

JOINT ELECTRICITY REGULATORY COMMISSION

Joint Electricity Regulatory Commission for State of Goa & Union Territories Grid Connected Solar Power Regulations – 2015 Dated 8th May 2015

Sl. No	Description	Summary
1	Title	Joint Electricity Regulatory Commission for state of Goa & Union Territories (Grid Connected Solar Power Regulations) 2015 dated 8 th May 2015
2	Date of Enforcement	Regulations to come into force from the date of publication in official gazette
3.	Applicability and Extent	<ul style="list-style-type: none"> • 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. • Regulations shall be applicable to the Grid connected Solar PV and Solar Thermal Projects subject to the fulfillment of eligibility criteria <p>Notwithstanding anything contained in these Regulations, Commission shall adopt the tariff for a specific Distribution Licensee, if such tariff has been determined through a transparent process of bidding in accordance with the guidelines issued by the Central Government, Provided the tariff determined is not higher than the generic tariff determined by the Commission</p>
4.	Eligibility Criteria	<p>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 Rooftop projects of ratings higher than 500 kWp can be considered by the Distribution Licensee if the distribution system remains stable with higher rating Rooftop Solar Projects getting connected to the grid. This is subject to that the</p> <p>(a) Solar System is:</p> <ul style="list-style-type: none"> – 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 <p>(b) Regulations do not preclude the right of relevant state authorities to undertake Rooftop Solar projects of any larger capacity through any alternative mechanisms</p> <p>(c) Net metering facility will be implemented for the consumers of the Distribution Licensees under the jurisdiction of the Commission at one location owned by one Solar Power Developer with / without battery back-up support. 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</p> <p>(d) All eligible consumers of electricity in the area of supply of the Distribution Licensee can participate in the solar rooftop net metering arrangement.</p> <p>(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</p>
5.	Third Party Owned Rooftop Solar Project with Net Metering	<ul style="list-style-type: none"> • A Rooftop Owner can lease out / rent the Rooftop Space to a Solar Project Developer on a mutual commercial arrangement • 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 as per “JERC-9/2009 Transmission and Distribution Regulations, 2009” or as amended and in force and would be exempted from open access restrictions and associated charges for sale/ purchase within the jurisdiction of the same licensee.

6.	Solar Power Generation Capacities	<p>(a) Distribution Licensee to arrange sealing of the electricity meter of eligible consumers. Meters to be arranged by the Consumer / Generator, as per the approved specification.</p> <p>(b) Distribution Licensee to facilitate the Solar Project Development. provided:</p> <p>(i) The cumulative Solar capacity allowed at a particular distribution transformer shall not exceed the limit as specified in these regulations</p> <p>(ii) Total Solar power generation capacity (in MW) in the respective territories does not exceed the limits as per Procurement of Renewable Energy Regulations of the Commission. Capacities beyond the specified limits shall also be encouraged once the capacity targets required to meet the RPOs in the respective territories are achieved and the grid system is ready to take on extra Solar Power Transmission.</p> <p>(c) Distribution Licensee to update on a yearly basis, the distribution transformer capacity available for connecting the Solar projects and the provide the information on its website, as well as to the Commission</p>
General Principles of Solar Power Projects		
7	Control Period	<ul style="list-style-type: none"> • Regulations to remain in force for 3 (three years) unless reviewed /revised earlier or extended by the Commission • The tariff fixation parameters may be reviewed for each financial year • Tariff determined under these Regulations, for projects commissioned during the control period, to be applicable for the entire duration of the Power Purchase Agreement period as specified in these Regulations. • Notwithstanding anything contained in these Regulations, the parameters fixed for Solar tariff determination in respect of grid connected Solar power projects that have started generating power prior to notification of these Regulations for which approval of the Distribution Licensee was taken or where the project specific Solar tariff was determined by the Commission remain unchanged. The provisions of these regulations having any impact on previously approved tariff shall not be considered.
8	Tariff Period	<p>Twenty-five years reckoned from the date of commercial operation of the Solar Power Projects or date of signing the PPA whichever is later provided:</p> <ul style="list-style-type: none"> • 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. Tariff for the balance part of un-commissioned project to be dealt on its commissioning as per the Solar tariff applicable for that part. • Solar Power Project planned to be developed comes within approved total Solar Capacity for respective Distribution Licensee
9.	Solar Project -Types	<p>Solar Power Projects for Prosumer as well as Producer which may be Roof mounted, ground mounted or installed on Elevated structures as under:</p> <p>(a) Prosumer / Producer allowed a feed-in tariff as determined under these Regulations.</p> <p>(b) Net metering allowed and existing service connection meter to be replaced with a Bi-directional energy meter by the Distribution Licensee.</p>
10.	Solar Power Metering	<p>Prosumer or Producer to arrange a meter to register the Solar Power produced and fed to the Grid for sale to the Distribution Licensee and be billed accordingly, for making payments to the Solar Power Producer.</p>
11.	Net-Metering	<ul style="list-style-type: none"> • Gross metering as well as Net-metering options allowed. Net metering applicable to generators having an electrical service connection for all consumer categories of the Distribution Licensee • Distribution Licensee to allow installation of SPP in its area of supply on non discriminatory and first come - first serve basis within the time line as per the regulations. Proposals with subsidy to be given higher preference. Electricity Duty if applicable, shall be payable on the net energy imported from the grid. • Group Net-Metering facility allowed to the Solar Prosumer at the consumer tariff applicable to the Consumer's service connection.

		<ul style="list-style-type: none"> Prosumer / Producer exempted from charges in respect of electricity Banking, Wheeling, line losses and cross subsidy to the extent of Energy produced. <p>For More Details refer Regulations</p>																		
12.	Facilities for Solar Power Producer (SPP)	<ul style="list-style-type: none"> Distribution Licensee to permit unrestricted and uninterrupted evacuation of Solar power through its T&D network. SPP may wheel power to a service connection of the Solar Producer subject to conditions detailed in the Regulations: 																		
13.	Generic Tariff	Generic Tariff as determined by the Commission for a specific year to be applicable																		
14.	Despatch Principles	<ul style="list-style-type: none"> All Grid-connected SPPs to be treated as 'MUST-RUN' power plants not subjected to 'merit order despatch' principles. Grid connected SPPs to be connected at Voltage levels indicated in these Regulations and subjected to scheduling and despatch code under Indian Electricity Grid Code (IEGC)-2010, as amended from time to time, except where specific provision has been made under the JERC (State Grid Code) Regulations, 2010, as amended from time to time. 																		
15.	Renewable Power Obligations (RPO)	<ul style="list-style-type: none"> RPO to be as specified in the JERC for state of Goa & Union Territories (Procurement of Renewable energy) Regulations, 2010. Beyond the RPO limits specified, Licensee can go ahead with RPO purchase beyond it targets if such purchase does not adversely affect the average Power purchase cost. 																		
16.	Solar Power Capacity Targets for Distribution Licensee	<ul style="list-style-type: none"> Maximum cumulative capacity to be installed under these Regulations to be decided by the Commission on yearly basis. Licensee to update distribution transformer level capacity available for connecting solar projects under net metering arrangement on yearly basis and provide the information on its website as well as to the Commission and the respective State Agency. 																		
17.	Solar RPO Applicability	<ul style="list-style-type: none"> Quantum of electricity purchased by the Licensee of the respective licensee area under the Commission's jurisdiction to get computed towards the Solar RPOs for the Solar Power purchased from any consumer who is either a Non-obligated / obligated entity with Net metering or Gross metering. Self-consumption of the Solar Power Generated to be counted towards the RPOs of the licensee, if the Solar Power Generator is metered and generation is certified by the nominated State Nodal Agency. Obligated entities including Open Access Consumers with load in excess of one MW to ensure compliance of their own RPOs. In case, the obligated entity is also a Solar Power Generator and feeding Solar Power in the Grid of the Licensee, only one of the two Generator or Licensee to qualify for RPO with first right to the Generator. <p>Solar RPOs % power Sale by the Distribution Licensee/ Company</p> <table border="1"> <thead> <tr> <th>YEAR</th> <th>Solar RPOs %</th> </tr> </thead> <tbody> <tr> <td>2014-15</td> <td>0.60</td> </tr> <tr> <td>2015-16</td> <td>0.85</td> </tr> <tr> <td>2016-17</td> <td>1.15</td> </tr> <tr> <td>2017-18</td> <td>1.50</td> </tr> <tr> <td>2018-19</td> <td>1.85</td> </tr> <tr> <td>2019-20</td> <td>2.20</td> </tr> <tr> <td>2020-21</td> <td>2.60</td> </tr> <tr> <td>2021-22</td> <td>3.00</td> </tr> </tbody> </table>	YEAR	Solar RPOs %	2014-15	0.60	2015-16	0.85	2016-17	1.15	2017-18	1.50	2018-19	1.85	2019-20	2.20	2020-21	2.60	2021-22	3.00
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18.	Certifying Authority	<ul style="list-style-type: none"> Commission has appointed the State Nodal Agencies who are certifying agencies for the RPOs generated by the obligated entities in the State/ UT. State Nodal Agencies to support the Stake Holders in Electricity Distribution & Consumption in development of Renewable Agencies and associated matters Approval of setting Solar Power plant rests with the Distribution Licensee 																		

Technical Parameters		
19	Technology	<ul style="list-style-type: none"> • Norms for SPV projects applicable for Grid connected Solar projects that directly convert Solar power into electricity and are based on technologies as may be approved by MNRE from time to time. • Norms for Solar Thermal power applicable for concentrated Solar Power (CSP) Technologies as approved by MNRE from time to time.
20.	Technical/ Interconnection Requirements	As per National & International Standards specified by MNRE & CEA's Technical Standards for Connectivity of Distributed generation Resources- Regulation 2013.
21.	Project Capacity Connectivity	<ul style="list-style-type: none"> • Variation in the rated capacity of the Solar Power project agreed between the Distribution Licensee and the Developer to remain within a range of 5 percent: • Project to meet the technical requirements for Grid interconnection with the network of the Distribution Licensee.
22.	Investment in the Grid Augmentation	Cost of any augmentation after the interconnection point in the Grid system of the Licensee to be borne by the Licensee provided that such capital cost, as approved by the Commission, shall be a pass through in the ARR requirement of Licensee
23.	Power Quality, Protection and Controls	To conform to CEA ^s (Technical Standards for Connectivity to the Grid) Regulations, 2007 applicable to the distribution system as amended from time to time.
24.	Connectivity, Safety Protection and O&M	<ul style="list-style-type: none"> • Solar plant to 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 • Solar Power Generator (SPG) may establish Grid interactive Solar Power plant in the Rooftop /Elevated surface without battery or with battery backup. However he has to ensure islanding of the Solar Plant and prevent back feeding to Grid system of the Distribution Licensee. <p>For Detailed Technical Requirements refer the Regulations</p>
25.	Communication Facilities	<ul style="list-style-type: none"> • All grid connected Projects to have electricity meters with features to record energy for 45 days data storage for injection into the Grid through Solar meter • All projects with capacity of above 25 kWp to have communication Port for exchanging real time information with the Distribution Licensee. • For Plants of 1 MWp and above the Communication will be with State Load Despatch Centre (SLDC) in addition to the Distribution Licensee.
26.	Installed Capacity	Maximum capacity of the Solar Project, as mentioned on AC side at the output of inverter to be not more than the sanctioned connected Load /Contract Demand of the consumer, and the minimum capacity shall not be less than 1 kWp.
27.	Life of Plant and Machinery	25years
28.	Capacity Utilization Factor (CUF)	As per Annexure "A" appended in the Regulations.
29.	Metering, Billing, Payment & Adjustment	As detailed in the Regulations
30.	Penalty or Compensation – Failure in Metering System	As per the provisions of the standards of performance regulations for Distribution Licensee.
31.	Rebate for early Payment	<ul style="list-style-type: none"> • For payment of bills through LC or by banking instrument within five working days of presentation of bills a rebate of 2% shall be allowed. • If payment is made beyond five working days but within thirty days of presentation of bills, a rebate of 1% to be allowed

32.	Late Payment Surcharge on Solar Power Bills	In case the payment of any bill is delayed beyond a period of 30 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 to be levied by the generating company or project developer.
33.	Banking, Wheeling and Cross Subsidy Surcharges	<ul style="list-style-type: none"> Solar plant, whether self /third party owned installed on eligible entity's premises, exempted from electricity Banking, Wheeling charges and losses and Cross Subsidy surcharge for use of electricity within the respective territories. For Ground Mounted Solar Power plant set up for Sale of Power, no Banking is allowed.
34.	Eligibility to Participate under REC Mechanism	<ul style="list-style-type: none"> For sale of Power to the Distribution Licensee at the average cost of Power Purchase applicable for the specific year and getting RECs, the issuance of Renewable Energy Certificates(REC) as per CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 and as notified by JERC Net-metering injection not eligible for REC. The quantum of electricity consumed by an eligible consumer, who is not defined as an obligated entity from the Solar Power Plant 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 approved by the commission by the tariff order for each year.
35.	Procedure for getting Permission to set up a Grid Connected Solar Plant	<ul style="list-style-type: none"> Application-cum-Agreement Form to be available on the website of the Licensee Application to be submitted to designated officer of the Distribution Licensee for grant of permission to set-up the plant. Applicant shall be issued Letter of Approval by the Distribution Licensee within 30 days of receipt of application. In case of delay in setting up the Solar plant, the SPG to obtain extension from the Licensee which will be granted for a maximum period of 2 months only and will lapse automatically if the project is not setup even in the extended 2-months period For more details refer Regulations
36.	Application Fee for Setting up a Solar Power Plant	Applicant to pay application fee of Rs. 50/kW along with the application to the Distribution Licensee
Financial Principles for Computing Tariff		
37.	Tariff Structure	Tariff for Grid connected Ground mounted and Rooftop mounted Solar Power Plants shall be a single-part tariff consisting of: <ul style="list-style-type: none"> (i) Capital Cost of the Project; (ii) Interest on long-term loans; (iii) Depreciation; (iv) Return on Equity; (v) Interest on Working Capital; and (vi) Operation and Maintenance (O&M) Expenses;
38.	Levelling 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
39.	Capital Cost	<ul style="list-style-type: none"> Capital cost for Solar Power Projects for working out the Tariff to be inclusive of 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, if any. The normative capital cost ceiling limit for setting up of Rooftop Solar Photovoltaic Power projects shall be on various items specified in the Regulations Provided that the Capital Subsidy or grant made available for the Project from Govt., of India/State Govt.,/ any agency to be adjusted for working out the Tariff. Generic Tariff as per these regulations to be applicable after adjusting for same in the Capital Cost.

		<ul style="list-style-type: none"> The normative capital cost ceiling limit for setting up of Grid connected SPV Power projects shall be as decided by the Commission for each of the financial year. The normative capital cost for Solar Thermal Power Projects shall be considered on project specific basis. Provided that the normative capital cost for Solar Power Projects may be reviewed annually by the Commission.
40.	Debt-Equity Ratio	<p>70:30</p> <ul style="list-style-type: none"> 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. Provided that the equity invested and loan drawn in the foreign currency shall be designated in Indian Rupees on the date of each investment, using the selling rates notified by the Reserve Bank of India on the date of such investment Commission shall take into consideration any capital grant/subsidy offered by the Central/State Government/any other agency, for the Solar Power Projects while determining the tariff under these Regulations
41.	Interest and Financing Charges for Long Term Debt	<ul style="list-style-type: none"> Loans arrived at in the manner indicated in the Annexure A 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.
42.	Interest on Working Capital	<ul style="list-style-type: none"> Working capital requirement shall be computed as under: <ul style="list-style-type: none"> O & M expenses for one month Receivables equivalent to Two 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 Interest on Working Capital shall be at an interest rate equivalent to an average State Bank of India Base Rate equivalent during the first six months of the previous year plus 350 basis points.
43.	Return on Equity	<ul style="list-style-type: none"> Base Value for the equity shall be 30% of the capital cost or actual equity whichever is less Normative Return on Equity: 20% pa for the first 10 years and 24% pa 11th years onwards
44.	O&M Expenses	<ul style="list-style-type: none"> O&M expenses shall comprise of Repair and Maintenance (R&M), establishment, lease rental, if any, and administrative and general expenses including insurance. Normative O&M expenses shall be decided by the Commission while deciding the Tariff for a specific Financial Year. Normative O&M expenses allowed during the first year of control period (i.e. FY 2015-16) to be escalated @ of 5.72% per annum over the tariff period from the 2nd year onwards
45.	Depreciation	<ul style="list-style-type: none"> Value base shall be Capital cost of the assets determined by the Commission. Depreciation per annum shall be based on 'Differential Depreciation Approach' over the loan period and beyond loan tenure to be computed based on straightline method over the useful life Salvage value to be 10% and depreciation up to maximum 90% of the capital cost of the asset Depreciation for the first 12 years of the Tariff Period to be 5.83% per annum and the remaining depreciation to 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

46.	Accelerated Depreciation (AD)	<ul style="list-style-type: none"> • The effect of AD for Solar Power Projects to be calculated by the Commission while indicating yearly Tariff. The tariffs shall be worked out as under: <ul style="list-style-type: none"> – Tariff indicated is without availing the accelerated depreciation. – Tariff, if the accelerated depreciation is availed by the Project developer. – Tariff with Capital Subsidy. – Tariff without Capital Subsidy. • 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. • For More Details refer Regulations
47.	Availing Subsidy	<ul style="list-style-type: none"> • The Prosumers/ Producers setting up Solar project can approach the State Agency for the applicable MNRE, Govt. of India grant as per the prevailing instructions / guidelines. • Solar Power plant will be eligible for the fiscal and other incentives as per New and Renewable Sources Energy (NRSE) Policy 2012 of Govt., of India
48.	Impact of other Subsidies or Incentives by Central / State Government	<ul style="list-style-type: none"> • In addition to subsidy from MNRE, Commission shall take into consideration any other incentive or benefit available from the Central or State Government or any other agency, including accelerated or higher depreciation benefit, if availed by the Generating company, while determining the tariff • Provided Generation Based Incentive/Tariff Subsidy, if allowed by the Central/State Government would be governed by the terms and conditions of such scheme.
49.	Sharing of CDM Benefits	<p>(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.</p> <p>(b) Proceeds of carbon credit from approved CDM project to be shared between Generating company and concerned beneficiaries as follows:</p> <ul style="list-style-type: none"> – 100% by project developer in the first year after the date of commercial operation of the generating station. – In the second year, the share shall be 90% and 1/3rd of the share to be deployed by the developer for promotion of Renewable Energy, while 10% to be passed on to the Distribution Licensee. – 90% to be progressively decreased by 10% every year till the proceeds shall be shared in equal proportion by the Developer/Generating company and the Distribution company. <p>Provided, that 2/3rd of benefits received by the Distribution Licensee shall be passed on to the consumers and balance 1/3rd deployed for promotion of Renewable Energy</p> <p>(c) The deployment of funds towards promotion of RE shall be done in a transparent manner and the Commission kept informed of such promotion of RE.</p>
50.	Financial and Fiscal Calculations	<ul style="list-style-type: none"> • For levellised tariff computation, discount factor equivalent to Post Tax weighted average cost of capital to be considered. • Generic tariff to be determined on levellised basis for the Tariff Period.
51.	Applicable Tariff	<p>Tariff applicable for each project at the time of signing the PPA shall be as approved by the Commission for each year.</p> <ul style="list-style-type: none"> • Provided the 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 these 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
52.	Power Bill Adjustment Rates for Solar Power fed into the Grid	<p>The net metered Prosumer bill in Solar project will get adjusted as per the Solar Power Tariff decided by the Commission, If a Prosumer is net exporter of Solar power, the Consumer will get the payment as per the settlement period</p>

53.	Taxes and Duties	<ul style="list-style-type: none"> • Tariff to 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. • Capital Cost or O&M Costs are inclusive of Taxes and Duties including Service Tax etc. as applicable.
Miscellaneous		
54.	Power to give Directions	Commission may from time to time issue such directions and orders as considered appropriate for the implementation of these Regulations
55.	Power to Relax	Powers vested with the Commission
56.	Power to Amend	Powers vested with the Commission
57.	Deviation from Provisions of the Regulations	Powers vested with the Commission
58.	Power to Remove Difficulties	Powers vested with the Commission
59.	Review of Regulations	Commission may review Regulations at the end of three years from the date of notification of these Regulations or even earlier
60.	Support Information	For Support Information may please refer Regulations