GUJARAT ELECTRICITY REGULATORY COMMISSION

Determination of Tariff for Procurement of power by the Distribution Licensees and others from Solar Energy Projects for the State of Gujarat Order No. 3 of 2015

<table>
<tr><th>Sl. No.</th><th>Description</th><th>Summary</th></tr>
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Order No. 3 of 2015</td></tr>
<tr><td>2.</td><td>Potential of Solar Power</td><td>Most of the State of Gujarat receives an average solar insolation of greater than 5.5 kWh per square meter per day</td></tr>
<tr><td colspan="3">Determination of Tariff for procurement of power from Solar PV Power Projects</td></tr>
<tr><td>3.</td><td>Plant Capacity</td><td>To limit the size of all Rooftop systems below 100kW to the consumers /buildings connected load or sanctioned demand</td></tr>
<tr><td>4.</td><td>Photovoltaic system classification for Tariff Applicability</td><td>
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<tr><th>System Size</th><th>System Type</th><th>Evacuation Specification</th><th>Applicable Tariff</th></tr>
<tr><td>From 1 kW - 6 kW</td><td>Rooftop</td><td>230 V, 1-ph, 50 Hz</td><td rowspan="2">Kilowatt-scale Photovoltaic Tariff</td></tr>
<tr><td>More than 6 kW -100 kW</td><td>Rooftop</td><td>415 V, 3-ph, 50 Hz</td></tr>
<tr><td>More than100 kW - 1 MW</td><td>Rooftop/ Ground -mounted</td><td>11 kV, 3-ph, 50 Hz</td><td rowspan="3">Large Rooftop and Megawatt-scale Photovoltaic Tariff</td></tr>
<tr><td>More than 1 MW-4MW</td><td>Ground mounted</td><td>11 kV, 3-ph, 50 Hz</td></tr>
<tr><td>More than 4 MW</td><td>Ground mounted</td><td>66 kV, 3-ph, 50 Hz</td></tr>
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</td></tr>
<tr><td></td><td colspan="2">Parameters for Solar Photovoltaic Power Projects</td></tr>
<tr><td>5.</td><td>Tariff</td><td>Single part Tariff</td></tr>
<tr><td>6.</td><td>Capital Cost (Solar PV)</td><td>For large Rooftop and Megawatt-scale System -
Rs. 615 Lakh per MW
For Kilowatt-scale System - Rs 0.80 Lakh per KW
• Capital Cost to include cost of land, building & civil works
• Responsibility for laying the transmission line/ transmission infrastructure to the nearest STU substation for Power evacuation lies with the developer</td></tr>
<tr><td>7.</td><td>O&M</td><td>Rs. 10.90 Lakh per MW/annum
Rs. 0.01 Lakh per kW/annum</td></tr>
<tr><td>8.</td><td>Escalation in O&M Cost</td><td>5.72% Annually</td></tr>
<tr><td>9.</td><td>Capacity Utilization Factor(Solar PV)</td><td>19%</td></tr>
<tr><td>10.</td><td>Performance Degradation</td><td>1% Annually</td></tr>
<tr><td>11.</td><td>Auxiliary Consumption</td><td>0.25% of Energy Generation - for MW scale
NIL - for kW scale</td></tr>
<tr><td>12.</td><td>Useful Life</td><td>25 years</td></tr>
<tr><td colspan="3">Financial Parameters</td></tr>
<tr><td>13.</td><td>Debt: Equity Ratio</td><td>70:30</td></tr>
<tr><td>14.</td><td>Loan Tenure</td><td>10 years</td></tr>
<tr><td>15.</td><td>Interest Rate on loan</td><td>12.7% Annually</td></tr>
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16.	**Insurance Cost**	0.35% of Capital cost Annually
17.	**Interest on Working Capital**	11.85% Annually
18.	**Working Capital**	Sum of (i) one month's expense on O&M expenses (ii) Receivables equivalent to one month's energy charges at normative CUF.

19.	**Rate of Depreciation**	(i) 6% Annually for the first 10 years (ii) 2% Annually for the next 15 years
20.	**Minimum Alternate Tax Rate**	20.008% Annually for the first 10 years
21.	**Corporate Tax Rate**	32.445% Annually from the 11th year until 25th year
22.	**Return on Equity**	14% Annually
23.	**Discount Factor for levelised Tariff**	10.647% Annually
24.	**Levelized tariff for megawatt-scale and kilowatt-scale photovoltaic systems commissioned between July 1, 2015 and March 31, 2018.**	

Period	**July 1, 2015 to March 31, 2016**	**April 1, 2016 to March 31, 2017**	**April 1, 2017 to March 31, 2018**
Levelized Tariff for Large Rooftop and Megawatt Scale Power Plant			
Without Accelerated Depreciation Benefit	6.77	6.30	5.86
With Accelerated Depreciation Benefit	6.17	5.74	5.34
Levelized Tariff for Kilowatt Scale Power Plant			
Without Accelerated Depreciation Benefit	8.42	7.83	7.28
With Accelerated Depreciation Benefit	7.64	7.11	6.61

	Determination of Tariff for procurement of power from Solar Thermal Power Projects	
25.	**Capital Cost**	Rs 1200 Lakh per MW for MW Scale System
26	**O&M Cost**	1.5% of Capital cost
27	**Escalation in O&M cost**	5.72% Annually
28	**Capacity Utilization Factor**	23%
29	**Performance Degradation**	0.25% Annually
30	**Auxiliary Consumption**	10% of Energy Generation
31	**Useful Life**	25 years
	Financial Parameters	
32	**Debt: Equity Ratio**	70:30
33	**Loan Tenure**	10 years
34	**Interest rate of Loan**	12.70%
35	**Insurance Cost**	0.35% of Capital Cost Annually
36	**Interest on Working Capital**	11.85% Annually
37	**Working Capital**	Sum of (i) one month O&M expenses (ii) Receivables equivalent to one Months' Energy Charges at normative CUF
38	**Rate of Depreciation**	6% annually for the first 10 years 2% annually for the next 15 years

39	**Minimum Alternate Tax rate**	20.008% Annually for first 10 years
40	**Corporate Tax Rate**	32.445% Annually from the 11th year until 25th year
41	**Return on Equity**	14% Annually
42	**Discount Factor**	10.647% Annually

43	**Leveilized Tariff for Solar Thermal Projects commissioned between July 1, 2015 and March 31, 2018.**	• With accelerated depreciation benefit : Rs 10.11 / kWh • Without accelerated depreciation benefit : Rs 11.22 / kWh
44	**Tariff for variants (Hybrid) in Technology**	In case Developer develops the system with thermal storage or as a hybrid, the tariff determination would be on case-to-case basis under "project specific" tariff determination route based on petition filed by the Developer
	Other Considerations	
45	**Plant & Machinery**	Only new plants and machinery eligible
46	**Auxiliary Power Supply**	STU/Distribution Licensee shall provide auxiliary power for the solar generator under kWh to kWh adjustment basis.
47	**Reactive Energy Charges**	As approved by the commission in tariff orders for GETCO from time to time.
48	**Evacuation Facilities**	• Interfacing line as per the CEA (Technical Standard for connectivity to the grid) Regulations, 2012 shall be provided by the STU/ Distribution Licensee at their cost • Switchyard equipment, metering and protection arrangement and RTUs at generator end to be provided by the owners of generators at their cost • Responsibility of constructing the transmission line shall lie with the developer
49.	**Transmission and Wheeling Charges**	Whenever the power is sold to a Distribution licensee, the Solar Power Generator will supply the power at the interconnection point of the generator-STU. Thereafter, the transmission/ wheeling charges will be borne by the Distribution Licensee
49.1	**Wheeling with Injection at 66 kV or above**	• Applicable to solar plants of capacity greater than 4 MW. Wheeling of power to the desired location(s) at 66 kV voltage level and above, within the State allowed on payment of transmission charges and transmission losses applicable to normal Open-Access Consumers. • Wheeling of power to the desired location(s), below 66 kV, within the State allowed on payment of transmission charges as applicable to normal open access customers and transmission and wheeling loss @ 7% of the energy fed into the grid. • Loss to be shared between the transmission and distribution licensees in the ratio of 4:3.
49.2	**Wheeling with Injection at 11 kV or above and below 66 kV**	• Applicable to ground-mounted/ rooftop solar plant of capacity between 100 kW and 1 MW, and ground-mounted solar plants between 1 MW and 4 MW. • Wheeling of power to the desired location(s) within the area of same distribution licensee allowed on payment (in kind) of distribution loss @ 3% of the energy fed in to the grid. • Wheeling of power to the desired location(s) within the State but in the area of a different Distribution licensee allowed on payment of transmission charges as applicable to normal Open-Access Customers and T&D loss @ 10% of the energy fed in to the grid. • Losses to be shared among the transmission licensee and two distribution licensees involved in the ratio of 3:4:3.
49.3	**Wheeling with Injection at 415 V or below**	• Applicable to rooftop solar installations capacity between 1 kW and 6 kW feeding at 220 V, 1φ; and between 6 kW and 100 kW at 415 V, 3φ. • Wheeling of power feeding at 415V allowed only to the locations within the same distribution licensee and no wheeling charges applicable • Power from rooftop solar plants at 220 V not allowed to be wheeled and will have to be consumed within the same premises

49.4	**Wheeling at two or More Locations**	If a Solar Power Generator owner wheel electricity to two or more locations, it shall pay Rs.0.05 per unit on energy fed in the grid to Distribution Company in whose area power is consumed in addition to the transmission charges and losses, as applicable

50	**Cross- Subsidy Surcharge**	No cross-subsidy surcharge levied in case of third-party sale or captive use.
51	**Banking**	• All solar power projects commissioned under captive generating mode and not operating under the REC route or third party sale shall be eligible for banking of energy for one month period only. • Banking to be on first in first out energy basis. • Any surplus energy banked in the given billing cycle available after set-off shall be considered as deemed sale to the concerned Distribution Licensees at Average Power Purchase Cost rate determined by the Commission for relevant year
52	**REC Projects**	Solar power projects set up and operate under the REC route shall: • Pay the entire transmission and wheeling charges and losses and cross subsidy surcharge. • Not eligible for banking facility
53	**Applicability of Intra-state ABT**	Not applicable
54	**Energy Accounting**	• Projects to provide ABT compliant meters at the interface points. • Interface metering to conform to CEA (Installation and Operation of Meters) Regulations, 2010. • Electricity generated from the SPG shall be metered and readings taken jointly by the Developer with GETCO/Distribution Company at the interconnection point of the generator bus-bar with the transmission/ distribution system • In case of solar rooftop power projects, a separate metering system shall be provided at the output terminal of solar roof-top power project
55	**Connectivity Charges for Rooftop Power Plants**	Connectivity Charges and Fees to be payable to the respective Distribution Licensee **System Size** / **Applicable fees (Rs.)** From 1 kW up to 6 kW / 1,500 per connection More than 6 kW up to 100 kW / 10,000 More than 100 kW up to 1 MW / 50,000
56	**Parallel Operation Charges**	No parallel operation charges shall be levied by the distribution licensee for all solar PV systems for captive use
57	**Power Purchase Agreement (PPA)**	Term - 25 years Developer to submit a Bank guarantee/ security deposit of Rs 25 lakh/MW to distribution licensee on signing of PPA
58	**Sharing of Clean Development Mechanism(CDM) Benefit**	• 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
59	**Standards of CEA and RRF mechanism of CERC**	• Developers to comply with the CEA Regulations/ Standards for grid connectivity of solar projects and CERC Regulations “Procedure for the implementation of the Mechanism of Renewable Regulatory Fund” (RRF) under Regulation 6.1 (d) of the CERC (Indian Electricity Grid Code) Regulation, 2010 (dated 18-2-2011). • In the absence of compliance of above regulations, GEDA shall not issue the commissioning certificate.
60	**Control Period**	1.7.2015 to 31.3.2018
61	**Non-Applicability of Merit Order**	All solar energy power plants to be considered as Must-Run facilities, and not subject to merit order dispatch principles