KARNATAKA ELECTRICITY REGULATORY COMMISSION

(Determination of Tariff for Grid Interactive Solar Power including Roof Top and Small Solar Photovoltaic Power Plants)

- (i) Order No.S/03/1 dated 10th October 2013
- (ii) Amendment order S/03/1 dated 18th August 2014
- (iii) Amendment order dated 16th September 2014

SI. No.	Description	Summary				
1.	Preamble	 (i) The Commission in its tariff order dated 13th July 2010 had determined tariff for grid connected Solar Photovoltaic, Solar thermal power plants and Rooftop Solar Photovoltaic and other small solar power plants. The tariff determined in this order was valid for projects commissioned upto 31st March 2013. (ii) The discussion paper dated 21-06-2013 for determination of tariff for grid connected solar plants was issued by the Commission for the next control period from 1st April 2013 to 31st March 2015. (iii) After considering the written and oral submissions of the stakeholders the Commission passed the orders for determination of tariff for solar plants. 				
2	Scope of Present Tariff determination	The tariff determined in this order is applicable to all grid connected Solar PV generators, Solar thermal power generators and Rooftop Photovoltaic generators entering into PPAs on or after 1-4-2013 and during the control period as specified in this order.				
3	Abstract of Cost Parameters approved by the Commission	The Commission decided various parameters for determination of tariff. Based on the decisions of the Commission, the following is the abstract of the parameters considered for determination of tariff:				
		Particulars		Approved	l Parameters	
			Solar PV	Solar Thermal	Solar Rooftop PV/ Small Solar Plants	Solar Rooftop PV/ Small Solar Plants (with 30% capital subsidy)
		Capital Cost/MW- Rs Lakhs	830	1200	0.90/kW	0.63/kW
		Debt: Equity Ratio	70:30	70:30	70:30	70:30
		Debt-Rs. Lakhs/MW	581	840	0.63/kW	0.441/kW
		Equity- Rs. Lakhs	249/MW	360/MW	0.27/kW	0.189/kW
		Debt Repay-ment Tenure in Yrs.	10	10	10	10
		Interest charges on Debt-%	12.30	12.30	12.50	12.50
		Capacity Utilisation Factor (CUF)	19	23	19	19
		ROE-%	16	16	16	16
		Discount Factor -%	13.41	13.41	13.41	13.41
		Auxiliary Consumption %	0.25	8	0.00	0.00
		O & M expenses in (Rs. Lakhs)	1.5% of CC (12.00/MW)	1.5% of CC (18.00 /MW)	2% of CC (0.018/kW)	2% of CC (0.018/kW)
		O & M Escalation p.a. %	5.72	5.72	5.72	5.72
		Working Capital	2 months receivables	2 months receivables	2 months receivables	2 months receivables
		Interest on Working Capital-%	13.00	13.00	13.00	13.00
		Depreciation for first 10 yrs %	7.00	7.00	7.00	7.00
		Depreciation for next 15 yrs %	1.33	1.33	1.33	1.33
		Useful Life Years	25	25	25	25

4	4 Tariff On the basis of the approved parameters, the following is the approved			
		Type of Solar Plant	Approved Tariff in	
		Rs./unit		
		Solar PV Power Plants	8.40	
		Solar Thermal Power Plants	10.92	
		Rooftop and Small Solar PV Plants	9.56	
		Rooftop and Small Solar PV Plants with 30% capital subsidy	7.20	
		The above approved tariff is applicable to solar power generators entering into power purchase agreements (PPA) on or after 01-04-2013 and upto 31-03-2018 other than those where the tariff is discovered through bidding process.		
5	Other issues	 (a) Sharing of Clean Development of Mechanism (CDM) benefit a project developer in the first year after the date of com generating station. (ii) In the second year, the share of the beneficiaries shall progressively increased by 10% every year till it reach proceeds shall be shared in equal proportion by the ge the beneficiaries. (a) Grid connectivity The commission decides that, STU shall arrange necessar power from the inter-connection point including augmentati developer shall be responsible for providing evacuation facility point. In the case of solar roof top PV of kilowatt scale, the evange two stalled capacity of solar rooftop PV shall be at sing evacuation from 5 kW upto 50 kW installed capacity shall level. Solar rooftop PV system of 50 kW and above shall distribution system. The maximum installed capacity of solar single location shall be limited to 1 MW for the purpose of a tariff. The grid connectivity shall be arranged by the distribution Standards for Connectivity of the Distributed Generation of 2012. Distribution Licensee shall take adequate measure protective devices to prevent the possibility of any feedback of failure of grid supply to ensure safety of personnel worksystem. (b) Metering Metering shall be in compliance with CEA (Installation ar Regulations 2006 as amended from time to time. In the case of Solar rooftop PV systems connected to LT grid of the concept of net-metering shall be adopted and the net grid shall be billed. For net surplus energy injected into the pay the rooftop consumer at tariff approved by the Commis (c) Applicability of Merit Order dispatch All these grid connected solar plants shall be considered as be subjected to meet Order Dispatch principles (d) Applicability of Meeling & Banking Charges & Cross Subsivide order No. S/03/1 dated 18th August 2014) (i) All solar power generators in the State achieving con (COD) between 1st April 2013 and 31st March 201 consumers within the state on open access or wheeling p	are to be retained by the imercial operation of the es 50%, where after, the nerating companies and ary facilities to evacuate ion charges, if any. The vupto the interconnection cuation from 1 kW upto gle phase 230 volts, the be at 3 phase 415 volts be connected at 11 kV in rooftop PV plant at any pplying solar rooftop PV on licensee as per CEA ins 2007, CEA (Technical Resources) Regulations are to install necessary k to the grid in the event riking on the distribution of Adoperation of Meters) of a distribution company, energy pumped into the energy pumpe	

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		 (ii) Captive solar power plants opting for Renewable Energy Certificates shall pay the normal wheeling, banking and other charges as specified in the Commission's order dated 9th October 2013. (e) Control Period The commission decides to adopt a Control Period of 5 years beginning from 01-04-2013 upto 31-03-2018. 	
6	Issue of Standard format of PPA for Solar Rooftop Photovoltaic (SRTPV) plants	 (i) The Commission has finalized the Standard format of PPA for SRTPV plants with an installed capacity of 1 MW. (ii) PPAs for SRTPV plants upto an installed capacity of 500 kW executed as per the standard format, would be considered as deemed to have been approved by the Commission and the ESCOMs are not required to obtain a separate approval thereon. (iii) Approval of the Commission shall be obtained in case there is any deviation from the standard approved format of PPA. (iv) The Commission may review any of the PPA at its discretion to verify its conformity to the Standard format and other applicable orders/Regulation. 	