

Chapter | 2

Installed Capacity and Capacity Utilization



CHAPTER 2

Installed capacity and capacity utilization

Installed capacity

The world in its commitment to sustainability has pledged to expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries (SDG Target 7.B).

Energy systems capable of delivering to the ever growing and emerging needs of developing economies is the need of the hour. Growing energy demands world over and in the densely populated regions of Asia including India have driven the need to shift to cleaner fuels and larger energy systems. Thus, in India, there has been a thrust to increase installed generating capacity of power and to decrease the reliance on primary fossil fuels to cater to these needs.

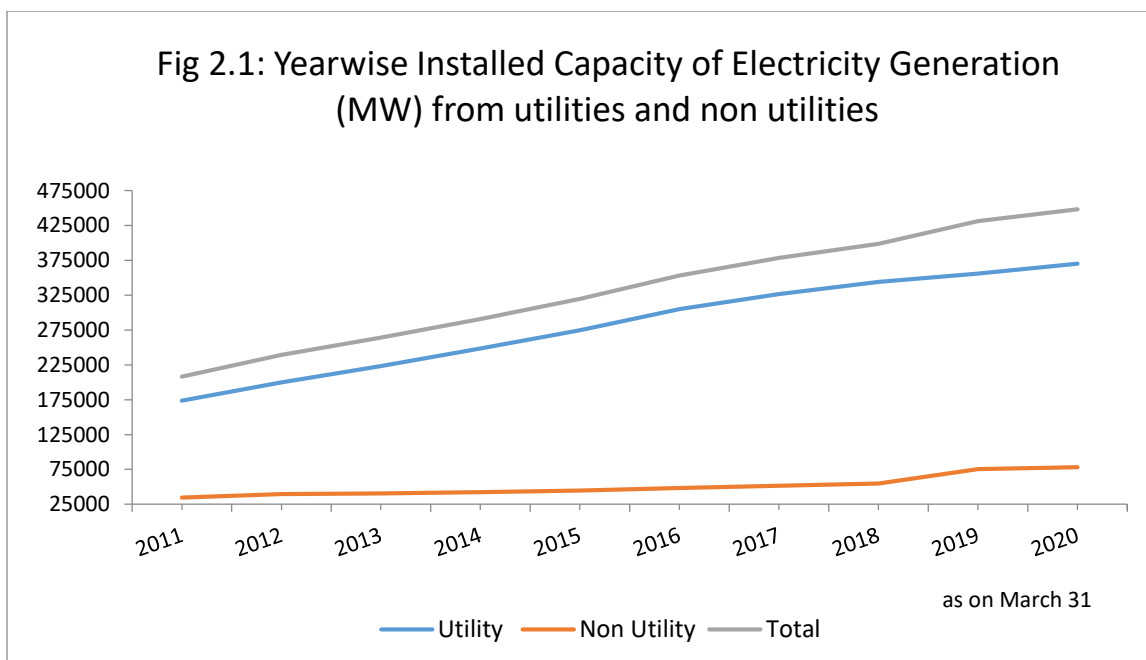
Generating and providing reliable power at competitive prices in a sustainable manner by optimising the use of multiple energy resource with innovative eco-friendly technologies has been at the core of policy planning in India. Also, the environmental and health burdens arising out of the use of hydrocarbons force the world towards adopting energy efficiency and clean energy systems.

It is worthy to note here that not all potential is viable to be transformed into capacity, and overall capacity does not lead to an equal amount of generation due to production losses etc. Power plants have a capacity to produce a certain amount of power during a given time, but if they are taken offline (i.e. for maintenance or refuelling) then they are not actually generating power.

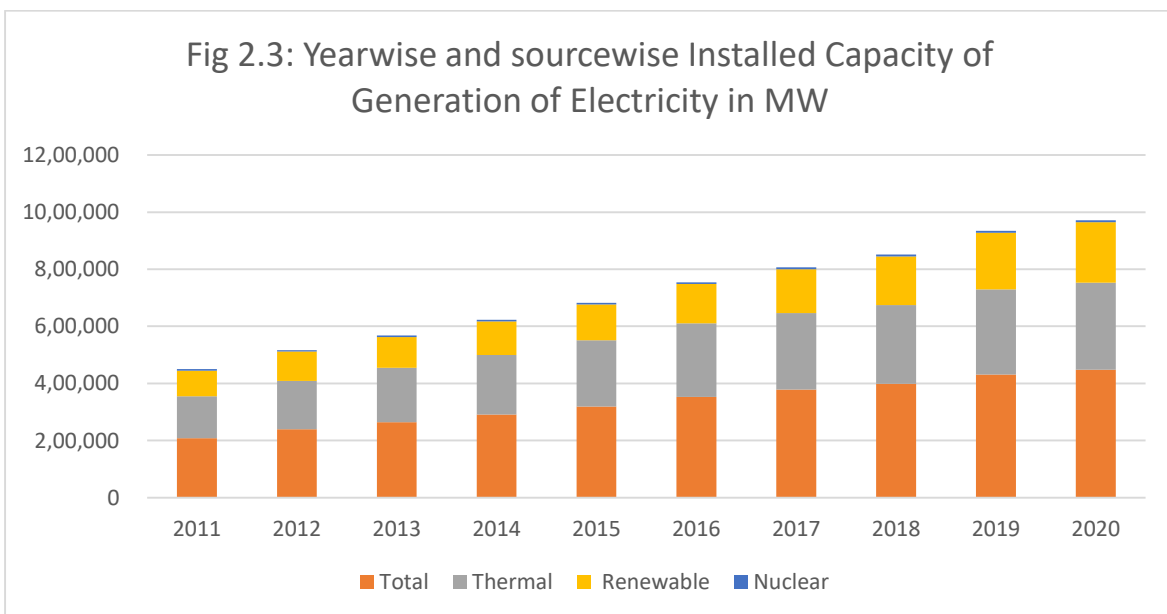
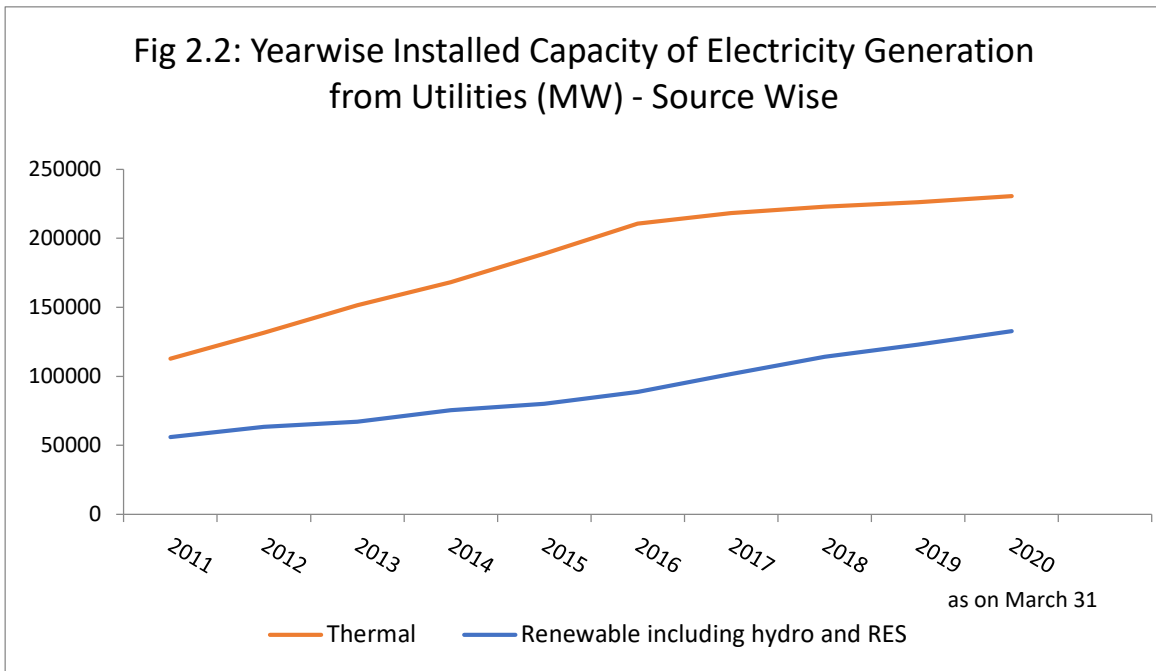
This chapter presents the capacity of coal washeries, oil refineries and electricity. It also provides the progress of installation of Renewable Energy Systems in the country.

Highlights

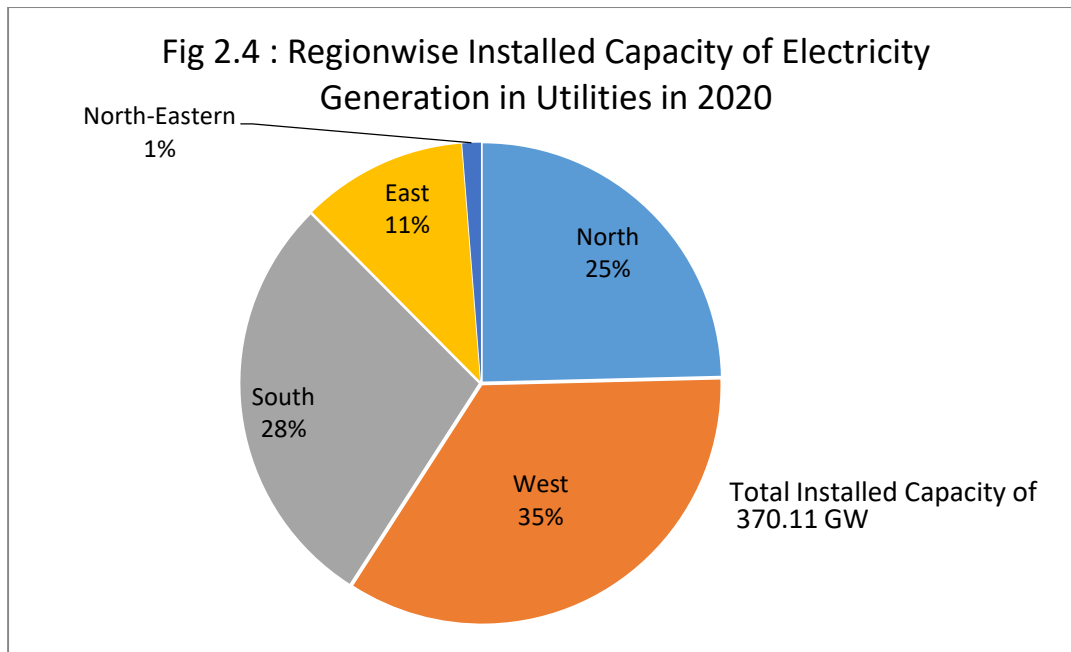
- Total installed capacity of coal washeries in India is 143.44 Million Tonne per year (MTY) as on 31.03.2020 (P). This comprises of 29.84 MTY in coking and 113.60 MTY in Non Coking Coal Washeries (Table 2.1).
- Similarly, as on 31.03.2020, there were a total of 23 refineries in the country, 18 in the Public Sector, 3 in the Private sector and 2 in Joint Venture (Table 2.2).
- The refining capacity of the country was 249366 TMTPA on 31.03.2019 which is 500 TMTPA lower than the country's refining capacity of 249866 TMTPA on 31.03.2020 and the entire increase is on account of refineries in Joint Venture sector.
- The Refinery production (crude throughput) achievement was 257205 TMT during 2018-19 which has decreased to 254386 TMT during 2019-20 i.e. a net decrease of 1.1% over 2018-19.
- Hence, Capacity utilization of the refineries which was 103.9% during 2018-19 has decreased to 102.01% in 2019-20. In the Public Sector, Indian Oil Corporation (IOC) decreased its capacity utilization from 106.27% in 2018-19 to 101.87% in 2019-20. However, capacity utilization in 2019-20 improved by 1.67 % in private sector and 0.39% in Joint Ventures over 2018-19.
- In absolute terms, the installed capacity of electricity generation increased by 3.8% to 448106 MW in 2019-20 over 431307 MW in 2018-19 with the major share of installed capacity existing with utilities i.e. 82.59% (Table 2.3).



- India's Energy mix has been seeing a shift from more conventional resources of energy to renewable sources. This is well captured by the fact that while the installed capacity of renewable sources of electricity generation excluding hydro from utilities grew at 12% in the previous year (2020 over 2019), that of thermal sources grew only at 1.91%.



- The geographical distribution of installed capacity of electricity generating as on 31.03.2020 indicates that Western Region accounted for the highest share (35%) followed by Southern Region (28%) and Northern Region (25%). Northern Region also accounted for the highest share of hydro energy. Among states, the state of Karnataka has the highest share of hydro installed capacity of 3.59 GW and also the highest share of Other renewable resources as well at 15.23 GW. (Table 2.4).



- Region wise growth in the installed capacity during 2019-20 reveals that North Eastern Region (NER) registered highest annual growth of about 7.88%. Amongst all the major states Odisha registered highest annual growth (19.64%) in the installed capacity.
- The total installed capacity of grid interactive renewable power, which was 78316.44 MW as in 2019 increased at growth rate of 11.19% during a year (2020) (Table 2.5).
- Out of the total installed generation capacity of renewable sources of power in 2020, installed capacity of Wind power accounted for about 43.3%, followed by Solar power including roof tops (39.8%) and Biomass power (11.2%). However, in terms of growth rates year on year, Solar power installed capacity raced at a growth rate of almost 23% just over the last year from 2019 to 2020.

- Karnataka had the highest installed capacity of grid connected renewable power (15232.06 MW) in 2020 followed closely by Tamil Nadu (14347.22 MW) mainly on account of wind and solar power.

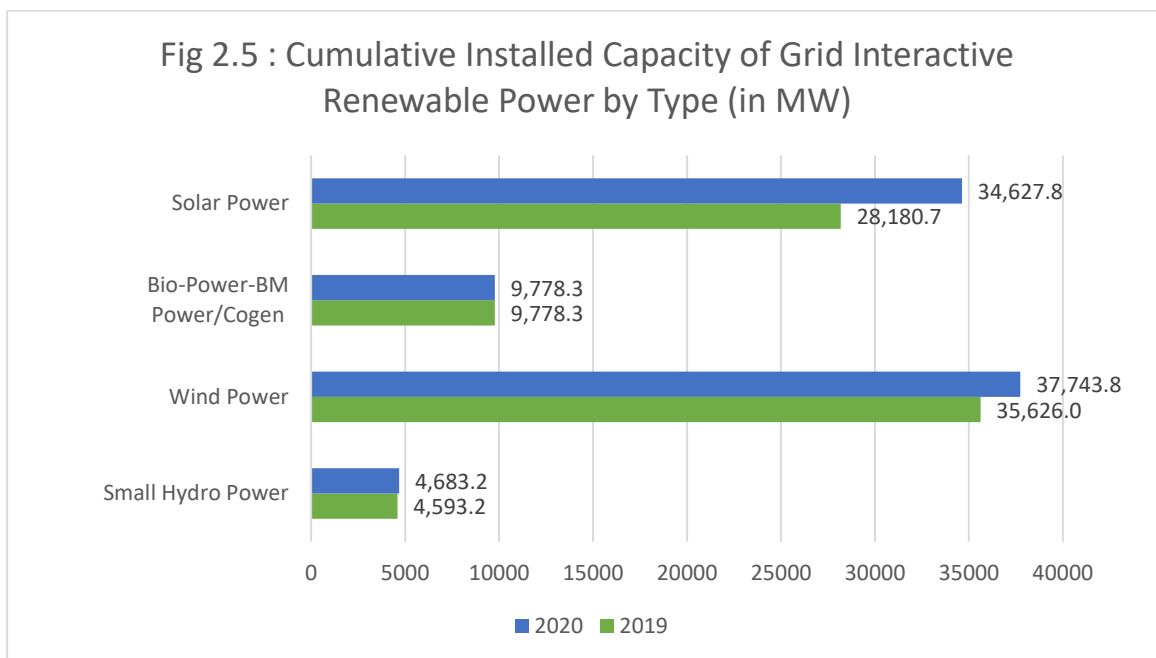


Table 2.1: Installed Capacity of Coal Washeries

as on 31.03.2020

Sl. No.	Washery & Operator	State	Capacity (MTY) 31.03.2020*
COKING COAL			
1	Dudga-II, CIL	Jharkhand	2.00
2	Bhojudih, CIL	West Bengal	1.70
3	Moonidih, CIL	Jharkhand	1.60
4	Sudamdih, CIL	Jharkhand	1.60
5	Mahuda, CIL	Jharkhand	0.63
6	Madhuban, CIL	Jharkhand	2.50
7	Kathara, CIL	Jharkhand	3.00
8	Swang, CIL	Jharkhand	0.75
9	Rajrappa, CIL	Jharkhand	3.00
10	Kedla, CIL	Jharkhand	2.60
11	Nandan, CIL	Madhya Pradesh	1.20
(A) CIL			20.58
12	Chasnala, IISCO	Jharkhand	1.4
13	Jamadoba, TISCO	Jharkhand	1.3
14	West Bokaro-II, TISCO	Jharkhand	2.5
15	West Boakaro-III, TISCO	Jharkhand	2.56
16	Bhelatand, TISCO	Jharkhand	1.5
(B) PSU & Private			9.26
TOTAL COKING (A + B)			29.84
NON-COKING COAL			
1	Gidi, CIL	Jharkhand	2.50
2	Piparwar, CIL	Jharkhand	6.50
3	Kargali, CIL	Jharkhand	2.72
(A) CIL			11.72
4	Dipka, Aryan coal beneficiation pvt. Ltd.	Chattisgarh	14.00
5	Gevra, Aryan coal beneficiation pvt. Ltd.	Chattisgarh	6.25
6	Panderpauni, Aryan coal beneficiation pvt. Ltd.	Maharashtra	2.62
7	Chakabuwa, Aryan coal beneficiation pvt. Ltd.	Chattisgarh	7.50
8	Hingir, Aryan coal beneficiation pvt. Ltd.	Odisha	5.00
9	Binjhari, Aryan coal beneficiation pvt. Ltd.	Chattisgarh	4.80
10	Talcher, Aryan Energy Pvt. Ltd.	Odisha	2.34
* Provisional			Contd....
<i>Source: Office of Coal Controller, Ministry of Coal</i>			

Table 2.1(Contd.): Installed Capacity of Coal Washeries

Sl. No.	Washery & Operator	State of Location	Capacity (MTY)
			31.03.2020*
11	Wani, Kartikay Coal washeries pvt. Ltd.	Maharashtra	2.50
12	Talcher, Global coal Mining (P) Ltd.	Odisha	4.00
13	Ib Valley, Global coal Mining (P) Ltd.	Odisha	3.50
14	Ramagundam, Global coal Mining (P) Ltd.	Telangana	1.00
15	Manuguru, Global coal Mining (P) Ltd.	Telangana	1.50
16	Talcher, Spectrum Coal & Power Ltd.	Odisha	9.52
17	Ratija, Spectrum Coal & Power Ltd.	Chattisgarh	11.00
18	Maruti, Maruti Clean Coal.	Chattisgarh	6.60
19	Ael, Adani Enterprises Limited.	Chattisgarh	15.00
20	Jpl, Jindal Power Limited.	Chattisgarh	4.75
	(B) Private		101.88
	TOTAL NON-COKING (A+B)		113.60
	Gross Total (Coking + Non-Coking)		143.44
* Provisional			
<i>Source: Office of Coal Controller, Ministry of Coal</i>			

Table 2.2: Installed Capacity and Utilization of Refineries of Crude Oil

Sl. No.	Refinery	Refinery Capacity (TMTPA)		Crude Oil Processed (TMT)		Capacity Utilisation (%)		Change in Utilisation
		31.03.2019	31.03.2020	2018-19	2019-20(P)	2018-19	2019-20(P)	
1	2	3	4	5	6	7	8	9
(a)	PUBLIC SECTOR	142066	142566	150976	144716	106.27	101.87	-4.41
	IOCL, Guwahati, Assam	1000	1000	863	892	86.32	89.24	2.92
	IOCL, Barauni, Bihar	6000	6000	6661	6516	111.02	108.59	-2.43
	IOCL, Koyali, Gujarat	13700	13700	13505	13075	98.58	95.44	-3.14
	IOCL, Haldia, West Bengal	7500	8000	7965	6463	106.20	86.18	-20.02
	IOCL, Mathura, Uttar Pradesh	8000	8000	9737	8948	121.71	111.85	-9.86
	IOCL, Digboi, Assam	650	650	676	664	103.93	102.19	-1.74
	IOCL, Panipat, Haryana	15000	15000	15281	15038	101.87	100.25	-1.62
	IOCL, Bongaigaon, Assam	2350	2350	2513	2045	106.93	87.01	-19.91
	IOCL, Paradip, Odisha	15000	15000	14616	15778	97.44	105.19	7.75
	Total IOC	69200	69700	71816	69419	103.78	100.32	-3.46
	BPCL, Mumbai, Maharashtra	12000	12000	14773	15017	123.11	125.14	2.03
	BPCL, Kochi, Kerala	15500	15500	16051	16515	103.55	106.55	3.00
	Total BPCL	27500	27500	30823	31532	112.09	114.66	2.58
	HPCL, Mumbai, Maharashtra	7500	7500	8671	8065	115.61	107.54	-8.08
	HPCL, Visakh, Andhra Pradesh	8300	8300	9773	9115	117.75	109.82	-7.93
	Total HPCL	15800	15800	18444	17180	116.73	108.74	-8.00
	CPCL, Manali, Tamil Nadu	10500	10500	10271	10161	97.82	96.77	-1.05
	CPCL, Narimanam, Tamil Nadu	1000	1000	423	0	42.34	0.00	-42.34
	Total CPCL	11500	11500	10695	10161	93.00	88.35	-4.64
	NRL, Numaligarh, Assam	3000	3000	2900	2383	96.68	79.44	-17.23
	ONGC, Tatipaka, Andhra Pradesh	66	66	66	87	100.24	131.71	31.47
	MRPL, Mangalore, Karnataka	15000	15000	16231	13953	108.21	93.02	-15.19
(b)	PRIVATE SECTOR	88200	88200	88041	89515	99.82	101.49	1.67
	RIL, Jamnagar, Gujarat	33000	33000	31752	33019	96.22	100.06	3.84
	RIL, SEZ-Jamnagar, Gujarat	35200	35200	37393	35876	106.23	101.92	-4.31
	ESSAR Oil Ltd. Vadinar	20000	20000	18896	20620	94.48	103.10	8.62
(c)	JOINT VENTURE	19100	19100	18189	20155	105.14	105.52	0.39
	BORL, Bina, M.P.	7800	7800	5716	7913	95.26	101.45	6.18
	HMEL, GGS, Bathinda, Punjab	11300	11300	12473	12242	110.38	108.34	-2.04
	Total (a+b+c)	249366	249866	257205	254386	103.14	102.01	-1.13

Note: 1.Total may not tally due to rounding off

P:Provisional

2. Crude throughput in terms of crude oil processed.

3. Capacity utilisation is equal to crude oil processed in current year divided by refining capacity at the end of previous year*100

Source: M/o Petroleum & Natural Gas

Table 2.3 (A) : Yearwise Installed Capacity of Electricity Generation in Utilities and Non-utilities

(in Mega Watt = 10³ Kilo Watt)

As on	Utilities							Total
	Thermal				Hydro	Nuclear	RES*	
	Steam	Diesel	Gas	Total				
1	2	3	4	5	6	7	8	9
31.03.2011	93,918	1,200	17,706	1,12,824	37,567	4,780	18,455	1,73,626
31.03.2012	1,12,022	1,200	18,381	1,31,603	38,990	4,780	24,503	1,99,877
31.03.2013	1,30,221	1,200	20,110	1,51,530	39,491	4,780	27,542	2,23,344
31.03.2014	1,45,273	1,200	21,782	1,68,255	40,531	4,780	34,988	2,48,554
31.03.2015	1,64,636	1,200	23,062	1,88,898	41,267	5,780	38,959	2,74,904
31.03.2016	1,85,173	994	24,509	2,10,675	42,783	5,780	45,924	3,05,162
31.03.2017	1,92,163	838	25,329	2,18,330	44,478	6,780	57,244	3,26,833
31.03.2018	1,97,172	838	24,897	2,22,907	45,293	6,780	69,022	3,44,002
31.03.2019	2,00,705	638	24,937	2,26,279	45,399	6,780	77,642	3,56,100
31.03.2020 (P)	2,05,135	510	24,955	2,30,600	45,699	6,780	87,028	3,70,106
Growth rate of 2019-20 over 2018-19(%)	2.21	-20.06	0.07	1.91	0.66	0.00	12.09	3.93
CAGR** 2010-11 to 2019-20 (%)	9.07	-9.07	3.89	8.27	2.20	3.96	18.81	8.77

Note: Data for RES has been revised with respect to year 2014, 2015 along with 2016 as per the data supplied by CEA

* RES= Renewable Energy Sources excluding Hydro

** Capacity in respect of Self Generating Industries includes units of capacity 1 MW and above.

CAGR: Compound Annual Growth Rate =((Current Value/Base Value)^(1/nos. of years)-1)*100

Source : Central Electricity Authority.

Table 2.3 (B) : Yearwise Installed Capacity of Electricity Generation in Utilities and Non-utilities

(in Mega Watt = 10³ x Kilo Watt)

As on	Non-Utilities							Grand Total (Utility + Non-Utility)
	Thermal				Hydro	RES*	Total	
	Steam	Diesel	Gas	Total				
	10	11	12	13	14	15	16	17= 9+16
31.03.2011	19,112	9,655	5,054	33,821	57	567	34,444	2,08,071
31.03.2012	22,615	9,955	5,885	38,456	48	872	39,375	2,39,252
31.03.2013	23,890	11,148	4,498	39,535	67	1,124	40,726	2,64,070
31.03.2014	24,752	11,432	4,751	40,935	64	1,259	42,258	2,90,812
31.03.2015	26,089	12,009	5,193	43,291	65	1,301	44,657	3,19,561
31.03.2016	28,688	12,347	5,819	46,853	59	1,368	48,279	3,53,442
31.03.2017	30,572	13,350	6,109	50,031	65	1,433	51,529	3,78,362
31.03.2018	32,854	13,145	7,156	53,155	51	1,726	54,933	3,98,935
31.03.2019	47,679	15,571	8,787	72,037	103	3,067	75,207	4,31,307
31.03.2020 (P)	49,957	15,813	8,937	74,707	108	3,185	78,000	4,48,106
Growth rate of 2019-20 over 2018-19(%)	4.78	1.56	1.70	3.71	4.41	3.87	3.71	3.89
CAGR** 2010-11 to 2019-20 (%)	10.09	5.06	5.87	8.25	6.62	18.84	8.52	7.97

* RES= Renewable Energy Sources excluding Hydro

** Capacity in respect of Self Generating Industries includes units of capacity 1 MW and above.

CAGR: Compound Annual Growth Rate =((Current Value/Base Value)^{(1/nos. of years)-1})*100

Source : Central Electricity Authority.

Table 2.4 : Regionwise and Statewise Installed Capacity of Electricity Generation (Utilities)

States/UTs	Hydro		Thermal		Nuclear		RES*		Total		Growth Rate (2019-20 to 2018-19) (%)
	31.03.19	31.03.20	31.03.19	31.03.20	31.03.19	31.03.20	31.03.19	31.03.20	31.03.19	31.03.20	
Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.03	0.04	16.83
Delhi	0.00	0.00	2.49	2.36	0.00	0.00	0.18	0.22	2.67	2.57	-3.62
Haryana	1.10	0.20	5.03	4.82	0.00	0.00	0.41	0.53	6.55	5.55	-15.28
Himachal Pradesh	2.48	2.48	0.00	0.00	0.00	0.00	0.88	0.95	3.36	3.43	2.03
Jammu & Kashmir	1.23	1.23	0.18	0.18	0.00	0.00	0.19	0.20	1.60	1.60	0.37
Punjab	2.60	1.24	6.92	6.92	0.00	0.00	1.28	1.45	10.80	9.62	-11.00
Rajasthan	1.10	0.43	10.31	10.97	0.00	0.00	7.33	9.24	18.73	20.64	10.20
Uttar Pradesh	0.72	0.72	12.77	12.77	0.00	0.00	2.91	3.21	16.41	16.70	1.79
Uttarakhand	1.98	1.98	0.55	0.55	0.00	0.00	0.59	0.66	3.13	3.19	2.13
Central Sector NR	8.60	11.52	13.56	14.22	1.62	1.62	0.38	0.38	24.16	27.74	14.82
Sub-Total (NR)	19.81	19.81	51.82	52.80	1.62	1.62	14.20	16.87	87.45	91.09	4.17
Chhattisgarh	0.12	0.12	16.45	16.25	0.00	0.00	0.54	0.55	17.10	16.92	-1.07
Gujarat	0.77	0.77	19.63	20.37	0.00	0.00	8.40	10.34	28.80	31.48	9.33
Madhya Pradesh	1.70	1.70	11.75	11.80	0.00	0.00	4.26	4.70	17.72	18.19	2.68
Maharashtra	3.33	3.33	24.29	23.37	0.00	0.00	9.19	9.59	36.81	36.29	-1.43
Daman & Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.02	37.25
D. & N. Haveli	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00
Goa	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.01	0.05	0.05	2.31
Central Sector WR	1.52	1.52	19.36	20.68	1.84	1.84	0.67	0.67	23.39	24.71	5.64
Sub-Total (WR)	7.45	7.45	91.52	92.51	1.84	1.84	23.08	25.87	123.89	127.67	3.05
Andhra Pradesh	1.67	1.67	12.84	12.30	0.00	0.00	7.49	8.11	22.00	22.09	0.42
Telangana	2.48	2.48	6.25	6.38	0.00	0.00	3.98	4.01	12.71	12.88	1.32
Karnataka	3.59	3.59	7.23	7.11	0.00	0.00	13.83	15.23	24.65	25.92	5.17
Kerala	1.86	1.86	0.33	0.33	0.00	0.00	0.36	0.38	2.55	2.57	0.56
Tamil Nadu	2.18	2.18	8.51	8.51	0.00	0.00	12.41	14.12	23.10	24.81	7.38
Puducherry	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.04	0.04	6.65
Lakshadweep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Sector SR #	0.00	0.00	12.75	13.10	3.32	3.32	0.54	0.54	16.61	16.96	2.11
Sub-Total (SR)	11.77	11.77	47.95	47.77	3.32	3.32	38.62	42.41	101.66	105.27	3.55
Bihar	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.34	0.33	0.34	5.31
Jharkhand	0.13	0.13	2.25	2.25	0.00	0.00	0.04	0.05	2.42	2.43	0.32
Odisha	2.06	2.06	4.22	5.54	0.00	0.00	0.50	0.51	6.78	8.11	19.64
West Bengal	0.99	0.99	7.54	7.43	0.00	0.00	0.47	0.53	9.00	8.95	-0.57
Sikkim	0.76	0.76	0.00	0.00	0.00	0.00	0.05	0.05	0.81	0.81	0.01
A. & N. Islands	0.00	0.00	0.04	0.04	0.00	0.00	0.01	0.01	0.05	0.05	0.89
Central Sector ER \$	1.01	1.01	18.38	19.71	0.00	0.00	0.02	0.02	19.40	20.73	6.86
Sub-Total (ER)	4.94	4.94	32.43	34.97	0.00	0.00	1.42	1.51	38.79	41.42	6.80
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.14	0.14	0.16
Assam	0.10	0.10	0.35	0.35	0.00	0.00	0.03	0.05	0.48	0.50	3.89
Manipur	0.00	0.00	0.04	0.04	0.00	0.00	0.01	0.01	0.04	0.05	3.83
Meghalaya	0.32	0.32	0.00	0.00	0.00	0.00	0.03	0.05	0.35	0.37	3.89
Mizoram	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04	2.76
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.03	0.00
Tripura	0.00	0.00	0.17	0.17	0.00	0.00	0.02	0.02	0.19	0.19	2.33
Central Sector NER	1.01	1.31	2.00	2.00	0.00	0.00	0.03	0.03	3.04	3.34	9.87
Sub-Total (NER)	1.43	1.73	2.56	1.73	0.00	0.00	0.32	0.36	4.31	4.65	7.88
Total States	33.27	30.35	160.22	160.88	0.00	0.00	76.01	85.40	269.50	276.63	2.64
Total Central	12.13	15.35	66.06	69.72	6.78	6.78	1.63	1.63	86.60	93.48	7.95
Total All India	45.40	45.70	226.28	230.60	6.78	6.78	77.64	87.03	356.10	370.11	3.93

\$ Damodar Valley Corporation (DVC) installed capacity is considered under central sector(ER)

* RES: Renewable Energy Sources excluding hydro

Sub-totals/Totals may not tally due to conversion to GW and rounding off.

Source : Central Electricity Authority.

Table 2.5: State-wise cumulative Installed Capacity of Grid Interactive Renewable Power by Type

S. No.	STATES / UTs	Small Hydro Power		Wind Power		Bio-Power- BMPower/Cogen		Waste to Energy		Solar Power		Total Capacity		Growth Rate (2019 to 2020)
		(MW)		(MW)		(MW)		(MW)		(MW)		(MW)		
		2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	
1	Andhra Pradesh	162.11	162.11	4090.45	4092.45	477.18	477.18	23.16	23.16	3085.68	3610.02	7838.58	8364.92	6.71
2	Arunachal Pradesh	131.11	131.11	-	-	-	-	-	-	5.39	5.61	136.50	136.72	0.16
3	Assam	34.11	34.11	-	-	-	-	-	-	22.40	41.23	56.51	75.34	33.32
4	Bihar	70.70	70.70	-	-	121.20	121.20	-	-	142.45	151.57	334.35	343.47	2.73
5	Chhattisgarh	76.00	76.00	-	-	230.50	244.50	-	-	231.35	231.35	537.85	551.85	2.60
6	Goa	0.05	0.05	-	-	-	-	-	0.34	3.92	4.78	3.97	5.17	30.23
7	Gujarat	61.30	68.95	6073.07	7541.52	77.30	77.30	-	-	2440.13	2948.37	8651.80	10636.14	22.94
8	Haryana	73.50	73.50	-	-	205.66	205.66	-	-	224.52	252.14	503.68	531.30	5.48
9	Himachal Pradesh	860.61	911.51	-	-	7.20	7.20	-	-	22.68	32.93	890.49	951.64	6.87
10	Jammu & Kashmir	179.03	180.48	-	-	-	-	-	-	14.83	19.30	193.86	199.78	3.05
11	Jharkhand	4.05	4.05	-	-	4.30	4.30	-	-	34.95	38.40	43.30	46.75	7.97
12	Karnataka	1254.73	1280.73	4694.90	4790.60	1798.80	1881.80	1.00	1.00	6095.56	7277.93	13844.99	15232.06	10.02
13	Kerala	222.02	222.02	52.50	62.50	0.72	0.72	-	-	138.59	142.23	413.83	427.47	3.30
14	Madhya Pradesh	95.91	95.91	2519.89	2519.89	105.35	105.35	15.40	15.40	1840.16	2258.46	4576.71	4995.01	9.14
15	Maharashtra	375.57	379.58	4794.13	5000.33	2516.10	2516.10	12.59	12.59	1633.54	1801.80	9331.93	9710.40	4.06
16	Manipur	5.45	5.45	-	-	-	-	-	-	3.44	5.16	8.89	10.61	19.35
17	Meghalaya	32.53	32.53	-	-	13.80	13.80	-	-	0.12	0.12	46.45	46.45	0.00
18	Mizoram	36.47	36.47	-	-	-	-	-	-	0.50	1.52	36.97	37.99	2.76
19	Nagaland	30.67	30.67	-	-	-	-	-	-	1.00	1.00	31.67	31.67	0.00
20	Odisha	64.63	64.63	-	-	59.22	59.22	-	-	394.73	397.84	518.58	521.69	0.60
21	Punjab	173.55	173.55	-	-	317.10	317.10	9.25	10.75	905.62	947.10	1405.52	1448.50	3.06
22	Rajasthan	23.85	23.85	4299.72	4299.72	121.30	121.30	-	-	3226.79	5137.91	7671.66	9582.78	24.91
23	Sikkim	52.11	52.11	-	-	-	-	-	-	0.01	0.07	52.12	52.18	0.12
24	Tamil Nadu	123.05	123.05	8968.91	9304.34	997.55	997.55	6.40	6.40	2575.22	3915.88	12671.13	14347.22	13.23
25	Telangana	90.87	90.87	128.10	128.10	159.10	159.10	18.50	26.00	3592.09	3620.75	3988.66	4024.82	0.91
26	Tripura	16.01	16.01	-	-	-	-	-	-	5.09	9.41	21.10	25.42	20.47
27	Uttar Pradesh	25.10	25.10	-	-	2115.51	2115.51	-	-	960.10	1095.10	3100.71	3235.71	4.35
28	Uttarakhand	214.32	214.32	-	-	130.50	130.50	-	-	306.75	315.90	651.57	660.72	1.40
29	West Bengal	98.50	98.50	-	-	319.92	319.92	-	-	75.95	114.46	494.37	532.88	7.79
30	Andaman & Nicobar	5.25	5.25	-	-	-	-	-	-	11.73	12.19	16.98	17.44	2.71
31	Chandigarh	-	-	-	-	-	-	-	-	34.71	40.55	34.71	40.55	16.83
32	Dadar & Nagar Haveli	-	-	-	-	-	-	-	-	5.46	5.46	5.46	5.46	0.00
33	Daman & Diu	-	-	-	-	-	-	-	-	14.47	19.86	14.47	19.86	37.25
34	Delhi	-	-	-	-	-	-	52.00	52.00	126.89	165.16	178.89	217.16	21.39
35	Lakshwadeep	-	-	-	-	-	-	-	-	0.75	0.75	0.75	0.75	0.00
36	Puducherry	-	-	-	-	-	-	-	-	3.14	5.51	3.14	5.51	75.48
37	Others	-	-	4.30	4.30	-	-	-	-	-	-	4.30	4.30	0.00
Total (MW)		4593.15	4683.16	35625.97	37743.75	9778.31	9778.31	138.30	147.64	28180.71	34627.82	78316.44	87077.68	11.19

Source: Ministry of New and Renewable Energy

**Table 2.6 : Installation of Off-grid / Decentralised Renewable Energy Systems/
Devices as on 31.03.2020**

Sl. No.	State/UT	Biogas Plants (Nos.)	SPV Pumps (Nos.)	Solar Photovoltaic (SPV) Systems				Waste to Energy (MW)
				SLS (Nos.)	HLS (Nos.)	SL (Nos.)	PP (KWP)	
1	2	3	4	5	6	7	8	9
1	Andhra Pradesh	266744	34045	10487	22972	77803	3816	28.205
2	Arunachal Pradesh	3609	22	5410	35065	36694	963	-
3	Assam	138483	45	10556	46879	647761	1605	-
4	Bihar	129925	2813	38432	12303	1735227	6770	1
5	Chhattisgarh	59700	61970	2042	42232	3311	31372	0.33
6	Goa	4226	15	707	393	1093	33	-
7	Gujarat	435287	11522	4754	9253	31603	13577	19.245
8	Haryana	63436	1293	34625	56727	93853	2321	4.885
9	Himachal Pradesh	47706	6	78100	22592	33909	1906	1
10	Jammu & Kashmir	3200	39	15387	144316	51224	8130	-
11	Jharkhand	7855	4670	12733	9450	790515	3770	-
12	Karnataka	510942	7420	3210	52638	7781	7854	13.622
13	Kerala	152771	818	1735	41912	54367	15825	0.23
14	Madhya Pradesh	376221	17813	11683	7920	529101	3654	4.901
15	Maharashtra	924092	11315	10420	3497	239297	3858	31.042
16	Manipur	2128	40	11967	24583	9058	1581	-
17	Meghalaya	11156	19	5800	14874	40750	2004	-
18	Mizoram	5856	37	5625	12060	34512	3175	-
19	Nagaland	7953	3	6235	1045	6766	1506	-
20	Odisha	271690	9551	17597	5274	99843	1322	-
21	Punjab	185583	4413	42758	8626	17495	2066	7.455
22	Rajasthan	72497	48175	7114	187968	225851	30449	3.833
23	Sikkim	9044	0	504	15059	23300	850	-
24	Tamil Nadu	223894	5459	39419	296505	16818	13052	17.74
25	Telangana	316665	424	1958	0	0	7450	4.092
26	Tripura	3710	151	1990	32723	64801	867	-
27	Uttar Pradesh	440949	28650	278905	235909	2330083	10638	50.235
28	Uttarakhand	364582	26	27739	91595	163386	4060	9.22
29	West Bengal	1072	653	11813	145332	17662	1730	1.167
30	Andaman & Nicobar	97	5	390	468	6296	167	-
31	Chandigarh	169	12	898	275	1675	730	-
32	Dadar & Nagar Haveli	681	0	0	0	0	0	-
33	Daman & Diu	0	0	0	0	0	0	-
34	Delhi	0	90	301	0	4807	1269	-
35	Lakshadweep	578	0	4168	600	5289	2190	-
36	Puducherry	17541	21	417	25	1637	121	-
37	Others*	-	4621	9150	140273	125797	23885	-
	Total	5060042	2,56,156	7,15,029	17,21,343	75,29,365	2,14,565	198.20

* Others includes installations through NGOs/IREDA in different states

SLS = Street Lighting System; HLS = Home Lighting System; SL = Solar Lantern; PP = Power Plants; SPV = Solar Photovoltaic;

MW = Mega Watt; KWP = Kilowatt peak

Source : Ministry of New and Renewable Energy