

Annexure 5
Solar PV Power Projects

Assumptions

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Amount
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	19%
			Auxiliary consumption	%	0.00%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost - FY 2015-16	Rs Lacs	606
			Capital subsidy (if any)	Rs Lacs	0
			Net capital cost	Rs Lacs	606
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	25
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	424.095
			Total Equity Amount	Rs Lacs	181.755
		<u>Debt Component</u>	Loan Amount	Rs Lacs	424
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	12
			Interest Rate	%	13.25%
		<u>Equity Component</u>	Equity amount	Rs Lacs	182
			Return on Equity for first 10 years	% p.a	18.0%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	22.0%
			Weighted average of ROE	%	20.4%
Discount Rate (Equiv. to WACC)	%		10.92%		
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	20.01%
			80 IA benefits	Yes/No	Yes
		<u>Depreciation</u>	Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate	Years	12
			Salvage value	%	10%
5	Working Capital	O&M Charges Maintenance Spare Receivables for Debtors on energy charges Interest On Working Capital	(% of O&M exepenses)	Months	1
				%	15%
				Months	2
				%	13.75%
6	Operation & Maintenance	Base Year - FY 2013-14 FY 2015-16 <u>Total O & M Expenses Escalation</u>		Rs Lakh	11.00
					12.29
				%	5.72%
7	Incentives (if any)	GBI Period for GBI		Rs Lakh p.a.	0.00
				Years	0.00

Determination of Tariff Component

Units 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	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross/Net Generation	MU		1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66

Tariff Components (Fixed Charge)	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
O&M Expenses	Rs Lakh		12.29	13.00	13.74	14.53	15.36	16.24	17.17	18.15	19.19	20.28	21.44	22.67	23.97	25.34	26.79	28.32	29.94	31.65	33.46	35.37	37.40	39.54	41.80	44.19	46.72
Depreciation	Rs Lakh		35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34	35.34
Interest on term loan	Rs Lakh		53.85	49.17	44.49	39.80	35.12	30.44	25.75	21.07	16.39	11.71	7.02	2.34	0.00	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		3.55	3.48	3.41	3.35	3.28	3.22	3.17	3.11	3.06	3.01	3.14	3.10	2.51	2.58	2.66	2.75	2.84	2.94	3.04	3.15	3.26	3.38	3.51	3.64	3.79
Return on Equity	Rs Lakh		32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	32.72	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.99
Total Fixed Cost	Rs Lakh		137.75	133.70	129.70	125.73	121.82	117.96	114.14	110.39	106.69	103.06	106.93	103.44	75.78	77.23	78.76	80.38	82.09	83.90	85.81	87.83	89.97	92.23	94.62	97.14	99.81

Levillised tariff corresponding to Useful life

Per Unit Cost of 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
O&M expn	Rs/kWh		0.74	0.78	0.83	0.87	0.92	0.98	1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.52	1.61	1.70	1.80	1.90	2.01	2.13	2.25	2.38	2.51	2.65	2.81
Depreciation	Rs/kWh		2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Int. on term loan	Rs/kWh		3.24	2.95	2.67	2.39	2.11	1.83	1.55	1.27	0.98	0.70	0.42	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		0.21	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.19	0.19	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.22	0.23
RoE	Rs/kWh		1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Total COG per unit	Rs/kWh		8.28	8.03	7.79	7.55	7.32	7.09	6.86	6.63	6.41	6.19	6.42	6.21	4.55	4.64	4.73	4.83	4.93	5.04	5.16	5.28	5.41	5.54	5.68	5.84	6.00

Discount Factor			1.000	0.902	0.813	0.733	0.661	0.596	0.537	0.484	0.436	0.393	0.355	0.320	0.288	0.260	0.234	0.211	0.190	0.172	0.155	0.140	0.126	0.113	0.102	0.092	0.083
Levillised Tariff	6.79	Rs/Unit																									

Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	33.99%
Capital Cost	691

Years ----->	Unit	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
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	15.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	31.99	17.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation

Opening	%	100%	50%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	50.00%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	302.93	272.63	24.23	4.85	0.97	0.19	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	286.93	240.64	-7.75	-27.14	-31.02	-31.80	-31.95	-31.98	-31.99	-31.99	-31.99	-31.99	-31.99	-31.99	-31.99	-31.99	-31.99	-17.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	97.53	81.79	-2.64	-9.23	-10.54	-10.81	-10.86	-10.87	-10.87	-10.87	-10.87	-10.87	-10.87	-10.87	-10.87	-10.87	-10.87	-5.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	0.83	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
Per unit benefit	Rs/Unit	11.72	4.91	-0.16	-0.55	-0.63	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.65	-0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.000	0.902	0.813	0.733	0.661	0.596	0.537	0.484	0.436	0.393	0.355	0.320	0.288	0.260	0.234	0.211	0.190	0.172	0.155	0.140	0.126	0.113	0.102	0.092	0.083

Tax Benefit Levellised 11.46 Rs Lakh

Electricity Generation (Levellised) 1.58 MU

Levellised benefit	0.73	Rs/Unit
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