



# **Rajasthan Electricity Regulatory Commission**

Vidyut Viniyamak Bhawan, Near State Motor Garage, Sahkar Marg, JAIPUR -302001

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No.RERC/Secy/Director (Tariff)/F.F&S/2017/D. 1296

Date: 28.12.2017

The Chairman & Managing Director  
Rajasthan Rajya Vidyut Prasaran Nigam Limited,  
Vidyut Bhawan, Jaipur.

**Sub: Approval of the Procedure for implementation of the Framework on Forecasting and Scheduling for Renewable Energy (RE) Generating Stations (Wind and Solar).**

**Ref: (1) Chief Engineer (LD) letter no. 700 dated 04.12.2017**  
**(2) Your office letter no. 164 dated 27.12.2017.**

Sir,

In accordance with provision of the Regulation 13 of the RERC (Forecasting, Scheduling and Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017, State Load Dispatch Centre (SLDC) vide their letter dated 04.12.2017 have submitted "Procedure for implementation of the Framework on Forecasting and Scheduling for Renewable Energy (RE) Generating Stations (Wind and Solar)" for approval of the Commission.

2. Commission has also received your letter dated 27.12.2017 under reference seeking one month time from the date of approval of the above procedure for making effective the RERC (Forecasting, Scheduling and Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017.

3. I am directed to convey approval of procedure proposed with due changes. The Commission considering your request seeking time extension of one month has approved the commercial mechanism of the RERC (Forecasting, Scheduling and Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 to be brought into force from 01.02.2018.

4. The procedure as approved by the Commission is enclosed herewith for implementation by all the concerned w.e.f. 01.02.2018.

Yours faithfully,

**Encl: As Above**

(Himanshu Khurana)  
Secretary

**PROCEDURE FOR IMPLEMENTATION OF THE FRAME WORK ON  
FORECASTING AND SCHEDULING FOR RENEWABLE ENERGY (RE) GENERATING  
STATIONS (WIND AND SOLAR)**

**1. Preamble :**

This Procedure is issued in compliance to Regulation 13 of the Rajasthan Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 hereinafter called the "Procedure for implementation of the framework on Forecasting and Scheduling for Renewable Energy (RE) Generating Stations".

**2. Scope:**

This Procedure shall be followed by State Load Despatch Centre (SLDC) and Wind / solar generating stations connected directly 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 through open access and selling power within or outside the State and Qualified Coordinating Agencies (QCA's).

**3. 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 amended from time to time, the RERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 (herein after referred to as the RERC FS DSM Regulations for Solar and Wind GS 2017) , the REGC and other relevant Regulations.**

**4. Applicability:**

This procedure shall be applicable to:

- (1) Wind power generators supplying power to the Discoms, or to the third party consumers through Open Access (OA) or for captive consumption through OA within or outside the State:
  - (a) Wind power generators having individual or combined capacity of 5 MW and above whether connected to the State Grid independently or through pooling stations;
  - (b) Wind power generators of any capacity connected to the State Grid through pooling station with total capacity of 5 MW and above.
- (2) Solar power generators supplying power to the Discoms, or to the third party consumers through Open Access (OA) or for captive consumption through OA within or outside the State:
  - (a) Solar power generators having Individual or combined capacity of 5 MW and above whether connected to the State Grid independently or through pooling stations and/or solar parks;
  - (b) Solar power generators of any capacity connected to the State Grid through pooling station and /or solar park with total capacity of 5 MW and above.

**5. The Qualified Coordinating Agency (QCA):**

- (1) The Qualified Coordinating Agency (QCA) shall be nominated based on consensus and mutually agreed terms and conditions amongst the wind and solar generators. The wind and solar generators shall also inform SLDC to this effect.

On submission of consent letter from the generators and upon meeting the stipulated requirements, the Agency shall be registered as QCA for that pooling station/common feeder/dedicated feeder.

(2) QCA shall be the single point of contact with SLDC on behalf of its coordinated generator(s) connected to a pooling station for the following purposes:

- (a) Provide schedules with periodic revisions as per the Regulations on behalf of all the Wind/Solar Generators connected to the pooling station.
- (b) Responsible for coordination with STU/SLDC and other agencies for metering, data collection and its transmission and communication.
- (c) Undertake commercial settlements on behalf of the generators, of such charges pertaining to generation deviations only including payments to the State pool account through the concerned SLDC.
- (d) Undertake de-pooling of payments received on behalf of the generators from the State Pool account and settling them with the individual generators in accordance with these Regulations.
- (e) Undertake commercial settlement of any other charges on behalf of the generators as may be mandated from time to time.
- (f) All other ancillary and incidental matters.

QCA shall be treated as an intra-state entity for the purpose of the RERC FS DSM Regulations for Solar and Wind GS 2017.

(3) Each pooling station shall have one QCA. However, in case a particular solar or wind generator alone is connected to a pooling station, then such generator shall act as a QCA.

#### **6. Qualifying Requirement for QCA:**

The QCA shall be nominated by Wind/Solar Generators who may be

one of the generators having generation capacity in Rajasthan or any mutually agreed agency based on the following criteria:

- a. The QCA shall be a company incorporated in India under the Companies Act, 1956/2013.
- b. Operational requirements – The QCA shall have fully functional forecasting and scheduling tools to obtain the desired output.
- c. The QCA shall have the experience in the field of Wind and/or Solar Power forecasting and scheduling for 500 MW projects (including cumulative pilot projects) and a minimum period of one (1) year with appropriate accuracy levels in forecasting.
- d. The QCA shall have an experience in working in different terrain & regions, as Wind/Solar generation depends on these factors and such experience facilitates better scheduling.
- e. The QCA shall have capability to handle multiple plant owners connected to a pooling station in order to be well positioned to de-pool deviation charges.
- f. The financial strength of the QCA shall be such that it shall be in a position to handle the risk of penalties due to deviation charges applicable to RE generator. Considering this, the net worth of the QCA shall be at least Rs. 1.50 Crores in the previous financial year which shall reflect from its audited accounts duly certified by the Chartered Accountant.
- g. The QCA shall have a compatible system in place for seamless flow of information to and from SLDC in order to facilitate forecasting, scheduling and revision of schedule, intimation of outages/grid constraints etc. and it shall have capability to provide real time

monitoring systems in place for seamless flow of information to and from SLDC.

- h. QCA shall have an established team of Renewable Resource Analysts, modeling Statisticians, Energy modelers and 24x7 operation and monitoring team.
- i. QCA shall possess/provide the authorization letter from all the RE generators connected to the pooling station or directly connected to the state network for being appointed as the QCA.

**7. Responsibilities of QCA:**

- a. As per the Rajasthan Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017, QCA shall be responsible for the settlement of Deviation charges with the SLDC for the pooling stations/Generators as QCA and it shall be liable to payable & receivable of Deviation charges.
- b. QCA shall provide the pooling station wise or standalone RE generator wise forecasting schedules to SLDC day-ahead basis on behalf of Wind and Solar pooling stations connected to STU/DISCOM. However, separate schedule for inter and or intra state transaction shall be provided.
- c. QCA 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.
- d. The monthly energy meter reading shall be downloaded by the RVPN /DISCOM along with a representative of the QCA as per REGC/standard practices including ABT/Load Survey data or

directly through AMR.

- e. QCA shall abide by Rajasthan Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 as amended from time to time.
- f. QCA shall provide WTG's/ Inverter's static data and pooling stations details as per the proforma at **Annexure-Ia** for wind, **Annexure-Ib** for solar & **Annexure-Ic** for pooling stations and further any change in the information furnished earlier shall be shared with the SLDC within 7 working days from the change.
- g. All RE generators (Wind & Solar) shall save & store the block wise generator SCADA data or any other data desired by SLDC and make available the same to their respective QCA so that it could be sent to SLDC within 7 days from the date of demand from SLDC.
- h. DSM charges may be de-pooled by the QCA amongst constituent generators on the basis of methodology mutually agreed upon by them.
- i. QCA shall submit the indemnity bond on Non Judicial Stamp paper of value notified by the State Government from time to time to keep the SLDC indemnified at all times and shall undertake to indemnify, defend and save the SLDC harmless from any and all damages, losses including commercial losses due to forecasting error, 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 transactions undertaken by the Generators.

- j. QCA shall coordinate for periodical testing and calibration of SEMs as per CEA Metering Regulations and procedures of the STU.

#### **8. Other General conditions for QCA:**

- (1) The QCA and RE generators shall mutually decide professional charges for scheduling and deviation settlement payable to QCA.
- (2) Non-performance of function by QCA under the Rajasthan Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 as amended from time to time and this procedure, shall not in any manner absolve the solar and wind generators from meeting their responsibility provided under the Regulations and procedure.

#### **9. Role of SLDC:**

- (1) The SLDC shall be responsible for scheduling, communication, coordination with QCA and RE Generators. Forecasting of the renewable energy generation shall be done by the SLDC and the forecast shall be available on the website of the SLDC. The generation forecast shall be done with the objective of ensuring secure grid operation based on the weather data provided by IMD or on the basis of other methods used by the Forecasting Agency whose service may be availed by SLDC.
- (2) The SLDC shall be responsible for processing the interface meter data and computing the net injections by each QCA, accordingly



DSM account shall be prepared.

- (3) Monthly accounts shall be prepared by the SLDC. The SLDC shall maintain separate records and account of time block wise schedules, actual generation and deviations.

**10. Procedure for registering as QCA:**

The procedure for registering a QCA is as follows:

- a. The prospective QCA shall submit application accompanied with such fee as may be prescribed, if any as per the proforma (**Annexure-II**) for registration.
- b. QCA shall be required to provide consent letters from all the generators connected to the respective QCA pool. A proforma consent letter is attached as **Annexure-III**.
- c. A bank guarantee for payment security shall be submitted by the QCA along with the application.
- d. QCA shall submit one time details to SLDC as per Annexure-I a, Ib & Ic. Further, if there is any change in the information furnished, then the updated information shall be furnished to the SLDC within 7 working days.
- e. Once QCA submits the application along with bank guarantee, 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.

- f. QCA shall submit an undertaking on Non Judicial Stamp paper of value notified by the State Government from time to time in regard to compliance of RERC Regulations and its procedure as per **Annexure-IV**.

**11. Metering, data collection and data communication:**

- a) Interface Energy Meters shall be installed by the State Transmission Utility as per RERC (Metering) Regulations, 2007 & CEA Metering Regulations, 2006 and amendments thereof.
- b) On the basis of this real time actual generation data and the forecast/schedule provided by the QCA, SLDC shall prepare the DSM account which can be seen by the QCA through its login id. Automated meter reading (AMR) system shall be used for communicating interface meter data at SLDC. Internal Clock of the interface meter shall be time synchronized with GPS.
- c) QCA shall provide data telemetry at the turbine/inverter level to the SLDC and shall ensure the correctness of the real-time data and undertake the corrective actions, if required. Frequency of real-time data updating shall be 4 second or such other frequency as SLDC may require. Further, turbine/inverter outage plan shall also be forwarded to the SLDC. The proforma data telemetry requirement for RE Generators is enclosed at **Annexure -V**.
- d) Authorized representative of the distribution licensee / concerned state utility / QCA /generator as the case may be, shall forward monthly RE meter readings to the SLDC within 10 days after completion of each month i.e. by 10<sup>th</sup> day of the next month of a previous month for energy accounting purpose under these

regulations. This shall be made available in addition to data acquisition by automated meter reading system being put in place.

**12. Forecasting :**

- a) The RE forecasting of the state shall be done by the SLDC to facilitate secure grid operation. The SLDC may engage a forecasting agency to undertake forecasting.
- b) RE generator shall also provide the forecast to the SLDC which may be based on their own forecast or SLDC forecast.
- c) RE Generators or QCA 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 chosen by the wind and solar generator shall be borne by the respective generator/pooling stations.

**13. Available Capacity (AvC):**

- a) It is mandatory for a QCA to declare the block wise AvC for each plant (wind/solar) on behalf of their generators. The AvC shall be declared on day ahead basis and can be revised during the submission of intra-day schedules.
- b) The Available capacity (AvC) for a wind generating plant shall be applicable for the entire 24 hours in a day. Whereas considering the availability of solar irradiation only during the day, the AvC for a solar generating plants shall be applicable only between 05:30 AM till 19:30 PM. Plants having mixed capacity of wind and solar generation shall consider the AvC accordingly.

#### **14. Scheduling and Despatch :**

- a) The SLDC shall be responsible for scheduling, communication, coordination with RE Generators or QCA. Forecasting of the renewable energy generation shall be done by the SLDC and the forecast shall be available on the website of the SLDC. The generation forecast shall be done on the basis of the weather data provided by IMD or on the basis of other methods used by the Forecasting Service Provider (FSP) whose service may be availed by SLDC. However, the forecast by the SLDC shall be with the objective of ensuring secure grid operation.
- b. QCA shall submit schedules for interstate and intra state transaction separately. In case of electrical separation not being possible, then a combined schedule of inter and intra state transaction with bifurcated inter and intra state schedule shall be allowed and actual generation of the connected generators shall be considered and adjusted in the following order:
  - 1) Intra state power
  - 2) Interstate power.
- c. The schedule by RE generators or QCA may be revised by giving advance notice to the SLDC, as the case may be. Such revisions shall be effective from 4th time block, the first being the time-block in which notice was given. 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 maximum of 16 revisions during the day.
- d. Revision in schedules by RE Generator or QCA selling power through collective transactions shall not be allowed.

- e. Day ahead schedules shall be required to be communicated to SLDC upto 10:00 AM of the preceding day in the proforma at **Annexure-VI**.
- f. SLDC shall create a website on which schedules shall be required to be updated. Each QCA shall be provided with one login ID and password. After logging-in, the QCA shall be able to transfer schedules of its pooling station which it is representing and the revisions shall also be transferred.
- g. Till such time that the website is not fully operational, schedules shall be sent to the following email ids –  
se.remc@rvpn.co.in  
se.remc.schedules@gmail.com
- h. The forecasting, scheduling, metering, energy accounting and deviation charges shall be as per applicable RERC Regulations, as amended from time to time.
- i. In the event of contingencies, transmission constraints, congestion in the network, threat to system security, the transactions of RE Generators already scheduled by SLDC may be curtailed as per provisions of REGC for ensuring secure and reliable system operation.

**15. Determination of fixed rate for the purpose of deviation charges for generators connected to the grid and selling power outside the State:**

The fixed rate for DSM is the weighted average rates of PPAs which shall be based on the rates submitted by the generators on an affidavit on Non Judicial Stamp paper of value notified by the State

Government from time to time duly signed by the authorized signatory of QCA and the concerned generator along with a copy of the PPA.

#### 16. Procedure for Commercial Settlement:

(1) Timelines for commercial settlement shall be as follows:

Sr No	Action	Responsibility	Timeline
1	Publish DSM statement for the month on its website. This statement shall have detailed calculations of deviation for each pooling station/capacity under each QCA.	SLDC	10th of the next month
2	File comments/ rectification requests.	QCA	Within 5 days from the publishing of the statement on the website
3	Carry out rectifications/ modifications and finalization of DSM account and convey the same through Email/on Website	SLDC	Within 5 days after receiving the rectification request as per (2) above
4	Make DSM payment	QCA	Within 7 working days from the finalization of the DSM account.
5	If payments against the Charges for Deviation Charges for Deviation are delayed by more than two days, i.e., beyond seven (7) working days from the date of issue of final DSM account by SLDC, the defaulting QCA shall have to pay simple interest @ 0.04% per day .	QCA	In case the payment is not made even after a lapse of 60 days from issuance of final DSM account, process to invoke BG shall be initiated beside any other action as permissible under law/Regulations.

#### 17. Payment security:

The RE Generator or QCA shall be required to submit the following payment security in the form of a bank guarantee towards DSM charges:

- a. For RE generator/ QCA capacity Rs.10,000/- per MW, for solar generating plants
- b. For RE generator/ QCA capacity Rs. 40,000/- per MW, for Wind generating plant
- c. The BG submitted shall be valid for a period of 3 years and issued by any Nationalized/Scheduled Bank branch situated in the State of Rajasthan 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.

**18. Curtailment Event:**

- a. In case planned curtailment/ shutdown/ system constraint necessitated in certain time blocks of a day by the SLDC, Generator / QCA 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.
- b. 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 4<sup>th</sup> time block after communication with SLDC, the first block being the one in which the communication to SLDC has been made.

**19. Application of Losses and Charges:**

Transmission charges and losses for State Transmission Network shall be applicable as determined by the Commission from time to time.

**20. SLDC Fees & Charges and other charges:**

SLDC fee and charges including scheduling and operating charges shall be payable by QCA or RE generator, as the case may be, as specified in the Rajasthan Electricity Regulatory Commission (Levy of fee and charges by SLDC) Regulations, 2004 as amended from time to time. The other charges shall be levied as per the applicable RERC Regulations/Orders.

**21. Event of breach of procedure and consequences thereof :**

- (1) Following events shall constitute breach by QCA /Generators
  - a) Non-payment or delay in payment of Deviation Charges.
  - b) Non-compliance of any of the terms/conditions/rules outlined under this Procedure.
  - 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 RERC RE DSM Regulations 2017.
  - d) Obtaining registration on the basis of false information or by suppressing material information.
  - e) RE Generator or QCA fails to provide schedules for continuously for 10 days.
- (2) Consequences for Event of default:
  - a) If schedule is not provided by the RE generator/QCA (default as per 21 (2) (e) above) then the previous day's schedule for those non submission days shall be considered and DSM charges shall be computed accordingly. The non submission of schedule shall attract scheduling charges as per provisions of Rajasthan Electricity Regulatory Commission (Levy of fee and charges by SLDC) Regulations, 2004 as amended time to time.



- b) In case of default as per 21 (2) without prejudice to other actions as may be taken by SLDC, the SLDC shall issue a notice of period not less than 15 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/Generator fails to address/rectify the breach expressed by the SLDC in the Notice within stipulated time, the SLDC shall proceed with revocation of registration of QCA and disconnection from grid.

**22. Grievance Redressal:**

- (1) All disputes between QCA and RE generators shall be made to the State Load Despatch Centre within 30 days from the date on which dispute arose.
- (2) SLDC shall examine and decide the same within 45 days, from the date of receipt of complaint.
- (3) Before deciding the dispute, SLDC shall provide opportunity of hearing to the complainant and other party and shall pass reasoned order.

**23. Removal of difficulties:**

In case of any difficulty in implementation of this procedure, SLDC may approach the Commission for review or revision of the procedure with requisite details.

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**Proforma for static data for wind turbine generating plants**

<b>S No</b>	<b>Particulars</b>
1	<b>Type</b>
2	Manufacturer
3	Make
4	Model
5	Capacity
6	commissioned date
7	Hub height
8	total height
9	RPM range
10	Rated wind speed
11	<b>Performance Parameter</b>
	Rated electrical power at Rated wind speed
	Cut in speed
	Cut out Speed
	Survival speed (Max wind speed)
	Ambient temperature for out of operation
	Ambient temperature for in operation
	survival temperature
19	<b>Low Voltage Ride Through (LVRT) setting</b>
20	<b>High Voltage Ride Through (HVRT) setting</b>
21	lightning strength (KA & in coulombs)
22	Noise power level (db)
23	<b>Rotor</b>
	Hub type
	Rotor diameter
	Number of blades

	Area swept by blades
	Rated rotational speed
	Rotational Direction
	Coning angle
	Tilting angle
	Design tip speed ratio
33	<b>Blade</b>
	Length
	Diameter
	Material
	Twist angle
38	<b>Generator</b>
	Generator Type
	Generator no of poles
	Generator speed
	Winding type
	Rated Gen. Voltage
	Rated Gen. frequency
	Generator current
	Rated Temperature of generator
	Generator cooling
	Generator power factor
	KW/MW @ Rated Wind speed
	KW/MW @ peak continuous
51	Frequency Converter
52	Filter generator side
53	Filter grid side
54	<b>Transformer</b>
	Transformer capacity
	Transformer cooling type
	Voltage
	Winding configuration
59	<b>Weight</b>
	Rotor weight

- Nacelle weight
- Tower weight
- 63     **Over speed Protection**
- 64     **Design Life**
- 65     **Design Standard**
- 66     Latitude
- 67     Longitude
- 68     COD Details
- 69     Past Generation History from the COD to the date on  
which DAS facility provided at SLDC, if applicable
- 70     Distance above mean sea level

**Proforma for Static data for Solar generating Plants**

1. Latitude
2. Longitude
3. Turbine Power Curve
4. Elevation and orientation angles of arrays or concentrators
5. The generation capacity of the Generating Facility
6. Distance above mean sea level etc.
7. COD details
8. Rated voltage
9. Details of Type of Mounting: (Tracking Technology If used, single axis or dual axis, auto or manual )
10. Manufacturer and Model (of Important Components, Such as Turbine, Concentrators, Inverter, Cable, PV Module, Transformer, Cables)
11. DC installed Capacity
12. Module Cell Technology
13. I-V Characteristic of the Module
14. Inverter Rating at different temperature
15. Inverter Efficiency Curve
16. Transformer Capacity & Rating , evacuation voltage, distance form injection point

**Annexure-I(c)****WIND/SOLAR (132 kV GSS)/ WIND/SOLAR (220 kV GSS)/WIND/SOLAR (400 kV GSS)**

S.No	NAME OF RECEIVING STATION	NAME OF COMPANY	WIND/SOLAR CAPACITY IN MW

## Annexure-II

Tel :

Fax :

Email : [se.remco@rvpn.co.in](mailto:se.remco@rvpn.co.in)

## State Load Dispatch Centre

Rajasthan Rajya Vidyut Prasaran Nigam Limited

**QCA Registration Form**

(Regn No.2(1)(o) of the RERC Regulations )

Tick relevant box

<input type="checkbox"/>	New Registration	<input type="checkbox"/>	Change of registration	<input type="checkbox"/>	Cancel registration
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Tick relevant box

<input type="checkbox"/>	Wind Generation	<input type="checkbox"/>	Solar Generation
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1	Name of the Entity
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2	Primary business (brief description)
---	---

3	Business address
---	------------------

Phone	Mobile	Fax	Email	website

4	Postal address
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5	Contact person & designation		
Phone	Mobile	Fax	Email

6	Name of Directors	Position	Mobile	Email
a				
b				

7	Financial details
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<b>8 Pooling station represented</b>				
<b>Pooling station Name and address</b>	<b>Total Installed capacity</b>	<b>RVPN/ DISCOM Injecting Grid Sub station</b>	<b>Voltage Class</b>	<b>Type (Wind/ Solar)</b>
<b>Agreement &amp; Appointing letter from the legal Owners of WTGs. (Enclose Copies)</b>				

<b>9</b>	Details of BG/Security deposit	<b>Solar</b>	<b>MW capacity</b>	<b>Amount</b>
		<b>Wind</b>	<b>MW capacity</b>	<b>Amount</b>

<b>9</b>	Bank account Details of QCA for handling DSM mechanism	<b>A/C no.</b>		
		<b>IFSC Code</b>		
		<b>Name of the bank.</b>		
		<b>Address</b>		

Authorized Signature  
And official seal

(For QCA)



## Annexure-II (Contd.)

### 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 RERC,SLDC may impose to participate in the DSM for Solar & Wind from time to time.

I/We hereby also confirm that:

I/We have obtained consent from 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
			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,

Date:

Chief Engineer,  
State Load Dispatch Centre,  
Ajmer Road, Heerapura,  
Jaipur

Sub: Appointment of QCA as per RERC (Forecasting, Scheduling, Deviation settlement and related matters for Wind and Solar Generation sources) Regulations, 2017.

Respected Sir,

We would like to inform you that we as the Wind/Solar 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 RERC (Forecasting, Scheduling, Deviation settlement and related matters for Wind and Solar Generation sources) Regulations, 2017.

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

S.No.	Customer Name	No of Panels	Contact Person	Mail ID & Contact No	Capacity in MW
1	Name	Y	Name	Mail Id and contact no.	...

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: .....

(M) : ..... , (E-mail) : .....

Contact Person 3: .....

(E-mail) : .....

Forecast Operations Desk : .....

(o) : ..... , (E-mail) : .....

This is for your kind information and records.

Regards,

<<Signing Authority Name>>

<<Signing Authority Designation>>

**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 RERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 on Wind and Solar from time to time.
2. The Deviation Settlement charges shall be as per the RERC 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 RERC 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 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 RERC FS DSM Regulations for Solar and Wind GS 2017.
10. We as QCA will abide by RERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 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 a Bank Guarantee for the amount equivalent to Rs.10,000/MW for solar generation and Rs.40,000/MW for wind generation.
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, if payments against the Charges for Deviation Charges are delayed by more than two days, i.e., beyond seven (7) working days from the date of issue of final DSM account by SLDC, the defaulting QCA shall have to pay simple interest @ 0.04% per day in addition and in case the payment is not made even after a lapse of 60 days from issuance of final DSM account, process to invoke BG shall be initiated.

We are agreeing for the above terms and conditions for registering as /QCA with SLDC, RVPN, Rajasthan  
Details of Bank Guarantee is enclosed  
(Name and Postal address of QCA).....

.....  
.....

for Pooling station :

RVPN/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

**GUIDELINES FOR PROVIDING TELEMETRY DATA AND  
COMMUNICATION SYSTEM AT SLDC, HEERAPURA, JAIPUR**

The following guidelines shall be adopted by those who are applying for Grid connectivity to provide telemetry data and communication system to SLDC, Heerapura, Jaipur.

**DOCUMENTS TO BE FURNISHED WHILE APPLYING:**

- a) Single line Diagram
- b) Block diagram indicating information flow with brief details of each element

**INFORMATION TO BE PROVIDED AT ACTUAL PORT:**

(Data to be provided on two communication channels on real time basis)

- a) Meter readings:
  - 1) Power flow (Both active and reactive)
  - 2) Voltage
  - 3) Frequency
- b) Status of Circuit Breaker
- c) Status of Isolator (Optional)

**Real-time Data Telemetry requirement for plants**

**Wind turbine generating plants**

1. Turbine Generation (MW/MVAR)
2. Wind Speed(meter/second)
3. Generator Status (on/off-line)- this is required for calculation of availability of the WTG
4. Wind Direction ( degrees from true north)
5. Voltage(Volt)
6. Ambient air temperature ( ° C )
7. Barometric pressure (Pascal)
8. Relative humidity(in percent)
9. Air Density (kg/m<sup>3</sup>)

**For Solar generating Plants**

1. Solar Generation unit/ Inverter-wise ( MW and MVAR )
2. Voltage at interconnection point (Volt)
3. Generator/Inverter Status (on/off-line)
4. Global horizontal irradiance (GHI)- Watt per meter square
5. Ambient temperature ( ° C )
6. Diffuse Irradiance- Watt per meter square
7. Direct Irradiance- Watt per meter square
8. Sun-rise and sunset timings
9. Cloud cover-(Okta)
10. Rainfall (mm)
11. Relative humidity (%)
12. Performance Ratio-



**Annexure-VI**

**Forecast and Schedule Data to be submitted by Wind/Solar plants/generator**

To be submitted a day in advance

15 Min time block (96 Block in a day)	TIME	Available Capacity (MW) - Day Ahead	Day Ahead Forecast (MW)	Day Ahead Schedule (MW)
1	00:00-00:15			
2	00:15-00:30			
3	00:30-00:45			
4	00:45-01:00			
94				
95				
96				

**Note: The forecast should ideally factor forecasting errors. As such schedule should ordinarily be same as forecast.**

**Annexure-VI (Contd..)**

**To be submitted on the day of actual generation, revision of availability and schedule, if any, shall be done as per the RERC (REGC) Regulations.**

<b>15 Min time block (96 Block in a day)</b>	<b>TIME</b>	<b>Day ahead schedule (MW)</b>	<b>Current Available Capacity (MW)</b>	<b>Revised Schedule (MW)</b>
1	00:00-00:15			
2	00:15-00:30			
3	00:30-00:45			
4	00:45-01:00			
94				
95				
96				