



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority



नवीकरणीय ऊर्जा परियोजना प्रबोधन प्रभाग
Renewable Energy Project Monitoring Division



सत्यमेव जयते

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सं: के.वि.प्रा./योजना/आर.पी.एम.-13/3/2020/1399

दिनांक: 06.02.2020

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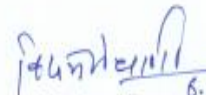
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विषय: नवीकरणीय ऊर्जा उत्पादन रिपोर्ट माह दिसम्बर- 2019 के सम्बंध में।

महोदय,

माह दिसम्बर 2019 की नवीकरणीय ऊर्जा उत्पादन रिपोर्ट (व्यापक अवलोकन सहित) सूचनार्थ संलग्न है।

संलग्नक: यथोपरि।


(विजय मेंघाणी) 6.2.2020

मुख्य अभियंता(आर.पी.एम)

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SUMMARY OF REPORT FOR THE MONTH OF DECEMBER 2019

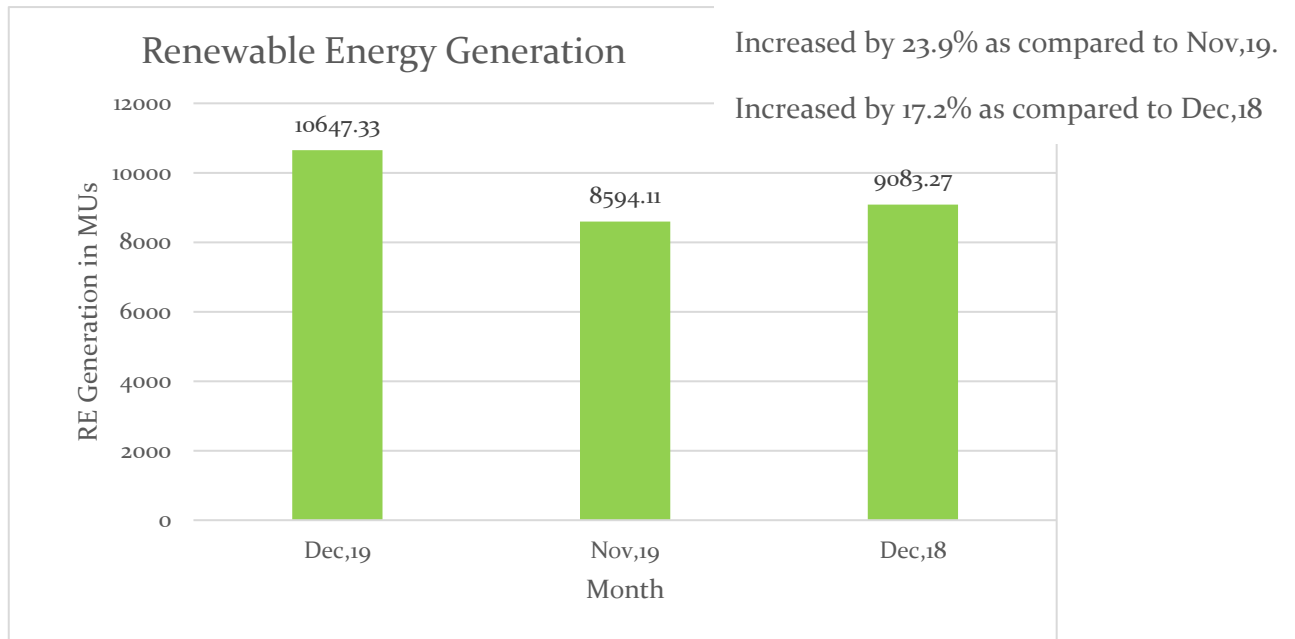


Figure 1 Renewable Energy Generation

Increased by 47.8% as compared to Nov,19.

Increased by 85 % as compared to Dec,18

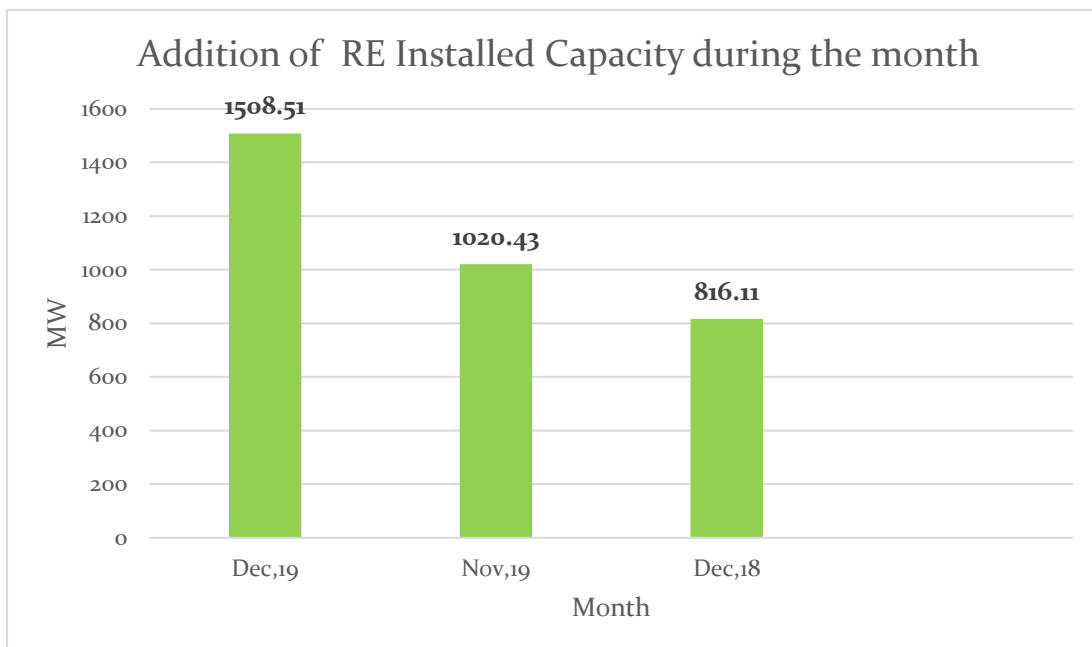


Figure 2 RE capacity added during the Month

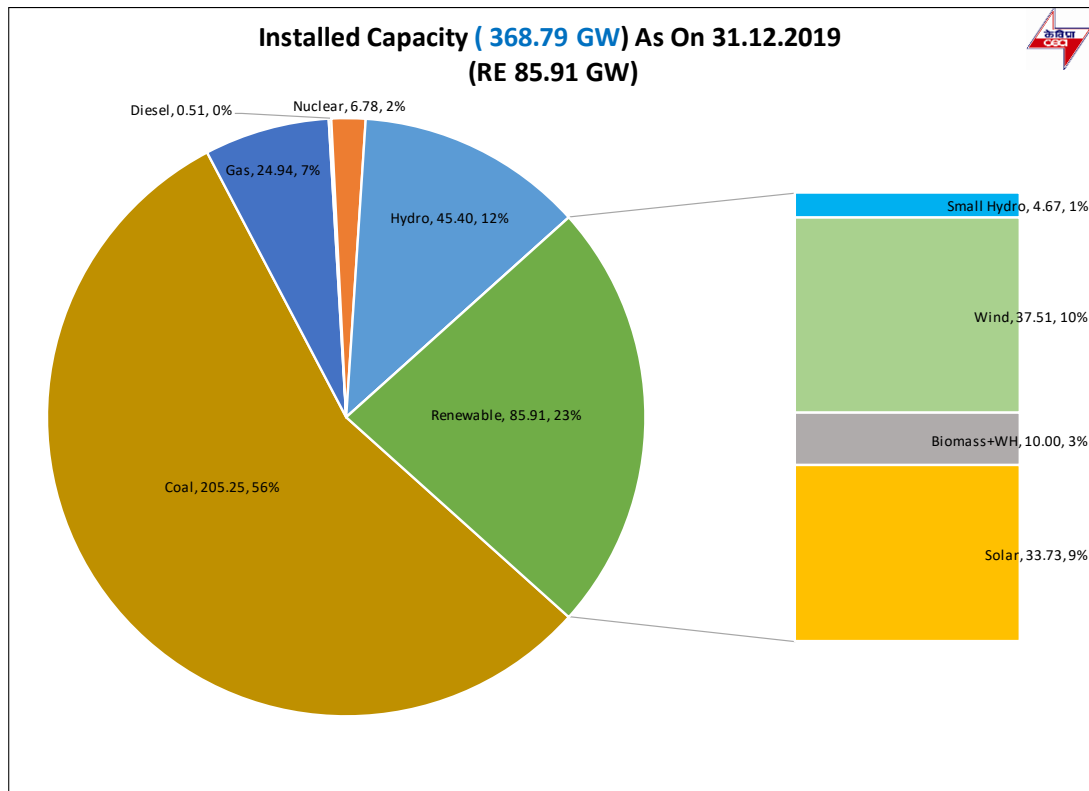


Figure 3 Installed Capacity in India as on 31.12.2019

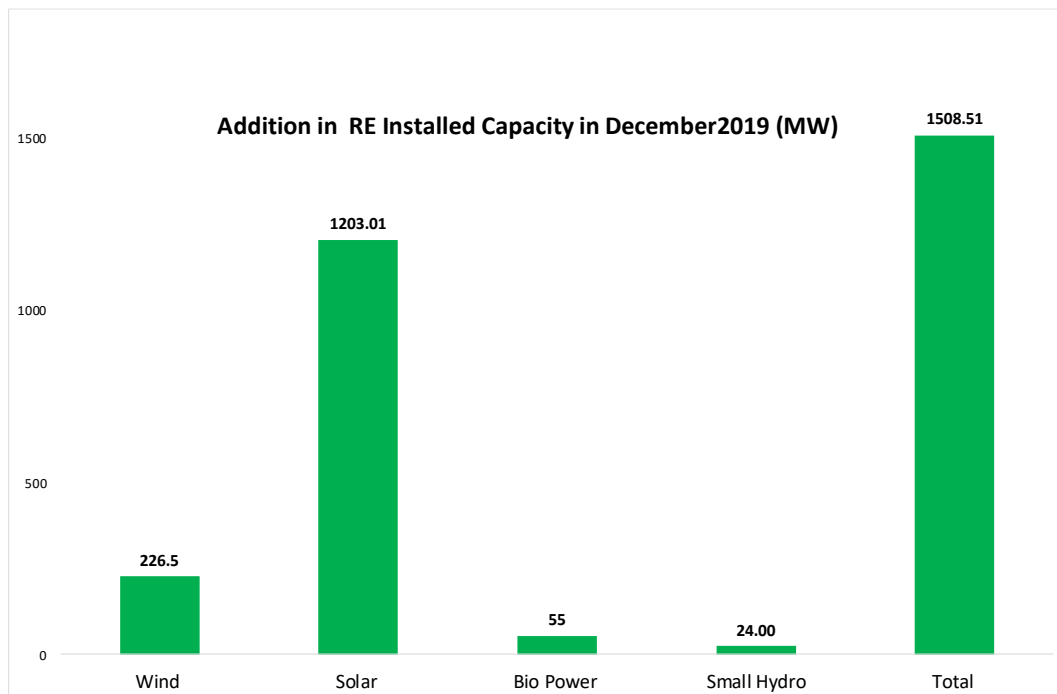


Figure 4: Addition in RE Installed Capacity

HIGHLIGHTS OF RE GENERATION DURING DECEMBER, 2019

1. After few months of single digit growth, RE generation grow by 17.22 in December, 2019 as compare to December, 2018.
2. Wind Power generation during the month of December 2019 increased in Rajasthan, Gujarat, Karnataka and Tamil Nadu and decreased in Andhra Pradesh as compared to December, 2018.
3. Daily wind generation increased by 36.78 % as compared to November, 2019 and increase by 33.57 % as compared to December, 2018.
4. Solar Power generation during the month of December 2019 increased in Rajasthan, Gujarat, Karnataka and Tamil Nadu and decreased in Punjab and Maharashtra as compared to December, 2018.
5. Daily solar generation decreased by 6.8 % as compared to November, 2019 and increased by 19.13 % as compared to December 2018.
6. Generation from Bagasse is not at the past year levels and still lower than December, 2018 in Uttar Pradesh, Maharashtra, Telangana and West Bengal.
7. Dally report of CEA is now capturing 94.76 % of wind and 93% of solar energy.
8. RE to Transport report giving details of energy schedule to Delhi Metro through Delhi Discom is included.

ALL INDIA SUMMARY OF RENEWABLE GENERATION

Category	Dec-19				April 2019-December 2019		
	Installed Capacity (MW)	Actual	Actual Same Month	% Of Last Year (2/3)	ACTUAL	Actual Same Period	% Of Last Year (5/6)
			2018-19			2018-19	
	1	2	3	4	5	6	7
Wind	37505.18	3943.01	2789.24	141.37	54396.21	53124.09	102.39
Solar	33730.56	3932.61	3182.12	123.58	34798.64	27794.92	125.20
Biomass	9861.31	238.09	247.01	96.39	2072.84	2035.81	101.82
Bagasse		1801.17	2311.49	77.92	5778.21	7451.18	77.55
Small Hydro	4671.557	702.83	516.72	136.02	7694.14	7410.48	103.83
Others	139.8	29.61	36.69	80.70	276.31	318.58	86.73
Total	85908.41	10647.33	9083.27	117.22	105016.36	98135.07	107.01

Table 1 All India Summary of Renewable Energy Generation

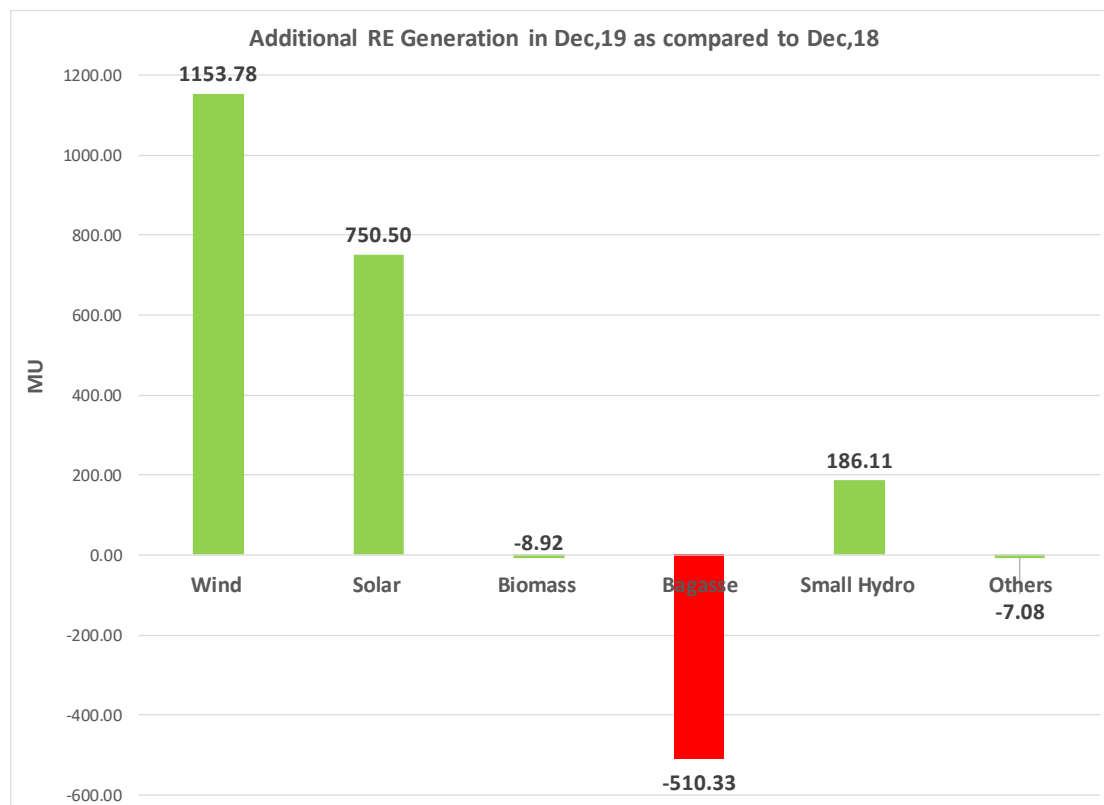


Figure 5 Additional RE Generation during Dec,19

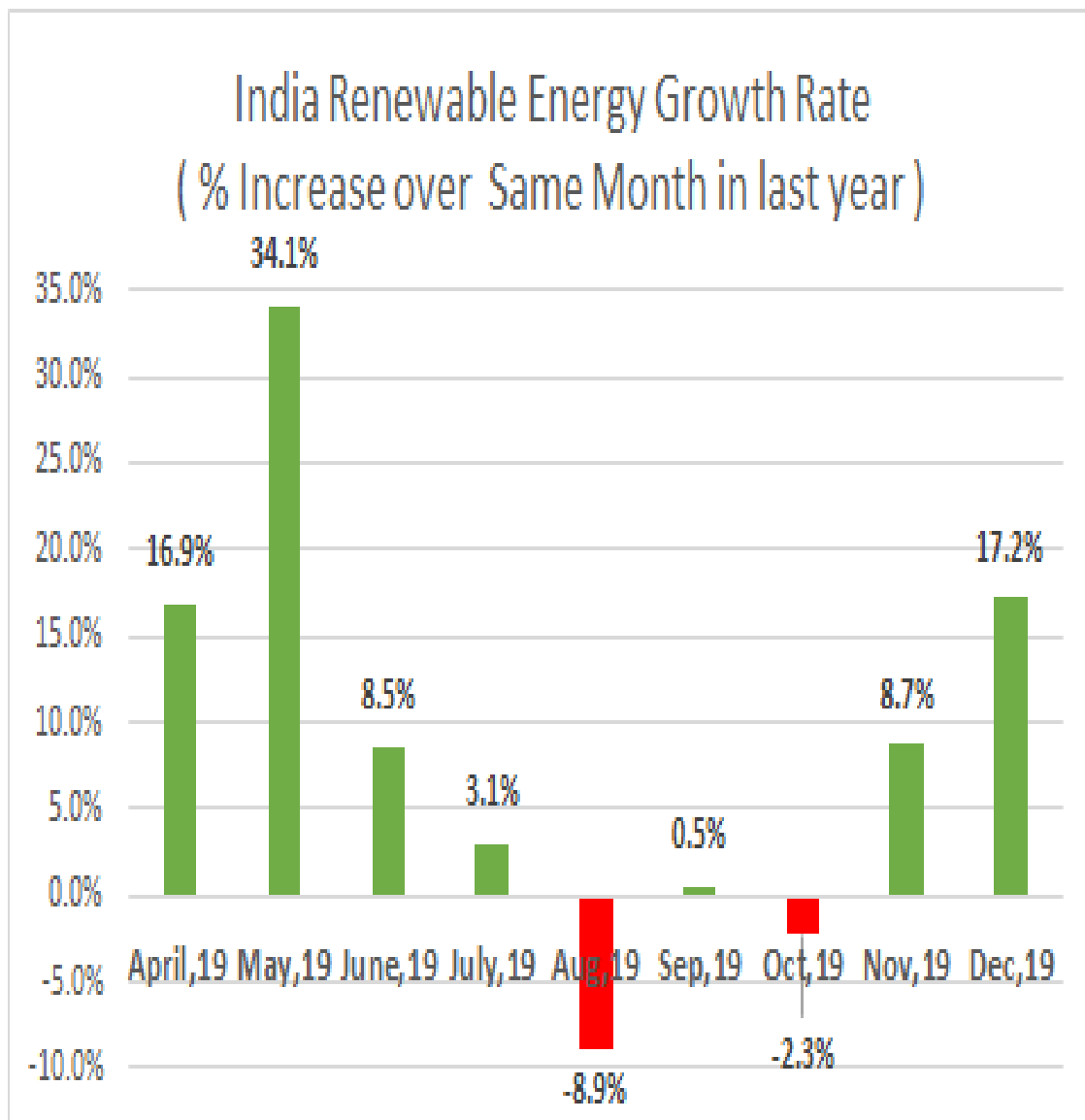


Figure 6 Month Wise Growth of RE Generation

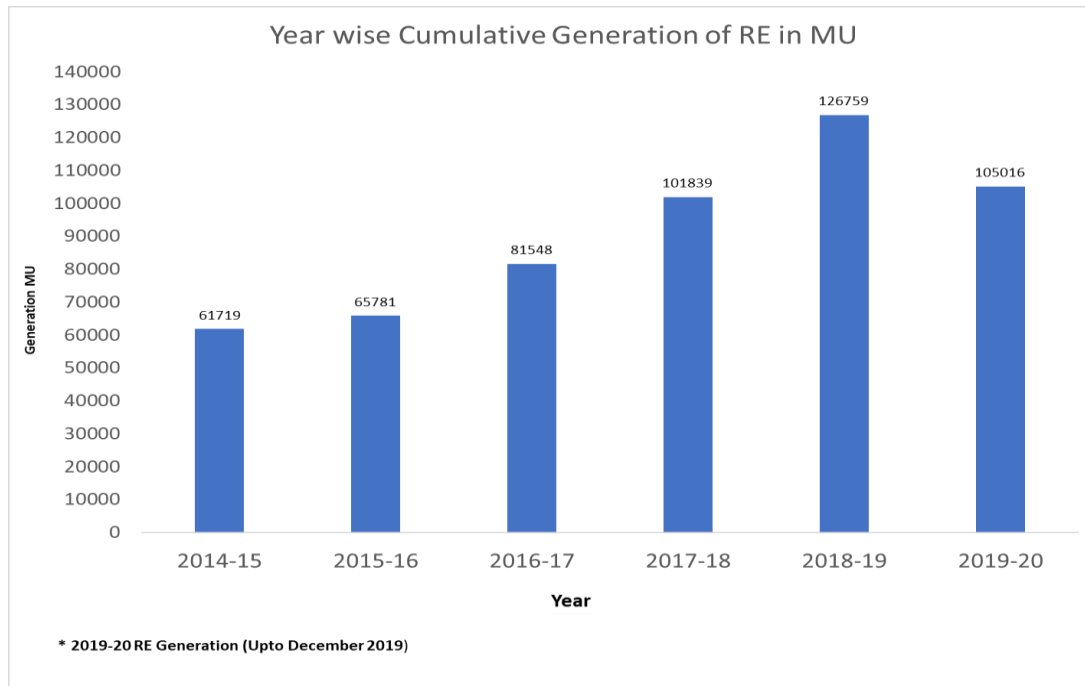


Figure 7 Year Wise RE Generation

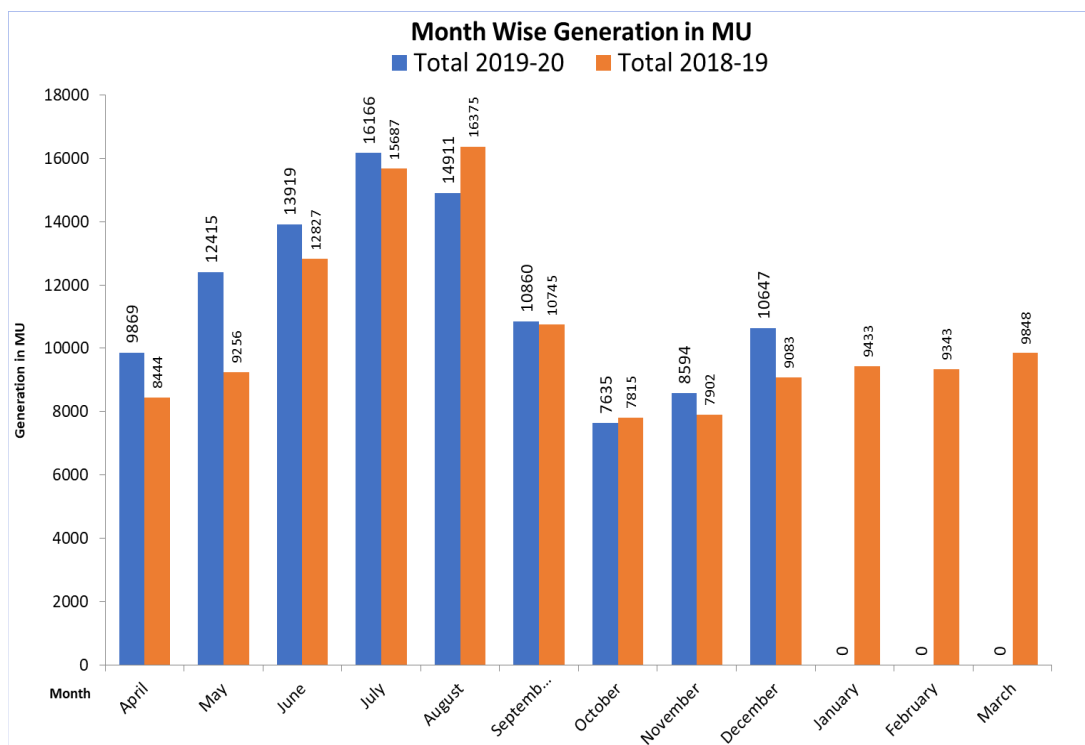


Figure 8 Month Wise RE Generation

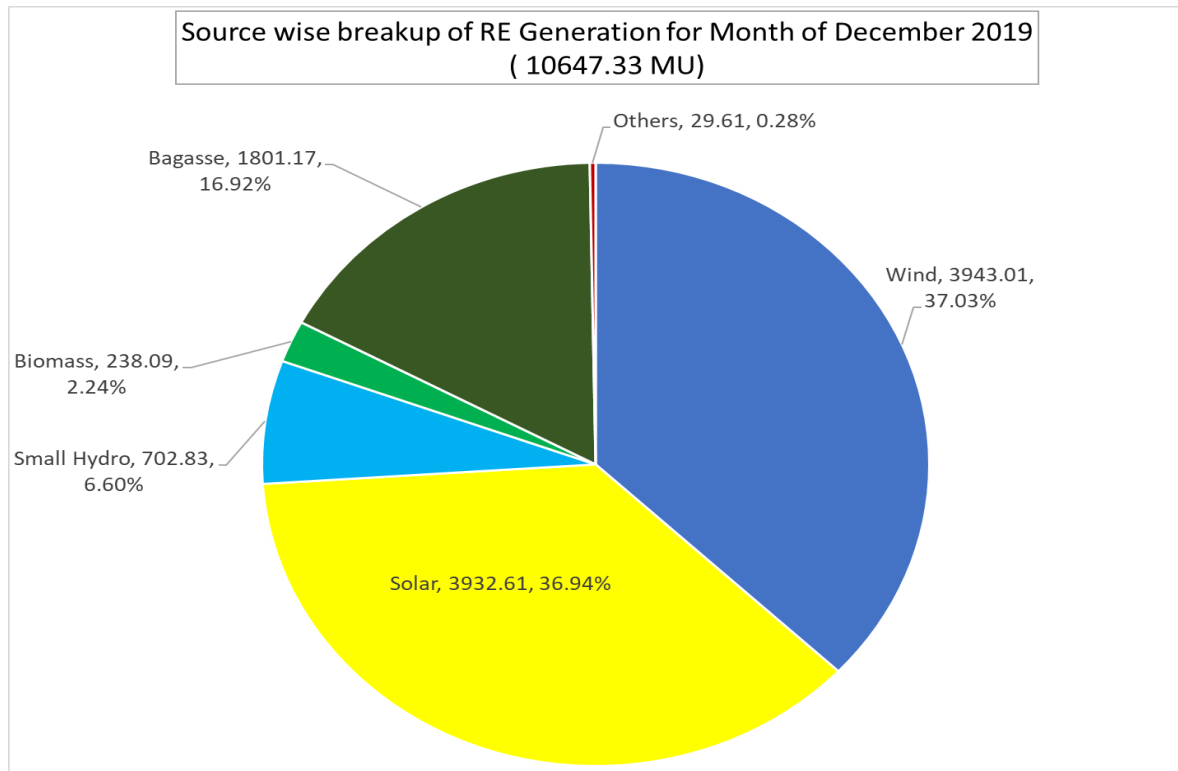


Figure 9 Source wise breakup of RE Generation

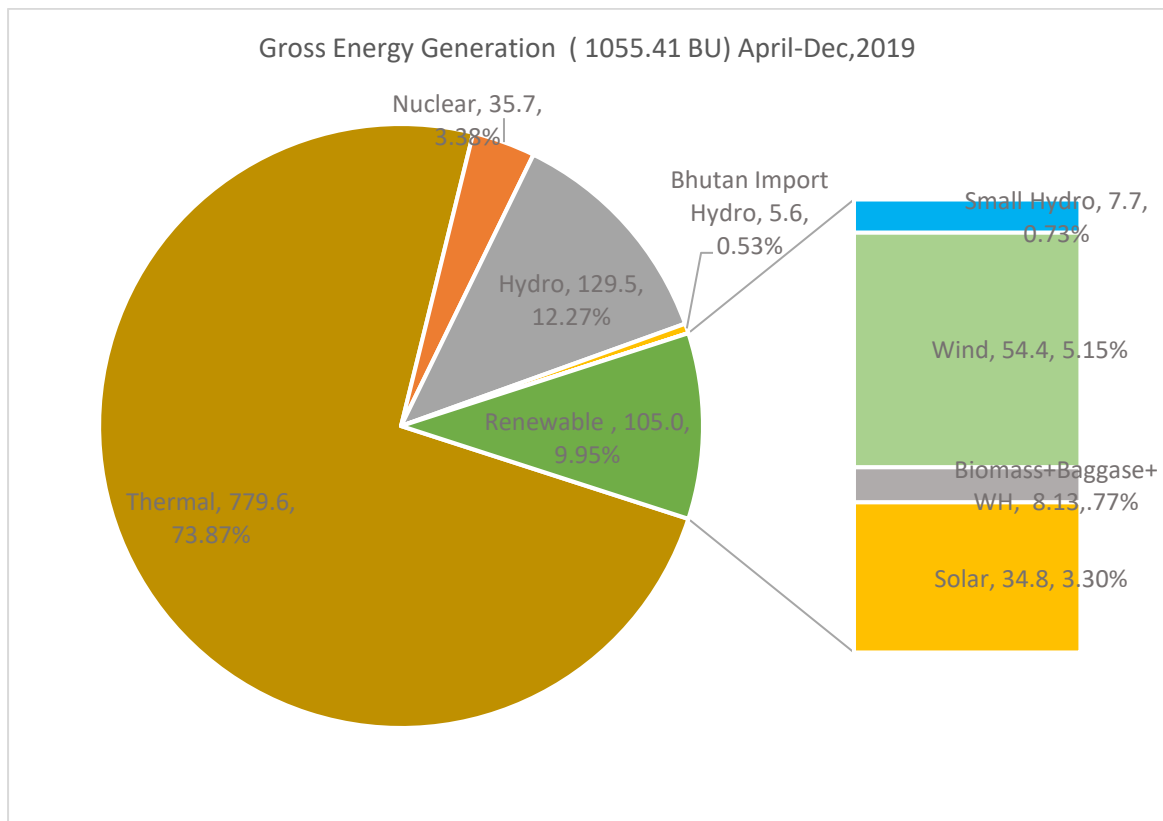


Figure 10 Gross Energy Generation In India and RE Share

Table 2 State Wise Renewable Energy Generation

Renewable Energy Generation (State Wise) for the month of December,2019				
State/UT	Actual Generation (MU)		Cumulative Generation (MU)	
	Dec,2019	Dec,2018	April - Dec, 2019	April - Dec, 2018
Chandigarh	1.78	1.41	10.04	11.56
Delhi #	30.92	22.82	337.54	221.25
Haryana *	52.74	62.32	511.51	484.54
HP	86.53	84.99	1827.27	2074.25
J & K	18.23	18.86	376.62	260.89
Ladakh	0.00	0.00	0.00	0.00
Punjab	181.39	210.79	2006.86	1755.52
Rajasthan	1104.36	777.82	10543.04	9184.34
Uttar Pradesh	706.54	796.38	2984.46	3390.06
Uttarakhand	82.16	78.40	909.80	833.09
Northern Region	2264.65	2053.79	19507.13	18215.51
Chhattisgarh	85.49	69.81	800.46	744.38
Gujarat	1746.10	1007.54	13366.03	10826.95
Madhya Pradesh	621.76	556.00	6219.74	6360.21
Maharashtra	1062.26	1374.60	10618.24	11186.39
Dadra and Nagar Haveli	0.47	0.48	4.38	3.88
Daman & Diu	2.23	1.49	15.59	13.09
Goa	0.14	0.00	0.40	0.00
Western Region	3518.45	3009.92	31024.84	29134.91
Andhra Pradesh	683.54	811.52	11111.19	11684.38
Telangana	534.73	543.54	4875.52	5056.46
Karnataka	2348.83	1744.97	19080.32	16479.89
Kerala	67.14	47.18	651.18	618.85
Tamil Nadu	1021.59	631.36	16526.41	14705.30
Lakshadweep	0.05	0.11	0.47	0.94
Puducherry *	0.37	0.22	3.03	1.88

Renewable Energy Generation (State Wise) for the month of December,2019

State/UT	Actual Generation (MU)		Cumulative Generation (MU)	
	Dec,2019	Dec,2018	April - Dec, 2019	April - Dec, 2018
Southern Region	4656.25	3778.91	52248.12	48547.71
Andaman Nicobar	1.80	2.76	13.35	22.03
Bihar *	15.85	48.18	188.19	246.42
Jharkhand *	1.22	1.40	12.22	13.92
Orissa	53.11	53.76	608.20	485.68
Sikkim *	6.92	2.30	50.96	24.62
West Bengal	86.47	115.87	1130.34	1209.23
DVC	0.01	0.00	0.32	1.81
Eastern Region	165.37	224.26	2003.57	2003.73
Arunachal Pradesh	0.22	0.16	1.60	1.28
Assam	18.49	2.23	52.74	16.57
Manipur	1.24	0.15	2.97	0.89
Meghalaya	9.66	2.85	50.65	40.41
Mizoram	4.11	2.48	40.66	27.74
Nagaland	6.14	3.66	64.57	78.86
Tripura *	2.74	4.85	19.50	67.48
North Eastern Region	42.61	16.38	232.69	233.22
All India Total	10647.33	9083.27	105016.36	98135.07
1) Data as received from SLDC of the respective states or from the electricity department				
2) Figure given above indicate gross generation of all power stations (Central , State & Private Sector) located geographically in the respective State/UT.				
* Data has been taken provisionally as of RE generation report of November 2019.				
# Solar power generation as of RE generation report of November 2019 .				

Table 3 State Wise wind Power Generation

State Wise -Source Wise RE Generation_ Wind _December 2019		
Wind Electricity		
State/UT	Dec'19	Dec'18
Chandigarh	0.00	0.00
Delhi #	0.00	0.00
Haryana *	0.00	0.00
HP	0.00	0.00
J & K	0.00	0.00
Ladakh	0.00	0.00
Punjab	0.00	0.00
Rajasthan	408.90	283.00
Uttar Pradesh	0.00	0.00
Uttarakhand	0.00	0.00
Northern Region	408.90	283.00
Chhattisgarh	0.00	0.00
Gujarat	1384.15	786.01
Madhya Pradesh	298.80	247.64
Maharashtra	304.39	299.97
Dadra and Nagar Haveli	0.00	0.00
Daman & Diu	0.00	0.00
Goa	0.00	0.00
Western Region	1987.34	1333.62
Andhra Pradesh	242.02	392.06
Telangana	20.46	18.50
Karnataka	682.61	476.75
Kerala	9.83	3.97
Tamil Nadu	591.86	272.05
Lakshadweep	0.00	0.00
Puducherry *	0.00	0.00
Southern Region	1546.78	1163.33
Andaman Nicobar	0.00	0.00
Bihar *	0.00	0.00
Jharkhand *	0.00	0.00
Orissa	0.00	9.29
Sikkim *	0.00	0.00
West Bengal	0.00	0.00
DVC	0.00	0.00

State Wise -Source Wise RE Generation_ Wind _December 2019		
Wind Electricity		
Eastern Region	0.00	9.29
Arunachal Pradesh	0.00	0.00
Assam	0.00	0.00
Manipur	0.00	0.00
Meghalaya	0.00	0.00
Mizoram	0.00	0.00
Nagaland	0.00	0.00
Tripura *	0.00	0.00
North Eastern Region	0.00	0.00
All India Total	3943.01	2789.24
1) Data as received from SLDC of the respective states or from the electricity department		
2) Figure given above indicate gross generation of all power stations (Central , State & Private Sector) located geographically in the respective State/UT.		
* Data has been taken provisionally as of RE generation report of November 2019.		

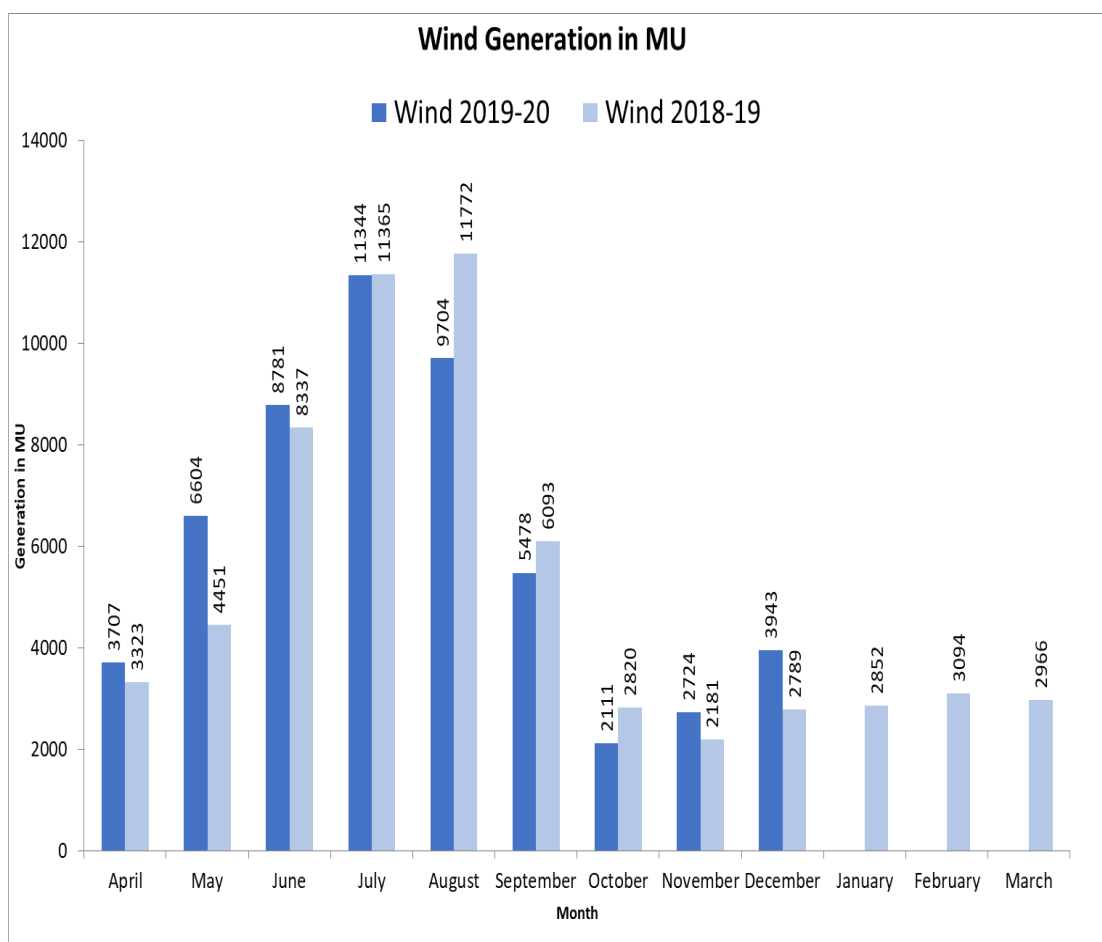


Figure 11 Month Wise Wind Power Generation

Table 4 State Wise Solar Power Generation

State wise_Source Wise RE Generation_Solar_December 2019		
Solar Generation (MU)		
State/UT	Dec'19	Dec'18
Chandigarh	1.78	1.41
Delhi #	8.73	0.51
Haryana *	14.36	5.59
HP	2.03	0.00
J & K	0.00	0.00
Ladakh	0.00	0.00
Punjab	55.39	98.04

State wise _Source Wise RE Generation _Solar _December 2019		
Solar Generation (MU)		
Rajasthan	657.74	461.47
Uttar Pradesh	93.35	102.39
Uttarakhand	19.24	19.01
Northern Region	852.61	688.42
Chhattisgarh	27.81	23.06
Gujarat	328.26	208.49
Madhya Pradesh	269.85	265.71
Maharashtra	174.96	193.11
Dadra and Nagar Haveli	0.47	0.48
Daman & Diu	2.23	1.49
Goa	0.14	0.00
Western Region	803.72	692.34
Andhra Pradesh	375.45	336.08
Telangana	471.75	463.07
Karnataka	995.77	648.58
Kerala	10.69	10.04
Tamil Nadu	374.78	301.66
Lakshadweep	0.05	0.11
Puducherry *	0.37	0.22
Southern Region	2228.86	1759.76
Andaman Nicobar	0.75	1.09
Bihar *	13.78	13.84
Jharkhand *	1.22	1.40
Orissa	25.79	21.15
Sikkim *	0.00	0.00
West Bengal	4.76	2.65

State wise_Source Wise RE Generation_Solar_December 2019		
Solar Generation (MU)		
DVC	0.01	0.00
Eastern Region	46.30	40.12
Arunachal Pradesh	0.18	0.10
Assam	0.68	0.63
Manipur	0.24	0.15
Meghalaya	0.00	0.00
Mizoram	0.03	0.02
Nagaland	0.00	0.00
Tripura *	0.02	0.56
North Eastern Region	1.13	1.47
All India Total	3932.61	3182.12

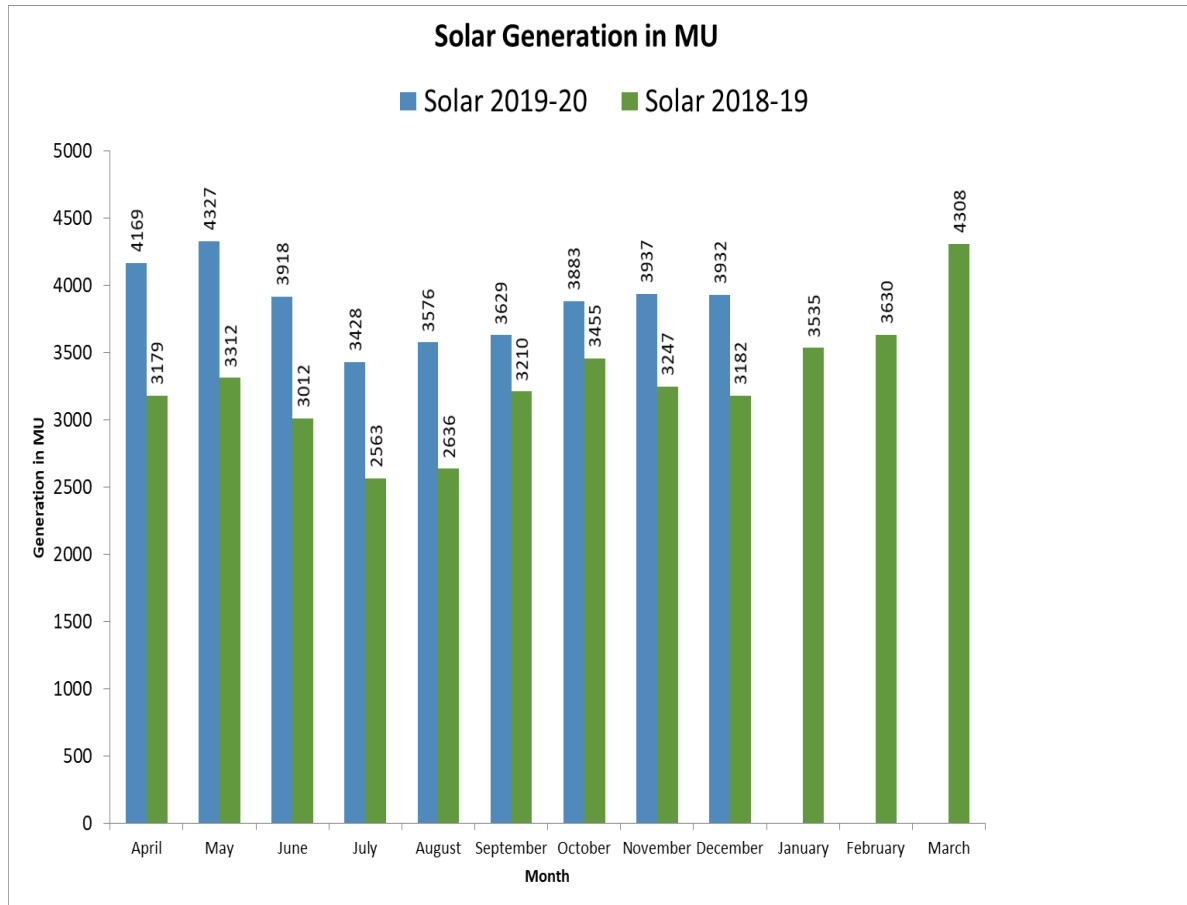


Figure 12 Month wise Solar Power Generation

Table 5 State Wise Biomass Power Generation

State Wise_Source Wise RE Generation_Biomass_December 2019		
(MU)		
State/UT	Dec'19	Dec'18
Chandigarh	0.00	0.00
Delhi #	0.00	0.00
Haryana *	14.23	17.00
HP	0.00	0.00
J & K	0.00	0.00
Ladakh	0.00	0.00
Punjab	39.01	34.17
Rajasthan	36.70	32.45
Uttar Pradesh	10.22	8.41
Uttarakhand	0.00	0.00
Northern Region	100.15	92.02
Chhattisgarh	52.61	46.70
Gujarat	10.74	5.36
Madhya Pradesh	0.12	0.09
Maharashtra	33.43	40.11
Dadra and Nagar Haveli	0.00	0.00
Daman & Diu	0.00	0.00
Goa	0.00	0.00
Western Region	96.90	92.26
Andhra Pradesh	8.69	14.49
Telangana	6.62	13.09
Karnataka	11.76	12.72
Kerala	0.00	0.00
Tamil Nadu	8.97	14.89
Lakshadweep	0.00	0.00
Puducherry *	0.00	0.00
Southern Region	36.04	55.20
Andaman Nicobar	0.00	0.00
Bihar *	1.22	0.99
Jharkhand *	0.00	0.00
Orissa	3.78	6.54
Sikkim *	0.00	0.00
West Bengal	0.00	0.00

State Wise_Source Wise RE Generation_Biomass_December 2019 (MU)		
DVC	0.00	0.00
Eastern Region	5.00	7.53
Arunachal Pradesh	0.00	0.00
Assam	0.00	0.00
Manipur	0.00	0.00
Meghalaya	0.00	0.00
Mizoram	0.00	0.00
Nagaland	0.00	0.00
Tripura *	0.00	0.00
North Eastern Region	0.00	0.00
All India Total	238.09	247.01

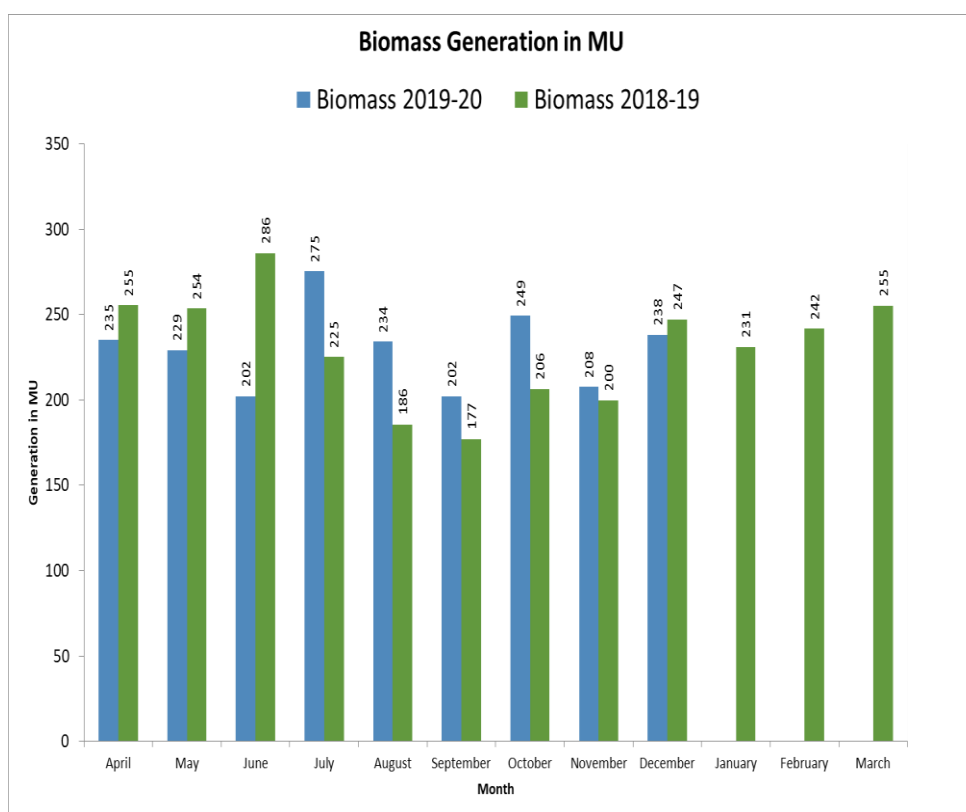


Figure 13 Month Wise Biomass Power Generation

Table 6 State Wise bagasse Power Generation

SOURCE WISE _BAGASSE_ RE GENERATION _DECEMBER 2019		
	(MUS)	
STATE/UT	DEC'19	DEC'18
CHANDIGARH	0.00	0.00
DELHI #	0.00	0.00
HARYANA *	0.00	20.50
HP	0.00	0.00
J & K	0.00	0.00
LADAKH	0.00	0.00
PUNJAB	34.28	27.36
RAJASTHAN	0.00	0.00
UTTAR PRADESH	600.23	683.69
UTTARAKHAND	20.37	17.96
NORTHERN REGION	654.88	749.50
CHHATTISGARH	0.00	0.00
GUJARAT	3.77	0.00
MADHYA PRADESH	22.20	20.22
MAHARASHTRA	499.14	775.45
DADRA AND NAGAR HAVELI	0.00	0.00
DAMAN & DIU	0.00	0.00
GOA	0.00	0.00
WESTERN REGION	525.11	795.67
ANDHRA PRADESH	7.76	42.28
TELANGANA	27.86	31.86
KARNATAKA	494.48	527.05
KERALA	1.36	0.00
TAMIL NADU	12.16	22.78
LAKSHADWEEP	0.00	0.00
PUDUCHERRY *	0.00	0.00
SOUTHERN REGION	543.62	623.97
ANDAMAN NICOBAR	0.00	0.00
BIHAR *	0.00	33.34
JHARKHAND *	0.00	0.00

SOURCE WISE _BAGASSE _RE GENERATION _DECEMBER 2019		
	(MU)	
ORISSA	0.00	0.00
SIKKIM *	0.00	0.00
WEST BENGAL	77.55	109.02
DVC	0.00	0.00
EASTERN REGION	77.55	142.36
ARUNACHAL PRADESH	0.00	0.00
ASSAM	0.00	0.00
MANIPUR	0.00	0.00
MEGHALAYA	0.00	0.00
MIZORAM	0.00	0.00
NAGALAND	0.00	0.00
TRIPURA *	0.00	0.00
NORTH EASTERN REGION	0.00	0.00
ALL INDIA TOTAL	1801.17	2311.49

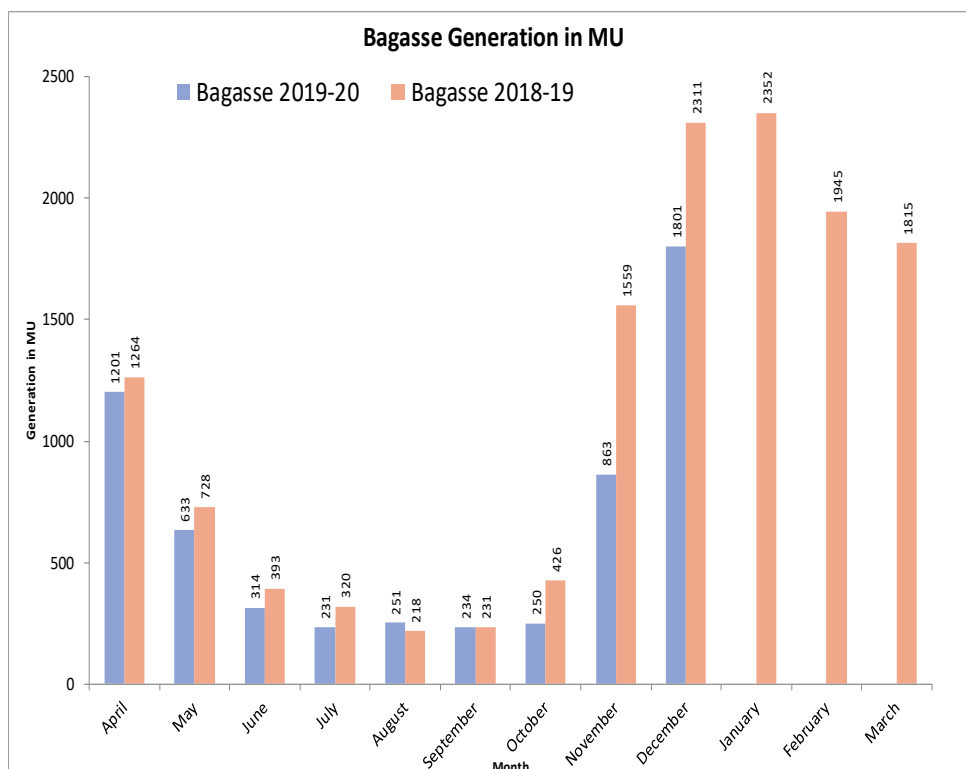


Figure 14 Month wise bagasse Power Generation

Table 7 State Wise Small Hydro Generation

STATE WISE_SOURCE WISE RE GENERATION_SMALL HYDRO_DECEMBER 2019 (MU)		
STATE/UT	DEC'19	DEC'18
CHANDIGARH	0.00	0.00
DELHI #	0.00	0.00
HARYANA *	24.15	19.24
HP	84.50	84.99
J & K	18.23	18.86
LADAKH	0.00	0.00
PUNJAB	52.68	51.22
RAJASTHAN	1.02	0.89
UTTAR PRADESH	2.75	1.90
UTTARAKHAND	42.55	41.43
NORTHERN REGION	225.88	218.53
CHHATTISGARH	5.08	0.05
GUJARAT	19.17	7.68
MADHYA PRADESH	27.94	21.14
MAHARASHTRA	50.26	65.81
DADRA AND NAGAR HAVELI	0.00	0.00
DAMAN & DIU	0.00	0.00
GOA	0.00	0.00
WESTERN REGION	102.45	94.68
ANDHRA PRADESH	48.83	25.86
TELANGANA	4.38	4.75
KARNATAKA	164.22	79.88
KERALA	45.26	33.17
TAMIL NADU	33.83	19.98
LAKSHADWEEP	0.00	0.00
PUDUCHERRY *	0.00	0.00
SOUTHERN REGION	296.52	163.64
ANDAMAN NICOBAR	1.05	1.67
BIHAR *	0.85	0.01
JHARKHAND *	0.00	0.00
ORISSA	23.54	16.77

STATE WISE_SOURCE WISE RE GENERATION_SMALL HYDRO_DECEMBER 2019 (MU)		
SIKKIM *	6.92	2.30
WEST BENGAL	4.16	4.20
DVC	0.00	0.00
EASTERN REGION	36.52	24.96
ARUNACHAL PRADESH	0.04	0.06
ASSAM	17.82	1.60
MANIPUR	1.00	0.00
MEGHALAYA	9.66	2.85
MIZORAM	4.09	2.45
NAGALAND	6.14	3.66
TRIPURA *	2.72	4.29
NORTH EASTERN REGION	41.47	14.91
ALL INDIA TOTAL	702.83	516.72

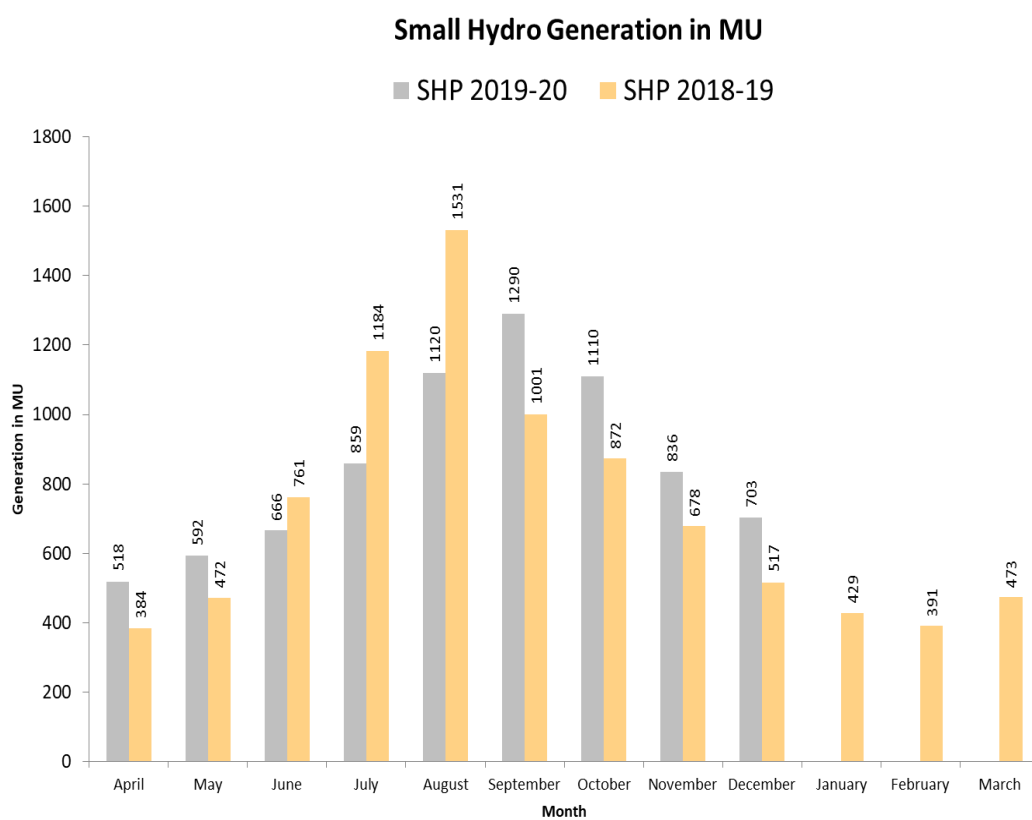


Figure 15 Month wise Small Hydro Power Generation

Table 8 State Wise Other (Waste Heat etc) Power Generation

STATE WISE_SOURCE WISE RE GENERATION_OTHER (WASTE HEAT ETC.) DECEMBER		
	(MUS)	
STATE/UT	DEC'19	DEC'18
CHANDIGARH	0.00	0.00
DELHI #	22.19	22.31
HARYANA *	0.00	0.00
HP	0.00	0.00
J & K	0.00	0.00
LADAKH	0.00	0.00
PUNJAB	0.03	0.00
RAJASTHAN	0.00	0.00
UTTAR PRADESH	0.00	0.00
UTTARAKHAND	0.00	0.00
NORTHERN REGION	22.22	22.31
CHHATTISGARH	0.00	0.00
GUJARAT	0.00	0.00
MADHYA PRADESH	2.85	1.21
MAHARASHTRA	0.09	0.16
DADRA AND NAGAR HAVELI	0.00	0.00
DAMAN & DIU	0.00	0.00
GOA	0.00	0.00
WESTERN REGION	2.94	1.36
ANDHRA PRADESH	0.79	0.76
TELANGANA	3.66	12.27
KARNATAKA	0.00	0.00
KERALA	0.00	0.00
TAMIL NADU	0.00	0.00
LAKSHADWEEP	0.00	0.00
PUDUCHERRY *	0.00	0.00
SOUTHERN REGION	4.45	13.02
ANDAMAN NICOBAR	0.00	0.00
BIHAR *	0.00	0.00

STATE WISE_SOURCE WISE RE GENERATION_OTHER (WASTE HEAT ETC.) DECEMBER		
	(MUS)	
STATE/UT	DEC'19	DEC'18
JHARKHAND *	0.00	0.00
ORISSA	0.00	0.00
SIKKIM *	0.00	0.00
WEST BENGAL	0.00	0.00
DVC	0.00	0.00
EASTERN REGION	0.00	0.00
ARUNACHAL PRADESH	0.00	0.00
ASSAM	0.00	0.00
MANIPUR	0.00	0.00
MEGHALAYA	0.00	0.00
MIZORAM	0.00	0.00
NAGALAND	0.00	0.00
TRIPURA *	0.00	0.00
NORTH EASTERN REGION	0.00	0.00
ALL INDIA TOTAL	29.61	36.69

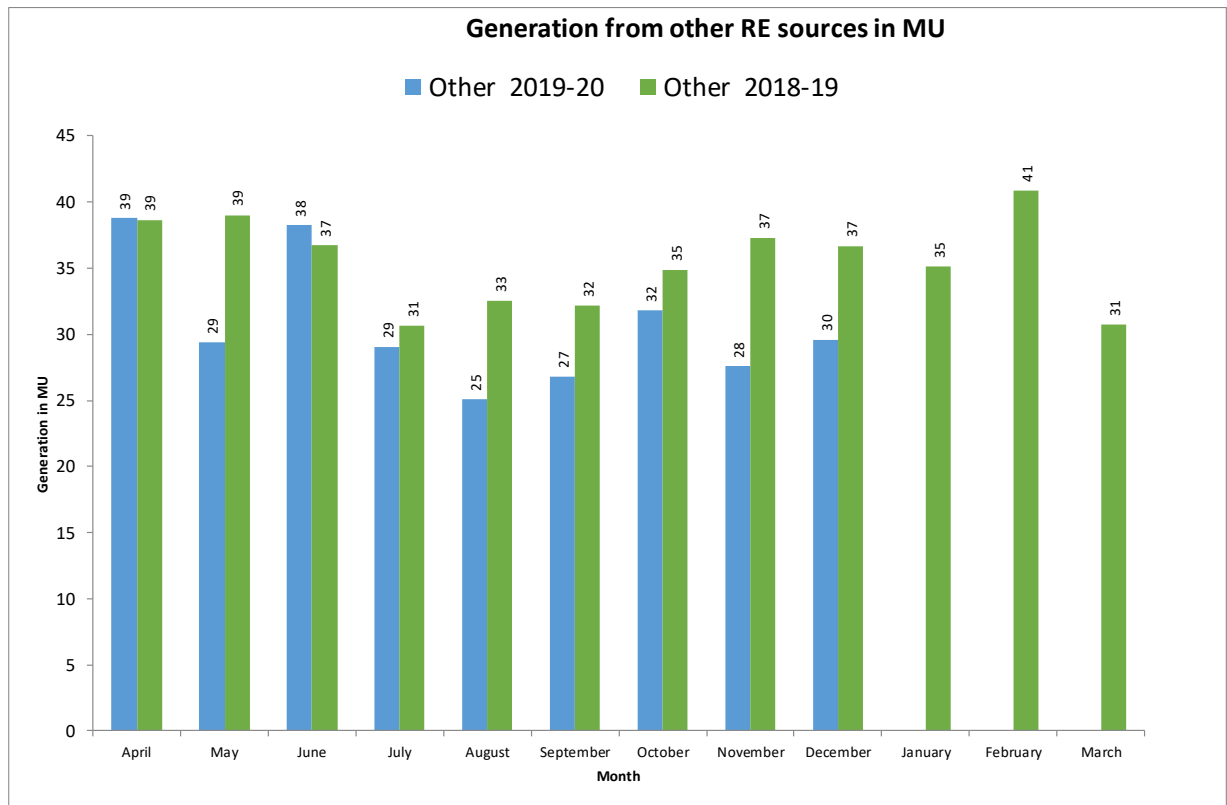


Figure 16 Month Other RE (Waste Heat etc) Power Generation

Table 9: Renewable Energy Generation by ISGS Stations

Monthly RE generation from Inter state Generating Station (ISGS) for December , 2019							
Station	State/ Region	Sector (Central /State /Private)	Owner	Type	Capacity (MW)	Generation (MU)	Monthly CUF
DADRI SOLAR	Uttar Pradesh	Central	NTPC	Solar	5	0.33	9%
SINGRAULI SOLAR	Uttar Pradesh	Central	NTPC	Solar	15	1.44	13%
UNCHAHAR SOLAR	Uttar Pradesh	Central	NTPC	Solar	10	0.58	8%
MAHOBHA SOLAR (UP) PRIVATE LTD	Rajasthan	Private	IPP	Solar	200	37.89	25%
ACME CHITTORGARH ENERGY PVT LTD	Rajasthan	Private	IPP	Solar	250	25.6	14%
AZURE POWER INDIA PVT LTD	Rajasthan	Private	IPP	Solar	200	33.83	23%
AZURE POWER THIRTY FOUR PVT LTD	Rajasthan	Private	IPP	Solar	130	24.31	25%
CLEAN SOLAR POWER (BHADLA) PVT LTD	Rajasthan	Private	IPP	Solar	300	10.49	
RENEW SOLAR POWER PVT LTD	Rajasthan	Private	IPP	Solar	50	9.76	26%
RENEW SOLAR POWER PVT LTD. BIKANER	Rajasthan	Private	IPP	Solar	250	37.03	20%
SB ENERGY FOUR PVT LTD	Rajasthan	Private	IPP	Solar	200	35.84	24%
TATA POWER RENEWABLE ENERGY LTD	Rajasthan	Private	IPP	Solar	150	27.91	25%
Northern Region					1760	245.01	
ACME SOLAR (RAMNAGAR)	Madhya Pradesh	Private	IPP	Solar	250	32.82	18%
ARINSUN SOLAR (BARSAITADESH)	Madhya Pradesh	Private	IPP	Solar	250	29.89	16%
MAHINDRA SOLAR (BADWAR)	Madhya Pradesh	Private	IPP	Solar	250	27.20	15%
RENEW SOLAR (BHUVAD)	Gujarat	Private	IPP	Solar	250	54.27	29%
GIWEL-II WIND (VADVA)	Gujarat	Private	IPP	Wind	250	52.74	28%

Monthly RE generation from Inter state Generating Station (ISGS) for December , 2019							
Station	State/ Region	Sector (Central /State /Private)	Owner	Type	Capacity (MW)	Generation (MU)	Monthly CUF
GIWEL-III WIND (NARANPAR)	Gujarat	Private	IPP	Wind	300	51.77	23%
IWISL WIND (DAYAPAR)	Gujarat	Private	IPP	Wind	500	12.31	3%
OSTRO WIND (KUTCH)	Gujarat	Private	IPP	Wind	250	78.52	42%
Western Region					2300	339.52	
GREEN INFRA	Tamil Nadu	Private	IPP	Wind	250	59.28	32%
ORANGE	Tamil Nadu	Private	IPP	Wind	200	42.58	29%
MYTRA	Tamil Nadu	Private	IPP	Wind	187	31.54	23%
Southern Region					637	133.40	
Total					4697	717.93	

Table 10 Renewable Energy Generation by CPSU Owned stations

Renewable Energy Generation Data (CPSU Wise)					
CPSU	State	Installed Capacity (MW)	Source	Actual Generation (MU)	Cumulative Generation (MU)
				Dec,2019	April to December 2019
NTPC					
NTPC Faridabad_Solar	Haryana	5	Solar	0.35	4.85
NTPC Bhadla	Rajasthan	260	Solar	34.05	324.65
NTPC Dadri_Solar	Uttar Pradesh	5	Solar	0.33	4.67
NTPC Unchahar_Solar	Uttar Pradesh	10	Solar	0.76	10.50
NTPC Singrauli_Solar	Uttar Pradesh	15	Solar	1.39	14.94
NTPC Singrauli_SH	Uttar Pradesh	8	Small Hydro	0.00	7.60
NTPC Rojmal	Gujarat	50	Wind	9.49	86.57
NTPC Rajgarh_Solar	Madhya Pradesh	50	Solar	5.64	54.21
NTPC Mandsaur	Madhya Pradesh	250	Solar	29.18	270.87
NTPC Anantapuram	Andhra Pradesh	250	Solar	27.65	284.91
NTPC Ramagundam	Telangana	10	Solar	0.43	10.29
NTPC Andaman Nicobar	Andaman Nicobar	5	Solar	0.33	3.39
NTPC Talchar_Solar	Orissa	10	Solar	1.12	10.09
Total NTPC		928		110.70	1087.56
THDC					
THDC Patan Wind Power Project	Gujarat	50	Wind	8.74	84.57
THDC Devbhumi Dwarka Wind Power Project	Gujarat	63	Wind	19.44	138.20
Total THDC		113		28.18	222.77
NHPC					
NHPC Wind Power Project	Rajasthan	50	Wind	4.62	30.48
NHPC Solar Power Project	Tamil Nadu	50	Solar	7.60	44.10
Total NHPC		100		12.22	74.575
ONGC					

Renewable Energy Generation Data (CPSU Wise)					
CPSU	State	Installed Capacity (MW)	Source	Actual Generation (MU)	Cumulative Generation (MU)
				Dec,2019	April to December 2019
ONGC Wind, Bhuj	Gujarat	51	Wind	7.36	14.85
ONGC Wind, Jaisalmer	Rajasthan	102	Wind	6.72	18.92
ONGC Solar, Goa	Goa	1	Solar	0.14	0.41
ONGC Solar, Hazira	Gujarat	10	Solar	1.21	3.64
ONGC Solar, Ankleshwar	Gujarat	5	Solar	0.54	1.65
ONGC Solar, Rajahmundry	Andhra Pradesh	1	Solar	0.10	0.32
ONGC Solar, Rooftop (RTS) Gujarat	Gujarat	4.232	Solar	0.35	1.15
ONGC Solar, Assam (RTS)	Assam	1.645	Solar	0.13	0.45
ONGC Solar, Uttarakhand (RTS)	Uttarakhand	1.236	Solar	0.11	0.33
ONGC Solar, Agartala asset	Tripura	0.247	Solar	0.01	0.04
ONGC Solar, Mumbai (Uran & NBP green height)	Maharashtra	0.285	Solar	0.01	0.02
ONGC Solar, Cauvery Assest Karaikal	Maharashtra	0.015	Solar	0.00	0.00
ONGC Solar,DDU Bhawan, (Under Maintenance)	Goa	0.25	Solar	0.00	0.00
Total ONGC		177.91		16.69	41.78
SJVN Limited					
Khirvire Wind Power	Maharashtra	47.6	Wind	0.93	49.53
Sadla Wind Power	Gujarat	50	Solar	5.38	64.43
Charanka Solar Power	Gujarat	5.6	Solar	0.70	4.34
Total SJVN		103.2		7.01	118.31
Oil India Ltd					
Oil India Ltd	Rajasthan	14	Solar	1.87	16.41
Oil India Ltd	Rajasthan	67.6	Wind	3.18	53.22

Renewable Energy Generation Data (CPSU Wise)					
CPSU	State	Installed Capacity (MW)	Source	Actual Generation (MU)	Cumulative Generation (MU)
				Dec,2019	April to December 2019
Oil India Ltd	Gujarat	43.3	Wind	10.77	80.85
Oil India Ltd	Madhya Pradesh	63.2	Wind	8.38	98.44
Total Oil India Ltd		188.1		24.20	248.92
NEEPCO					
NEEPCO	Tripura	5	Solar		8.88
All India		1615.21		199.00	1802.79
Generation of CPSU owned RE generating stations is shown in respective state according to physical location so their generation should not be considered additional generation.					

RENEWABLE ENERGY CURTAILMENT DURING DECEMBER, 2019

(As Available on SLDCs web site or informed by respective SLDC)

Table 11 RE Curtailment Data as available from SLDCs

Renewable Energy Curtailment for the month of December-2019			
S.No.	States	Curtailment (MU)	Source
1.	Andhra Pradesh	22.53	APTRANSCO Website- http://apps.aptransco.co.in/sldcreports/forms/BackDownWind.aspx
2.	Telangana	0	Information furnished by SLDC, TSTransco through email.
3.	Tamil Nadu	-	No information is available on website.
4.	Karnataka	0	SLDC, KPTCL Website- http://kptclslcd.com/recurtail.aspx
5.	Maharashtra	-	No information is available on website.
6.	Gujarat	-	No information is available on website.
7.	Rajasthan	0	SLDC, RRVPNL Website- https://slcd.rajasthan.gov.in/mis/monthlyReDsmReports
8.	Madhya Pradesh	0	SLDC, MP Power Transmission Corporation Ltd.- http://223.31.122.117/mpslcd/RE_DATA

Table 12 Deviation Data for ISGS

Deviation Settlement Mechanism(DSM) of Renewable Energy (ISGS) project for the Month of December 2019			
Station	Schedule (MU)	Actual(MU)	Deviation(MU)
Northern Region			
ACME CHITTORGARH ENERGY PVT LDT	24.673	25.544	-0.871
AZURE SOLAR	31.544	34.095	-2.551
AZURE SOLAR THIRTY FOUR	23.586	24.188	-0.602
Clean Solar Power(Bhadla) Pvt Ltd.	10.315	13.707	-3.392
DADRI SOLAR	0.037	0.322	-0.285
MAHOBHA SOLAR	36.823	36.709	0.114
RENEW Solar	8.712	8.133	0.579
RENEW SOLAR POWER LTD PVT BIKANER	37.544	36.936	0.608
SB ENERGY	34.855	35.122	-0.267
SINGRAULI SOLAR	1.265	1.358	-0.093
TATA POWER RENEWABLE	26.668	27.998	-1.33
UNCHAHAH SOLAR	0.845	0.735	0.11
Western Region			
ACME Jaipur(RUMS)	32.504	32.558	0.054
ARINSUN (RUMS)	32.842	32.338	-0.504
Mahindra Renewable (RUMS)	24.863	26.873	2.01
Ostro -Kutch	82.377	78.948	-3.429
Renew Power	57.215	54.665	-2.55
Green Infra Wind Energy Limited SECI 2	55.028	53.119	-1.909
Green Infra Wind Energy Limited SECI 3	53.865	51.711	-2.154
Inox Wind	13.371	13.195	-0.176
Southern Region			
GIREL	62.506	60.31	-2.196
MYTRAH	34.4223	31.223	-3.1993
ORANGE	47.264	43.787	-3.477
BETAM	6.210	5.7239	-0.4861

Table 13 Fossil and Non Fossil Generation

Fossil and Non Fossil (State Wise) Electricity Generation for the Month of December, 2019							
State/UT	Fossil		Non Fossil			Grand Total	Non Fossil as % of Total Generation
	Thermal	Gas	Nuclear	Hydro (Large)	Renewable Energy		
Chandigarh	0.00	0.00	0.00	0.00	1.78	1.78	100%
Delhi	0.00	417.28	0.00	0.00	30.92	448.20	7%
Haryana	1081.41	162.22	0.00	0.00	52.74	1296.37	4%
HP	1526.79	0.00	0.00	0.00	86.53	1613.32	5%
J & K	0.00	0.00	0.00	984.46	18.23	1002.69	100%
Ladakh	0.00	0.00	0.00	18.99	0.00	18.99	100%
Punjab	1464.59	0.00	0.00	341.62	181.39	1987.60	26%
Rajasthan	4181.65	67.28	726.98	68.76	1104.36	6149.03	31%
Uttar Pradesh	8610.61	39.59	335.68	130.39	706.54	9822.81	12%
Uttarakhand	0.00	187.50	0.00	746.08	82.16	1015.74	82%
Northern Region	16865.05	873.87	1062.66	2290.30	2264.65	23356.53	24%
Chhattisgarh	10412.65	0.00	0.00	3.90	85.49	10502.04	1%
Gujarat	7244.32	823.16	303.42	467.63	1746.10	10584.63	24%
Madhya Pradesh	10430.00	0.00	0.00	404.08	621.76	11455.84	9%
Maharashtra	9092.84	637.37	621.95	550.90	1062.26	11965.32	19%
Dadra and Nagar Haveli	0.00	0.00	0.00	0.00	0.47	0.47	100%
Daman & Diu	0.00	0.00	0.00	0.00	2.23	2.23	100%
Goa	7244.32	823.16	303.00	467.63	0.14	8838.25	9%
Western Region	44424.13	2283.69	1228.37	1894.14	3518.45	53348.78	12%
Andhra Pradesh	4593.11	241.34	0.00	150.07	683.54	5668.06	15%
Telangana	3859.17	0.00	0.00	111.80	534.73	4505.70	14%
Karnataka	1901.21	0.00	677.92	1310.44	2348.83	6238.40	70%
Kerala	0.00	0.00	0.00	369.33	67.14	436.47	100%
Tamil Nadu	4660.18	267.15	1010.64	540.44	1021.59	7500.00	34%
Lakshadweep	0.00	0.00	0.00	0.00	0.05	0.05	100%
Puducherry	0.00	21.87	0.00	0.00	0.37	22.24	2%

Fossil and Non Fossil (State Wise) Electricity Generation for the Month of December,2019							
State/UT	Fossil		Non Fossil			Grand Total	Non Fossil as % of Total Generation
	Thermal	Gas	Nuclear	Hydro (Large)	Renewable Energy		
Southern Region	15013.67	530.36	1688.56	2482.08	4656.25	24370.92	36%
Andaman Nicobar	7.62	0.00	0.00	0.00	1.80	9.42	19%
Bihar	2869.33	0.00	0.00	0.00	15.85	2885.18	1%
Jharkhand	2339.54	0.00	0.00	8.39	1.22	2349.15	0%
Orissa	3974.03	0.00	0.00	409.20	53.11	4436.34	10%
Sikkim	0.00	0.00	0.00	359.65	6.92	366.57	100%
West Bengal	5671.56	0.00	0.00	184.79	86.47	5942.82	5%
DVC	0.00	0.00	0.00	0.00	0.01	0.01	100%
Eastern Region	14862.08	0.00	0.00	962.03	165.37	15989.48	7%
Arunachal Pradesh	0.00	0.00	0.00	69.24	0.22	69.46	100%
Assam	383.57	229.24	0.00	29.22	18.49	660.52	7%
Manipur	0.00	0.00	0.00	34.53	1.24	35.77	100%
Meghalaya	0.00	0.00	0.00	72.05	9.66	81.71	100%
Mizoram	0.00	0.00	0.00	22.10	4.11	26.21	100%
Nagaland	0.00	0.00	0.00	12.04	6.14	18.18	100%
Tripura	0.00	457.76	0.00	0.00	2.74	460.50	1%
North Eastern Region	383.57	687.00	0.00	239.18	42.61	1352.36	21%
All India Total	91548.50	4374.92	3979.59	7867.73	10647.33	118418.07	19%

Table 14 Renewable Energy as % of Total Electricity Generated

Re Generation as proportion of Total Electricity generation -Physical location wise. (State Wise) for the Month of December,2019							
State/UT	Thermal	Gas	Nuclear	Hydro	Renewable Energy	Grand Total	RE as % of Total
Chandigarh	0.00	0.00	0.00	0.00	1.78	1.78	100.00
Delhi	0.00	417.28	0.00	0.00	30.92	448.20	6.90
Haryana	1081.41	162.22	0.00	0.00	52.74	1296.37	4.07
HP	1526.79	0.00	0.00	0.00	86.53	1613.32	5.36
J & K	0.00	0.00	0.00	984.46	18.23	1002.69	1.82
Ladakh	0.00	0.00	0.00	18.99	0.00	18.99	0.00
Punjab	1464.59	0.00	0.00	341.62	181.39	1987.60	9.13
Rajasthan	4181.65	67.28	726.98	68.76	1104.36	6149.03	17.96
Uttar Pradesh	8610.61	39.59	335.68	130.39	706.54	9822.81	7.19
Uttarakhand	0.00	187.50	0.00	746.08	82.16	1015.74	8.09
Northern Region	16865.05	873.87	1062.66	2290.30	2264.65	23356.53	9.70
Chhattisgarh	10412.65	0.00	0.00	3.90	85.49	10502.04	0.81
Gujarat	7244.32	823.16	303.42	467.63	1746.10	10584.63	16.50
Madhya Pradesh	10430.00	0.00	0.00	404.08	621.76	11455.84	5.43
Maharashtra	9092.84	637.37	621.95	550.90	1062.26	11965.32	8.88
Dadra and Nagar Haveli	0.00	0.00	0.00	0.00	0.47	0.47	100.00
Daman & Diu	0.00	0.00	0.00	0.00	2.23	2.23	100.00
Goa	7244.32	823.16	303.00	467.63	0.14	8838.25	0.00
Western Region	44424.13	2283.69	1228.37	1894.14	3518.45	53348.78	6.60
Andhra Pradesh	4593.11	241.34	0.00	150.07	683.54	5668.06	12.06
Telangana	3859.17	0.00	0.00	111.80	534.73	4505.70	11.87
Karnataka	1901.21	0.00	677.92	1310.44	2348.83	6238.40	37.65
Kerala	0.00	0.00	0.00	369.33	67.14	436.47	15.38
Tamil Nadu	4660.18	267.15	1010.64	540.44	1021.59	7500.00	13.62
Lakshadweep	0.00	0.00	0.00	0.00	0.05	0.05	100.00
Puducherry	0.00	21.87	0.00	0.00	0.37	22.24	1.66
Southern Region	15013.67	530.36	1688.56	2482.08	4656.25	24370.92	19.11
Andaman Nicobar	7.62	0.00	0.00	0.00	1.80	9.42	19.08
Bihar	2869.33	0.00	0.00	0.00	15.85	2885.18	0.55

Re Generation as proportion of Total Electricity generation -Physical location wise. (State Wise) for the Month of December,2019

State/UT	Thermal	Gas	Nuclear	Hydro	Renewable Energy	Grand Total	RE as % of Total
Jharkhand	2339.54	0.00	0.00	8.39	1.22	2349.15	0.05
Orissa	3974.03	0.00	0.00	409.20	53.11	4436.34	1.20
Sikkim	0.00	0.00	0.00	359.65	6.92	366.57	1.89
West Bengal	5671.56	0.00	0.00	184.79	86.47	5942.82	1.46
DVC	0.00	0.00	0.00	0.00	0.01	0.01	100.00
Eastern Region	14862.08	0.00	0.00	962.03	165.37	15989.48	1.03
Arunachal Pradesh	0.00	0.00	0.00	69.24	0.22	69.46	0.32
Assam	383.57	229.24	0.00	29.22	18.49	660.52	2.80
Manipur	0.00	0.00	0.00	34.53	1.24	35.77	3.46
Meghalaya	0.00	0.00	0.00	72.05	9.66	81.71	11.82
Mizoram	0.00	0.00	0.00	22.10	4.11	26.21	15.69
Nagaland	0.00	0.00	0.00	12.04	6.14	18.18	33.79
Tripura	0.00	457.76	0.00	0.00	2.74	460.50	0.59
North Eastern Region	383.57	687.00	0.00	239.18	42.61	1352.36	3.15
All India Total	91548.50	4374.92	3979.59	7867.73	10647.33	118418.07	8.99

RENEWABLE ENERGY TO TRANSPORT SECTOR :

Table 15 REWA Solar To Delhi Metro

From Rewa Solar Park (MP) to DMRC				
Month	Delhi Disoms			Total (MUs)
	BRPL	BYPL	TPDDL	
April ,19	3.59	3.80		7.39
May,19	15.79	9.03		24.82
June,19				0.00
July,19	15.72	8.70		24.42
August,19	15.85	8.78		24.63
September,19	15.30	8.52		23.82
October,19	15.15	8.49		23.64
November,19	13.95	7.82		21.77
December,19	13.05	7.17	6.10	26.32
* All figures at Delhi PP in MUs				
DMRC : Delhi Metro Rail Corporation				

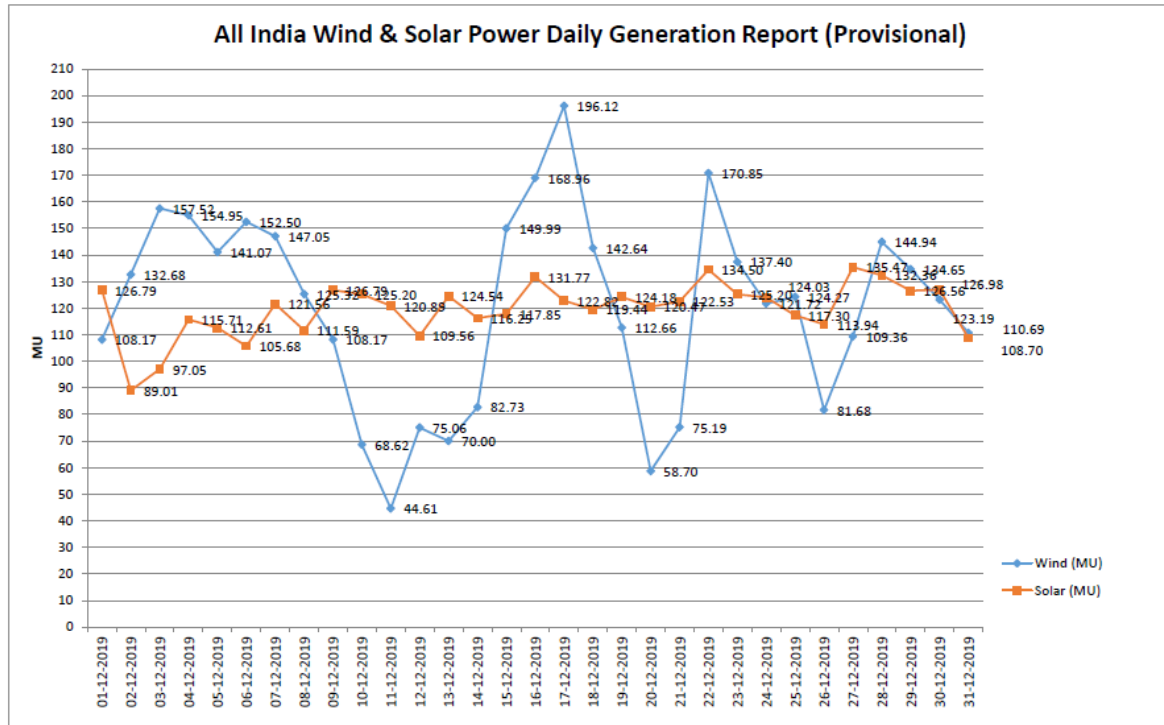


Figure 17 Daily Solar and wind Power Generation trend

A decorative graphic element consisting of a blue triangle with a gradient, pointing towards the right, located to the left of the text.

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