

cost so arrived, after such adjustment, shall be considered for computing Debt-Equity Components for the purposes of determination of generic levellised tariffs:

Provided further that where the Central Government or the State Government notifies, or has notified, any generation based incentive (GBI) scheme for a particular kind of renewable technology, such technology based generating station shall be assumed to have availed the benefit of such a scheme and their tariffs shall be reduced by the amount of generation based incentive (GBI) per unit for the period during which such incentive remains applicable.

(2) Where any additional project specific grant or budgetary support is available to any project, apart from the incentive and/or subsidy and/or grant available under sub-regulation (1) of this regulation, the Commission shall account for such budgetary support also, while determining project specific levellised tariff.

(3) The amount of subsidy shall be considered for each renewable source as per the applicable policy of the MNRE/State Government/Central Government and if the amount and/or mechanism of subsidy is changed by the MNRE/State Government/Central Government, consequent corrections in tariffs may be carried out by the Commission in accordance with regulation 20.”

12.10 No adjustment of incentive and/or subsidy and/or grant is being made in the tariff calculations. However, adjustment to be made in the rate on the basis of per million (rupees) of subsidy for each MW capacity has been worked out and mentioned in the attached calculation sheet of the project and adjustment, if any, on account of the same shall be made at appropriate stage while applying the tariff after taking into account the eligibility conditions in each case. Similarly, adjustment on account of any other subsidy scheme(s) available under the Government (Central/State) shall also be made at appropriate stage(s) after taking into account the extent of subsidy(ies) available under such scheme(s). The adjustments on account of subsidies, where available, are to be made at the rates indicated in the calculation sheet on normative basis by considering the provisions of regulations 20-B, 23-B, 24-B, 25-B and 26-B. For this purpose the total amount (in million rupees) of incentive and/or subsidy and/or grant etc., shall be divided by the installed capacity of the projects and the per MW amount (in million rupees) so arrived at, shall be multiplied by the rate indicated in the calculation sheet.

12.11 Adjustment in tariff on account of change in the tax rates.-

- (i) As explained in item (ii) of sub para 11.1(a), the normative capital cost takes into account the impact, after duly balancing the various related factors on normative basis, the additional taxes i.e. GST from 5% to 12% and BCD/SGD from 14.5% to 40% on the normative cost of the Solar PV modules. This is however subject to adjustment in case of changes in the tax rate. In order to simplify the adjustment, the arithmetical sum of these two taxes i.e. (GST and BCD/SGD) on Solar PV modules (without any cascading effect) shall be considered. Similarly, for the purpose of adjustment also the arithmetical sum

of these two taxes shall be considered. Such arithmetical sums of these two taxes have hereinafter referred to as the composite tax rate. Accordingly, the composite tax rate of 52% (12%+40%) shall be considered to have been included in the normative cost.

- (ii) The adjustments as per item (i) of this para shall be carried out only to the extent of the rates considered under item (ii) of subject para 11.1(a) above and no adjustment shall be carried out in respect of the rate by which the composite tax rate falls below 19.5% (5%+14.5%). Accordingly, in such cases the composite tax rate shall be considered as 19.5% even if the composite tax rate for the relevant period (as detailed in item (iii) below) actually falls below 19.5%.
- (iii) For the purposes of adjustment the weighted average of the notified rates of the GST and BCD/SGD, as applicable during the period of nine months immediately before the commissioning, shall be considered. In case the commissioning of the project capacity takes place in phases during the period(s) which attract the Generic Levellised Tariff determined in this Order, the adjustment shall be worked out separately for the capacity commissioned in each phase during the such period. Thereafter, the weighted average rate for the adjustment to be carried out at the end of each phase shall be worked out by taking into account the total capacity commissioned upto the end of each phase.
- (iv) The Commission has worked out the rates for adjustment on account of changes in the composite tax rate separately for various categories and finds that such rates are, more or less, the same i.e. 0.52 paise/kWh. The Commission, therefore, decides to make the adjustment at a uniform rate. Accordingly, the adjustment in the generic levellised tariff shall be carried out @ 0.52 paise/kWh for every one percent change in the composite tax rate.
- (v) BCD and Safe Guard Duty shall be considered as mutually inter changeable.
- (vi) The adjustments if any in pursuance to item (i) of sub para 11.1(a) shall be carried out only if the Commission issues a separate order.

Illustrations:-

- (A) If the GST rate is reduced from 12% to 6% and BCD gets reduced from 40% to 30%, the composite tax rate shall be considered as 36% and the tariff shall be reduced by considering 16% reduction in the composite

tax rate ($52\%-36\%=16\%$). In such case the Generic Levellised Tariff shall be reduced by 8 paise/kWh (i.e. 8.32 paise rounded to 8 paise).

- (B) If the GST rate is reduced from 12% to 6% and BCD gets reduced from 40% to 10%, the composite tax rate shall be considered as 19.5% (instead of 16%). Accordingly, the reduction in the composite tax rate shall be taken as 32.5% ($52\%-19.5\%=32.5\%$) instead of 36% ($52\%-16\%$). In this case the Generic Levellised Tariff shall be reduced by 17 paise (i.e. 16.90 paise rounded to 17 paise).
- (C) In case the GST gets increased from 12% to 14% and the BCD from 40% to 50%, the composite tax rate shall be considered as 64% and the Generic Levellised Tariff shall be increased by considering 12% increase in composite tax rate (i.e. $64\%-52\%=12\%$). In this case the Generic Levellised Tariff shall be increased by 6 paise (i.e. 6.24 paise rounded to 6 paise).

(vii) The adjustments in Generic Levellised Tariff shall be carried out by the Distribution Licensee in accordance with this order.

(viii) The adjustments on account of changes in the composite tax rate shall be carried out in addition to those on account of incentive/subsidy etc. as per paras 12.9 & 12.10 of this order. Both these adjustments in the Generic Levellised Tariff shall be carried out independently i.e. without linkage with each other.

12.12 DISCOUNT FACTOR.-

In accordance with sub-regulation (4) of regulation 12 of the RE Tariff Regulations, 2017, the discount factor equivalent to the post tax weighted average cost of capital has been considered for the purpose of levellised tariff computation. The discount factor has been calculated on the basis of normative debt equity ratio (70:30) and weighed average of the post tax rate for debt and equity component. For this purpose, the interest rate on the loan component (i.e. 70%) of capital cost is 9.00%. For equity component (i.e. 30%), rate of Return of Equity (RoE) is considered as post tax rate of 14%. The discount factor has been calculated as 8.67%. The Corporate tax has been taken as 29.12% (25% IT rate+12% Surcharge+4% Health and Education cess).

12.13 ROUNDING.-

- (i) The tariff so worked out for Solar PV projects has been rounded to nearest paise/kWh. The fraction of 0.5 paise/kWh or above has been rounded to next higher paise and fraction of less than 0.5 has been ignored.

- (ii) The adjustment to be carried out in accordance with para 12.11 for total difference in the composite tax rate shall also be rounded to nearest paisa/kWh. The fraction of 0.5 paise/kWh or above shall be rounded to next higher paise and fraction of less than 0.5 shall be ignored.

13. **GENERIC LEVELLISED TARIFF AND ASSOCIATED TERMS & CONDITIONS.-**

In light of the discussions made in the preceding paragraphs, the generic levelled tariff and the associated terms and conditions for Solar PV project for FY 2022-23 under the RE Regulations, 2017 have been arrived at and are determined as under:-

A. The generic levelled tariff for Solar PV projects for FY 2022-23 shall be:-

Sr. No.	Capacity	Generic levelled tariff (Rs. Per kWh)
1	Projects to be set up in other than industrial areas and urban areas	
(a)	Upto 1.00 MW	3.75
(b)	Above 1.00 MW & upto 5.00 MW	3.71
2	Projects to be set up in industrial areas and urban areas	
(a)	Upto 1.00 MW	3.82
(b)	Above 1.00 MW & upto 5.00 MW	3.78

- B. This tariff as per item A shall be subject to the RE Tariff Regulations, 2017 and the orders as may be issued by the Commission thereunder from time to time.
- C. This tariff is applicable to Solar PV projects which directly convert Solar Energy into Electricity, using the poly crystalline silicon or Mono PERC technology or any other technology as approved by the Ministry of New and Renewable Energy and are connected to the Grid.
- D. This tariff does not take into account any capital subsidy or any incentive or grant/budgetary support etc. and the adjustment in this regard shall be carried out in accordance with the RE Regulations, 2017. The adjustments, if any, to be made at the rate per kWh by considering Rs. 10.00 lakh per MW subsidy have however been indicated in the tariff calculation sheets.
- E. This tariff takes into account the composite tax rate of 52% (12%GST+40%BCD/SGD). In case of change(s) in this composite tax rate, necessary adjustments shall be carried out as per para 12.11 of this order.
- F. The applicability of this tariff shall be governed as per the following provisions:-
- (i) in cases where the joint petition for approval of PPA is submitted to the Commission on or after 01.04.2022, but not later than 31.03.2023, this

tariff shall be applicable for such capacity(ies) as are commissioned on or before 31.03.2024.

(ii) in other cases, not covered in item (i) above, this tariff shall be applicable for such capacity(ies) for which the generic levelled tariff for 2022-23 is applicable in accordance with the provisions of the PPAs read with the applicable Tariff Order(s) of previous years. For this purpose, the tariff determined in this order and duly adjusted as per the provisions of this order, shall be considered and the generic levelled tariff for FY 2022-23.

G. This tariff shall not be applicable in cases where the distribution licensee procures power through Solar Energy Corporation of India or through competitive bidding at its level in accordance with Section 63 of the Electricity Act, 2003.

H. This tariff shall not be applicable in case of the Solar PV projects which are installed by the consumers within their premises (rooftop or ground mounted) under net metering scheme.

14. The detailed computations for generic levelled tariff for FY 2022-23 for the categories of Solar PV power projects, without considering any subsidies/incentives/grants as well as illustrations thereof are attached as per Appendix – “I & II” and “III & IV”.

Sd/-
(Yashwant Singh Chogal)
Member (Law)

Sd/-
(Bhanu Pratap Singh)
Member

Sd/-
(Devendra Kumar Sharma)
Chairman

Place: Shimla.

Dated: 28th March, 2022.

Annexure-“A”

List of the stakeholders/participants who attended the public hearing on 22nd March, 2022.

Sr. No.	Name
1	Er. Manoj Kumar (SE), Directorate of Energy
2	Shri Shanti Swaroop, Directorate of Energy
3	Er. Virender Kumar, Assistant Executive Engineer, Directorate of Energy
4	Er. Vinod Kumar Bhatti, Sr. Executive Engineer, HPSEBL
5	Er. Ashish Dhiman, Assistant Engineer, HPSEBL
7	Shri. Kamlesh Saklani, Law Officer, HPSEBL.
8	Shri Inderdeep Singh Khurana, M/s Sunomatic Power Pvt. Ltd.

Assumption Parameters for Solar PV Power Projects upto 1 MW
(for project(s) to be setup in area other than Industrial areas and Urban areas)

Sr. No	Assumption Head	Sub Head	Sub Head(2)	Unit	Value
1	Power Generation	Capacity	Installed Generation Capacity	KW	1000
			Capacity Utilisation Factor	%	21
			Transmission losses, Auxillary Consumption including Transformation Losses	%	1.45
			Useful Life	Years	25
2	Project Cost	Capital Cost /MW	Project Cost	Lakh Rs./MW	432.31
3	Project Financing	Debt Equity	Tariff Period	Year	25
			Debt	%	70
		Debt Component	Equity	%	30
			Loan Amount	Lakh Rs./MW	302.617
			Moratorium Period	Year	0
			Repayment Period	Year	15
		Equity Component	Interst Rate	%	9.00
			Equity Amount	Lakh Rs./MW	129.693
			Return of equity for first 20 Years	%	16.96
			Return of equity from 21st Years onwards	%	19.75
4	Subsidy	Subsidy			0
5	Depreciation	Depreciation	Recovery of Depreciation	%	90
			Annual Rate of Depreciation till completion of Loan Repayment (balance spread in remaining years)	%	4.67
			16th year Onward	%	1.995
6	Operation & Maintenance		Total O&M Expenses	Lakh Rs./MW	9.43
			Annual Escalation	%	3.84
7	Working Capital		O&M Charges	Month	1
			Maintenance Spares	% of O&M expenses of a Year	15
			Recievables	Months	1.5
			Interest on Working capital	%	10.50
8	Discount Factor		Discount Rate	%	8.67

Determination of Tariff for Solar PV Power Projects up to 1 MW

Sheet of Appendix I

Unit Generation	unit	year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Installed Capacity	KW		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Gross generation	MU		1.840	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Losses	MU		1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Net Generation	MU		1.813	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
Fixed Cost		year																									
O&M Expences	Rs. lakh		9.43	9.792	10.17	10.56	10.96	11.39	11.82	12.28	12.75	13.24	13.75	14.27	14.82	15.39	15.98	16.60	17.23	17.89	18.58	19.29	20.04	20.81	21.60	22.43	23.30
Depriciation	Rs. lakh		20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	20.19	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62	8.62
Interest on Term Loan	Rs. lakh		26.33	24.51	22.70	20.88	19.06	17.25	15.43	13.62	11.80	9.99	8.17	6.35	4.54	2.72	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. lakh		1.27	1.26	1.25	1.24	1.23	1.22	1.22	1.21	1.20	1.20	1.19	1.19	1.19	1.18	1.18	1.04	1.06	1.09	1.12	1.14	1.22	1.25	1.28	1.31	1.34
Return on Equity	Rs. lakh		22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	25.61	25.61	25.61	25.61	25.61
Total fixed Cost	Rs. lakh		79.21	77.75	76.30	74.87	73.45	72.04	70.66	69.29	67.94	66.61	65.29	64.00	62.73	61.48	60.26	48.26	48.92	49.60	50.32	51.06	55.49	56.29	57.12	57.98	58.88
Levellised CoG																											
Per unit CoG	Unit	levellised																									
O&M Expences	Rs/kWh	0.72	0.52	0.54	0.56	0.58	0.60	0.63	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.11	1.15	1.19	1.24	1.28
Depriciation	Rs/kWh	1.00	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Interest on Term Loan	Rs/kWh	0.74	1.45	1.35	1.25	1.15	1.05	0.95	0.85	0.75	0.65	0.55	0.45	0.35	0.25	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs/kWh	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07
Return on Equity	Rs/kWh	1.23	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.41	1.41	1.41	1.41	1.41	1.41
Total CoG	Rs/kWh	3.75	4.37	4.2886	4.21	4.13	4.05	3.97	3.90	3.82	3.75	3.67	3.60	3.53	3.46	3.39	3.32	2.66	2.70	2.74	2.78	2.82	3.06	3.11	3.15	3.20	3.25
Discounted factor	%		1	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.44	0.40	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.21	0.19	0.17	0.16	0.15	0.14
Levellised Tariff	Rs/kWh	3.75	4.37	3.9464	3.56	3.22	2.91	2.62	2.37	2.14	1.93	1.74	1.57	1.41	1.28	1.15	1.04	0.76	0.71	0.67	0.62	0.58	0.58	0.54	0.51	0.47	0.44

Generic Levellised Tariff (without Subsidy) at Capital Cost of Rs 432.31 Lakh/MW = Rs. 3.75/kWh
Indicative Generic Levellised Tariff by considering Subsidy/Incentive/Grant of Rs 10 Lakh/MW = Rs. 3.68/kWh
Adjustment to be made per 10 Lakh of Subsidy/Incentive/Grant per MW= Rs. 0.07/kWh
Adjustment to be made per 1% change in the composite tax rate as per Para 12.11 of the Order = 0.52 paise/kWh

Assumption Parameters for Solar PV Power Projects above 1 MW upto 5 MW
(for project(s) to be setup in area other than Industrial areas and Urban areas)

Sr. No	Assumption Head	Sub Head	Sub Head(2)	Unit	Value
1	Power Generation	Capacity	Installed Generation Capacity	KW	1000
			Capacity Utilisation Factor	%	21
			Transmission losses, Auxillary Consumption including Transformation Losses	%	1.45
			Useful Life	Years	25
2	Project Cost	Capital Cost /MW	Project Cost	Lakh Rs./MW	425.93
3	Project Financing	Debt Equity	Tariff Period	Year	25
			Debt	%	70
		Debt Component	Equity	%	30
			Loan Amount	Lakh Rs./MW	298.151
			Moratorium Period	Year	0
			Repayment Period	Year	15
		Equity Component	Interst Rate	%	9.00
			Equity Amount	Lakh Rs./MW	127.779
			Return of equity for first 20 Years	%	16.96
			Return of equity from 21st Years onwards	%	19.75
4	Subsidy	Subsidy			0
5	Depreciation	Depreciation	Recovery of Depreciation	%	90
			Annual Rate of Depreciation till completion of Loan Repayment (balance spread in remaining years)	%	4.67
			16th year Onward	%	1.995
6	Operation & Maintenance		Total O&M Expenses	Lakh Rs./MW	9.43
			Annual Escalation	%	3.84
7	Working Capital		O&M Charges	Month	1
			Maintenance Spares	% of O&M expenses of a Year	15
			Recievables	Months	1.5
			Interest on Working capital	%	10.50
8	Discount Factor		Discount Rate	%	8.67

Determination of Tariff for Solar PV Power Projects above 1 MW upto 5 MW

Unit Generation	unit	year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Installed Capacity	KW		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Gross generation	MU		1.840	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
Losses	MU		1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	
Net Generation	MU		1.813	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	
Fixed Cost		year																											
O&M Expences	Rs. lakh		9.43	9.792	10.17	10.56	10.96	11.39	11.82	12.28	12.75	13.24	13.75	14.27	14.82	15.39	15.98	16.60	17.23	17.89	18.58	19.29	20.04	20.81	21.60	22.43	23.30		
Depriciation	Rs. lakh		19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	19.89	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	
Interest on Term Loan	Rs. lakh		25.94	24.15	22.36	20.57	18.78	16.99	15.21	13.42	11.63	9.84	8.05	6.26	4.47	2.68	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. lakh		1.26	1.25	1.24	1.23	1.22	1.21	1.21	1.20	1.19	1.19	1.18	1.18	1.18	1.18	1.17	1.03	1.06	1.08	1.11	1.14	1.21	1.24	1.27	1.30	1.34		
Return on Equity	Rs. lakh		21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	21.67	25.24	25.24	25.24	25.24	25.24		
Total fixed Cost	Rs. lakh		78.19	76.75	75.33	73.92	72.53	71.15	69.80	68.45	67.13	65.83	64.54	63.28	62.03	60.81	59.61	47.80	48.46	49.15	49.86	50.60	54.98	55.78	56.61	57.47	58.37		
Levellised CoG																													
Per unit CoG	Unit	levellised																											
O&M Expences	Rs/kWh	0.72	0.52	0.54	0.56	0.58	0.60	0.63	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.11	1.15	1.19	1.24	1.28		
Depriciation	Rs/kWh	0.98	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47		
Interest on Term Loan	Rs/kWh	0.72	1.43	1.33	1.23	1.13	1.04	0.94	0.84	0.74	0.64	0.54	0.44	0.35	0.25	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Interest on Working Capital	Rs/kWh	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07		
Return on Equity	Rs/kWh	1.21	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.39	1.39	1.39	1.39	1.39		
Total CoG	Rs/kWh	3.71	4.31	4.2336	4.16	4.08	4.00	3.92	3.85	3.78	3.70	3.63	3.56	3.49	3.42	3.35	3.29	2.64	2.67	2.71	2.75	2.79	3.03	3.08	3.12	3.17	3.22		
Discounted factor	%		1	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.44	0.40	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.21	0.19	0.17	0.16	0.15	0.14		
Levellised Tariff	Rs/kWh	3.71	4.31	3.8958	3.52	3.18	2.87	2.59	2.34	2.11	1.90	1.72	1.55	1.40	1.26	1.14	1.03	0.76	0.71	0.66	0.62	0.58	0.57	0.54	0.50	0.47	0.44		

Generic Levellised Tariff (without Subsidy) at Capital Cost of Rs 425.93 Lakh/MW = Rs. 3.71 /kWh
 Indicative Generic Levellised Tariff by considering Subsidy/Incentive/Grant of Rs 10 Lakh/MW = Rs. 3.64 /kWh
 Adjustment to be made per 10 Lakh of Subsidy/Incentive/Grant per MW= Rs. 0.07/kWh
 Adjustment to be made per 1% change in the composite tax rate as per Para 12.11 of the Order = 0.52 paise/kWh

Assumption Parameters for Solar PV Power Projects upto 1 MW
(for project(s) to be setup in Industrial areas and Urban areas)

Sr. No	Assumption Head	Sub Head	Sub Head(2)	Unit	Value
1	Power Generation	Capacity	Installed Generation Capacity	KW	1000
			Capacity Utilisation Factor	%	21
			Transmission losses, Auxillary	%	1.45
			Consumption including Transformation Losses		
			Useful Life	Years	25
2	Project Cost	Capital Cost /MW	Project Cost	Lakh Rs./MW	442.46
3	Project Financing	Debt Equity	Tariff Period	Year	25
			Debt	%	70
		Debt Component	Equity	%	30
			Loan Amount	Lakh Rs./MW	309.722
			Moratorium Period	Year	0
			Repayment Period	Year	15
		Equity Component	Interst Rate	%	9.00
			Equity Amount	Lakh Rs./MW	132.738
			Return of equity for first 20 Years	%	16.96
			Return of equity from 21st Years onwards	%	19.75
4	Subsidy	Subsidy			0
5	Depreciation	Depreciation	Recovery of Depreciation	%	90
			Annual Rate of Depreciation till completion of Loan Repayment (balance spread in remaining years)	%	4.67
			16th year Onward	%	1.995
6	Operation & Maintenance		Total O&M Expenses	Lakh Rs./MW	9.43
			Annual Escalation	%	3.84
7	Working Capital		O&M Charges	Month	1
			Maintenance Spares	% of O&M expenses of a Year	15
			Recievables	Months	1.5
			Interest on Working capital	%	10.50
8	Discount Factor		Discount Rate	%	8.67

Determination of Tariff for Solar PV Power Projects up to 1 MW

Sheet of Appendix III

Unit Generation	unit	year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Installed Capacity	KW		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Gross generation	MU		1.840	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Losses	MU		1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Net Generation	MU		1.813	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
Fixed Cost		year																									
O&M Expences	Rs. lakh		9.43	9.792	10.17	10.56	10.96	11.39	11.82	12.28	12.75	13.24	13.75	14.27	14.82	15.39	15.98	16.60	17.23	17.89	18.58	19.29	20.04	20.81	21.60	22.43	23.30
Depriciation	Rs. lakh		20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	20.66	8.83	8.83	8.83	8.83	8.83	8.83	8.83	8.83	8.83	8.83
Interest on Term Loan	Rs. lakh		26.95	25.09	23.23	21.37	19.51	17.65	15.80	13.94	12.08	10.22	8.36	6.50	4.65	2.79	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. lakh		1.29	1.28	1.27	1.26	1.25	1.24	1.24	1.23	1.22	1.21	1.21	1.20	1.20	1.20	1.20	1.05	1.07	1.10	1.13	1.15	1.23	1.26	1.29	1.32	1.35
Return on Equity	Rs. lakh		22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	22.51	26.22	26.22	26.22	26.22	26.22
Total fixed Cost	Rs. lakh		80.84	79.34	77.84	76.37	74.90	73.46	72.03	70.62	69.22	67.85	66.49	65.16	63.84	62.55	61.28	48.98	49.65	50.33	51.05	51.79	56.31	57.11	57.94	58.80	59.69
Levellised CoG																											
Per unit CoG	Unit	levellised																									
O&M Expences	Rs/kWh	0.72	0.52	0.54	0.56	0.58	0.60	0.63	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.11	1.15	1.19	1.24	1.28
Depriciation	Rs/kWh	1.02	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Interest on Term Loan	Rs/kWh	0.75	1.49	1.38	1.28	1.18	1.08	0.97	0.87	0.77	0.67	0.56	0.46	0.36	0.26	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs/kWh	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07
Return on Equity	Rs/kWh	1.26	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.45	1.45	1.45	1.45	1.45
Total CoG	Rs/kWh	3.82	4.46	4.3761	4.29	4.21	4.13	4.05	3.97	3.90	3.82	3.74	3.67	3.59	3.52	3.45	3.38	2.70	2.74	2.78	2.82	2.86	3.11	3.15	3.20	3.24	3.29
Discounted factor	%	1	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.44	0.40	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.21	0.19	0.17	0.16	0.15	0.14	
Levellised Tariff	Rs/kWh	3.82	4.46	4.0270	3.64	3.28	2.96	2.67	2.41	2.18	1.96	1.77	1.60	1.44	1.30	1.17	1.06	0.78	0.72	0.68	0.63	0.59	0.59	0.55	0.51	0.48	0.45

Generic Levellised Tariff (without Subsidy) at Capital Cost of Rs 442.46 Lakh/MW = Rs. 3.82 /kWh
Indicative Generic Levellised Tariff by considering Subsidy/Incentive/Grant of Rs 10 Lakh/MW = Rs. 3.75 /kWh
Adjustment to be made per 10 Lakh of Subsidy/Incentive/Grant per MW= Rs. 0.07/kWh
Adjustment to be made per 1% change in the composite tax rate as per Para 12.11 of the Order = 0.52 paise/kWh

Assumption Parameters for Solar PV Power Projects above 1 MW upto 5 MW
(for project(s) to be setup in Industrial areas and Urban areas)

Sr. No	Assumption Head	Sub Head	Sub Head(2)	Unit	Value
1	Power Generation	Capacity	Installed Generation Capacity	KW	1000
			Capacity Utilisation Factor	%	21
			Transmission losses, Auxillary Consumption including Transformation Losses	%	1.45
			Useful Life	Years	25
2	Project Cost	Capital Cost /MW	Project Cost	Lakh Rs./MW	435.93
3	Project Financing	Debt Equity	Tariff Period	Year	25
			Debt	%	70
		Debt Component	Equity	%	30
			Loan Amount	Lakh Rs./MW	305.151
			Moratorium Period	Year	0
			Repayment Period	Year	15
		Equity Component	Interst Rate	%	9.00
			Equity Amount	Lakh Rs./MW	130.779
			Return of equity for first 20 Years	%	16.96
			Return of equity from 21st Years onwards	%	19.75
4	Subsidy	Subsidy			0
5	Depreciation	Depreciation	Recovery of Depreciation	%	90
			Annual Rate of Depreciation till completion of Loan Repayment (balance spread in remaining years)	%	4.67
			16th year Onward	%	1.995
6	Operation & Maintenance		Total O&M Expenses	Lakh Rs./MW	9.43
			Annual Escalation	%	3.84
7	Working Capital		O&M Charges	Month	1
			Maintenance Spares	% of O&M expenses of a Year	15
			Recievables	Months	1.5
			Interest on Working capital	%	10.50
8	Discount Factor		Discount Rate	%	8.67

Determination of Tariff for Solar PV Power Projects above 1 MW upto 5 MW

Unit Generation	unit	year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Installed Capacity	KW		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Gross generation	MU		1.840	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
Losses	MU		1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	
Net Generation	MU		1.813	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	
Fixed Cost		year																										
O&M Expences	Rs. lakh		9.43	9.792	10.17	10.56	10.96	11.39	11.82	12.28	12.75	13.24	13.75	14.27	14.82	15.39	15.98	16.60	17.23	17.89	18.58	19.29	20.04	20.81	21.60	22.43	23.30	
Depriciation	Rs. lakh		20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	20.36	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70
Interest on Term Loan	Rs. lakh		26.55	24.72	22.89	21.06	19.22	17.39	15.56	13.73	11.90	10.07	8.24	6.41	4.58	2.75	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. lakh		1.28	1.27	1.26	1.25	1.24	1.23	1.22	1.22	1.21	1.20	1.20	1.20	1.19	1.19	1.19	1.04	1.07	1.09	1.12	1.15	1.22	1.25	1.28	1.31	1.35	
Return on Equity	Rs. lakh		22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	25.83	25.83	25.83	25.83	25.83	
Total fixed Cost	Rs. lakh		79.79	78.32	76.85	75.40	73.97	72.55	71.15	69.76	68.40	67.05	65.72	64.41	63.13	61.86	60.62	48.52	49.18	49.86	50.58	51.32	55.78	56.58	57.41	58.27	59.17	
Levellised CoG																												
Per unit CoG	Unit	levellised																										
O&M Expences	Rs/kWh	0.72	0.52	0.54	0.56	0.58	0.60	0.63	0.65	0.68	0.70	0.73	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.11	1.15	1.19	1.24	1.28	
Depriciation	Rs/kWh	1.00	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
Interest on Term Loan	Rs/kWh	0.74	1.46	1.36	1.26	1.16	1.06	0.96	0.86	0.76	0.66	0.56	0.45	0.35	0.25	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on Working Capital	Rs/kWh	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	
Return on Equity	Rs/kWh	1.24	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.42	1.42	1.42	1.42	1.42	
Total CoG	Rs/kWh	3.78	4.40	4.3198	4.24	4.16	4.08	4.00	3.92	3.85	3.77	3.70	3.63	3.55	3.48	3.41	3.34	2.68	2.71	2.75	2.79	2.83	3.08	3.12	3.17	3.21	3.26	
Discounted factor	%		1	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.44	0.40	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.21	0.19	0.17	0.16	0.15	0.14	
Levellised Tariff	Rs/kWh	3.78	4.40	3.9752	3.59	3.24	2.93	2.64	2.38	2.15	1.94	1.75	1.58	1.42	1.28	1.16	1.04	0.77	0.72	0.67	0.62	0.58	0.58	0.54	0.51	0.47	0.44	

Generic Levellised Tariff (without Subsidy) at Capital Cost of Rs 435.93 Lakh/MW = Rs. 3.78 /kWh
 Indicative Generic Levellised Tariff by considering Subsidy/Incentive/Grant of Rs 10 Lakh/MW = Rs. 3.71 /kWh
 Adjustment to be made per 10 Lakh of Subsidy/Incentive/Grant per MW= Rs. 0.07/kWh
 Adjustment to be made per 1% change in the composite tax rate as per Para 12.11 of the Order = 0.52 paise/kWh