REGULATORY REQUIREMENTS TO BE FULLFILLED BY RENEWABLE ENERGY GENERATORS BEFORE COMMISSIONING OF THE PROJECT AND GETTING CONNECTED WITH MP GRID

1. **Registration Fee :** Registration Fee of ` 5000/- for registration with SLDC is to be deposited in the SLDC account details of which are given below. The Registration form **(Annexure-A)** should be submitted to SLDC.

(i)	Name of Account:	RAO MPPTCL-SLDC JABALPUR
(ii)	Current Account No.	**571701010050118**
(iii)	Name of Bank:	UNION BANK OF INDIA
(iv)	Branch Address	SHAKTI BHAVAN ROAD, JABALPUR
(v)	IFSC Code	UBIN0557170

2. TELEMETRY & COMMUNICATION : The Data Acquisition facility (Telemetry) for transfer of telemetry data to SLDC/Sub LDCs should be established alongwith communication facility in accordance with the guidelines specified in **Annexure - B**.

3. ABT Metering with AMR : ABT meters of 0.2s accuracy class and of open protocol conforming to IS: 15959 with AMR facility. This is to be provided at the pooling sub-station / Interface point for the purpose of energy accounting. Also provide the meter details in format **Annexure-I**. The ABT meters should have AMR facility for providing meter data to SLDC.

To do this you have to install modem and SIM (capable of working on both GPRS & GSM network) enabled at the interface point and integrating the meters with the AMR system of Secure make installed at SLDC which has the static IP address 117.239.195.194, for data transfer between energy meter and AMR system at SLDC over the GSM/GPRS communications network. The integration of ABT meters with AMR system could be done with the help of M/s Secure or any other competent vendor.

After integration of ABT meters with AMR system, you have to obtain a confirmation from SLDC that the meters are integrated with AMR system and data of ABT meters are being successfully downloaded through AMR system.

4. Please submit single line diagram indicating the connectivity with the grid duly certified by :

(i) MPPTCL when connected to 132 KV and above
(ii) MPPTCL and DISCOM when connected at 33 KV at MPPTCL substation
(iii) DISCOM when connected to 33 KV and below at DISCOM substation..

5. Please submit copy of connection agreement with MPPTCL or DISCOM as the case may be.

6. Please submit information regarding sale of power to MPPMCL / Third party sale (Copy of PPA & LTA).

7. FORECASTING & SCHEDULING (to commence after commissioning) : The CERC vide order dated 09.07.2013 had approved the detailed ñProcedure for the implementation of the mechanism of Renewable Regulatory Fundò and directed that the RRF mechanism shall be implemented w.e.f 15.07.2013. In the said procedure the Commission has directed that the procedure shall be applicable to solar power projects with collective capacity of 5 MW and above connected at connection point of 33kV level and above. The CERC vide order dated 07.01.2014 has suspended the commercial mechanism but continued the forecasting & scheduling as per the provision of order dated 09.07.2013. Further, Honôable MPERC vide order dated 05.02.2014 has also issued the directives to the petitioners i.e. wind generators to continue with forecasting and scheduling of wind electricity generation as per CERCôs order dated 09.07.2013. As such wind and solar power projects shall have to forecast their generation to SLDC on day ahead basis. The CERC & MPERC orders may be referred for further details regarding forecasting & scheduling. All wind & solar power projects shall have to furnish one time details as per **Annexure-II** and start day ahead load forecasting of their project at pooling sub-station on 15 minute time block as per format in **Annexure-III** with effect from the date of commissioning of 5 MW and above capacity for solar projects and 10MW and above capacity for wind projects and the same shall be sent to SLDC at email id ï **sldcmpjbp@gmail.com** by 10.00hrs daily.

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Annexure A

APPLICATION FOR REGISTRATION FOR CONNECTION WITH THE STATE GRID

Sl.No	Particulars	
1	Name of the Generating Company/ Licensee	
2	Registered Address	
3	Phone No./Fax/E-mail Id	
4	Generating Capacity: In case of Generating Station Installed Capacity (in MWs)	
5	Transmission Capacity: In case of Transmission Network the volume of energy handled (in MUs)	
6	Proposed date of Connection with the State Grid	
7	Details of Inter-connection point(enclose separate sheet if necessary)	
8	DD No.and Date towards Registration Fee payable to SLDC	
	Undertaking:	
	We hereby undertake to abide by the instructions issued by the SLDC for Grid Management.	
		Signature of the Authorised Officer
Note:	The SLDC may prescribe and collect necessary technical details from the Generating Companies	
	and Transmission Companies separately.	

Annexure-B

GUIDELINES FOR PLANNING OF TELEMETRY AND VOICE COMUNICATION

1. The DAS/RTU to be installed at the power stations/substations/pooling station should have **IEC 60870-5-101** / IEC 60870-5-104 protocol with interoperability matrix compatible with the SCADA system available at SLDC/backup SLDC/Sub-LDC..

2. The renewable generating station are required to arrange data channel upto nearest SLDC Jabalpur/Sub-LDC Indore /Backup SLDC at Govindpura Bhopal or nearest wideband nodes. the existing wideband nodes are at 400KV S/s Bhopal, 400KV S/s Bina, 400KV S/s Indore, 400KV S/s Nagda, 220KV S/s Jabalpur, 220KV Satna, 400Kv S/s Katni, 400KV SGTPS, 220KV S/s Ujjain, 220KV Itarsi. The wideband nodes at few other locations are under commissioning stage and updated list of wideband noes shall be uploaded on the SLDC website.

3. The renewable generating stations are required to arrange reliable data channel using either Power Line Carrier Communication (PLCC), dedicated point to point leased line, combination of PLCC and leased line/RF or VSAT.

It may please be noted that communication channel using GPRS/GSM is not found reliable and suitable by SLDC, MPPTCL. Further data channel using internet/broadband internet etc shall also be not permitted due to cyber security reasons.

4. Presently, the telemetry of active and reactive power of all feeders upto 33KV connected at your pooling station/control centre, active and reactive power of transformers, bus voltage, frequency and circuit breaker status of all feeders, transformers, bus couplers of your pooling station/control centre where DAS /RTU is located and Bus voltage & Frequency is required. However, in future, SLDC shall also require telemetry of weather parameters like temperature, humidity, wind speed , wind direction, irradiation parameter, turbine-wise/inverter-wise generation etc. Accordingly, same shall also be included in data list prepared by renewable generating stations.

5. The measured mentioned above are required to be configured in RTU/DAS with IEC-Type as detailed hereunder:-

S.N	Data object	IEC Data type to be configured
1.	Breaker Status	M_DP_TA_1 (TYP04) i.e Double status with time tag.
2.	Analog Input (MW, MVAR, KV, HZ)	M_ME_NA _1 (Type09) or M_ME_NC (TYPE 13)

The other important IEC 870-5-101 parameter setting required to be made in your DAS/RTU are also given hereunder

IecMaxUserFrameLength	**255**
IecLLAddrFieldLength	**1 octet**
IecASDUAddrFieldlength	**1 octet**
IECObject Addr Field length	**2 octet**
IEC Transmission Field length	**1 octet**

6.. The reliable data channel from DAS/RTU to nearest SLDC/Sub-LDC/wideband node (either PLCC or leased line) is required to be arranged by the RE Generator. The data channel speed may be worked out on the basis of Number of analog data as per details given hereunder:-

No. of Analog Data	Minimum Baud Rate
0 ï 30	300
31 ï 60	600
61 ï above	1200

7. The IEC 60870-5-101 protocol is to be configured in data acquisition system at renewable generating station as per the details given hereunder:-

Type of power system data	Data unit type	Description as per IEC	Data polling method	Scan group	Class-x	Object address range
Analog values	ASDU-9 or ASDU-13	Measured value normalized or short float	Periodic group scan	Group-3	Class-2	3001-4001
Single Input digital status	ASDU-1	Single Point information without time tag	By exception (spontaneous) and on periodic group scan	Group-1	Class-1 after exception, class-1 after	1-1000

					group scan	
Single Input digital status	ASDU-2	Single Point information with time tag	By exception (spontaneous)	Group-1	Class-1 after exception	1001-2000
Digital Inputs Double point	ASDU-3	Double point information	By exception (spontaneous)	Group-2	Class1 after exception	2001-3001

8. **Modem/other integration equipment** along with necessary wiring/cabling required for integration of telemetry of your plant at Sub-LDC /SLDC shall also be arranged by the concern renewable generating agency. However, data base preparation in SLDC/backup SLDC/Sub-LDC SCADA/EMS system shall be the responsibility of SLDC.

9. Ensuring round the clock availability of telemetry after its commissioning is of utmost importance and necessary arrangement for ensuring 100% availability after subsequent commissioning of telemetry like arrangement of sufficient spares for data acquisition equipments as well as data channel equipments/ AMC with OEMS , availability of backup of all configuration files, wiring diagrams etc is required to be maintained and details of contact person responsible for maintenance of telemetry is required to be informed by each renewable generating stations to SLDC.

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ANN

Details of Main & Check meters installed at Interface Points of _____Pooling Sub-Substation

Sl.NO.	Location of Installation	Meter Catagery	Meter Details						Date of Comm.	Equipement Detail				Reading Unit WH / KWH / MWH
			Meter Sl. No.	Make	ABT / Non ABT	Acc. Class	C.T.Ratio	P.T.Ratio		C.T. Details		P.T Details		
										Ratio	Acc. Class	Ratio	Acc. Class	
1		Main												
2		Check												
!														
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EXURE-I

M.F.

ANNEXURE -II

RE GENERATING STATION DETAILS (ONE TIME DETAILS)

S.No.	Particulars	
1	Name of Power Station	
2	Type: Wind / Solar Generator	
3	Individual / Group of Developer	
4	Name, Designation, Organization & Contact Details of Nodal officer	
5	If group of Developer then detail of ageement*	
6	Total / collective installed capacity of RE Generating Station	
7	Total Number of Units with details*	
8	Physical Address of RE Generating Station	
9	Regional Entity / State Entity	
10	In case of State Entity, indicate name of SLDC/Control Area	
11	Weather PPA has been signed: (Y/N)	If yes, then attached details
12	Connectivity Details	Location / Voltage Level
13	Metering Details of the meter installed at the pooling station / substation.	Meter No. 1. Main 2. Check
14	Data Acquisition System Facitily for transfer of data to SLDC/ RLDC available (Yes/ No)	
15	Generation Forcasting tools (Software) available (Yes/ No) if Yes then give details.	

*** Please enclose the details**

Note - Please also furnish the following -

(i) Contract details including contracted price for sale of power..
(ii) Single line diagram indicating connectivity of RE Generator with substation.
(iii) Date of commissioning / charging of REG feeder with substation.

Annexure - III

STATE LOAD DESPATCH CENTRE - JABALPUR

LOAD FORECASTING OF -- MW WIND / SOLAR POWER PROJECT OF M/s ---------- AT POOLING STATION IN MW

FOR DATE:	
REV. NO.	
TIME	
REMARKS	

BLK NO.	FROM TIME	TO TIME	POOLING STATION NAME
1	0:00	0:15	
2	0:15	0:30	
3	0:30	0:45	
4	0:45	1:00	
5	1:00	1:15	
6	1:15	1:30	
7	1:30	1:45	
8	1:45	2:00	
9	2:00	2:15	
10	2:15	2:30	
11	2:30	2:45	
12	2:45	3:00	
13	3:00	3:15	
14	3:15	3:30	
15	3:30	3:45	
16	3:45	4:00	
17	4:00	4:15	
18	4:15	4:30	
19	4:30	4:45	
20	4:45	5:00	
21	5:00	5:15	
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.	.	.	
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.	.	.	
90	22:15	22:30	
91	22:30	22:45	
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	