JOINT ELECTRICITY REGULATORY COMMISSION- ORDER

Joint Electricity Regulatory Commission for State of Goa & Union Territories (Draft Solar Power Tariff - Ground Mounted Grid Connected and Solar Rooftop with Net Metering) Regulations – 2014

Dated July 2014

Sl. No	Description	Summary
1	**Title**	Joint Electricity Regulatory Commission for state of Goa & Union Territories (**Draft Solar Power Tariff** - Ground Mounted Grid Connected and Solar Rooftop with Net Metering) Regulations 2014 dt. July, 2014
2	**Date of enforcement**	Regulations to come into force from the date of publication in official gazette and shall remain in force for a period of three (3) years from the date of commencement thereof, unless reviewed/revised earlier or extended by the Commission
3.	**Applicable**	• Regulations shall apply to the whole of the state of Goa and the Union Territories of Andaman and Nicobar Islands, **Chandigarh**, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry. • To all the grid connected solar PV (including rooftop solar PV) and solar thermal projects, where tariff for electricity generated from such project/(s) is to be determined by the Commission • In case of grid connected ground and rooftop mounted solar power plants, these Regulations shall apply subject to the fulfilment of eligibility criteria specified in Regulations
4.	**Eligibility Criteria**	Grid connected ground mounted Solar PV and Solar Thermal power projects of capacity equal to or more than 500 kWp, and Rooftop Solar PV of capacity equal to or more than 1 kWp but not more than 500 kWp at one location owned by one individual or entity, based on the technologies approved by MNRE subject to that the (a) Solar System is: • Within the permissible rated capacity as defined under these Regulations. • Located in the consumer premises. • Interconnected and operated safely in parallel with the distribution licensee network (b) Regulations do not preclude the right of relevant state authorities to undertake rooftop solar projects of any larger capacity through any alternative mechanisms (c) Net metering facility will be implemented for the consumers of the Distribution licensees under the jurisdiction of the Commission. Consumers will generate solar power for self-consumption and can feed excess power into the grid to be adjusted as per provisions of these regulations (d) All eligible consumers of electricity in the area of supply of the distribution licensee can participate in the solar rooftop net metering arrangement. (e) Maximum Rooftop Solar System capacity to be installed at any eligible consumer premises shall be governed by the eligibility of interconnection with the grid for that eligible consumer as per provisions of JERC
5.	**Third Party Owned Rooftop Solar Project with Net Metering**	• A Rooftop Owner can lease out / rent the Rooftop Space to a Solar Project Developer • The electricity generated is used to meet the Rooftop owner's internal electricity needs while the excess generation is fed into the grid on net metering basis. • The arrangement between the two parties will be a mutual commercial arrangement. It may include sharing Solar Power units generated and fed to the grid after Net Metering • The net meter billing will be with one of the two parties that is decided and informed to the Distribution Licensee • Solar Power Units generated will be allowed Open access and would be exempted from open access restrictions and associated charges.

6.	**Solar Power Generation Capacities**	• Distribution licensee shall provide net metering arrangement to eligible consumers. • Distribution licensee to facilitate the ground mounted Solar Project development provided that the cumulative solar capacity allowed at a particular distribution transformer shall not exceed the limit as specified in Annexure C to these regulations as a percent of the peak capacity of the distribution transformer; • Distribution licensee shall update distribution transformer level capacity available for connecting the Solar Systems on a yearly basis and shall provide the information on its website as well as to the Commission.
	General Principles of Solar Power Projects	
7	**Control Period**	FY 2014-15 to FY 2016-17 • The ceiling limit in respect of the Capital cost and the interest rate and other benchmarked parameters for Solar Tariff determination may be reviewed for each financial year • Solar tariff determined under these Regulations, for grid connected Ground mounted and Rooftop Solar Power projects which are commissioned during the control period, shall continue to be applicable for the entire duration of the Tariff Period as specified in these Regulations. • The provisions of the said Regulations, if have any bearing or impact on any previous solar tariff order may be considered for revision in tariff only after the approval of the Commission from the applicable date.
8	**Tariff Period**	Twenty-five (25) years and shall be reckoned from the date of commercial operation of the solar power projects subject to: • PPA is signed between the Solar Project Developer and the Distribution Licensees mandated to buy the Solar Power • Full capacity of the Solar Project as approved, gets commissioned with the time lines specified by the Commission, after signing of the PPA. • If only a part of Plant capacity is commissioned within the specified time, the Solar tariff applicable will be for the part capacity that is commissioned. The Tariff for the balance part of un-commissioned project will be dealt on its commissioning as per the Solar tariff applicable for that part, if there is a change announced in Solar Tariff by the Commission
9	**Generic Tariff**	As per Annexure A & B of these Regulations
	Financial Principles for computing Tariff	
10	**Tariff Structure**	Tariff for grid connected ground mounted and rooftop mounted Solar Power Plants shall be a single-part tariff
11	**Levellised Tariff Design**	The tariff shall be determined on the levellised basis for the tariff period provided the Solar Project has been commissioned within the Control period during which the PPA is signed
12	**Capital Cost**	• The capital cost for Solar Power Projects for working out the Tariff shall be inclusive of all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction, other misc. expenses such as overheads, administrative cost etc. during construction, and evacuation infrastructure up to the interconnection point. • Normative capital cost ceiling limit for setting up of rooftop solar photovoltaic power projects shall be determined based on the capital cost of various items specified in the Regulations • Normative capital cost ceiling limit for Solar PV Power projects and Solar Roof Tops shall be as per Annexure A of the Regulations for the financial year specified • Normative capital cost for Solar Thermal Power projects shall be as per Annexure B for the financial year specified • Normative capital cost for Solar power projects may be reviewed annually by the Commission.
13	**Debt-Equity Ratio**	70:30 If the equity actually deployed is less than 30%, the actual equity shall be considered and if more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

14	**Interest Rate for long term debt**	• Loans arrived at in the manner indicated in the Annexure A & Annexure B of these Regulations shall be considered as gross normative loan(s) for calculation of interest on loan • Repayment of loan to be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed • For computation of tariff, the normative interest rate to be considered as an average SBI Base rate prevalent during the first six months of the previous year plus 300 basis points. • Commission to allow obligatory taxes on interest, commitment charges for getting loan, finance charges and any exchange rate difference arising from foreign currency borrowings, as finance cost.
15	**Interest on Working Capital**	(a) Working capital requirement shall be computed as under: • O & M expenses for one month • Receivables equivalent to Two (2) months of energy charges for sale of electricity calculated on the normative Capacity Utilization Factor. • Maintenance spares at the rate of 15% of O & M expenses (b) Interest on Working Capital shall be at an interest rate equivalent to an average State Bank of India Base Rate during the first six months of the previous year plus 350 basis points.
16	**Return on Equity**	• Value base for the equity shall be 30% of the capital cost or actual equity in case of project specific tariff determination • Normative Return on Equity: 20% per annum for the first 10 years and 24% per annum 11th years onwards
17	**O&M expenses**	Normative O&M expenses for Solar Power projects shall be as indicated in Annexure A & Solar Thermal power projects as indicated under Annexure B and shall be escalated at the rate of 5.72% per annum over the tariff period (i.e. from the 2nd year onwards).
18	**Depreciation**	• Value base shall be capital cost of the assets • Depreciation to be calculated annually on straight-line method • Salvage value to be 10% and depreciation up to maximum 90% of the capital cost of the asset. • Depreciation rate for the first 12 years of the Tariff Period to be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards. • Depreciation shall be chargeable from the first year of commercial operation of the project • In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis
19	**Accelerated Depreciation**	• The applicable tariff will depend upon whether the Project developer is availing / intend to avail the benefit of accelerated depreciation as per the provisions of the Income Tax Act. • Project developer claiming higher tariff (without Accelerated Depreciation Benefit) to give an affidavit every year in the beginning of the financial year that the Project developer is not claiming / intends claiming the benefit of the accelerated depreciation from Income tax department. • Affidavit to be submitted before the processing of 1st bill for sale of power or its adjustment towards the total electricity consumed.
20	**Subsidy or incentive by the Central / State Government**	• Commission to consider any incentive/r subsidy offered by the Central/ State Government and income tax benefit on account of accelerated depreciation, if availed by the generating company while determining the tariff. • In case the Solar Power Generator or project developer is not claiming accelerated or higher depreciation benefit, the PPA entered into with the generating company or project developer to include an undertaking by the generating company or project developer that accelerated or higher depreciation benefit would not be availed for the project. • If accelerated or higher depreciation benefit has been claimed despite submission of the undertaking, the distribution licensee shall be entitled to recover the amount wrongly claimed along with penal charges @ 1.50 % per month on levellised tariff calculated on daily basis from the period of claiming accelerated depreciation from any bill that is next due or is pending for payment.

21	**Sharing of CDM Benefits**	(a) All risks, costs and efforts in development of such projects as CDM projects shall remain with the Project Developer/lead entity as the case may be, who is responsible for developing and registering these projects as CDM projects. (b) Proceeds of carbon credit from approved CDM project to be shared between generating company and concerned beneficiaries as follows: • 100% by project developer in the first year after the date of commercial operation of the generating station. • 2nd year – share of beneficiaries @ 10% to progressively increase by 10% every year up to 50% where after to be shared in equal proportion, by the generating company and the beneficiaries
22	**Applicable Tariff**	Tariff applicable for each project at the time of signing the PPA shall be as approved by the Commission for each year. • Provided the Power Purchase Agreement (PPA) is signed between the Solar Power Project Developer and the Distribution licensee in the Specific Year of the Control Period: • Provided the Solar Project comes within the time indicated in the Annexure G of the Regulations • Provided the Solar Project envisaged does not come in the duration specified above, the Tariff applicable for the project will be lesser of the two tariffs i.e. of the previous year when PPA was signed and the next year tariff during which the Project gets commissioned
23	**Power Bill Adjustment Rates for Solar Power fed into the Grid**	• The Consumer bill in Solar Rooftop to be adjusted as per the Tariff decided in these Regulations. If a consumer is net exporter of Solar electricity, the Consumer will get the payment six monthly i.e. on 30th Sept & 31ST March of each year. • Ground mounted Solar Plants, the invoice raised will be paid within 2 months. • Rebate for payment through Letter of Credit, or early payment and penalty on delayed payments is as per these regulations.
24	**Taxes and Duties**	(a) Tariff shall be exclusive of taxes and duties as may be levied by the appropriate Government for sale of Solar Power, provided that the taxes and duties levied by the appropriate Government shall be allowed as pass through on actual basis. (b) Capital Cost or O&M Costs are inclusive of Taxes and Duties including Service Tax etc. as applicable.
25	**Despatch principles**	All grid-connected ground and rooftop mounted Solar PV plants to be treated as 'MUST-RUN' power plants and not subjected to 'merit order despatch' principles
	Renewable Power Obligations	
26	**Quantum of Purchase of Electricity from Solar Power**	As specified in the JERC for state of Goa & Union Territories (Procurement of Renewable energy) Regulations, 2010 with first Amendment Regulations, 2014 dt.19.2.2014
27	**Solar Power Capacity Targets for distribution licensee**	• Maximum cumulative capacity to be installed under these Guidelines shall be decided by the Commission on yearly basis. • The shortfall in any year shall be carried forward to the next succeeding year provided that the cumulative capacity to be allowed at a particular distribution transformer shall not exceed the limits as specified in Annexure C to these regulations of the rated capacity of the distribution transformer; on first-cum-first serve. • Consumer/Project Developer to apply afresh in the next financial year, in case the earlier application could not be considered due to approved Solar capacity constraints in the previous year. • Distribution licensee shall update distribution transformer capacity available for connecting rooftop solar systems under net metering arrangement on yearly basis and shall provide the information on its website as well as to the Commission and the respective State Agency.
28	**Solar Renewable Purchase Obligations Applicability**	• The quantum of electricity purchased by the distribution licensee of the respective licence area under the Commission's jurisdiction to be covered towards the Solar RPOs for the Solar Power purchased from any consumer who is a Non-obligated / obligated entity.

		• Obligated entities including Open Access Consumers with load in excess of 1MW to comply their own RPOs. In case, the obligated entity is also a Solar Power Generator and selling Solar Power to the distribution licensee, only Solar Power Generator would qualify for RPO compliance.
	Technical Parameters	
29	**Technology Norms**	• Norms for Solar photovoltaic power projects applicable for those directly convert solar power into electricity and are based on technologies such as crystalline Silicon or thin film etc. as may be approved by MNRE. • Norms for Solar thermal power shall be applicable for concentrated solar power (CSP) technologies viz. line focusing or point focusing, as may be approved by MNRE.
30	**Interconnection with the Grid through Net Metering**	Conditions to be Adhered: • Variation in the rated capacity of the system agreed between the Distribution Licensee and the Solar Project Developer shall remain within a range of 5 % • System meets the technical requirements for grid interconnection with the network of the distribution licensee.
31	**Technical and interconnection requirements**	Detailed at Annexure C & D of the regulations
32	**Communication Facilities**	• All grid connected solar PV power projects shall have meters with features to record energy for 45 days data storage for injection into the grid through solar meter as provided under these Regulations. • All projects with capacity of 10 kWp and above shall have communication Port for exchanging real time information with the Distribution Licensee. • For plant size of 1MWp and above the Communication will be with State Load Despatch Centre (SLDC) also in addition to the distribution licensee
33	**Connectivity and Protection**	• Solar Rooftop systems will be allowed in house auto synchronization /de-synchronization facility with distribution system of the licensee at generation voltage level. • They will utilize the same service line for excess power injection into the Grid which is currently being used by the consumer for drawal of power from utility's grid and will operate in synchronization with Distribution licensee's system provided that such injection of power from the Rooftop solar system shall not be more than the limit of the total consumption from the licensee's supply by the consumer in a Settlement Period. • It will be mandatory for the solar rooftop generator to provide an appropriate protection system on their incoming side/ consumer premises with the feature of "Islanding the Solar generator", so as to achieve isolation of consumer power-system from utility power-system during grid failure including protection from voltage / lightning surges. • The Power Conditioning Unit of the solar plant shall have features to filter out harmonics and other distortions before injecting the energy into the system of the Distribution Agency. • Harmonics & inverter standards are as specified in Annexure C of the regulations.
34	**O & M – Technical Requirements**	• The solar plant shall comply with the relevant standards specified by the MNRE / Bureau of Indian Standards (BIS) and CEA. • The responsibility of operation and maintenance of the Solar Photo Voltaic (SPV) Generator including all accessories and apparatus lies with the consumer • For Detailed Technical Requirements refer the Regulations
	Metering, Billing, Payment & Adjustment	
35	**Energy Accounting and Settlement**	• For each billing cycle, the licensee shall show the quantum of electricity injected into the Grid by the consumer, the electricity billed by distribution licensee and, Solar Power net billed for payment or adjustment in the Prosumer's Electricity bill for that billing cycle.

		• In event the electricity injected into the Grid exceeds than consumed during the billing cycle, such excess injected Solar Power units of electricity shall be carried forward to next billing cycle as electricity units credit and may be utilized to net electricity injected or consumed in future billing cycle; • In case of any dispute in billing and settlement it would be settled by the consumer grievance redressal forum and if the issue still remains unresolved shall be settled by the Ombudsman and if still not settled then by the Commission following appropriate procedure
36	**Banking, Wheeling charges and losses and cross subsidy**	• Rooftop solar system under Net Metering arrangement, whether self-owned or third party owned installed on Eligible Consumer's premises, shall be exempted from these charges • For Ground Mounted Solar Power plant set up for the purpose of Sale of Power, no banking is allowed. There will not be any cross subsidy payable for Sale of Power.
37	**Cap on Banking of Surplus Power**	30 % of the Annual generation capacity, banking period for electricity a maximum of 9 months.
38	**Eligibility to Participate under REC Mechanism**	As per the eligibility criteria specified in JERCs Regulations 2014 under CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010
39	**Billing for Solar Power and Payment**	• Billing of the energy shall be carried out on a monthly basis. • Project developer to raise the bill to the distribution licensee every month for the energy supplied. • Payments to be made to the developer by the distribution licensee within 60 days from the date of the bill.
40	**Rebate for early release of payment**	• For payment of bills made through LC or by cash/cheque within three working days of presentation of bills a rebate of 2% shall be allowed. • If payment is made beyond three working days of presentation of bills but within thirty days of presentation of bills, a rebate of 1% shall be allowed.
41	**Late Payment Surcharge on Solar Power Bills**	In case the payment of any bill is delayed beyond a period of 45 days from the date of presentation of bill, a late payment surcharge of 1.25% of billed amount per month calculated on a daily basis shall be levied by the generating company or project developer
42	**Procedure for setting up a Solar Plant**	• Application-cum-Agreement form is available on the website of the Distribution Licensee • Application to be submitted to designated officer of the Distribution Licensee for grant of permission to setup the plant. • Applicant shall pay application fee of Rs. 50/KVA along with the application to the Distribution Licensee. • Applicant shall be issued Letter of Approval by the Distribution Licensee within 30 days of receipt of application. • For more details refer Regulations
43	**Applicability of R E Certificates and RPO**	• Net-metering injection is not eligible for REC. • The quantum of electricity consumed by an eligible consumer, who is not defined as an obligated entity from the rooftop solar system under net-metering arrangement shall qualify as deemed Renewable Purchase Obligation (RPO) for the distribution licensee. • In case the Consumer / prosumer opts to claim REC for the Power Generated from the Solar Project, then the Electricity sold to the licensee will be at average cost of Procurement of Power as decided by the commission by the tariff order for each year. • Consumer to follow the guidelines on "Renewable Energy Certificates (REC) Accreditation Charges for issue of RECs for Renewal Energy Projects chargeable by State Agency

Commission's Mandate		
44	**Power to give directions**	Commission may from time to time issue such directions and orders as considered appropriate for the implementation of these Regulations
45	**Power to Relax**	Powers vested with the Commission
46	**Power to Amend**	Powers vested with the Commission
47	**Deviation from provisions of the Regulations**	Powers vested with the Commission
48	**Power to Remove Difficulties**	Powers vested with the Commission