



**REPORT**  
**ON**  
**FLY ASH GENERATION**  
**AT**  
**COAL/LIGNITE BASED THERMAL POWER STATIONS**  
**AND**  
**ITS UTILIZATION IN THE COUNTRY**  
**FOR**  
**1<sup>ST</sup> HALF OF THE YEAR 2018-19**  
**(April, 2018 to Sept., 2018)**



**CENTRAL ELECTRICITY AUTHORITY**

**NEW DELHI**

**JUNE 2019**



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**CENTRAL ELECTRICITY AUTHORITY**  
**THERMAL CIVIL DESIGN DIVISION**

**FLY ASH GENERATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS AND ITS UTILIZATION IN THE COUNTRY FOR THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19 (APRIL, 2018 TO SEPTEMBER, 2018)**

**1.0 BACKGROUND**

Coal/Lignite based Thermal Power Generation has been the backbone of power capacity addition in the country. Indian coal is of low grade with ash content of the order of 30-45 % in comparison to imported coal which has low ash content of the order of 10-15%. Large quantity of ash is, thus being generated at coal/lignite based Thermal Power Stations in the country, which not only requires large area of precious land for its disposal but is also one of the sources of pollution of both air and water.

Central Electricity Authority (CEA) on behalf of Ministry of Power has been monitoring since 1996-97 the fly ash generation and its utilization in the country at coal/ lignite based thermal power stations. Data on fly ash generation and utilization including modes of utilization is obtained from thermal power stations on half yearly as well as yearly basis. The data thus obtained is analyzed and a report bringing out the status of fly ash generation and its utilization in the country is prepared. The said report is forwarded to Ministry of Power, Ministry of Environment, Forests and Climate Change(MoEF&CC) and is also uploaded on the web site of CEA for bringing out the information in the public domain so that users of fly ash have access to the information on the availability of fly ash at different thermal power stations (TPSs) in the country.

To reduce the requirement of land for disposal of fly ash in ash ponds and to address the problem of pollution caused by fly ash, Ministry of Environment, Forests and Climate Change has issued various Notifications on fly ash utilization, first Notification was issued on 14<sup>th</sup> September, 1999 which was subsequently amended in 2003, 2009 and 2016 vide Notifications dated 27<sup>th</sup> August, 2003, 3<sup>rd</sup> November, 2009 and 25<sup>th</sup> January, 2016 respectively.

Towards the efforts in the direction of enhancing gainful utilization of fly ash, the latest MoEF&CC's Notification of 25<sup>th</sup> January, 2016 stipulates mandatory uploading of details of fly ash available on TPS's website and updating of stock position at least once in every month; increase in mandatory jurisdiction of area of application from 100 km to 300 km; cost of transportation of fly ash to be borne entirely by TPS up to 100 km and equally shared between user and TPS for more than 100 km and up to 300 km; and mandatory use of fly ash based products in all Government schemes or programmes e.g. Pradhan Mantri Gramin Sadak Yojana, Mahatma Gandhi National Rural Employment Guarantee Act, 2005, Swachh Bharat Abhiyan, etc.

The Notification of 3<sup>rd</sup> November, 2009 prescribes targets of Fly Ash utilization in a phased manner for all Coal/Lignite based Thermal Power Stations in the country so as to achieve 100% utilization of fly ash. The Thermal Power Stations in operation before the date of the Notification (i.e. 3<sup>rd</sup> November, 2009) are to achieve the target of fly ash utilization in successive 5 years -50% in first year; 60% in second year; 75% in third year; 90% in fourth year and 100% in fifth year. The new Thermal Power Stations coming into operation after the MoEF&CC's notification (i.e. 3<sup>rd</sup> November,



2009) are to achieve the target of fly ash utilization as 50% in the first year, 70% during two years, 90% during three years and 100% during four years depending upon their date of commissioning.

The report on fly ash generation and its utilization at coal/lignite based thermal power stations provides the status of fly ash generation as well as utilization in the country. The report also contains conclusion and recommendation for increasing the present rate of utilization of the fly ash.

## 2.0 ASH GENERATION & UTILIZATION DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19

### 2.1 A Brief Summary

Fly ash generation & utilization data for the 1<sup>st</sup> half of the Year 2018-19 (April, 2018 to Sept., 2018) has been received from **156** (One hundred fifty six) coal/lignite based thermal power stations of various power utilities in the country.

Data thus received has been analyzed to derive conclusions on present status of fly ash generation and its utilization in the country as a whole. A brief summary of status is given in Table-I below:

**TABLE-I**

#### SUMMARY OF FLY ASH GENERATION AND UTILIZATION

Description		1 <sup>st</sup> Half Year 2017-18	1 <sup>st</sup> Half Year 2018-19
· Nos. of Thermal Power Stations from which data was received	:	138	156
· Installed capacity (MW)	:	147725.50	159623.00
· Coal consumed (Million tons)	:	263.73	295.42
· Fly Ash Generation (Million tons)	:	84.68	93.26
· Fly Ash Utilization (Million tons)	:	51.13	64.08
· Percentage Utilization of Fly Ash (%)	:	60.38	68.72
· Percentage Average Ash Content (%)	:	32.11	31.57

It can be seen from the above table that during current half year, **156** thermal power stations have reported Fly Ash Generation & its Utilization data. Based on this, Fly Ash Utilization percentage has increased during 1<sup>st</sup> half of the year 2018-19 in comparison to the utilization during the 1<sup>st</sup> half of previous year (of **138** thermal power stations).

Power Station wise fly ash generation & its utilization status including modes of utilization for the 1<sup>st</sup> half of the Year 2018-19 for all the **156** thermal power stations is given in the statement at **Annex-I**.

### 2.2 Power Utility-wise Status of Fly Ash Generation & its Utilization during the 1<sup>st</sup> Half of the Year 2018-19

The status of fly ash generation & utilization for the 1<sup>st</sup> half of the year 2018-19 for various power utilities in the country has been assessed based on data received from Thermal Power Stations and the same is given in Table-II:

**TABLE-II****POWER UTILITY WISE FLY ASH GENERATION AND UTILIZATION DURING THE  
1<sup>ST</sup> HALF OF THE YEAR 2018-19**

Sl. No.	Name of Power Utility	Nos. of TPS of Utility	Total Installed Capacity (MW)	Total Fly Ash Generation (Million-ton)	Total Fly Ash Utilization (Million-ton)	Average % age utilization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Andhra Pradesh Power Generation Corporation (A.P.GEN.CO)	2	2810.00	3.1154	2.9684	95.28
2	APPDCL (Andhra Pradesh)	1	1600.00	0.6480	0.3752	57.90
3	APL (Gujarat)	1	4620.00	0.2990	0.2866	95.85
4	ACB (INDIA) Ltd. (Chhattisgarh)	4	390.00	0.8087	0.8087	100.00
5	AMNEPL (Maharashtra)	1	246.00	0.0000	0.0000	0.00
6	Adani Power Ltd. (Maharashtra)	1	3300.00	1.9640	1.3013	66.26
7	Adani Power Rajasthan Ltd. (Rajasthan)	1	1320.00	0.6140	0.6988	113.81
8	ADANI ELECTRICITY MUMBAI LIMITED (Maharashtra)	1	500.00	0.3070	0.3262	106.24
9	ADHUNIK POWER & NATURAL RESOURCES LIMITED (Jharkhand)	1	540.00	0.4177	0.4177	100.00
10	BEPL (UP)	5	450.00	0.2119	0.2119	100.00
11	C.E.S.C. Ltd.	3	1125.00	0.7160	0.7160	100.00
12	Chhattisgarh State Power Generation Company Ltd. (C.S.P.G.C.L.)	3	2780.00	2.7664	0.8486	30.68
13	C.G.P.L (Gujarat)	1	4150.00	0.3573	0.3275	91.66
14	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1	1200.00	0.0281	0.0284	100.92
15	Damodar Valley Corporation (D.V.C.)	7	7090.00	4.9497	3.1669	63.98
16	Durgapur Projects Ltd. (D.P.L.)	1	660.00	0.3339	0.3189	95.52
17	Dhariwal Infrastructure Ltd. (Maharashtra)	1	600.00	0.3741	0.3379	90.33
18	EASTERN COALFIELDS LIMITED (West Bengal) (No Generation)	1	30.00	0.0000	0.0000	#DIV/0!
19	Gujarat Industries Power Corporation Ltd. (G.I.P.C.L.)	1	500.00	0.2740	0.2740	100.00
20	Gujarat Mineral Development Corporation Ltd. (G.M.D.C.L.)	1	250.00	0.1357	0.2222	163.73
21	G.S.E.C.L. (Gujarat)	6	4500.00	2.1231	2.4035	113.21
22	Gupta Energy Pvt. Ltd.(Maharashtra)	1	120.00	0.0000	0.0000	#DIV/0!
23	GMR Kamalanga Energy Ltd (Odisha)	1	1050.00	0.9462	0.9222	97.47
24	GMR Chhattisgarh Energy Ltd.	1	1370.00	0.2512	0.2151	85.64



Sl. No.	Name of Power Utility	Nos. of TPS of Utility	Total Installed Capacity (MW)	Total Fly Ash Generation (Million-ton)	Total Fly Ash Utilization (Million-ton)	Average % age utilization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(Chhattisgarh)					
25	G.M.R. Warora Energy Ltd. (Maharashtra)	1	600.00	0.3491	0.3585	102.70
26	Haryana Power Generation Cor. Ltd. (H.P.G.C.L.)	2	1520.00	0.9264	0.8014	86.52
27	HALDIA ENERGY LIMITED (W.B.)	1	600.00	0.5479	0.5479	100.00
28	HINDUJA NATIONAL POWER COPORATION LIMITED (Andhra Pradesh)	1	1040.00	0.0594	0.1517	255.42
29	IDEAL ENERGY PROJECTS Ltd.(Maharashtra)	1	270.00	0.0306	0.0000	0.00
30	IL & FS TAMIL NADU POWER COMPANY Ltd (Tamil Nadu)	1	1200.00	0.0630	0.0630	100.00
31	INDIAN METALS & FERRO ALLOYS LTD. (Odisha)	1	258.00	0.2117	0.2117	100.00
32	INDIA POWER CORPORATION LIMITED(West Bengal)	1	12.00	0.0123	0.0123	100.00
33	Inderprastha Power Generation Company Ltd. (.I.P.G.C.L)	1	135.00	0.0000	0.0000	#DIV/0!
34	J.P.L (Chhattisgarh)	2	3400.00	1.6060	1.2980	80.82
35	JSW Energy Ltd.	2	2060.00	0.3448	0.3204	92.94
36	JAIPRAKASH POWER VENTURES LIMITED(Madhya Pradesh)	2	1820.00	0.8062	0.8192	101.61
37	JINDAL INDIA THERMAL POWER LIMITED	2	1334.00	0.9284	0.6560	70.66
38	JINDAL STEEL AND POWER LIMITED (Chhattisgarh)	1	576.00	0.3828	0.3838	100.28
39	JHABUA POWER LIMITED (MP)	1	600.00	0.2484	0.0997	40.15
40	JHAJJAR POWER LIMITED(Haryana)	1	1320.00	0.7369	0.6563	89.06
41	Karnataka Power Corporation Ltd.(K.P.C.L.)	2	3420.00	1.2842	0.9024	70.27
42	KANTI BIJLEE UTPADAN NIGAM LIMITED (Bihar)	1	610.00	0.2871	0.1101	38.34
43	Korba West Power Company Ltd. (Chhattisgarh)	1	600.00	0.0000	0.0600	#DIV/0!
44	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	1	1980.00	0.8786	0.8280	94.24
45	LANCO AMARKANTAK POWER	1	600.00	0.5663	0.1926	34.01

Sl. No.	Name of Power Utility	Nos. of TPS of Utility	Total Installed Capacity (MW)	Total Fly Ash Generation (Million-ton)	Total Fly Ash Utilization (Million-ton)	Average % age utilization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	LIMITED(Chhattisgarh)					
46	M.P.L (Jharkhand)	1	1050.00	0.9055	0.7712	85.18
47	M/s KSK MAHANADI POWER COMPANY LIMITED (Chhattisgarh)	1	1800.00	0.8156	0.6803	83.41
48	Meenakshi Energy Ltd. (A.P)	1	300.00	0.0014	0.0085	622.26
49	MB POWER(MADHYA PRADESH) LIMITED (Madhya Pradesh)	1	1200.00	0.8113	0.8638	106.47
50	Madhya Pradesh Power Generation Corporation Ltd. (M.P.P.G.C.L.)	4	4080.00	2.8897	0.9769	33.81
51	Maharashtra State Power Generation Corporation Ltd. (M.S.P.G.C.L)	6	7030.00	4.1158	2.2461	54.57
52	NABHA POWER LIMITED(Punjab)	1	1400.00	0.7085	0.6337	89.44
53	NATIONAL ALUMINIUM COMPANY LIMITED (NALCO) (Odisha)	1	1200.00	1.2750	0.8030	62.98
54	Neyvelli Lignite Corporation Ltd. (N.L.C.LTD)	5	3240.00	2.0031	1.9682	98.26
55	NLC TAMILNADU POWER LIMITED (Tamil Nadu)	1	1000.00	0.4714	0.4714	100.00
56	NTECL (Tamil Nadu)	1	1500.00	1.0380	0.5820	56.07
57	NSPCL (West Bengal)	1	120.00	0.1049	0.0855	81.51
58	N.T.P.C.LTD.	20	38255.00	29.8544	15.9134	53.30
59	Orissa Power Generation Corporation Ltd. (O.P.G.C.L.)	1	420.00	0.4800	0.1858	38.71
60	Punjab State Power Corporation Ltd. (P.S.P.C.L).	3	2220.00	0.6891	1.0009	145.24
61	PRAYAGRAJ POWER GENERATION COMPANY LIMITED (Uttar Pradesh)	1	1980.00	0.9063	0.5412	59.72
62	Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (R.R.V.U.N.L.)	2	2200.00	1.0874	1.1287	103.80
63	R.W.P.L. (JSW)	1	1080.00	0.4683	0.5749	122.77
64	RPSCL (UP)	1	1200.00	0.5647	0.5481	97.05
65	RAICHUR POWER CORPORATION LIMITED (Karnataka)	1	1600.00	0.0849	0.0133	15.66
66	R K M POWERGEN PRIVATE LIMITED(Chhattisgarh)	1	1080.00	0.3180	0.3293	103.58
67	SIMHAPURI ENERGY LIMITED (Andhra Pradesh)	1	600.00	0.0020	0.0020	100.00
68	Spectrum Coal & Power Ltd.(Chhattisgarh)	1	100.00	0.3677	0.2025	55.07
69	SEMBCORP ENERGY INDIA LIMITED (Andhra Pradesh)	1	1320.00	0.5385	0.4509	83.73
70	SWASTIK POWER & MINERALS RESOURCES PVT. LTD (Chhattisgarh) (No Generation)	1	25.00	0.0000	0.0000	#DIV/0!
71	TENUGHAT VIDHYUT NIGAM LIMITED (Jharkhand)	1	420.00	0.2268	0.2960	130.50



Sl. No.	Name of Power Utility	Nos. of TPS of Utility	Total Installed Capacity (MW)	Total Fly Ash Generation (Million-ton)	Total Fly Ash Utilization (Million-ton)	Average % age utilization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
72	Taqa Neyveli Power Company Pvt.Ltd.	1	250.00	0.0433	0.0428	99.02
73	THE SINGARENI COLLIERIES COMPANY LIMITED (Telangana)	1	1200.00	0.8647	0.8598	99.43
74	Tata Power Company (T.P.CO.)	2	1297.50	0.4569	0.4202	91.97
75	Torent Power Ltd.	1	422.00	0.1618	0.1618	100.00
76	TSGENCO (Telangana)	4	1822.50	1.8952	1.1655	61.50
77	T.N.G & D Corporation (Tamil Nadu)	1	600.00	0.3039	0.2999	98.70
78	TRN ENERGY PRIVATE LIMITED (Chhattisgarh)	1	600.00	0.4310	0.3814	88.48
79	Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.(U.P.R.V.U.N.L.)	3	4770.00	3.5113	0.7770	22.13
80	UPCL (Karnataka)	1	1200.00	0.0539	0.0535	99.22
81	VIDARBHA INDUSTRIES POWER LIMITED (Maharashtra)	1	600.00	0.2971	0.4690	157.83
82	West Bengal Power Development Corporation Limited (W.B.P.D.C.L)	5	4745.00	2.4050	2.3394	97.27
83	WPCL (KSKEV Ltd.) (Maharashtra)	1	540.00	0.1920	0.1856	96.64
<b>GRAND TOTAL</b>		<b>156</b>	<b>159623.00</b>	<b>93.2561</b>	<b>64.0829</b>	<b>68.72</b>

It may be seen from the Table-II above that:

The data of fly ash generation and utilization for the 1<sup>st</sup> half of the year 2018-19 was received from **83** Power Utilities having 156 Thermal Power Stations out of which **29** Power Utilities have achieved 100% or more average fly ash utilization against their respective Thermal Power Stations numbering 47. Further, **17** Power Utilities have achieved average fly ash utilization in the range of 90% to less than 100% in respect of their Thermal Power Stations numbering 28.

The performance of power utilities during the 1<sup>st</sup> half of the year 2018-19 is tabulated below:

**TABLE-III**

**POWER UTILITY-WISE RANGE OF PERCENTAGE FLY ASH UTILIZATION**

Sl. No.	Level of Fly Ash utilization	Nos. of Power Utilities
		1 <sup>st</sup> Half of the Year 2018-19
1	2	3
1	100% or more than 100%	29
2	90% to less than 100%	17
3	70% to less than 90%	12
4	50% to less than 70%	10
5	Less than 50%	9
6	No Generation	6
<b>TOTAL</b>		<b>83</b>



### 2.3 State wise Status of Fly Ash Generation & its Utilization during the 1<sup>st</sup> half of the Year 2018-19

The state wise status of fly ash generation & utilization in the country based on data received from Thermal Power Stations/Power Utilities has also been assessed and the same is given in Table-IV:

**TABLE-IV**

#### STATE WISE FLY ASH GENERATION AND ITS UTILIZATION DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19

Sl. No.	Name of State	Nos. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-ton)	Fly Ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ANDHARAPRADESH	9	12270.00	7.9387	7.0458	88.75
2	ASSAM	1	500.00	0.2640	0.0550	20.83
3	BIHAR	3	4270.00	3.4981	1.3332	38.11
4	CHHATISGARH	21	19035.00	13.5014	7.8611	58.22
5	DELHI	2	840.00	0.2700	0.2550	94.44
6	GUJARAT	11	14442.00	3.3509	3.6756	109.69
7	HARYANA	3	2840.00	1.6633	1.4578	87.64
8	JHARKHAND	7	4897.50	3.7669	3.2621	86.60
9	KARNATAKA	6	8680.00	1.9781	1.3580	68.65
10	MADHYA PRADESH	9	12460.00	8.9436	3.7456	41.88
11	MAHARASHTRA	19	18736.00	9.5250	6.2863	66.00
12	ODISHA	7	7588.00	7.9096	4.8914	61.84
13	PUNJAB	4	3620.00	1.3976	1.6346	116.95
14	RAJASTHAN	5	4850.00	3.1037	3.3363	107.50
15	TAMILNADU	10	8740.00	3.0169	2.5219	83.59
16	TALANGANA	5	3022.50	2.7599	2.0253	73.38
17	UTTAR PRADESH	16	18690.00	11.4483	6.2692	54.76
18	WEST BENGAL	18	14142.00	8.9199	7.0688	79.25
<b>GRAND TOTAL</b>		<b>156</b>	<b>159623.00</b>	<b>93.2561</b>	<b>64.0829</b>	<b>68.72</b>

It may be seen from Table-IV above that:

- (i) 7 states namely Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Maharashtra, Odisha, Uttar Pradesh and West Bengal each have generated more than 7 million-ton of fly ash during the 1<sup>st</sup> half of the Year 2018-19 . Maximum fly ash of more than 13 million-ton was generated in Chhattisgarh during the aforesaid period.
- (ii) During the 1<sup>st</sup> half of the Year 2018-19, Out of 18 states, Gujarat, Punjab and Rajasthan have achieved the fly ash utilization level of more than 100% with Punjab reporting highest 116.95 % fly ash utilization.

### 3.0 PRESENT STATUS OF FLY ASH UTILIZATION AS PER MoEF&CC'S NOTIFICATION OF 3<sup>rd</sup> NOVEMBER, 2009

Fly ash generation and utilization data received from Thermal Power Stations/Power Utilities in the country for the 1<sup>st</sup> half of the year 2018-19 has been compiled to see the fly ash utilization vis-à-vis the target of fly ash utilization as prescribed in MoEF&CC's notification of 3<sup>rd</sup> November, 2009.

During the 1<sup>st</sup> half of the Year 2018-19, all those thermal power stations which were in operation on the date of issuance of MoEF&CC's notification (i.e. 3<sup>rd</sup> November, 2009) should have achieved the target of fly ash utilization of 100% within five years from the date of notification. All those thermal power stations which have come into operation after the date of issuance of MoEF&CC's notification (i.e. 3<sup>rd</sup> November, 2009) should have achieved the target of fly ash utilization of 100% within four years depending upon their date of commissioning. However, it is seen that the target set by MoEF&CC's notification has not been achieved by most of the Thermal Power Stations.

#### 3.1 Range of Fly Ash Utilization during the 1<sup>st</sup> Half of the Year 2018-19

Based on the fly ash utilization data received from Thermal Power Stations/Power Utilities, the thermal power stations have been grouped into five categories as noted below depending upon range of utilization of fly ash by the stations.

**TABLE-V**

**POWER STATION WISE RANGE OF PERCENTAGE FLY ASH UTILIZATION**

Sl. No.	Range of Fly Ash utilization	Nos. of Power Stations
		1 <sup>st</sup> Half of the Year 2018-19
1	2	3
1	100% or more than 100%	54
2	90% to less than 100%	22
3	70% to less than 90%	22
4	50% to less than 70%	21
5	Less than 50%	29
6	Nos. of TPS which have not generated any significant fly ash or any fly ash	8
	<b>TOTAL</b>	<b>156</b>

#### 3.2 Thermal Power Stations that have achieved Fly Ash utilization level of 100% or more during the 1<sup>st</sup> half of the Year 2018-19

The following Thermal Power Stations as given in Table-VI achieved the fly ash utilization level of 100% or more during the 1<sup>st</sup> half of the year 2018-19.



**TABLE-VI****THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF 100% OR MORE DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19**

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	KASAI PALI	ACB(INDIA)Ltd (Chhattisgarh)	270.00	0.6273	0.6273	100.00
2	KAWAI	ADANI POWER RAJASTHAN Ltd. (Rajasthan)	1320.00	0.6140	0.6988	113.81
3	ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED (Maharashtra)	500.00	0.3070	0.3262	106.24
4	CHAKABURA TPP	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.0851	0.0851	100.00
5	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.0821	0.0821	100.00
6	SVPL Renki	ACB India Limited (Chhattisgarh)	60.00	0.0142	0.0142	100.07
7	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LIMITED (Jharkhand)	540.00	0.4177	0.4177	100.00
8	BARKHERA	BEPL (UP)	90.00	0.0363	0.0363	100.00
9	KHAMBER KHERA	BEPL (UP)	90.00	0.0378	0.0378	100.00
10	KUNDARKI	BEPL (UP)	90.00	0.0532	0.0532	100.00
11	MAQSOODAPUR	BEPL (UP)	90.00	0.0344	0.0344	100.00
12	UTRAULA	BEPL (UP)	90.00	0.0501	0.0501	100.00
13	B.B.G.S.	C.E.S.C. (West Bengal)	750.00	0.6830	0.6830	100.00
14	S.G.S.	C.E.S.C. (West Bengal)	135.00	0.0330	0.0330	100.00
15	MUTIARA	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1200.00	0.0281	0.0284	100.92
16	CHANDRAPURA	D.V.C.(Jharkhand)	630.00	0.4491	0.4881	108.68
17	SURAT LIGNITE	G.I.P.C.L. (Gujarat)	500.00	0.2740	0.2740	100.00
18	AKRIMOTA	G.M.D.C.L. (Gujarat)	250.00	0.1357	0.2222	163.73
19	GANDHINAGAR	G.S.E.C.L. (Gujarat)	630.00	0.3850	0.8731	226.78
20	KUTCH LIGNITE	G.S.E.C.L. (Gujarat)	290.00	0.1850	0.1870	101.08
21	SIKKA	G.S.E.C.L. (Gujarat)	500.00	0.0511	0.1150	225.05
22	GMR WARORA ENERGY Ltd.	GMR WARORA ENERGY Ltd. (Maharashtra)	600.00	0.3491	0.3585	102.70
23	PANIPAT	H.P.G.C.L.(Haryana)	920.00	0.4760	0.5548	116.56
24	HINDUJA NATIONAL POWER COPORATION TPP (Vizag)	HINDUJA NATIONAL POWER COPORATION LIMITED (Andhra Pradesh)	1040.00	0.0594	0.1517	255.42
25	HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED (W.B.)	600.00	0.5479	0.5479	100.00
26	IL & FS TNPC Ltd	IL & FS TAMIL NADU POWER COMPANY Ltd (Tamil Nadu)	1200.00	0.0630	0.0630	100.00
27	DISHERGARH TPS	INDIA POWER CORPORATION	12.00	0.0123	0.0123	100.00

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		LIMITED(West Bengal)				
28	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd. (Odisha)	258.00	0.2117	0.2117	100.00
29	VIJAYANAGAR	JSW Energy Limited (Karnataka)	860.00	0.1148	0.1148	100.00
30	JAYPEE NIGRIE SUPER	JAIPRAKASH POWER VENTURES LIMITED(Madhya Pradesh)	1320.00	0.5600	0.5730	102.32
31	JAYPEE BINA	JAIPRAKASH POWER VENTURES LIMITED(Madhya Pradesh)	500.00	0.2462	0.2462	100.00
32	DONGAMAHUA CAPTIVE POWER PLANT	JINDAL STEEL AND POWER LIMITED (Chhattisgarh)	576.00	0.3828	0.3838	100.28
33	KHARSIA CAPTIVE POWER PLANT	JINDAL INDIA THERMAL POWER LIMITED (Chhattisgarh)	134.00	0.1857	0.1857	100.00
34	THAMMINAPATNAM TPS	MEENAKSHI ENERGY Ltd.(Andhra Pradesh)	300.00	0.0014	0.0085	622.26
35	ANUPPUR	MB POWER(MADHYA PRADESH) LIMITED (Madhya Pradesh)	1200.00	0.8113	0.8638	106.47
36	NASHIK	M.S.P.G.C.L. (Maharashtra)	630.00	0.3869	0.5686	146.99
37	NEYVELI -I EXPN	N.L.C.LTD(Tamil Nadu)	420.00	0.5712	0.5712	100.00
38	NEYVELI - II	N.L.C.LTD(Tamil Nadu)	1470.00	0.3529	0.3530	100.03
39	NEYVELI - II EXPN	N.L.C.LTD (Tamil Nadu)	500.00	0.0391	0.0391	100.00
40	BARSINGSAR LIGNITE	N.L.C.LTD (Rajasthan)	250.00	0.9339	0.9339	100.00
41	NLC TAMILNADU POWER LTD.	NLC TAMILNADU POWER LIMITED (Tamil Nadu)	1000.00	0.4714	0.4714	100.00
42	FEROZE GANDHI UNCHAHAHAR	N.T.P.C. LTD(U.P.)	1050.00	0.8176	0.8900	108.86
43	TANDA	N.T.P.C.LTD (U.P.)	440.00	0.2950	0.6020	204.07
44	ROPAR	P.S.P.C.L. (Punjab)	840.00	0.2899	0.7241	249.80
45	CHHABRA	RRVUNL (Rajasthan)	1000.00	0.7126	0.7366	103.36
46	KALISINDH	RRVUNL (Rajasthan)	1200.00	0.3748	0.3922	104.63
47	JALIPA KAPURDI	RWPL (Rajasthan)	1080.00	0.4683	0.5749	122.77
48	UNCCHPINDA	R K M POWERGEN PRIVATE LIMITED(Chhattisgarh)	1080.00	0.3180	0.3293	103.58
49	SIMHAPURI	SIMHAPURI ENERGY LIMITED (Andhra Pradesh)	600.00	0.0020	0.0020	100.00
50	TENUGHAT TPS	TENUGHAT VIDHYUT NIGAM LIMITED (Jharkhand)	420.00	0.2268	0.2960	130.50
51	SABARMATI	TORNT POWER Ltd. (Gujarat)	422.00	0.1618	0.1618	100.00
52	BUTIBORI	VIDARBHA INDUSTRIES POWER LIMITED (Maharashtra)	600.00	0.2971	0.4690	157.83



Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
53	KOLAGHAT	W.B.P.D.C.L(W.B.)	1260.00	0.0828	0.1232	148.73
54	SANTALDIH	W.B.P.D.C.L (W.B.)	500.00	0.5605	0.5673	101.21

It may be seen from Table-VI above that:

During the 1<sup>st</sup> half of the Year 2018-19, 54 thermal power stations have achieved the fly ash utilization level of 100% or more out of which 29 thermal power stations which have achieved fly ash utilization level of more than 100%.

Fly ash utilization level of more than 100% indicates full utilization of fly ash generated during the period of report along with that from ash pond.

### 3.3 Thermal Power Stations with Fly Ash Utilization Level of 90% to less than 100% during the 1<sup>st</sup> half of the Year 2018-19

The names of Thermal Power Stations which have achieved the fly ash utilization in the range of 90% to less than 100% during the 1<sup>st</sup> half year 2018-19 along with fly ash utilization level achieved by each of these power stations are given in Table-VII below:

**TABLE-VII**

#### **THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF 90% TO LESS THAN 100% DURING THE 1<sup>st</sup> HALF OF THE YEAR 2018-19**

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Dr. N.T.R (Vijawada)	A.P.GENCO (Andhra Pradesh)	1760.00	2.2451	2.1413	95.38
2	RAYALSEEMA	A.P.GENCO (Andhra Pradesh)	1050.00	0.8703	0.8270	95.03
3	MUNDRA TPS	APL (Gujarat )	4620.00	0.2990	0.2866	95.85
4	MUNDRA UMPP	CGPL (Gujarat)	4150.00	0.3573	0.3275	91.66
5	D.P.P.S.	D.P.L (West Bengal)	660.00	0.3339	0.3189	95.52
6	DHARIWAL INFRASTRUCTURE Ltd.	Dhariwal Infrastructure Ltd. (Maharashtra)	600.00	0.3741	0.3379	90.33
7	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY Ltd. (Odisha)	1050.00	0.9462	0.9222	97.47
8	LALITPUR TPS	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	1980.00	0.8786	0.8280	94.24
9	BHUSAWAL	M.S.P.G.C.L (Maharashtra)	1210.00	0.9513	0.8896	93.51
10	BADARPUR	N.T.P.C.LTD (Delhi)	705.00	0.2700	0.2550	94.44
11	TALCHAR(TPS)	N.T.P.C.LTD (Odisha)	460.00	0.5680	0.5673	99.88
12	SOLAPUR	N.T.P.C.LTD (Maharashtra)	660.00	0.2835	0.2820	99.47

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
13	ROSA PHASE-I	RPSCL(U.P)	1200.00	0.5647	0.5481	97.05
14	CUDDALORE	TAQA Neyveli Power Co. Pvt. Ltd. (Tamil Nadu)	250.00	0.0433	0.0428	99.02
15	SINGARENI	THE SINGARENI COLLIERIES COMPANY LIMITED (Telangana)	1200.00	0.8647	0.8598	99.43
16	JOJOBERA	T.P.CO. (Jharkhand)	547.50	0.4302	0.3991	92.77
17	KAKATIYA (Stage-II)	TSGENCO (Telangana)	600.00	0.4443	0.4054	91.26
18	METTUR-II	T.N.G & D Corporation (Tamil Nadu)	600.00	0.3039	0.2999	98.70
19	UDUPI	UPCL (Karnataka)	1200.00	0.0539	0.0535	99.22
20	SAGARDIGHI	W.B.P.D.C.L(W.B.)	1600.00	0.6346	0.6303	99.32
21	BAKRESWAR	W.B.P.D.C.L(W.B.)	1050.00	0.8565	0.8400	98.07
22	SAI WARDHA POWER Ltd. WARORA	WPCL (Maharashtra)	540.00	0.1920	0.1856	96.64

It may be seen from Table-VII above that 22 thermal power stations during the 1<sup>st</sup> half of the year 2018-19 have achieved fly ash utilization level in the range of 90% to less than 100%.

### 3.4 Thermal Power Stations with Fly Ash Utilization Level of 70% to less than 90% during the 1<sup>st</sup> half of the Year 2018-19

The names of Thermal Power Stations which have achieved the fly ash utilization in the range of 70% to less than 90% during the 1<sup>st</sup> half year 2018-19 along with fly ash utilization level achieved by each of these power stations are given in Table-VIII below:

**TABLE-VIII**

### THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF 70% TO LESS THAN 90% DURING THE 1<sup>st</sup> HALF OF THE YEAR 2017-18

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	KODERMA	D.V.C. (Jharkhand)	1000.00	0.8547	0.7080	82.83
2	UKAI	G.S.E.C.L. (Gujarat)	1110.00	0.5960	0.4400	73.83
3	WANAKBORI	G.S.E.C.L. (Gujarat)	1470.00	0.8910	0.7870	88.33
4	GMR Chhattisgarh	GMR Chhattisgarh Energy Ltd. (Chhattisgarh)	1370.00	0.2512	0.2151	85.64
5	O.P.Jindal Super TPP (Stage-I)	JPL (Chhattisgarh)	1000.00	0.5520	0.4120	74.64
6	O.P.Jindal Super TPP(Stage-II)	JPL (Chhattisgarh)	2400.00	1.0540	0.8860	84.06



Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7	RATNAGIRI	JSW Energy Ltd (Maharashtra)	1200.00	0.2300	0.2056	89.41
8	MAHATMA GANDHI	JHAJJAR POWER LIMITED(Haryana)	1320.00	0.7369	0.6563	89.06
9	RAICHUR	K.P.C.L.(Karnataka)	1720.00	0.2832	0.1938	68.43
10	MAITHON RBTPP	MPL (Jharkhand)	1050.00	0.9055	0.7712	85.18
11	KMPCL-Nariyara	M/s KSK MAHANADI POWER COMPANY LIMITED (Chhattisgarh)	1800.00	0.8156	0.6803	83.41
12	DURGAPUR CAPTIVE POWER PLANT	NSPCL (West Bengal)	120.00	0.1049	0.0855	81.51
13	RAJPURA	NABHA POWER LIMITED(Punjab)	1400.00	0.7085	0.6337	89.44
14	DADRI	N.T.P.C.LTD (U.P.)	1820.00	1.2270	0.9960	81.17
15	RAMAGUNDAM	N.T.P.C.LTD (Andhra Pradesh)	2600.00	2.1390	1.8480	86.40
16	SIMHADRI	N.T.P.C.LTD (Andhra Pradesh)	2000.00	1.4350	1.2410	86.48
17	FARAKKA	N.T.P.C.LTD (W.B.)	2100.00	1.6370	1.2600	76.97
18	SEMBCORP ENERGY INDIA LIMITED	SEMBCORP ENERGY INDIA LIMITED (Andhra Pradesh)	1320.00	0.5385	0.4509	83.73
19	TROMBAY	T.P.CO.(Maharashtra)	750.00	0.0267	0.0211	79.03
20	KAKATIYA (Stage-I)	TSGENCO (Telangana)	500.00	0.3891	0.3484	89.54
21	RAIGARH TPP	TRN ENERGY PRIVATE LIMITED (Chhattisgarh)	600.00	0.4310	0.3814	88.48
22	PARICHHA	U.P.R.V.U.N.L. (U.P.)	1140.00	0.7360	0.6442	87.53

It may be seen from Table-VIII above that 22 thermal power stations during the 1<sup>st</sup> half of the year 2018-19 have achieved fly ash utilization level in the range of 70% to less than 90%.

### 3.5 Thermal Power Stations with Fly Ash Utilization Level of 50% to less than 70% during the 1<sup>st</sup> half of the Year 2018-19

The Thermal Power Stations which have achieved the fly ash utilization in the range of 50% to less than 70% during the 1<sup>st</sup> half of the year 2018-19 along with fly ash utilization level achieved by each of these power stations are given in Table-IX below:

**TABLE-IX****THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF 50% TO LESS THAN 70% DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19.**

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	SRI DAMODARAM SANJEEVAIAH	APPDCL (Andhra Pradesh)	1600.00	0.6480	0.3752	57.90
2	TIRODA	ADANI POWER Ltd. (Maharashtra)	3300.00	1.9640	1.3013	66.26
3	KORBA (EAST)	C.S.P.G.C.L (Chhattisgarh)	440.00	0.4094	0.2171	53.04
4	MEJIA	D.V.C.(West Bengal)	2340.00	1.7907	1.2256	68.44
5	DURGAPUR STEEL	D.V.C. (West Bengal)	1000.00	0.8487	0.5338	62.89
6	YAMUNANAGAR	H.P.G.C.L.(Haryana)	600.00	0.4504	0.2466	54.76
7	DERANG TPP	JINDAL INDIA THERMAL POWER LIMITED (Odisha)	1200.00	0.7427	0.4704	63.33
8	BALLARI	K.P.C.L (Karnataka)	1700.00	0.2832	0.1938	68.43
9	SANJAY GANDHI	M.P.P.G.C.L. (M.P.)	1340.00	0.9690	0.6388	65.93
10	AMARKANTAK	M.P.P.G.C.L. (M.P.)	210.00	0.1208	0.0662	54.82
11	PARLI	M.S.P.G.C.L. (Maharashtra)	750.00	0.3985	0.2698	67.71
12	NEYVELI - I	N.L.C.LTD(Tamil Nadu)	600.00	0.1060	0.0710	66.98
13	VALLUR	NTECL (Tamil Nadu)	1500.00	1.0380	0.5820	56.07
14	KORBA	N.T.P.C.LTD (Chhattisgarh)	2600.00	2.5860	1.2980	50.19
15	KUDGI	N.T.P.C.LTD (Karnataka)	1600.00	0.4403	0.2740	62.23
16	NALCO, CPP AUNGAL	NATIONAL ALUMINIUM COMPANY LIMITED (NALCO) (Odisha)	1200.00	1.2750	0.8030	62.98
17	LEHRA MOHABAT	P.S.P.C.L. (Punjab)	920.00	0.3993	0.2361	59.12
18	PRAYAGRAJ	PRAYAGRAJ POWER GENERATION COMPANY LIMITED (Uttar Pradesh)	1980.00	0.9063	0.5412	59.72
19	RATIZA TPS	SPECTRUM COAL AND POWER LIMITED (Chhattisgarh)	100.00	0.3677	0.2025	55.07
20	RAMAGUNDAM-B	TSGENCO (Telangana)	62.50	0.0508	0.0350	68.92
21	BANDEL	W.B.P.D.C.L (W.B.)	335.00	0.2705	0.1787	66.04

It may be seen from Table-IX above that 21 thermal power stations during the 1<sup>st</sup> half year 2018-19 have achieved fly ash utilization level of 50% to less than 70%.



### 3.6 Power Stations with Fly Ash Utilization Level of less than 50% during the 1<sup>st</sup> half of the Year 2018-19

The Thermal Power Stations which have achieved the fly ash utilization level of less than 50% during the 1<sup>st</sup> half year 2018-19 along with fly ash utilization level achieved by each of these power stations are given in Table-X:

**TABLE-X**

#### THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF LESS THAN 50% DURING THE 1<sup>st</sup> HALF OF THE YEAR 2018-19

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	KORBA (WEST)	C.S.P.G.C.L (Chhattisgarh)	1340.00	1.3980	0.4324	30.93
2	MARWA TENDUBHATA	C.S.P.G.C.L (Chhattisgarh)	1000.00	0.9590	0.1991	20.76
3	BOKARO 'B'	D.V.C.(Jharkhand)	710.00	0.4830	0.1820	37.69
4	DURGAPUR	D.V.C.(West Bengal)	210.00	0.1504	0.0109	7.26
5	RAGHUNATHPUR	D.V.C. (West Bengal)	1200.00	0.3731	0.0185	4.97
6	BHAVNAGAR	G.S.E.C.L. (Gujarat)	500.00	0.0150	0.0014	9.33
7	BELA TPS	IDEAL ENERGY PROJECTS Ltd.(Maharashtra)	270.00	0.0306	0.0000	0.00
8	JHABUA POWER LIMITED	JHABUA POWER LIMITED (MP)	600.00	0.2484	0.0997	40.15
9	MUZAFFARPUR	KANTI BIJLEE UTPADAN NIGAM LIMITED (Bihar)	610.00	0.2871	0.1101	38.34
10	AMARKANTAK	LANCO AMARKANTAK POWER LIMITED(Chhattisgarh)	600.00	0.5663	0.1926	34.01
11	SATPURA	M.P.P.G.C.L. (M.P.)	1330.00	1.0651	0.1787	16.78
12	SHREE SINGAJI TPS	M.P.P.G.C.L. (M.P.)	1200.00	0.7348	0.0932	12.68
13	KHAPARKHEDA	M.S.P.G.C.L. (Maharashtra)	1340.00	0.8531	0.2604	30.52
14	KORADI	M.S.P.G.C.L. (Maharashtra)	2600.00	1.1740	0.1650	14.05
15	PARAS	M.S.P.G.C.L.(Maharashtra)	500.00	0.3521	0.0928	26.34
16	SINGRAULI	N.T.P.C.LTD (U.P.)	2000.00	1.3190	0.4030	30.55
17	RIHAND	N.T.P.C.LTD (U.P.)	3000.00	1.7170	0.4720	27.49
18	VINDHYACHAL	N.T.P.C.LTD (M.P.)	4760.00	4.1880	0.9860	23.54
19	SIPAT	N.T.P.C.LTD (Chhattisgarh)	2980.00	2.4160	0.9770	40.44
20	KAHALGAON	N.T.P.C.LTD(Bihar)	2340.00	1.9960	0.9200	46.09
21	BARH SUPER TPS	N.T.P.C.LTD (Bihar)	1320.00	1.2150	0.3031	24.95
22	TALCHAR(KAN)	N.T.P.C.LTD(Odisha)	3000.00	3.6860	1.7310	46.96
23	MOUDA TPS	N.T.P.C.LTD (Maharashtra)	2320.00	1.3550	0.5530	40.81
24	BONGAIGAON	N.T.P.C.LTD (Assam)	500.00	0.2640	0.0550	20.83
25	IB VALLEY	O.P.G.C.L.(Odisha)	420.00	0.4800	0.1858	38.71

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
26	YERAMARUS TPS	RAICHUR POWER CORPORATION LIMITED (Karnataka)	1600.00	0.0849	0.0133	15.66
27	KOTHAGUDEM-I to IV	TSGENCO (Telangana))	660	1.0110	0.3766	37.25
28	ANPARA 'A' & 'B'	U.P.R.V.U.N.L. (U.P.)	2630.00	2.3105	0.0734	3.18
29	OBRA	U.P.R.V.U.N.L. (U.P.)	1000.00	0.4648	0.0594	12.77

It may be seen from Table-X above that:

During the 1<sup>st</sup> half of the year 2018-19, out of 156 thermal power stations, 29 stations could achieved the level of fly ash utilization to less than 50%.

### 3.7 Power Stations with no fly ash Generation during the 1<sup>st</sup> half of the Year 2018-19

The Thermal Power Stations, which have no fly ash generation during the 1<sup>st</sup> half year 2018-19 along with the details of these power stations are given in Table-XI:

**TABLE-XI**

#### LIST OF THERMAL POWER STATIONS WITH NO FLY ASH GENERATION DURING THE 1<sup>st</sup> HALF OF THE YEAR 2018-19

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	MIHAN	AMNEPL (Maharashtra)	246.00	TPS is under shut down condition since 5 <sup>th</sup> November,2013 till date		
2	T.G.S.	C.E.S.C. (West Bengal)	240.00	TPS have been under reserve shut down from 09.01.2016 till date		
3	CHINAKURI	EASTERN COALFIELDS LIMITED (West Bengal)	30.00	TPS is not in operation since October,2011		
4	RAJGHAT	IPGCL (Delhi)	135.00	TPS is not in operation since 21.05.2015 and it is in process of closure.		
5	GEPL TPP	GUPTA ENERGY Pvt. Ltd. (Maharashtra)	120.00	TPP is under shut down since June 2013.		
6	KWPCL TPS	Korba West Power Company Ltd. (Chhattisgarh)	600.00	Plant is under long break down & not running since 22 <sup>nd</sup> May,2017		



Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Million-ton)	Fly ash Utilization (Million-ton)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7	BATHINDA	P.S.P.C.L. (Punjab)	460.00	As all units have been permanently closed of Guru Nanak Dev Thermal Power Plant (GNDTP), Bathinda w.e.f 01.01.2018, therefore no coal has been received.		
8	SWASTIK POWER & MINERALS RESOURCES PVT. LTD.	SWASTIK POWER & MINERALS RESOURCES PVT. LTD (Chhattisgarh)	25.00	TPS is not in operation from date of Commission (Date of Commission: 02.05.2015).		

#### 4.0 MODES OF FLY ASH UTILIZATION DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19

The data on fly ash utilization received from Thermal Power Stations/Power Utilities for the 1<sup>st</sup> half of the year 2018-19 has been compiled to ascertain the modes in which fly ash was utilized and the quantity utilized in each mode.

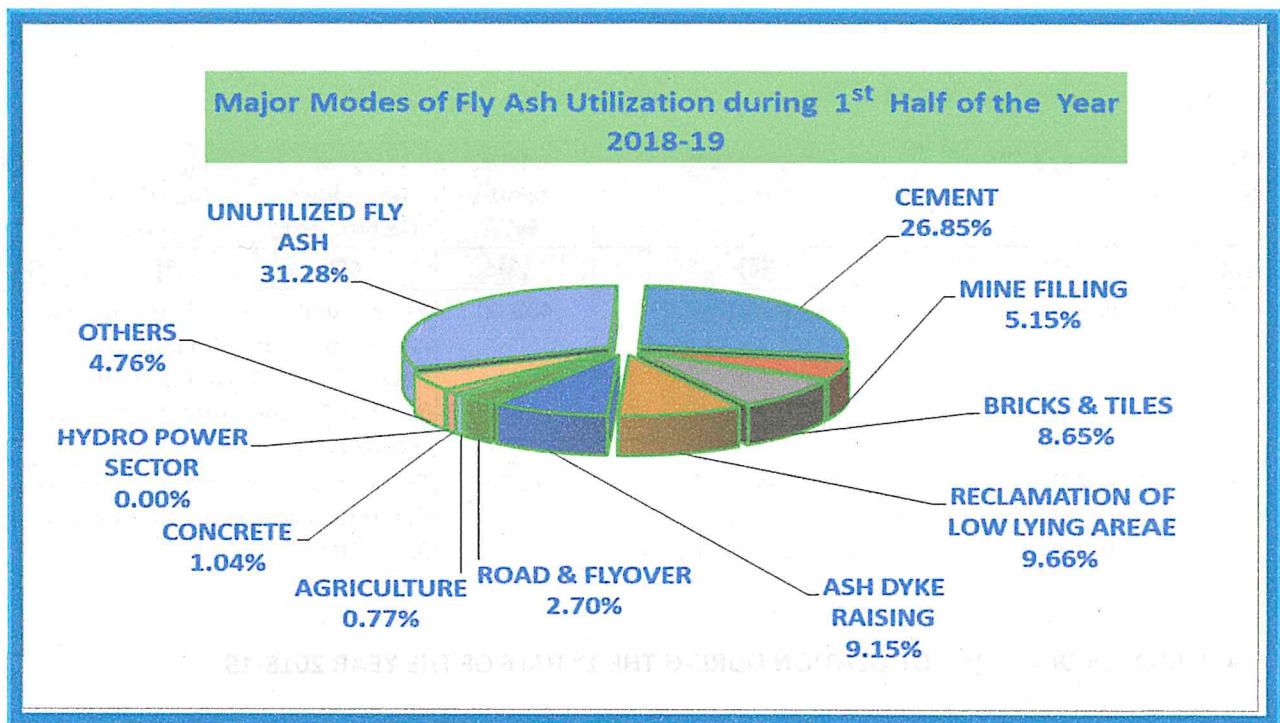
The modes in which fly ash were utilized during the 1<sup>st</sup> half year 2018-19 along with utilization in each mode are given in Table-XII:

**TABLE-XII**

#### MODES OF FLY ASH UTILIZATION DURING THE 1<sup>ST</sup> HALF OF THE YEAR 2018-19

Sl. No.	Mode of Utilization	Quantity of Fly Ash utilized in the mode of utilization	
		Million-ton	Percentage (%)
(1)	(2)	(3)	(4)
1	Cement	25.0370	26.85
2	Mine filling	4.8014	5.15
3	Bricks & Tiles	8.0691	8.65
4	Reclamation of low lying area	9.0110	9.66
5	Ash Dyke Raising	8.5285	9.15
6	Roads & flyovers	2.5199	2.70
7	Agriculture	0.7155	0.77
8	Concrete	0.9660	1.04
9	Hydro Power Sector	0.0000	0.00
10	Others	4.4346	4.76
11	Unutilized Fly Ash	29.17	31.28
<b>Total</b>		<b>93.2561</b>	<b>100.00</b>

The pie diagram showing the modes of utilization of fly ash during the 1<sup>st</sup> half of the Year 2017-18 is given in Figure-1 below:



**FIGURE-1**

It may be seen from Table-XII and Figure -1 above that:

During the 1<sup>st</sup> half of the Year 2018-19, the maximum utilization of fly ash to the extent of 26.85 % of total fly ash utilized was in the Cement sector, followed by 9.66 % in reclamation of low lying area, 9.15 % in ash dyke raising, 8.65 % in making bricks & tiles, 5.15 % in mine filling, 2.70 % in roads & embankments, 1.04 % in concrete, 0.77 % in agriculture and 4.76 % Ash is utilized in others etc. and 31.28 % Fly Ash remain Unutilized.

## 5.0 CONCLUSIONS & RECOMMENDATIONS

1. The highest level of fly ash utilization of about 68.72% is achieved in the current 1<sup>st</sup> Half year 2018-19 and it was about 55.62% in the 1<sup>st</sup> half year 2013-14, 53.01% in the 1<sup>st</sup> half year 2014-15 , 56.04% in the 1<sup>st</sup> half year 2015-16, 57.93% in the 1<sup>st</sup> half year 2016-17 and 60.38% in the 1<sup>st</sup> half year 2017-18.
2. The utilization of fly ash is in the range of 5 to 8 % in making fly ash based building products and in mine filling whereas it is less than 5 % in the construction of roads & flyover. These areas have large potential of fly ash utilization which needs to be explored for increasing the overall utilization of fly ash in the country.
3. A Web page has been developed for Fly Ash Generation & its Utilization and Mobile App 'ASH TRACK' has been launched by Ministry of Power as an interface between TPS and potential users.
4. A few strategies which need to be adopted to further increase the utilization level of fly ash are given below:



- Renovation and modernization of coal/lignite based Thermal Power Station needs to include the technological advancement required to ensure development of dry fly ash collection, storage and disposal facilities so that fly ash in dry form could be made available to its users. Renovation and modernization should also include a marketing strategy for the development of fly ash based industries and making available fly ash and fly ash based building products in the nearby markets.
- The states and districts where thermal power stations are located need to be sensitized to the need for utilization of fly ash and fly ash based building products and take necessary measures to promote them in the construction of buildings, highways/roads/ flyovers and other infrastructure projects. Measures can include policy intervention, planning strategies, fiscal incentives, recognizing specific efforts etc.
- Use of fly ash based building products like fly ash based bricks, blocks, tiles etc. by both Govt. and Public & Private Construction agencies at Central and State levels is required to be ensured especially in construction works within a radius of 300 km of any coal/ lignite based thermal power station as mandated in MoEF&CC's Notification of 25<sup>th</sup> January, 2016. The government agencies responsible for approval of building plans may have to ensure stipulation of a condition in their approval to the effect that only fly ash based building products like bricks/blocks/tiles etc shall be used in the construction of buildings as prescribed in MoEF&CC's Notification of 25<sup>th</sup> January, 2016 within a prescribed distance from any thermal power station especially in the construction of large office/commercial buildings and housing projects being developed both in government and private sectors.
- Use of fly ash in the construction of roads, road embankments and flyovers is well established and is slowly picking up. However, its potential is yet to be fully utilized. The use of fly ash in these projects within a radius of 300 km of any thermal power station as mandated in MoEF&CC's Notification of 25<sup>th</sup> January, 2016 has to be ensured right from project formulation stage and included in tender documents by having a prior tie up with the concerned thermal power station for their requirement. There is a need to sensitize National Highway Authority of India, CPWD, State PWDs and other agencies both at Central and State levels that are involved in the construction of highways, roads, flyovers etc. in this regard.
- Use of fly ash in backfilling/stowing of closed/abandoned/running open cast and underground mines has large potential for utilization of fly ash, especially for pit head thermal power stations which otherwise have limited avenues for fly ash utilization. However, its potential is yet to be fully utilized. The use of fly ash in back filling/stowing of open cast and underground mines within a radius of 50 km of any thermal power station as mandated in MoEF&CC's Notification of 3<sup>rd</sup> November, 2009 has to be ensured right from initial stage of preparation of mine development plan. Inclusion of fly ash and bottom ash as backfill materials in the guidelines for preparation of mine closure plan is required for which Ministry of Coal and other concerned Ministries/Authorities have to take necessary action. There are environmental and safety concerns for use of fly ash along with overburden (OB) material for back filling of operating open cast mines. These concerns need to be addressed.
- Use of fly ash in the construction of embankments for laying railway lines has also significant potential for large scale utilization of fly ash. There are safety concerns in use of fly ash in the construction of railway embankments having passenger traffic. There is a need to address

these concerns by carrying out necessary studies by organizations like Railway Design & Standards Organization (RDSO), a research organization under the Ministry of Railways.

- Thermal Power Stations may ensure the utilization of fly ash and fly ash based building products within the thermal power station for the development of infrastructure like construction of buildings & roads, reclamation of low lying areas, the raising of ash dyke etc.
- The use of fly ash in Agriculture and waste land development has large potential but the utilization is below expectation. This may be attributed mainly to reservations in various quarters for use of fly ash in agriculture because of presence of heavy metals and radioactive elements in fly ash however, findings of research projects funded by Fly Ash Unit under Ministry of Science & Technology and studies carried out by other organizations indicate that there are no adverse effects in using fly ash in agriculture. Therefore, these concerns are required to be addressed for increasing the fly ash utilization.
- Thermal Power Stations may explore and promote all possible modes of fly ash utilization at their respective thermal power station for increasing the fly ash utilization in the country in line with MoEF&CC's notifications of 3<sup>rd</sup> November, 2009 and 25<sup>th</sup> January 2016.
- There is a need to encourage 'Industry–Institute Interactions' for entrepreneur development, creating awareness and organizing training programmes and workshops.
- New emerging areas such as Light Weight Aggregates and Geo-polymers, Coal Beneficiation-Blending and Washing, etc. needs to focus for higher utilization of fly ash in the country.
- In view of large quantity of fly ash generation, utilization of fly ash may be introduced as construction material in academic curriculum of Engineering, Architecture, Mining, Agriculture etc.

\* \* \*

**ABBREVIATIONS**

1. CEA : Central Electricity Authority
2. MoEF&CC: Ministry of Environment, Forest & Climate Change
3. MW : Mega Watt
4. MoP : Ministry of Power
5. MT : Million-Ton
6. TPS : Thermal Power Stations
7. APGENCO: Andhra Pradesh generation Corporation Ltd.
8. ACBPL : Aryan Coal Beneficiation Private Ltd.
9. APL : Adani Power Ltd.,
10. APCPL : Aravali Power Corporation Pvt.Ltd.
11. AMNEPL: Abhijeet MADC Nagpur energy Pvt. Ltd.
12. BEPL : Bajaj Energy Pvt. Ltd.
13. BSEB : Bihar State Electricity Supply Company
14. BRBC L: Bhartiya Rail Bijlee Company Limited
15. CESC : Calcutta Electric Supply Company
16. CGPL : Coastal Gujarat Power Ltd.
17. CSPGCL: Chhattisgarh State Power Generation Company Ltd.
18. DVC : Damodar Valley Corporation
19. DPL : Durgapur Project Ltd.
20. DPSC : Dishengardh Power Supply Company Ltd.
21. EPGL : Essar Power Gujarat Ltd.
22. GIPCL : Gujarat Industries Power Corporation Ltd.
23. GMDCL: Gujarat Mineral Development Corporation Ltd.
24. GSECL: Gujarat State Electric Corporation Ltd.
25. HPGCL: Haryana Power Generation Company Ltd.
26. IPGCL: Indraprastha Power Generation Company Ltd.
27. JSEB : Jharkhand State Electricity Board.
28. JHPL : Jhajjar Power Ltd.
29. JPL : Jindal Power Ltd.
30. JSW : Jindal Steel Works
31. KPCL : Karnataka Power Corporation Ltd.
32. KBUNL: Kanti Bijlee Utpadan Nigam Ltd.
33. MPPGCL: Madhya Pradesh Power Generating Company Ltd.
34. MPL : Maithon Power Ltd.
35. MSPGCL: Maharashtra State Power Generating Company Ltd.
36. NLC: Neyvelli Lignite Corporation
37. NSPCL: NTPC -SAIL Power Corporation Ltd.
38. NTPC : National thermal Power Corporation
39. NTECL: NTPC – Tamilnadu Electric Company Ltd.
40. OPGCL: Odisha Power Generation Corporation Ltd.
41. PSPCL: Punjab State Power Corporation Ltd.
42. RRVUNL: Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
43. RIL : Reliance Infrastructure Ltd.
44. RPSCL: Rosa Power Supply Company Ltd.
45. RWPL: Raj West Power Ltd.
46. SEL : Sterlite energy Ltd.
47. SVPPL: Shri Vardhman Power Pvt. Ltd.
48. ST-CMS: ST-CMS



- 49. TPCO : Tata Power Company Ltd.
- 50. TUNL : Tenunghat Vidyut Nigam Ltd.
- 51. TNG&D: Tamil Nadu Generating and Distribution Corporation Ltd.
- 52. UPCL: Udupi Power Company Ltd.
- 53. UPRVUNL: Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.
- 54. VESPL : Vandana Energy Supply Power Ltd.
- 55. WBPDC: West Bengal Power Development Corporation Ltd.
- 56. WPCL : Wardha Power Company Ltd.
- 57. GEPL : Gupta Power Company Ltd.
- 58. VIP : Vidharbha Industries Power Ltd.
- 59. EPL : Essar Power Ltd.
- 60. ACB : Aryan Coal Beneficiary Ltd.
- 61. AP : Andhra Pradesh
- 62. MP : Madhya Pradesh
- 63. TN : Tamil Nadu
- 64. UP : Uttar Pradesh
- 65. WB : West Bengal
- 66. OB : Overburden
- 67. RDSO : Research Designs & Standards Organization



**Annex-I**  
**FLY ASH GENERATION AND ITS UTILIZATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS IN THE COUNTRY FOR THE 1ST HALF YEAR 2018-19 (APRIL-2018 TO SEPTEMBER-2018)(POWER UTILITY WISE)**

Sl No.	Name of TPS	Power Utility & State	Installed Capacity (MW)	Coal Consumed (MT)	Ash Content of coal (%) (7)/(5)*100	Fly Ash Generation (MT)	Fly Ash Utilization (MT)	Percentage Utilization (8)/(7)*100	In making of Fly Ash based/Bio based/Bricks/Tiles etc. (MT)	In manufacture of portland pozzolana cement (MT)	In construction of Highways & Roads including flyovers (MT)	Part replacement of cement in concrete (MT)	In Hydro power sector in RCC Dam construction (MT)	In Ash Dykes raising (MT)	In reclamation of low lying Area (MT)	In Mining filling (MT)	In agriculture /waste land Development (MT)	Others (MT)	Total Utilization $\Sigma(10) to (19)$ (MT)	
																				(1)
1	Dr. N.T.R. (Vijawada)	A.P.GENCO (Andhra Pradesh)	1760.00	4.8450	46.34	2.2451	2.1413	95.38	1.0417	0.5859	0.0119	0.0766			0.3589				0.0663	2.1413
2	RAYALSEEMA	A.P.GENCO (Andhra Pradesh)	1050.00	2.2238	39.06	0.8703	0.8270	95.03	0.2012	0.6259									0.8270	
3	SRI DAMODARAM SANJEEVALAH	APPDCL (Andhra Pradesh)	1600.00	2.2739	28.50	0.6480	0.3752	57.90	0.0672	0.2100				0.0980					0.3752	
4	KASAI PALI	ACB(INDIA)Ltd (Chhattisgarh)	270.00	1.0954	57.26	0.6273	0.6273	100.00	0.0432										0.6273	
5	MUNDRA TPS	APL (Gujarat)	4620.00	5.0610	5.91	0.2990	0.2866	95.85	0.0000	0.1330	0.0000				0.0860			0.0676	0.2866	
6	TIRODA	ADANI POWER Ltd. (Maharashtra)	3300.00	6.0790	32.31	1.9640	1.3013	66.26	0.0220	0.0084	0.0078			0.1300	0.1236			1.0095	1.3013	
7	KAWAI	ADANI POWER RAJASTHAN Ltd. (Rajasthan)	1320.00	1.8765	32.72	0.6140	0.6988	113.81	0.0651	0.4658					0.1680				0.6988	
8	ADANI DAHANU	ADANI ELECTRICITY MUMBAI LIMITED (Maharashtra)	500.00	1.2140	25.29	0.3070	0.3262	106.24	0.0002		0.1530			0.0250				0.1480	0.3262	
9	MIHAN	AMINPL (Maharashtra) (No Generation)	246.00	0.0000	0.00	0.0000	0.0000	#DIV/0!											0.0000	
10	CHAKABURA TPP	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.1546	55.00	0.0851	0.0851	100.00	0.0073					0.0777					0.0851	
11	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.1494	54.96	0.0821	0.0821	100.00	0.0073					0.0748					0.0821	
12	SVPLP Renki	ACB India Limited (Chhattisgarh)	60.00	0.0239	59.55	0.0142	0.0142	100.07	0.0059					0.0083					0.0142	
13	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LIMITED (Jharkhand)	540.00	1.1025	37.88	0.4177	0.4177	100.00	0.0158	0.0670				0.0810	0.2539				0.4177	
14	BARKHERA	BEPL (UP)	90.00	0.0895	40.61	0.0363	0.0363	100.00	0.0024	0.0086				0.0253					0.0363	
15	KHAMBER KHERA	BEPL (UP)	90.00	0.0904	41.83	0.0378	0.0378	100.00	0.0041	0.0287				0.0050					0.0378	
16	KUNDARKI	BEPL (UP)	90.00	0.1305	40.73	0.0532	0.0532	100.00	0.0056	0.0379				0.0097					0.0532	
17	MAQSODAPUR	BEPL (UP)	90.00	0.0869	39.57	0.0344	0.0344	100.00	0.0001	0.0045				0.0298					0.0344	
18	UTRAJULA	BEPL (UP)	90.00	0.1249	40.15	0.0501	0.0501	100.00	0.0093	0.0276				0.0132					0.0501	
19	B.B.G.S.	C.E.S.C. (West Bengal)	750.00	1.9370	35.26	0.6830	0.6830	100.00	0.0250	0.5620	0.0080	0.0010		0.0030	0.0840				0.6830	
20	S.G.S.	C.E.S.C. (West Bengal)	135.00	0.1250	26.40	0.0330	0.0330	100.00	0.0070	0.0160	0.0050								0.0330	
21	T.G.S.	C.E.S.C. (West Bengal) (No Generation)	240.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!	0.0000										0.0000	
22	KORBA (EAST)	C.S.P.G.C.L (Chhattisgarh)	440.00	0.8820	46.42	0.4094	0.2171	53.04	0.0006					0.0234	0.1931				0.2171	
23	KORBA (WEST)	C.S.P.G.C.L (Chhattisgarh)	1340.00	3.4400	40.64	1.3980	0.4324	30.93	0.0387					0.0522	0.3328			0.0087	0.4324	



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Sl.No.	Name of TPS	Power Utility & State	Installed Capacity (MW)	Cost Consumed (MT)	Ash Content of coal %age (7)/(5)x100 (6)	Fly Ash Generation (MT) (7)	Fly Ash Utilization (MT) (8)	Percentage Utilization %age (8)/(7)x100 (9)	In making of Fly Ash based/Brick/Blocks/Tiles etc. (MT) (10)	In manufacturing of Portland cement pozzolana cement (MT) (11)	In construction of Highways & Roads including flyovers (MT) (12)	Part replacement of concrete in concrete (MT) (13)	In Hydro power sector in RCC Dam construction (MT) (14)	In Ash Dyke raising (MT) (15)	In reclamation of low lying Area (MT) (16)	In Mining Filling (MT) (17)	In agriculture /waste land Development (MT) (18)	Others (MT) (19)	Total Utilization (MT) Z(10) to (19) (20)
24	MARWA TENDUBHATA	C.S.P.G.C.L.(Chhattisgarh)	1000.00	2.3496	40.82	0.9590	0.1991	20.76	0.0050	0.0872				0.1069	0.1069				0.1991
25	MUNDRA UMPP	CGPL (Gujarat)	4150.00	4.9591	7.21	0.3573	0.3275	91.66	0.0034	0.1877		0.0264						0.1101	0.3275
26	MUTIARA	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1200.00	0.7876	3.57	0.0281	0.0284	100.92	0.0052	0.0232									0.0284
27	BOKARO 'B'	D.V.C.(Jharkhand)	710.00	1.1951	40.41	0.4830	0.1820	37.69								0.1820			0.1820
28	CHANDRAPURA	D.V.C.(Jharkhand)	630.00	1.0382	43.26	0.4491	0.4881	108.68	0.0004	0.0078						0.4800			0.4881
29	DURGAPUR	D.V.C.(West Bengal)	210.00	0.3381	44.47	0.1504	0.0109	7.26		0.0109									0.0109
30	MEJIA	D.V.C.(West Bengal)	2340.00	3.8513	46.50	1.7907	1.2256	66.44	0.0292	0.5564						0.6400			1.2256
31	DURGAPUR STEEL	D.V.C. (West Bengal)	1000.00	2.0158	42.11	0.8487	0.5338	62.89	0.0234	0.4737				0.0367					0.5338
32	KODERMA	D.V.C. (Jharkhand)	1000.00	1.9475	43.89	0.8547	0.7080	82.83	0.0010	0.3678									0.7080
33	RAGHUNATHPUR	D.V.C. (West Bengal)	1200.00	0.8711	42.83	0.3731	0.0185	4.97	0.0034	0.0152									0.0185
34	D.P.P.S.	D.P.L (West Bengal)	660.00	0.8274	40.36	0.3339	0.3189	95.52	0.0077	0.2694									0.3189
35	DHARIWAL INFRASTRUCTURE Ltd.	Dhariwal Infrastructure Ltd. (Maharashtra)	600.00	1.1080	33.76	0.3741	0.3379	90.33	0.0078	0.3302									0.3379
36	CHINAKURI	EASTERN COALFIELDS LIMITED (West Bengal) (No Generation)	30.00		#DIV/0!			#DIV/0!											0.0000
37	SURAT LIGNITE	G.I.P.C.L. (Gujarat)	500.00	1.7322	15.82	0.2740	0.2740	100.00	0.1702									0.1038	0.2740
38	AKRIMOTA	G.M.D.C.L. (Gujarat)	250.00	0.6677	20.32	0.1357	0.2222	163.73							0.2222				0.2222
39	GANDHINAGAR	G.S.E.C.L. (Gujarat)	630.00	1.2320	31.25	0.3850	0.8731	226.78	0.1550	0.4230	0.1970	0.1000						0.0001	0.8731
40	KUTCH LIGNITE	G.S.E.C.L. (Gujarat)	290.00	0.7360	25.14	0.1850	0.1870	101.08		0.0310							0.1560		0.1870
41	SIKKA	G.S.E.C.L. (Gujarat)	500.00	0.6920	7.38	0.0511	0.1150	225.05	0.0480	0.0670									0.1150
42	UKAI	G.S.E.C.L. (Gujarat)	1110.00	1.9510	30.55	0.5960	0.4400	73.83	0.2320	0.1600	0.0000	0.0020						0.0460	0.4400
43	WANAKBORI	G.S.E.C.L. (Gujarat)	1470.00	2.8070	31.74	0.8910	0.7870	88.33	0.0820	0.4800				0.1080				0.1170	0.7870
44	BHAVNAGAR	G.S.E.C.L. (Gujarat)	500.00	0.1370	10.95	0.0150	0.0014	9.33	0.0014										0.0014
45	GEPL TPP	GUPTA ENERGY Pvt. Ltd. (Maharashtra) (No Generation)	120.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
46	GMR Chhattisgarh	GMR Chhattisgarh Energy Ltd. (Chhattisgarh)	1370.00	0.8686	28.92	0.2512	0.2151	85.64	0.0146	0.2001						0.0005			0.2151

**FLY ASH GENERATION AND ITS UTILIZATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS IN THE COUNTRY FOR THE 1ST HALF YEAR 2018-19 (APRIL-2018 TO SEPTEMBER-2018)(POWER UTILITY WISE)**

Sl No.	Name of TPS	Power Utility & State	Installed Capacity (MW)	Coal Consumed (MT)	Ash Content of coal (%) (7)/(5) x 100	Fly Ash Generation (MT)	Fly Ash Utilization (MT)	Percentage Utilization (%) (8)/(7) x 100	In making of Fly Ash based/Brick/Blocks/Tiles etc. (MT)	In manufacture of Portland cement/pozzolana cement (MT)	In construction of Highways & Roads including flyovers (MT)	Part replacement of cement in concrete (MT)	In Hydro power sector in RCC Dam construction (MT)	In Ash Dyke raising (MT)	In reclamation of low lying Area (MT)	In Mining filling (MT)	In agriculture/waste land Development (MT)	Others (MT)	Total Utilization (MT) Σ(10) to (19)
47	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY Ltd. (Odisha)	1050.00	2.5539	37.05	0.9462	0.9222	97.47	0.3315	0.0523	0.0508						0.4877		0.9222
48	GMR WARORA ENERGY Ltd.	GMR WARORA ENERGY Ltd. (Maharashtra)	600.00	1.1714	29.80	0.3491	0.3585	102.70	0.0000	0.3263	0.0322								0.3585
49	YAMUNANAGAR	H.P.G.C.L.(Haryana)	600.00	1.1030	40.83	0.4504	0.2466	54.76	0.0076	0.2391									0.2466
50	PANIPAT	H.P.G.C.L.(Haryana)	920.00	1.2370	38.48	0.4760	0.5548	116.56	0.0331	0.3095	0.1724			0.0379				0.0019	0.5548
51	HINDUJA NATIONAL POWER COPORATION TPP (Vizag)	HINDUJA NATIONAL POWER COPORATION LIMITED (Andhra Pradesh)	1040.00	0.0829	71.70	0.0594	0.1517	255.42	0.0015	0.0085	0.0850							0.0567	0.1517
52	HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED (W.B.)	600.00	1.6223	33.77	0.5479	0.5479	100.00	0.0634	0.4499	0.0317			0.0029					0.5479
53	RAJGHAT	IPSCCL (Delhi)	135.00	0.0000	0.00	0.0000	0.0000	#DIV/0!	0.0000	0.0000	0.0000								0.0000
54	IL & FS TNPC Ltd	IL & FS TAMIL NADU POWER COMPANY Ltd (Tamil Nadu)	1200.00	1.616	3.90	0.0630	0.0630	100.00		0.0630									0.0630
55	DISHERGARH TPS	INDIA POWER CORPORATION LIMITED(West Bengal)	12.00	0.0238	51.45	0.0123	0.0123	100.00								0.0123			0.0123
56	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd. (Odisha)	256.00	0.4512	46.91	0.2117	0.2117	100.00	0.1324	0.0178	0.0051			0.0546				0.0018	0.2117
57	BELA TPS	IDEAL ENERGY PROJECTS Ltd.(Maharashtra)	270.00	0.1126	27.20	0.0306	0.0000	0.00											0.0000
58	O.P.Jindal Super TPP (Stage-I)	JPL (Chhattisgarh)	1000.00	1.3070	42.23	0.5520	0.4120	74.64						0.2690	0.1430				0.4120
59	O.P.Jindal Super TPP(Stage-II)	JPL (Chhattisgarh)	2400.00	2.4540	42.95	1.0540	0.8860	84.06	0.0180					0.6400		0.2280			0.8860
60	RATNAGIRI	JSW Energy Ltd (Maharashtra)	1200.00	1.5427	14.91	0.2300	0.2056	89.41	0.0125	0.0150	0.1781								0.2056
61	VIJAYANAGAR	JSW Energy Limited (Karnataka)	860.00	0.7868	14.59	0.1148	0.1148	100.00	0.0126	0.0966				0.0056					0.1148
62	JAYPEE NIGRIE SUPER	JAIPRAKASH POWER VENTURES LIMITED(Madhya Pradesh)	1320.00	2.1200	26.42	0.5600	0.5730	102.32	0.0080	0.5600								0.0050	0.5730
63	JAYPEE BINA	JAIPRAKASH POWER VENTURES LIMITED(Madhya Pradesh)	500.00	0.7941	31.00	0.2462	0.2462	100.00	0.0217	0.1788				0.0457					0.2462
64	DONGAMAHUA CAPTIVE POWER PLANT	JINDAL STEEL AND POWER LIMITED (Chhattisgarh)	576.00	0.8136	47.04	0.3828	0.3838	100.28								0.3838			0.3838
65	DERANG TPP	JINDAL INDIA THERMAL POWER LIMITED (Odisha)	1200.00	1.8116	41.00	0.7427	0.4704	63.33	0.0355	0.0000	0.0000	0.0000	0.0000	0.1874	0.2450	0.0000	0.0025	0.0000	0.4704







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Sl.No.	Name of TPS	Power Utility & State	Installed Capacity (MW)	Coal Consumed (MT)	Ash Content of coal % (7)/(5) x 100 (6)	Fly Ash Generation (MT)	Fly Ash Utilization (MT)	Percentage Utilization (8)/(7) x 100 (9)	In making of Fly Ash based/Brick/Blocks/Tiles etc. (MT)	In making of portland pozzolana cement (MT)	In construction of Highways & Roads (including flyovers) (MT)	Part replacement of concrete in concrete (MT)	In Hydro power sector in RCC Dam construction (MT)	In Ash Dyke raising (MT)	In reclamation of low lying Area (MT)	In Mining filling (MT)	In agriculture/waste land Development (MT)	Others (MT)	Total Utilization (MT) (10) to (19)
87	KORADI	M.S.P.G.C.L. (Maharashtra)	2600.00	2.8120	41.75	1.1740	0.1650	14.05	0.0070	0.0010	0.1570								0.1650
88	PARAS	M.S.P.G.C.L. (Maharashtra)	500.00	1.2750	27.62	0.3521	0.0928	26.34	0.0630	0.0098									0.0928
89	NEVELI - I	N.L.C.LTD(Tamil Nadu)	600.00	2.5610	4.14	0.1060	0.0710	66.98	0.0113	0.0578							0.0019		0.0710
90	NEVELI - I EXPN	N.L.C.LTD(Tamil Nadu)	420.00	11.8096	4.84	0.5712	0.5712	100.00	0.0794	0.3663						0.1085	0.0127	0.0023	0.5712
91	NEVELI - II	N.L.C.LTD(Tamil Nadu)	1470.00	5.7778	6.11	0.3529	0.3530	100.03	0.0714	0.1973						0.0843			0.3530
92	NEVELI - II EXPN	N.L.C.LTD (Tamil Nadu)	500.00	0.6438	6.07	0.0391	0.0391	100.00	0.0282							0.0105		0.0004	0.0391
93	BARSINGAR LIGNITE	N.L.C.LTD (Rajasthan)	250.00	5.5365	16.87	0.9339	0.9339	100.00	0.2082	0.4866						0.2391			0.9339
94	NILC TAMILNADU POWER LTD.	N.L.C.TAMILNADU POWER LIMITED (Tamil Nadu)	1000.00	1.5985	27.76	0.4714	0.4714	100.00	0.0466	0.4146	0.0102								0.4714
95	DURGAPUR CAPTIVE POWER PLANT	NSPL (West Bengal)	120.00	0.3585	29.27	0.1049	0.0855	81.51	0.0000	0.0617	0.0035			0.0203					0.0855
96	VALLUR	NTECL (Tamil Nadu)	1500.00	2.7110	38.29	1.0380	0.5820	56.07	0.1230	0.0575	0.0575				0.0000		0.3440		0.5820
97	RAJPURA	NABHA POWER LIMITED(Punjab)	1400.00	2.4976	28.37	0.7085	0.6337	89.44	0.0230	0.5385	0.0465			0.0257					0.6337
98	BADARPUR	N.T.P.C.LTD (Delhi)	705.00	0.8990	30.03	0.2700	0.2550	94.44	0.2240	0.0250	0.0060								0.2550
99	DADRI	N.T.P.C.LTD (U.P.)	1820.00	3.6700	33.43	1.2270	0.9960	81.17	0.2000	0.6650	0.1270						0.0040		0.9960
100	SINGRAULI	N.T.P.C.LTD (U.P.)	2000.00	4.2330	31.16	1.3190	0.4030	30.55		0.0010				0.0950	0.3070				0.4030
101	RIHAND	N.T.P.C.LTD (U.P.)	3000.00	6.4850	26.48	1.7170	0.4720	27.49	0.0320	0.0430	0.0000			0.1870	0.1750		0.0350		0.4720
102	FEROZE GANDHI UNCHAHAR	N.T.P.C. LTD(U.P.)	1050.00	2.1390	38.22	0.8176	0.8900	108.86	0.0170	0.4820	0.3790	0.0000	0.0000	0.0000	0.0000	0.0000	0.0120		0.8900
103	TANDA	N.T.P.C.LTD (U.P.)	440.00	0.8760	33.68	0.2950	0.6020	204.07	0.0000	0.1670	0.3020				0.1330				0.6020
104	KORBA	N.T.P.C.LTD (Chhattisgarh)	2600.00	6.6470	38.90	2.5860	1.2980	50.19	0.0250					0.6780	0.0760		0.5050		1.2980
105	VINDHYACHAL	N.T.P.C.LTD (M.P.)	4750.00	12.3820	33.82	4.1880	0.9860	23.54	0.0610	0.0250				0.4550	0.1080		0.3370		0.9860
106	SIPAT	N.T.P.C.LTD (Chhattisgarh)	2980.00	7.0500	34.27	2.4160	0.9770	40.44	0.1510	0.1930	0.0480			0.2820		0.1240	0.1790		0.9770
107	RAMAGUNDAM	N.T.P.C.LTD (Andhra Pradesh)	2600.00	5.9100	36.19	2.1390	1.8480	86.40	0.4470	0.3540				0.1050	0.5600	0.3290	0.0530		1.8480
108	SIMHADRI	N.T.P.C.LTD (Andhra Pradesh)	2000.00	4.2240	33.97	1.4350	1.2410	86.48	0.2330	0.2750	0.0250			0.5780	0.0060		0.1240		1.2410
109	FARAKKA	N.T.P.C.LTD (W.B.)	2100.00	4.8170	33.98	1.6370	1.2600	76.97	0.0300	0.2010	0.0760			0.2330	0.5700		0.1500		1.2600
110	KANHALGAON	N.T.P.C.LTD(Bihar)	2340.00	5.9380	33.61	1.9960	0.9200	46.09	0.0700	0.2790	0.0160			0.2290	0.1540		0.1720		0.9200



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Sl No.	Name of TPS	Power Utility & State	Installed Capacity (MW)	Coal Consumed (MT)	Ash Content of coal (%)	Fly Ash Generation (MT)	Fly Ash Utilization (MT)	Percentage Utilization (%)	In making of Fly Ash based/Bric K/Blocks/T pozzolane cements etc. (MT)	In manufacture of portland cement pozzolane cement (MT)	In construction of Highways & Roads including flyovers (MT)	Part replacement of concrete in concrete (MT)	In Hydro power sector in RCC Dam construction (MT)	In Ash Dyke raising (MT)	In reclamation of low lying Area (MT)	In Mining filling (MT)	In agriculture /waste land Development (MT)	Others (MT)	Total Utilization (MT)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
111	BARH SUPER TPS	N.T.P.C.LTD (Bihar)	1320.00	2,948.00	41.21	1,215.00	0.3031	24.95	0.0673	0.0829				0.1530					0.3031
112	TALCHAR(TPS)	N.T.P.C.LTD (Odisha)	460.00	1,457.00	38.98	0.5680	0.5673	99.88	0.0063					1.6650		0.5810			0.5673
113	TALCHAR(KAN)	N.T.P.C.LTD(Odisha)	3000.00	8,562.00	43.05	3,686.00	1,731.00	46.96	0.0410	0.0130									1,731.00
114	MOUDA TPS	N.T.P.C.LTD (Maharashtra)	2320.00	3,990.00	33.96	1,355.00	0.5530	40.81	0.2760	0.1070	0.1090				0.0020			0.0590	0.5530
115	BONGAIGAON	N.T.P.C.LTD (Assam)	500.00	0,879.00	30.03	0.2640	0.0550	20.83	0.0110	0.0440									0.0550
116	SOLAPUR	N.T.P.C.LTD (Maharashtra)	660.00	0,834.00	33.99	0.2835	0.2820	99.47	0.0270	0.2120								0.0430	0.2820
117	KUDGI	N.T.P.C.LTD (Karnataka)	1600.00	1,291.00	34.11	0.4403	0.2740	62.23	0.0020	0.2720									0.2740
118	NALCO, CPP AUNGAL	NATIONAL ALUMINIUM COMPANY LIMITED (NALCO) (Odisha)	1200.00	2,871.00	44.41	1,275.00	0.8030	62.98	0.1290					0.5880	0.0860				0.8030
119	IB VALLEY	O.P.G.C.L.(Odisha)	420.00	1,222.7	39.26	0.4800	0.1858	38.71	0.0055	0.0088					0.1624		0.00004	0.00909	0.1858
120	LEHRA MOHABAT	P.S.P.C.L. (Punjab)	920.00	1,035.8	38.55	0.3993	0.2361	59.12	0.0048	0.2295	0.0018								0.2361
121	ROPAR	P.S.P.C.L. (Punjab)	840.00	0,832.6	34.81	0.2899	0.7241	249.80	0.0078	0.3832	0.2731	0.0010			0.0569		0.0021		0.7241
122	BATHINDA	P.S.P.C.L. (Punjab)	460.00	0,000.0	#DIV/0!	0.0000	0.0408	#DIV/0!	0.0129	0.0279									0.0408
123	PRAYAGRAJ	PRAYAGRAJ POWER GENERATION COMPANY LIMITED (Uttar Pradesh)	1980.00	2,476.6	36.59	0.9063	0.5412	59.72		0.5412									0.5412
124	CHHABRA	RRVUNL (Rajasthan)	1000.00	2,079.9	34.26	0.7126	0.7366	103.36	0.1295	0.4957	0.0097		0.0000		0.0094			0.0922	0.7366
125	KALLISINDH	RRVUNL (Rajasthan)	1200.00	1,243.3	30.15	0.3748	0.3922	104.63	0.0290	0.2673				0.0026	0.0011			0.0921	0.3922
126	JALIPA KAPURDI	RWPL (Rajasthan)	1080.00	0,000.0	#DIV/0!	0.4683	0.5749	122.77	0.0600	0.4255						0.0895			0.5749
127	ROSA PHASE-1	RPSC(U.P)	1200.00	1,768.7	31.93	0.5647	0.5481	97.05	0.0347	0.3684				0.0970	0.0293		0.0184		0.5481
128	YERAMARUS TPS	RAICHUR POWER CORPORATION LIMITED (Karnataka)	1600.00	0,335.7	25.29	0.0849	0.0133	15.66	0.0057	0.0076									0.0133
129	UNCCHPINDA	R K M POWERGEN PRIVATE LIMITED(Chhattisgarh)	1080.00	2,136.3	14.88	0.3180	0.3293	103.58	0.2747		0.0287				0.0123			0.0137	0.3293
130	SIMHAPURI	SIMHAPURI ENERGY LIMITED (Andhra Pradesh)	600.00	0,062.5	3.27	0.0020	0.0020	100.00	0.0020										0.0020
131	RATITZA TPS	SPECTRUM COAL AND POWER LIMITED (Chhattisgarh)	100.00	0,595.3	61.77	0.3677	0.2025	55.07	0.0079						0.1946				0.2025



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132	SEBICORP ENERGY INDIA LIMITED	SEBICORP ENERGY INDIA LIMITED (Andhra Pradesh)	1320.00	3.0325	17.76	0.5385	0.4509	83.73	0.0060	0.4448									0.4509
133	SWASTIK POWER & MINERALS RESOURCES PVT. LTD.	SWASTIK POWER & MINERALS RESOURCES PVT. LTD (Chhattisgarh) (No Generation)	25.00		#DIV/0!			#DIV/0!											0.0000
134	TENUGHAT TPS	TENUGHAT VIDHYUT NIGAM LIMITED (Jharkhand)	420.00	0.5671	40.00	0.2268	0.2960	130.50						0.2960					0.2960
135	CUDDALORE	TAAQ Neyveli Power Co. Pvt. Ltd. (Tamil Nadu)	250.00	0.5825	7.43	0.0433	0.0428	95.02	0.0075	0.0272				0.0072		0.0009			0.0428
136	SINGARENI	THE SINGARENI COLLIERIES COMPANY LIMITED (Telangana)	1200.00	2.5315	34.16	0.8647	0.8598	98.43	0.0738	0.4743						0.2941		0.0175	0.8598
137	JOJOBERA	T.P.CO. (Jharkhand)	547.50	1.2742	33.76	0.4302	0.3991	92.77	0.0021	0.2729		0.0344		0.0898					0.3991
138	TROMBAY	T.P.CO. (Maharashtra)	750.00	1.2740	2.10	0.0267	0.0211	79.03	0.0031	0.0180									0.0211
139	SABARMATI	TARENT POWER Ltd. (Gujarat)	422.00	0.8105	19.96	0.1618	0.1618	100.00		0.1323				0.0211			0.0084		0.1618
140	KOTHAGUDEM-I to IV	TSGENCO (Telangana)	660.00	2.0220	50.00	1.0110	0.3766	37.25	0.1756	0.1416				0.0594				0.0002	0.3766
141	KAKATIYA (Stage-I)	TSGENCO (Telangana)	500.00	1.0743	36.22	0.3891	0.3484	89.54	0.0551	0.2646				0.0274	0.0012			0.00003	0.3484
142	KAKATIYA (Stage-II)	TSGENCO (Telangana)	600.00	1.2317	36.07	0.4443	0.4054	91.26	0.0642	0.3083				0.0312	0.0017			0.00004	0.4054
143	RAMAGUNDAM-B	TSGENCO (Telangana)	62.50	0.1255	40.46	0.0508	0.0350	66.92										0.0350	0.0350
144	METTUR-II	T.N.G & D Corporation (Tamil Nadu)	600.00	0.8045	37.77	0.3039	0.2999	96.70	0.0418	0.1587				0.0948				0.0046	0.2999
145	RAIGARH TPP	TRN ENERGY PRIVATE LIMITED (Chhattisgarh)	600.00	1.2061	35.74	0.4310	0.3814	88.48	0.0124					0.3690					0.3814
146	ANPARA 'A' & 'B'	U.P.R.V.U.N.L. ( U.P.)	2630.00	6.4682	35.72	2.3105	0.0734	3.18	0.0017	0.0674				0.0043					0.0734
147	OBRA	U.P.R.V.U.N.L. ( U.P.)	1000.00	1.4549	31.95	0.4648	0.0594	12.77	0.0009	0.0411	0.0173								0.0594
148	PARICHA	U.P.R.V.U.N.L. ( U.P.)	1140.00	1.8720	39.32	0.7360	0.6442	87.53	0.0310	0.4000				0.2132					0.6442
149	UDUPI	UPCL (Karnataka)	1200.00	1.0200	5.28	0.0539	0.0535	98.22	0.0066	0.0359		0.0097						0.0013	0.0535
150	BUTIBORI	VIDARBHA INDUSTRIES POWER LIMITED (Maharashtra)	600.00	0.9241	32.15	0.2971	0.4690	157.83	0.0478	0.0578	0.2703	0.0931							0.4690
151	KOLAGHAT	W.B.P.D.C.L.(W.B.)	1260.00	0.2045	40.50	0.0828	0.1232	148.73	0.0045	0.0289				0.0897					0.1232
152	SAGARDIGHI	W.B.P.D.C.L.(W.B.)	1600.00	1.8872	33.63	0.6346	0.6303	98.32	0.0031	0.1450				0.4822					0.6303
153	BANDEL	W.B.P.D.C.L. (W.B.)	335.00	0.6501	41.61	0.2705	0.1787	66.04	0.0134	0.1298				0.0355					0.1787

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(1) Sl No.	(2) Name of TPS	(3) Power Utility & State	(4) Installed Capacity (MW)	(5) Coal Consumed (MT)	(6) Ash Content of coal (%)(7)/(5)x100	(7) Fly Ash Generation (MT)	(8) Fly Ash Utilization (MT)	(9) Percentage Utilization (8)/(7)x100	(10) In making of Fly Ash based/blocks/briquettes etc. (MT)	(11) In manufacture of portland pozzolana cement (MT)	(12) In construction of Highways & Roads including flyovers (MT)	(13) Part replacement of cement in concrete (MT)	(14) In Hydro power sector in RCC Dam construction (MT)	(15) In Ash Dyke raising (MT)	(16) In reclamation of low lying Areas (MT)	(17) In Mining filling (MT)	(18) In agriculture /waste land Development (MT)	(19) Others (MT)	(20) Total Utilization $\Sigma(10) to (19)$ (MT)	
																				(10)
154	SANTALDIH	W.B.P.D.C.L (W.B.)	500.00	1.2049	46.52	0.5605	0.5673	101.21	0.0106	0.1943					0.3594				0.0029	0.5673
155	BAKRESWAR	W.B.P.D.C.L(W.B.)	1050.00	2.0713	41.35	0.8565	0.8400	98.07	0.0181	0.3906					0.4313					0.8400
156	SAI WARDHA POWER Ltd. WARORA	WPCL (Maharashtra)	540.00	0.5670	33.86	0.1920	0.1856	96.64	0.0280	0.1030	0.0086			0.0190		0.0270				0.1856
	<b>Grand Total</b>		<b>159623.00</b>	<b>295.4217</b>	<b>31.57</b>	<b>93.2561</b>	<b>64.0829</b>	<b>68.72</b>	<b>8.0691</b>	<b>25.0370</b>	<b>2.5199</b>	<b>0.9660</b>	<b>0.0000</b>	<b>8.5285</b>	<b>9.0110</b>	<b>4.8014</b>	<b>0.7155</b>	<b>4.4346</b>	<b>64.0829</b>	