

## Solar Statistics; Phase I- Batch I & II

MNRE has come out with statistics on solar power plants commissioned under Phase I-Batch I & II.

**TOTAL GRID CONNECTED SOLAR POWER PROJECTS INSTALLED CAPACITY UNDER VARIOUS SCHEMES TILL DATE (18.05.2015) IS AS UNDER**

MNRE Projects in MW	State Schemes in MW	REC in MW	CPSUs in MW	Total
1243.00	1932.50	582.62	119.51	3877.63
32.06%	49.84%	15.03%	3.08%	

**TOTAL GRID CONNECTED SOLAR POWER PROJECTS STATE WISE INSTALLED CAPACITY UNDER VARIOUS SCHEMES TILL DATE (18.05.2015) IS AS UNDER:**

Sr. No.	State/UT	Total MNRE Projects in MW	State Policy in MW	REC Scheme in MW	CPSUs in MW	Total Commissioned capacity till 18.05.2015 (MW)	% w.r.t total installation
1	Andhra Pradesh	94.75	105.01	37.70	10.00	247.46	6.38%
2	Arunachal Pradesh	0.03	0.00	0.00	0.00	0.03	0.00%
3	Chhattisgarh	4.00	0.50	3.10	0.00	7.60	0.20%
4	Gujarat	20.00	974.05	6.00	0.00	1000.05	25.79%
5	Haryana	7.80	0.00	0.00	5.00	12.80	0.33%
6	Jharkhand	16.00	0.00	0.00	0.00	16.00	0.41%
7	Karnataka	5.00	64.22	0.00	9.00	78.22	2.02%
8	Kerala	0.03	0.00	0.00	0.00	0.03	0.00%
9	Madhya Pradesh	185.25	232.55	80.78	65.00	563.58	14.53%
10	Maharashtra	57.00	184.43	121.32	0.00	362.75	9.35%
11	Odisha	12.00	5.42	4.50	10.00	31.92	0.82%
12	Punjab	10.50	176.25	7.52	0.00	194.27	5.01%
13	Rajasthan	789.10	65.00	193.00	0.00	1047.10	27.00%
14	Tamil Nadu	16.00	33.82	98.16	0.00	147.98	3.82%
15	Telangana	0.00	39.35	23.40	0.00	62.75	1.62%
16	Tripura	0.00	0.00	5.00	0.00	5.00	0.13%
17	Uttar Pradesh	12.00	43.75	0.00	15.51	71.26	1.84%
18	Uttarakhand	5.00	0.00	0.00	0.00	5.00	0.13%
19	West Bengal	2.05	5.16	0.00	0.00	7.21	0.19%
20	Andaman & Nicobar	0.10	0.00	0.00	5.00	5.10	0.13%
21	Delhi	0.34	2.99	2.14	0.00	5.47	0.14%
22	Lakshadweep	0.75	0.00	0.00	0.00	0.75	0.02%
23	Puducherry	0.03	0.00	0.00	0.00	0.03	0.00%
24	Chandigarh	4.50	0.00	0.00	0.00	4.50	0.12%
25	Others	0.79	0.00	0.00	0.00	0.79	0.02%
<b>TOTAL</b>		<b>1243.00</b>	<b>1932.50</b>	<b>582.62</b>	<b>119.51</b>	<b>3877.63</b>	

Highlighted cells are analysis done by Energetica India.

## MONTH WISE AVERAGE NET EXPORTED SOLAR POWER (KWH/MW) AND CUF (%) FOR PHASE-I

Sr.No	Month (Jan 2014- Dec 2014)	Average Net Exported Solar Power, kWh/MW		CUF (%)	
		Phase-I, Batch-I	Phase-I, Batch-II	Phase-I, Batch-I	Phase-I, Batch-II
1	January	87095	11.71	133579	17.95
2	February	97007	14.44	138929	20.67
3	March	122674	16.49	167663	22.54
4	April	125562	17.44	170424	23.67
5	May	158218	21.27	168351	22.63
6	June	117373	16.30	163306	22.68
7	July	95749	12.87	148093	19.90
8	August	103912	13.97	152380	20.48
9	September	113361	15.74	154815	21.50
10	October	108104	14.53	154058	20.71
11	November	88797	12.33	143274	19.90
12	December	86048	11.57	137534	18.49
<b>Average</b>		<b>108658</b>	<b>14.89</b>	<b>152700</b>	<b>20.92</b>
		Highest CUF	21.27		
		Lowest CUF	11.57		
			April	Highest CUF	23.67
			January	Lowest CUF	17.95

Remark:

a) It has been observed that solar power generation under Batch-I have lot of variation from CUF- 11.57 % to 21.27 % and maximum CUF is during month of May 2014. Average CUF is 14.89 % and Average Solar power generation is 108658 KWh/MW. This variation is due to the fact that projects are installed in thirteen States ( State wise analysis is also done and given below)

b) Under Batch-II, there is no such variation of CUF. Minimum CUF is 17.95 % in the month of January. Average CUF is 20.92 % and Average Solar power generation is 152700 KWh/MW. Under Batch II, maximum solar power projects have been installed in the state of Rajasthan and show CUF of more than 20 %.

## STATE WISE AVERAGE NET EXPORTED SOLAR POWER(KWH/MW) AND CUF(%) FOR PHASE-I, BATCH-I& BATCH-II

PHASE-I, BATCH-I

Sr.No	State	Average Net Exported Solar Power, kWh/MW (period Jan 2014- Dec 2014)		Average CUF (%) (period Jan 2014- Dec 2014)		Higher CUF bet Thin Film & Crystalline
		Crystalline Technology	Thin Film Technology	Crystalline Technology	Thin Film Technology	
1	Andhra Pradesh	129903.0	144233.0	17.81	19.78	Thin Film
2	Chhattisgarh	137320.0		18.99		
3	Haryana	101848.0	106745.0	13.99	14.63	Thin Film
4	Jharkhand	110982.0	114033.0	15.22	15.64	Thin Film
5	Karnataka	127914.0		17.59		
6	M.P.	133832.0	109886.0	18.36	15.67	Crystalline
7	Maharashtra	129286.0		17.73		
8	Oisha	100310.0	130779.0	13.77	17.94	Thin Film
9	Punjab	121610.0	116941.0	16.67	16.01	Crystalline
10	Rajasthan	152198.0	129752.0	20.85	17.78	Crystalline
11	Tamilnadu	122968.0	124139.0	16.87	17.01	Thin Film
12	U.P.	127731.0	89512.0	17.49	12.27	Crystalline
13	Uttarakhand	114400.0	113906.0	15.67	15.61	Crystalline
<b>Average</b>		<b>123869.0</b>	<b>117992.6</b>	<b>17.00</b>	<b>16.23</b>	

Remark:

a) Both technologies have been used in Batch I.

b) In MP, Rajasthan and UP, CUF of Crystalline Technology is more than thin film but in A.P., Odisha CUF of thin film is more than Crystalline Technology.

c) Overall CUF of Crystalline Technology is more than thin film technology.

d) Average power generation per MW of all above states with Crystalline Technology is more in comparison to thin film technology.

e) Average % CUF for the stated period of a project with crystalline technology comes to 17.00

f) Average % CUF for the stated period of a project with thin film technology comes to 16.23

g) CUF more than 20 % is in the state of Rajasthan.

## STATE WISE AVERAGE NET EXPORTED SOLAR POWER(KWH/MW) AND CUF(%) FOR PHASE-I, BATCH-I& BATCH-II

PHASE-I, BATCH-II

Sr.No	State	Average Net Exported Solar Power, kWh/MW (period Jan 2014- Dec 2014)		Average CUF (%) (period Jan 2014- Dec 2014)	
		Crystalline Technology	Thin Film Technology	Crystalline Technology	Thin Film Technology
1	Rajasthan	152958.0	158360.0	20.96	21.7
2	Maharashtra		111052.0		15.25
3	A.P.		155414.0		21.31
<b>Average</b>		<b>152958.0</b>	<b>141608.0</b>	<b>20.96</b>	<b>19.42</b>

Remark:

a) Thin film is producing more power per MW in the state of Rajasthan. No other comparison can be made because projects with same technology are not available in other states.

b) In Batch II, Average CUF is 20 % because maximum solar power projects have been installed in the state of Rajasthan

## TECHNOLOGY WISE AVERAGE NET EXPORTED SOLAR POWER(KWH/MW) AND CUF(%) FOR PHASE-I, BATCH-I & BATCH-II

### BATCH I PHASE I

Sr.No	Month	Avg CUF %		Average net exported solar power(Kwh/MW)		
		For Year 2014	Crystalline Technology	Thin Film Technology	Crystalline Technology	Thin Film Technology
1			16.95	14.62	127865.0	110302.0
2			19.19	16.59	131038.0	114035.0
3			21.72	18.7	164415.0	141144.0
4			21.67	18.78	158121.0	137383.0
5			21.77	18.15	162891.0	137102.0
6			21.51	17.67	154686.0	129269.0
7			18.13	14.79	139026.0	111735.0
8			19.08	15.2	143172.0	115038.0
9			18.71	16.43	136356.0	123972.0
10			18.28	16.06	138763.0	121185.0
11			18.64	14.47	135383.0	105755.0
12			16.76	13.98	126150.0	105655.0
<b>Average</b>			<b>19.36</b>	<b>16.28</b>	<b>143155.0</b>	<b>121047.0</b>

Remark:

a) Overall in Phase I, Average power generation per MW with crystalline technology is higher than thin film.

## TECHNOLOGY WISE AVERAGE NET EXPORTED SOLAR POWER(KWH/MW) AND CUF(%) FOR PHASE-I, BATCH-I & BATCH-II

### BATCH II PHASE I

Sr.No	Month	Avg CUF %		Average net exported solar power(Kwh/MW)		
		For Year 2014	Crystalline Technology	Thin Film Technology	Crystalline Technology	Thin Film Technology
1			17.55	18.95	131583.0	142758.0
2			21.56	21.41	145827.0	146255.0
3			23.51	23.23	176018.0	174177.0
4			24.54	24.49	177696.0	178228.0
5			23.38	23.54	175054.0	175930.0
6			23.06	23.61	171400.0	175054.0
7			20.49	20.75	153674.0	155686.0
8			21.36	21.26	159495.0	160182.0
9			22.29	22.37	162353.0	161630.0
10			22.00	21.41	164937.0	160808.0
11			21.25	20.63	153956.0	149055.0
12			20.02	18.99	150064.0	142718.0
<b>Average</b>			<b>21.75</b>	<b>21.72</b>	<b>160171.0</b>	<b>160206.0</b>

Remark:

a) Average power generation per MW with both technologies is nearly same because maximum projects are in Rajasthan

b) In month of January, power generation per MW with thin film is higher than crystalline technology.