Deviation from schedule based on the forecast shall be borne by the Solar or Wind Generator either by itself or through the representing QCA.

9.8 The QCA on behalf of Solar and Wind Generator(s) or Generator(s) themselves shall submit a Day-ahead and Week-ahead schedule of each generator and aggregated schedule for each pooling station, as the case may be. Day-ahead schedule shall contain Wind or Solar energy generation schedule at intervals of fifteen (15) minutes time-block for the next day, starting from 00:00 hours of the day, and prepared for all ninety-six (96) time-blocks. The Week-ahead schedule shall contain the same Information for the next Seven days or (96X7 Time-Blocks).

Provided that the Wind and Solar Generators, as the case may be, having multiple transactions under a power purchase agreement and Intra-state and / or Inter-state open access with a common interface meter shall submit schedules with respect to such approved capacities allocated and such capacities alone shall be treated as AVCs for the purpose of these transactions under this Regulation.

Provided further that settlement of energy by SLDC will be on the basis of aggregated schedule submitted by the Generators/QCA with reference to each Pooling Station.

9.9 a) The Schedule of Wind and Solar Generators connected to the State Grid, excluding collective transactions, may be revised by giving an advance notice to the SLDC. Such revisions shall be effective from the Fourth (4^{th}) time block, the First being the time-block in which notice was given.

b) In respect of Wind generators, there may be one revision for each time slot of one and a half hours starting from 00:00 hrs of a particular day subject to a maximum of sixteen (16) revisions during the day.

c) In respect of Solar Generators, there may be one revision for each time slot of one and a half hours starting from 05:30 hrs upto 19:00 hrs of a particular day subject to a maximum of Nine (09) revisions during the day.

9.10 Solar and Wind power forecast and AVC have to be delivered separately at Pooling Station level/Grid SS level.

9.11 Day ahead forecast and AVC shall be provided by 06.00 hrs. every day for next day and same may be revised by 13.00 hrs.

9.12 In case planned curtailment/shutdown/system constraint necessitated in certain

Time blocks of a day by the SLDC, QCA and Generator shall be responsible to restrict the Generation at site as per the advice of the SLDC and accordingly the QCA/Generator shall revise the Schedule.

9.13 In case SLDC imposes any unplanned curtailment or remove the curtailment due to sudden transmission constraints, breakdown etc. for grid stability, the capacities thus reduced or increased by the generators for the immediate time blocks shall be exempted from DSM calculations till the 4th time block after communication with SLDC, the 1st block being the one in which the Communication to SLDC has been made.

10. Telemetry & Data Communication:

10.1 **SCADA Tools :**

i) Generators connecting at EHT level (i.e. 132 KV & above):

The real time data like MW,MVAR, Voltage, Frequency, Transformer tap, Breakers & Isolator status etc and any other data as desired by SLDC from the plant up to the appropriate data collection point on STU network shall be transmitted by Generators on PLCC/Fibre Network on IEC 104/101 protocols in reliable and efficient manner.

ii) **Discom embedded Generators (i.e. 33 KV & below):**

The real time data like MW, MVAR, Voltage, Frequency, Transformer tap, Breakers & Isolator status etc and any other data as desired by SLDC from the plant up to SLDC shall be transmitted on IEC 104/101 protocols through Leased Line over MPLS in a secured VPN channel or a more reliable communication media by Generators.

10.2 The Regulation No:3 of 2018 of TSERC is in force with effect from 04.07.2018. QCA shall transmit the weather data in real time from the Turbine/Inverter level to SLDC i.e., Metrological tower Unique ID, Wind speed, wind direction, Surface Pressure, Ambient Temperature, Relative humidity, percentage cloud cover and other data as and when required by SLDC.

10.3 (a) A Solar or Wind generating station which is already in commercial operation on or before 04.07.2018 shall establish the forecasting tools (Data Acquisition System, Communication System & appropriate Energy Meters etc) either by itself or through a QCA within the timelines as specified by SLDC in Clause 21 of this Regulation.

(b) A Solar or Wind generating station commencing commercial operation after 04.07.2018 shall not be allowed to be commissioned unless it has established the forecasting tools (Data Acquisition System, Communication System & appropriate Energy meters etc) either by itself or through a QCA.

Provided that the distribution licensee shall confirm with the SLDC about compliance of establishing forecasting tools before the generator is allowed to Synchronize with the Grid on Commercial basis.

11. Calculation of Energy Deviations & deviation Charges:

a) Implemented Schedules:

15 min Block wise implemented schedules shall be prepared by the SLDC based on the Forecasting and intraday revisions provided by the QCA/Generator.

b) Collection of Energy Meter Dumps (Actual Energy generation)

1. Based on the voltage level and interconnection point, the STU/Discoms will download the data of actual generation from the SEM on monthly basis and the Dumps will be uploaded to the TSSLDC web portal.
2. QCA shall Coordinate with DISCOM/STU/SLDC for metering, data collection, Communication.

c) Calculation of Energy Deviations & Deviation charges

1. SLDC shall calculate Net RE Deviation and deviation charges payable (D) at state periphery.
2. SLDC shall calculate absolute error occurred in the scheduled energy and actual energy and deviation for each pooling station and for each generator who is not part of the pooling station feeding directly to the substation and collect deviation charges (R) from them as per the Regulation.
3. Actual commercial impact for the state as a result of deviation of Wind and Solar Generation would be D-R.
4. SLDC shall further allocate this Deviation amount i.e. D-R to each pooling station and each generator which is not part of pooling station and feeding directly to the Substation, in proportion to their Deviation.

d) Deviation Settlement for Inter State Transactions

1. The sale or self-consumption of power outside the State of Telangana by solar and wind energy generators connected to the intra-state transmission system or distribution system shall be settled by the procurers on the basis

of their scheduled generation.

2. Inter-state transactions at a pooling sub-station shall be permitted only if the concerned generator is connected through a separate feeder.
3. The generator shall submit, through the QCA, a separate schedule for its energy generation, in accordance with this Regulation to the SLDC as well as the concerned Regional Load Despatch Centre (RLDC).
4. The deviation charges for under or over injection by wind or solar generator connected to the state grid and selling power outside the State shall be payable or receivable as per the CERC (Deviation Settlement Mechanism and Related Matters)Regulations,2014 as amended from time to time.
5. The SLDC shall prepare the deviation settlement account for such generator on the basis of measurement of the deviation in the energy injected and its impact at the state periphery.
6. The generator shall pay the deviation charges for under / over injection applicable within the State of Telangana in case of deviations in the State DSM Pool, the consequences of such deviation at the inter-state level being governed by the CERC Regulations governing the Deviation Settlement Mechanism and related matters.
7. A statement of energy accounting i.e., Energy Deviations and corresponding Deviation charges for each pooling station shall be prepared by the SLDC on monthly basis, based on forecasting submitted by the QCA/Generators and SEM data received from the concerned DISCOM/STU.

e) Publishing the Deviation Account in the SLDC Web site

The SLDC shall publish the Deviation data i.e., Energy deviations and corresponding deviation charges in the SLDC web site and shall be open to the respective entities for checking/verification for a period of 15 days. In case any mistake is detected by QCA/Generator, on report by QCA/Generator, the SLDC shall forthwith make a complete check and rectify the mistakes and publish the final Deviation Account.

12. De-Pooling of Deviation Charge:

The QCA serving the generators shall de-pool the energy deviation as well as deviation charges to each generator connected at a respective pooling station in proportion to energy injected in each time block by each generator.

13. Grid Stability:

All the Solar and Wind generators have to maintain reactive power, voltage and frequency in line with the central / state gird code regulations for maintenance of stability, safety and security of the grid.

14. State Pool Account :

a) State Pool Account:

14.1 State Pool Account means a separate account will be created, maintained and operated by SLDC in accordance with the provisions of the Regulation: 3 of 2018 of Hon'ble TSERC for receipts and payments on account of deviations specified under DSM Regulation.

14.2 The SLDC shall provide separate energy and deviation accounts for inter-state and intra state transactions to QCA or the Wind or Solar Generators.

14.3 The QCA shall separately facilitate settlement of deviation charges earned or liable to be paid by the wind or solar generators for inter-state and intra-state transactions separately.

14.4 The deviation charges for shortfall or excess generation within the state shall be payable by the wind or solar generator through QCA or generator(s) themselves, as the case may be, to the Intra state pool account, as per the table specified in the Regulation.

14.5 The deviation charges for under or over injection by wind or solar generator connected to the state grid and selling power outside the State shall be payable or receivable as per the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2014 as amended from time to time.

14.6 Deviations for generation and supply of power or otherwise in respect of Inter-State and Intra-State transactions at pooling station shall be accounted for separately.

14.7 QCA shall facilitate for commercial settlement of forecasting deviations including payment of deviation charges to the State Pool Account on behalf of the concerned generators.

14.8 QCA shall facilitate for de-pooling of payments received on behalf of the concerned generators from the State Pool Account and settling them with the individual Generators.

b) State Pool Account: Payment Mechanism for Settlement of Deviations by Solar/Wind Generators and Payment Security:

14.9 The payment settlement of deviations charges beyond permissible limits shall be prime responsibility of all the Solar and Wind generators connected to respective pooling station or connected with the sub-station as the case may be. The generators shall make payment of deviation charges through QCA nominated by them as per the rates specified in this Regulation.

14.10 The Solar or Wind generator shall provide payment security to SLDC by way of bank guarantee obtained from a public sector bank situated in the state of Telangana and / or revolving letter of credit given by a scheduled commercial bank situated in the state of Telangana for **Rs. 33,750/-** per MW for Solar Generation and **Rs.67,500/-** per MW for Wind Generation covering deviation settlement mechanism payment for **6** months.

14.11 The Bank Guarantee submitted shall be valid for a period of 2 years and should be issued by a Public Sector Bank, branch situated in the state of Telangana and shall be extended from time to time as required. The payment security may be amended from time to time by the SLDC based on actual incidence of DSM charges.

14.12 The payment of all charges on account of deviations beyond the permissible limit at a pooling station by Solar and Wind generators shall have priority over other payments and shall be paid within 10 (ten) days from the issuance of the invoice along with statement of account. Such payment shall attract an interest of 0.04% per day for each day of delay in the event the payment is made beyond 12 days.

14.13 In case the wind or solar generator defaults in payment to SLDC through QCA then QCA shall inform about the default by the generator to the SLDC and SLDC shall not despatch such Generation.

14.14 In case the Solar or Wind generator defaults in payment to SLDC through QCA, even after a lapse of 60 days from issuance of the invoice, the corresponding BG will be invoked.

14.15 All the Payment Transactions shall be done through RTGS only.

c) State Pool Account: Upload of De-Pooling Statement by QCA:

14.16 The QCA shall upload the de-pooling statement and payments made to the State Pool Account to the TSSLDC web portal.

d) Event of default and Consequences thereof: (Law)

14.17 Following events shall constitute event of default by QCA:

a) Non-payment or delay in payment of Deviation Charges by QCA.

b) Non-compliance of any of the terms/conditions/rules outlined under this Procedure and Hon'ble TSERC Regulation No: 3 of 2018 by QCA.

c) Non-compliance of any of the directives issued by SLDC, so long as such directives are not inconsistent with any of the provisions of Hon'ble TSERC Regulation No.3 of 2018.

d) In case QCA has obtained registration on the basis of false information or by suppressing material information and the registration of such entity is revoked.

e) Solar/Wind Generator or QCA fails to provide Schedules for continuously for 10 days.

14.18 Consequences for Event of default:

a) If Schedule is not provided by Solar or Wind Generator/QCA, then the previous day's Schedule for those non submission days shall be considered and DSM charges shall be computed accordingly.

b) In case of default as per 14.17 (e) without prejudice to other actions as may be taken by SLDC, the SLDC shall issue a notice of period not less than 14 days for revocation of registration of QCA and disconnection from the grid and adequate opportunity to QCA/Generator to present its case before SLDC.

c) In case QCA fails to address/rectify the default expressed by the SLDC in the Notice within stipulated time period, the SLDC shall proceed with revocation of Registration of QCA and disconnection from Grid.

Annexure-I

Tel :

Email : de.re2@tstransco.in

State Load Dispatch Centre

Transmission Corporation of Telangana Limited

QCA REGISTRATION FORM

(TSERC Regulation No:3 of 2018)

Tick relevant box

	New Registration		Change of Registration		Cancel Registration

Tick relevant box

	Solar Registration		Wind Registration

1	Name of the Entity	
2	Primary business (brief description)	
3	Business address	

Phone	Mobile	Fax	Email	Website

4	Postal Address			
5	Contact person & Designation			
Phone	Mobile	Fax	Email	

6	Name of Directors	Position	Mobile	Email
A				
B				

7	Financial details

◯ Pooling station represented

Pooling station Name and address	Total Installed capacity	TSTRANSCO/DISCOM Injecting Grid Sub station	Voltage level	Type (Solar/Wind)
Agreements & Appointing letters from the legal Owners of Solar/Wind generators (Enclose Copies)				

9	Details of BG/Security deposit of generators	Name of the Solar Generator	Capacity in MW	Amount
		1.		
		2.		
		3.		
		4.		
		Wind	Capacity in MW	Amount
		1.		

10	Bank account Details of Generators for handling DSM mechanism	Name of the Generator	Name of the bank, A/C no., & IFSC Code	Bank Address
		1.		
		2.		
		3.		
		4.		

Authorized Signature and
Official Seal of QCA



Login (GeneratorLogin.aspx)

Registration Form

Name of Generator:*

FUEL:

Solar

Installed Capacity(only in MW):*

Connecting Sub-Station:*

Injection Voltage Level:*

District: *

Mobile Number:*

Name of the Authorised Person of Generator/developer/Coordinating agency:*

Email ID: *

Land Line Number:

Discom:

TSSPDCL

Submit

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DECLARATION

(Declaration to be Signed by the M.D./CEO/Authorised Signatory of the Applicant (QCA))

I/We_____certify that all information furnished above is/are true to the best of my/our knowledge and belief.

I/We shall abide by such terms and conditions that the TSERC, TSTRANSCO, SLDC may impose to participate in the DSM for Solar & Wind from time to time.

I/We hereby also confirm that:

I/We have entered an agreement with all the generators connected to the_____pooling Stations as QCA and the Agreement is attached.

S.No	Name of IPP	No of Turbines/Inverters	Capacity of Each Turbine/Inverter	Total Capacity of IPP	Accepted as QCA (Yes or No)
			Total capacity of PS		

INDEMNIFICATION

The Renewable Energy generator and QCA shall keep SLDC indemnified at all times and shall undertake to indemnify, defend and save the SLDC harmless from any and all damages, losses, claims and actions, including those relating to injury to or death of any person or damage to property, demands, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the Registration of QCA under DSM Mechanism.

The Renewable Energy generator and QCA shall keep SLDC indemnified at all times and shall undertake to indemnify, defend and save the SLDC harmless from any and all damages, losses, claims and actions, arising out of disputes with SLDC, as well as with generators and QCA inclusive of confidentiality issues.

Date: Signature of the QCA

Annexure-III

PROFORMA CONSENT LETTER

To
Chief Engineer,
State Load Dispatch Centre,
TSTRANSCO,
Vidyut Soudha, Hyderabad.

Date:

Sub: Appointment of QCA as per TSERC (Forecasting, Scheduling, Deviation settlement and related matters for Solar and Wind Generation sources) Regulation No.3 of 2018.

****

Respected Sir,

We would like to inform you that, we as the Solar/Wind power generator at (name) pooling station have decided to exclusively appoint _____ only as the Qualified Coordinating Agency (QCA) for Forecasting, Scheduling and Commercial Settlement, as per TSERC (Forecasting, Scheduling, Deviation settlement and related matters for Solar and Wind Generation Sources) Regulation No. 3 of 2018.

Kindly find below the details of our capacity at _____ (Name) pooling station having _____ MW.

Sl. No.	Generator Name	No. Of Panels	Contact person Name	Mail ID & Contact No.	Capacity in MW
1					

We would like to state that henceforth the role of QCA at _____ (Name) Pooling station will be taken care by _____

Contact Person 1 : _____

Address :_____

Phones (O) :_____, (M) :_____,

(E-mail): _____

Contact Person 2 : _____

Address :_____

Phones (O) :_____, (M) :_____,

(E-mail): _____

Contact Person 3 : _____

Address :_____

Phones (O) :_____, (M) :_____,

(E-mail): _____

Forecast Operations Desk : _____

(O): _____, (E-mail) :_____

This is for your kind information and records.

Regards,

1) <<Signing Authority Name>>
<<Signing Authority Designation>>

2)

3)

Annexure-IV

UNDERTAKING TO BE GIVEN BY PROSPECTIVE QCA AT THE TIME OF REGISTRATION

Name: M/s._____ (Name of QCA): _____

(Postal Address) _____

(To be provided by the QCA on a stamp paper)

1. We, as a QCA will be regulated by TSERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations , 2018 on Wind and Solar from time to time.
2. The Deviation Settlement charges shall be as per the TSERC guidelines for which we as QCA will be responsible for the pooling stations/RE Generator for which we represent as a QCA.
3. As per the TSERC Regulations, we as a QCA, agree to provide the forecasting schedules to SLDC on day-ahead basis on behalf of Wind and Solar pooling stations/RE Generator connected to STU/DISCOM.
4. We as QCA agree to provide the authorization letter from all the generators connected to the pooling station/RE Generator for being appointed as the QCA.
5. We understand that we can revise the day ahead schedules for a maximum of 16 revisions for Wind and 9 revisions for Solar as per the regulations.
6. We agree that if there is any deviation from the schedule, then for such energy, Deviation charges will be applicable as per the regulations and amended from time to time.
7. We shall be responsible for commercial settlements with the SLDC on behalf of wind and solar generators under its control connected to the pooling station and RE generators.
8. We understand that SLDC will compute the comprehensive Deviation Charges and raise bills for the deviation on a monthly basis.
9. DSM Account shall be prepared as per TSERC FS DSM Regulations for Solar and Wind GS 2018.
10. We as QCA will abide by TSERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2018 as amended from time to time for all transactions.

11. We shall establish necessary SCADA data of the inter face point and other turbine/plant data for the purpose of monitoring and billing as per procedure.
12. In the event of any fault in generating system resulting in lower generation then, we will revise the schedule and the same shall be intimated to SLDC as per the procedure.
13. We agree to pay Bank Guarantees of our generators, for the amount equivalent to Rs.33750/MW for solar generator and Rs.67500/MW for wind generator.
14. We agree to provide WTG's/Inverter's static data and pooling stations details as per the formats specified by SLDC.
15. We agree to facilitate the payment of simple interest @ 0.04% per day for each day of delay in the event the payment is made beyond 12 days from the issue of the invoice along with final DSM account by SLDC and in case the payment is not made even after a lapse of 60 days from issuance of the invoice, SLDC shall not despatch such generation and corresponding BG will be invoked.

We are agreeing for the above terms and conditions for registering as / QCA with SLDC, TSTRANSCO, Telangana.

Details of Bank Guarantees is enclosed

(Name and Postal address of QCA) _____

_____

_____.

For Pooling station:

TSTRANSCO /DISCOM Injecting Station:

Voltage level at injecting point:

List of generators connected to the pooling station along with installed capacity for which consent is obtained:

1.
2.

Declaration: All that is stated in the above is true and correct.

QCA Authorized Signatory

Annexure - V

Technical Specifications, Static & Real time Data of Solar Plant

I	**Name of the Solar Plant**	
2	**Physical Location of the Solar Plant**	
a	Survey No.	
b	Village	
c	Mandal	
d	District	
3	**Corresponding Address of the Solar Plant**	
a	Land line No.	
b	Mobile No	
c	Fax No	
d	E Mail Id	
4	**Contact details of Nodal Person :**	
a	Name	
b	Designation	
c	Land line No.	
d	Mobile No	
e	Fax No	
f	E Mail Id	
5	**Contact details of alternate Nodal Person :**	
a	Name	
b	Designation	
c	Land line No.	
d	Mobile No	
e	Fax No	
f	E Mail Id	
6	**Total Installed Capacity of Solar Plant**	
7	**Date of Commissioning (Enclose Synchronisation Certificate)**	
8	**Solar PV Modules (Enclose CEIG approval with Annexure)**	
a	Capacity of each module(Wp)	
b	Total No. Of modules	
c	Total Capacity of Modules(DC Capacity in	
d	Voltage of each Module	
e	Module Cell technology(Thin film/Polycrystelene etc)	
f	Make of Module	
g	IV Characteristic of the Module	
h	**(Enclose the Tuv Certificate regarding confirmation of IEC Standards)**	

i	Azimuth angle of PV entity in degrees with 0 degrees defined as south and going clockwise	
j	Tilt angle (in Degree)	
9	**Inverters (Enclose CEIG approval with Annexure)**	
a	Total No. Of Inverters	
b	Sl. No. of Inverters	
c	No. of Modules, Capacity of each module & total capacity of modules connected to each Inverter (Split up figures in tabular form)	
c	Capacity & Voltage of each Inverter (at Different temperature)	
d	Total Capacity of Inverters (AC Capacity)	
e	Inverter I/P Voltage(DC)	
f	Inverter O/P Voltage(AC)	
g	Make of Inverters	
h	Inverter efficiency curve	
i	**(Enclose Test Reports including LVRT features)**	
10	**Inverter Transformer**	
a	No of Inverter Transformers	
b	Sl.Nos of Inverter Transformers	/ KV
c	No. of inverters connected to each transformer	
d	Capacity of each Tr(MVA)	
e	Total Capacity of the Inverter Trs(MVA)	
f	Input Voltage(KV)	
g	Out put Voltage(KV)	
h	Make of Inverter Trs	
11	**Connected TRANSCO/DISCOM Substataion**	
a	Name of the SS:	
b	Voltae rating of SS	/ KV
c	Solar Plant Connected voltage level	
d	Length of the line from Plant to SS(KM)	
e	No of Ckts from Plant to SS	
f	Type of Conductor Used	
12	**Pooling Station (if applicable)**	
a	Name of the pooling Station	
b	Voltae rating of SS	/ KV
c	. of feeders from Solar plants to Pooling Station	
d	Voltage level of each Feeder	
e	Total rating in MVA of Pooling Station	
f	No. of out going feeders from Pooling Station to TRANSCO/DISCOM SS	
g	Voltage level of outgoing Feeder	

13	**GPS Cordinates of Solar Plant: 4 Corners**		
	1 st Corner	Lattitude	° ' "N
		Longitude	° ' " E
	2nd Corner	Lattitude	° ' "N
		Longitude	° ' " E
	3rd Corner	Lattitude	° ' "N
		Longitude	° ' " E
	4th Corner	Lattitude	° ' "N
		Longitude	° ' " E
14	**GPS coordinates of Solar Plant(Center):**		
		Lattitude	° ' "N
		Longitude	° ' " E
15	**Distance above mean sea level etc.**		
16	**Enclose Power Curve**		
17	**Details of Type of Mounting: (Tracking or fixed)**		
	If tracking (Azimuth,Tilt or both)		
a	**If Azimuth** (Starting angle of Azimuth from south, as 0 degrees taken as south and going clockwise)		° ' "
	Ending Angle of Azimuth		° ' "
b	**If tilting** (starting angle of tilt)		° ' "
	Ending Angle of tilt		° ' "
c	**If both** (Starting & Ending angles of Azimuth and tilt)		
18	**Meter Details at TRANSCO/DISCOM SS**		
	1. Main Meter		
	Sl No.		
	Make of the Meter		
	Multiplication Factor		
	2. Check Meter		
	Sl No.		
	Make of the Meter		
	Multiplication Factor		
19	**Meter Details at Pooling SS**		
	1. Main Meter		
	Sl No.		
	Make of the Meter		
	Multiplication Factor		
	2. Check Meter		
	Sl No.		
	Make of the Meter		
	Multiplication Factor		

Annexure-VI

Static data of Wind Turbine Generators

I	**Plant Details**		
1	**Name of the Power Plant**		
2	**Capacity in MW**		
	No of WTGs		
	Capacity of each WTG		
3	**Commissioned date (Enclose COD Certificate)**		
4	**Developer details**		
	Name of the Developer		
	Address for Correspondence		
	Ph no		
	Fax No		
	E-mail ID		
5	**Contact Details of the Nodal-Person**		
	Name		
	Designation		
	Ph no		
	E mail ID		
6	**Contact Details of the Alternate Nodal Person**		
	Name		
	Designation		
	Mobile NumberFax Number		
	E - Mail Address		
7	**Capacity Approval from NREDCAP/GoAP to set up Plant(Attach copy)**		
8	**Connectivity permission from STU/Discom**		
9	Total Evacuation / Connectivity permission Accorded(Attach Copy)		
10	**Details of the pooling Station (PS)**		
	Name of the poolig station		
	GPS coordinates		
	Capacity		
	Voltage Level		
11	**Connected Grid SS**		
	GPS coordinates		
12	**Lines from PS to Grid SS**		
	Voltage Level		
	No of Ckts		
	Length		
	conductor used		
	Site Responsibility Schedule		
13	**ABT Meters**		
	Main		
	Check		
	Stand By		
14	**SVC/STATCOM**		
II	**Individual Genarators details**		
		WTG1	**WTG2**
1	**Name of the Generator:**		
a	WTG Location No		
	Village		
	Mandal		
	District		
b	GPS Co-ordinates		
	Lattitude		
	Longitude		
c	Contact Person name:		
	Address		
	Ph no		
	Fax No		
	E-mail ID		

d	Contact Alternate Person name:		
	Address		
	Ph no		
	Fax No		
	E-mail ID		
e	connected Line from the WTG to PS		
	Voltage Level		
	Conductor used		
	No of Lines		
	Name of the Line if any		
	Indicate the WTG s connected to each line		
III	**Wind Turbine Generator**		
a	Type		
b	Manufacturer		
c	Year of Mfg.		
d	Make		
e	Model		
f	Sl No		
g	Capacity in MW		
h	Generator no of poles		
i	Generator speed		
j	Winding type		
k	Rated Gen. Voltage		
l	Rated Gen. frequency		
m	Generator current		
n	Rated Temperature of generator		
o	Generator cooling		
p	Generator power factor		
q	KW/MW @ Rated Wind speed		
r	KW/MW @ peak continuous		
s	Frequency Converter		
t	Filter generator side		
u	Filter grid side		
IV	**Details of Rotor**		
a	Rotor type		
b	Rotor diameter		
c	Number of blades		
d	Area swept by blades		
e	Hub type		
f	Hub height (mt)		
g	Coning angle		
h	Tilting angle		
i	Design tip speed ratio		
j	Rated rotational speed		
k	Rotational Direction		
V	**Details of Blade**		
a	Length (mt)		
b	Diameter		
c	Material		
d	Twist angle		
VI	**Details of Transformer**		
a	Transformer type		
b	Transformer capacity		
c	Transformer cooling type		
d	Voltage		
e	Winding configuration		

VII	**Performance Parameters**		
1	Total height in M		
2	RPM range		
3	Rated wind speed m/s		
4	Performance Parameter		
5	Rated electrical power at Rated wind speed		
6	Cut in speed		
7	Cut out Speed		
8	Survival speed (Max wind speed)		
9	Ambient temperature for out of operation		
10	Ambient temperature for in operation		
11	survival temperature		
12	Low Voltage Ride Through (LVRT) setting		
13	High Voltage Ride Through (HVRT) setting		
14	Lightning strength (KA & in coulombs)		
15	Noise power level (db)		
16	Stall/Pitch control		
17	Rotor weight		
18	Nacelle weight		
19	Tower weight		
20	Over speed Protection		
21	Design Life		
22	Design Standard		
23	Latitude		
24	Longitude		
25	Distance above mean sea level		
VIII	**COD Details**		
	Past Generation History from the COD to the date on which DAS facility provided at SLDC, if applicable		
IX	**Generator Protection LVRT**		
1	LVRT Availability (LVRT Feature available/LVRT Not Possible/LVRT feature avilable to be enabled/LVRT Design supported but to be fitted/LVRT feature to be retrofitted)		
2	LVRT Settings as per CEA Regn		
3	LVRT Setting adopted(Enclose Test Certificate)		
X	**Generator Test Certificates**		
	Approved Test Reports		
1	Type test certificated		
2	FAT certificates		
3	Precommissioning test certificates		
4	Test reports of Harmonic Current Injection		
5	Test reports of DC current Injection		
6	Test reports of Flicker		
XI	**CEA connectivity Regn Provisions**		
1	Test Certificate regarding capability of Generator supplying reacitive power Support to maintain power factor within the limits of 0.95 lagging to 0.95 leading.		
2	Test Certificate regarding capability of Generator delivering rated output in the frequency range of 49.5 Hz to 50.5 Hz		

Developer/Generator

Annexure-VII

On Rs.100/- Non-Judicial Stamp paper

BANK GUARANTEE FOR Security for compliance of Deviation Amounts as per DSM

To
The Chief Engineer,
TSSLDC /TSTRANSCO,
HYDERABAD.

Bank Guarantee No.	
Amount of Guarantee	
Guarantee Voucher from	
Late date of lodgement of claim	
Name and address of the applicant	

This Deed of Guarantee executed by the Bank: _____, Branch:_____ , Branch Code:_____ , having its head office at _____ and amongst other places a Branch at _____(hereinafter referred to as "the Bank") in favour of The Chief Engineer, TSSLDC, TSTRANSCO, HYDERABAD (hereinafter referred to as "the Bank" Beneficiary) for an amount not exceeding Rs: _____ /- , (Rupees_____only) at the request of M/s._____ ,(hereinafter referred to as Generator).

This Guarantee is issued subject to the condition that the liability of the Bank under this Guarantee is limited to a maximum of Rs._____/- , (Rupees _____ only) and the Guarantee shall remain in full force up to _____(Date of expiry) and cannot be invoked otherwise than by a written demand or claim under this Guarantee served on the Bank on or before the _____(Last date of claim).

Where, M/s. _____ (Hereinafter called as the Generator) has undertaken in pursuance of " Providing Forecasting & Scheduling as per the TSERC Regulation: 3 of 2018 and subsequent amendments issued from time to time for the DSM Point at_____Pooling Station / _____ Feeder in _____ Grid SS(Hereinafter called the "Contract").

AND WHEREAS it has stipulated by your in the said contract that the Generator shall furnish you a Bank Guarantee by a Bank for the sum of specified therein as security for compliance with his obligations in accordance with the contract.

AND WHEREAS we have agreed to give the contractor such as Bank Guarantee performance security of the above said work.

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Generator, up to a total of Rs._____/- (Rupees _____ only) such sum being payable in the types and proportions of currencies in which the contract price is payable, and we unconditionally undertake to pay you, upon your first written demand and without cavil or argument, any sum of sums within the limits of amount of guarantee as aforesaid without you needing to prove or to show grounds or reasons for your demand for the sum specified therein towards performance security.

We hereby waive the necessity of you demanding the said debt from the Generator presenting us with the demand.

We further agree that no charge or addition to or other modification of the terms or the contract or of the works to be performed there under or any of the contract documents which may be made between you and the Generator shall in any way release us from any liability under this guarantee. And we hereby waive notice of any such change, addition or modification.

Format for Wind Forecast

S.No	From	To	Schedule-MW	AVC-MW	Schedule-Rev1	AVC-Rev1	.....	.....	Schedule-Rev 16	AVC-Rev 16
1	00:00	00:15								
2	00:15	00:30								
3	00:30	00:45								
4	00:45	01:00								
5	01:00	01:15								
6	01:15	01:30								
7	01:30	01:45								
8	01:45	02:00								
9	02:00	02:15								
10	02:15	02:30								
11	02:30	02:45								
12	02:45	03:00								
13	03:00	03:15								
14	03:15	03:30								
15	03:30	03:45								
16	03:45	04:00								
17	04:00	04:15								
18	04:15	04:30								
19	04:30	04:45								
20	04:45	05:00								
21	05:00	05:15								
22	05:15	05:30								
23	05:30	05:45								
24	05:45	06:00								
25	06:00	06:15								
26	06:15	06:30								
27	06:30	06:45								
...										
...										
...										
...										
...										
92	22:45	23:00								
93	23:00	23:15								
94	23:15	23:30								
95	23:30	23:45								
96	23:45	24:00:00								

Format for Solar Forecast

S.No	From	To	Schedule-MW	AVC-MW	Schedule-Rev1	AVC-Rev1	.....	.....	Schedule-Rev 9	AVC-Rev 9
1	00:00	00:15								
2	00:15	00:30								
3	00:30	00:45								
4	00:45	01:00								
5	01:00	01:15								
6	01:15	01:30								
7	01:30	01:45								
8	01:45	02:00								
9	02:00	02:15								
10	02:15	02:30								
11	02:30	02:45								
12	02:45	03:00								
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16	03:45	04:00								
17	04:00	04:15								
18	04:15	04:30								
19	04:30	04:45								
20	04:45	05:00								
21	05:00	05:15								
22	05:15	05:30								
23	05:30	05:45								
24	05:45	06:00								
25	06:00	06:15								
26	06:15	06:30								
27	06:30	06:45								
...										
...										
...										
...										
...										
92	22:45	23:00								
93	23:00	23:15								
94	23:15	23:30								
95	23:30	23:45								
96	23:45	24:00:00								