Report

on

Fly Ash Generation

at

Coal/Lignite Based Thermal Power Stations

and

its Utilization in the Country

for

the year 2016-17

CENTRAL ELECTRICITY AUTHORITY

NEW DELHI

DECEMBER 2017

FOREWORD

Electricity generation in the country is and will remain predominantly by coal-based stations in the near future. The Indian coal is of low grade having high ash content of the order of 30 - 45%, generating large quantity of fly ash at coal/lignite based thermal power stations. At present, the Ash utilization is lower than the generation on all India basis. As a result, there is surplus ash stock, which has been increasing every year. The management of fly ash has thus been a matter of concern in view of requirement of large area of land for its disposal because of its potential of causing pollution of air and water.

To address the above concerns, Ministry of Environment & Forests and Climate Change (MoEF&CC) has issued various Notifications on fly ash utilization prescribing therein the targets for fly ash utilization for Coal/Lignite power based Thermal Power Stations with an aim to achieve 100% utilization in a phased manner. Central Electricity Authority has been monitoring since 1996 the status of fly ash generation and its utilization in the country.

A large number of technologies have been developed for gainful utilization and safe management of fly ash under the concerted efforts made by Fly Ash Mission/Fly Ash Unit under Ministry of Science & Technology, Government of India since 1994. As a result, Fly ash earlier considered to be "hazardous industrial waste" material, has now acquired the status of useful and saleable commodity. The utilization of fly ash has increased from 6.64 million ton in 1996-97 to a level of 107.10 million-ton in 2016-17. The percentage of fly ash utilization during 2016-17 is 63.28% which is behind the target set by MoEF vide its notification dated 03.11.2009. This is a matter of concern and I understand MoEF&CC and other concerned departments are addressing the last bottlenecks/difficulties to achieve the target. MoEF&CC issued the amendment dated 25th January, 2016 to existing notification enjoining upon power utilities/Thermal Power Stations to 100% fly ash utilization by 31st December,2017. It is, however, noted that 100% utilization of fly ash on all India basis is unlikely to materialize.

This Report gives an overview of current status of fly ash generation and its utilization in the country for the year 2016-17. I am sure, that this publication will serve a useful purpose to guide all stake holders on the issues of fly ash utilization as per the notification of MoEF&CC, G.O.I.

I wish to express my sincere thanks to all the Power Utilities and Thermal Power stations in the country for providing data/information on fly ash generation and its utilization to CEA for bringing out this report.

(RAVINDRA KUMAR VERMA)
Chairperson, CEA

New Delhi
December 2017

PREFACE

Management of Fly Ash at coal/lignite based Thermal Power Stations in the country is a challenging task in view of large quantity of ash being generated and target of achieving 100% utilization of fly ash in time bound manner as prescribed in MoEF Notification of 14th September,1999 and its subsequent amendment. The land for creating ash dykes for ash disposal facilities at thermal power plants is becoming difficult to be acquired. Fly ash, if not managed well, may pose environmental challenges.

Fly Ash Mission, a Technology Project in Mission Mode of Government of India was commissioned during 1994 as a joint activity of Department of Science & Technology (DST), Ministry of Power (MOP) and Ministry of Environment & Forests (MoEF) with Department of Science & Technology as nodal agency. The Fly Ash Mission was set up to promote research in the area of fly ash utilization so that fly ash could be gainfully utilized instead of its disposal in ash ponds. Ministry of Environment & Forests, GOI also issued 1st Notification on Fly Ash Utilization in September, 1999, which was subsequently amended in 2003,2009 and 2016 stipulating targets for fly ash utilization for Thermal Power Stations and use of fly ash by construction agencies within prescribed radius of any thermal power station.

These initiatives and policy decisions by Government of India have led to increased utilization of fly ash in various construction activities like making of fly ash based building products, manufacturing of Portland pozzolana cement, construction of roads/highways/ flyovers, reclamation of low lying areas, back filling and stowing of mines, waste land development, construction of Roller Compacted concrete dams etc. Though, in 2016-17, the ash utilization level has reached to about 63.28% (107.10 MT) of total ash generated during the year as compared to less than 10% (6.64 MT) of the ash generated during the year 1996-97, a lot more needs to be done.

This report brings out present status of fly ash generation at 155 coal/lignite based thermal power stations and its utilization in the country. It also brings out the status of level of fly ash utilization achieved by various thermal power stations in the country vis-à-vis targets prescribed in MoEF's Notification of 14th September, 1999 and its subsequent amendments in 2003, 2009 & 2016. I am confident that the report will also be useful to all the stakeholders involved in fly ash management in the country for planning the utilization of fly ash and having necessary tie-up with the concerned thermal power station.

Data collection, its compilation, reconciliation & analysis is quite a vast task. Moreover, to provide a dependable/accurate data in desired formats is equally a major job. We acknowledge and express our gratitude to all Power Utilities and Thermal Power Station for furnishing data in a timely manner. I would also like to place on record my appreciation of the efforts made by the officers and staff of Thermal Civil Design Division. We solicit suggestion from all concerned for further improving the presentation made in the report. All suggestions/views as well as intimations for any unintended errors observed in this document may kindly be sent to Chief Engineer, TCD, CEA, Room No. 901(N), Sewa Bhawan, R.K. Puram, New Delhi (E-mail Address: tcdcea@nic.in)

New Delhi
December 2017

(P.D.SIWAL)
Member (Thermal)

ACKNOWLEDGEMENT

I express my sincere thanks to all the power utilities and the Thermal Power Stations for furnishing the data and information for bringing out this report on Fly Ash Generation and its utilization in the country for the year 2016-17. Timely furnishing the required data and information by various Power Utilities and Thermal Power Stations to CEA is important for bringing out the report.

I am grateful to Chairperson as well as Member (Thermal), CEA for the valuable suggestions and guidance in preparation of this report.

I also express my thanks to the team comprising S/Shri Neeraj Kumar, Director, Shamim Ahmad Khan, Deputy Director, Bhagaban Bhattacharya, Assistant Director and other officers of TCD Division, CEA in preparation of this report.

New Delhi
December 2017

(Gorakh Thakur)
Chief Engineer (TCD)

CONTENTS

PARA No.	DESCRIPTION	PAGE No.
1.0	Background	1
2.0	Ash Generation & Utilization during the Year 2016-17	2
2.1	A Brief Summary	2
2.2	Thermal Power Units Commissioned during the year 2016-17	2
2.3	Retirement of Thermal Power Units during 2016-17	2
2.4	Power Utility wise status of fly ash generation & its utilization during the Year 2016-17	3
2.5	State wise status of fly ash generation & its utilization during the Year 2016-17	7
3.0	Targets of fly ash utilization as per MoEF's Notification dated 3rd November, 2009	7
3.1	Thermal Power Station in operation as on 03.11.2009	8
3.2	Thermal Power Stations Commissioned after 03.11.2009	8
4.0	Present status of fly ash utilization as per MoEF's notification of 3rd November, 2009	9
4.1	Status during the Year 2016-17	9
4.2	Range of Fly Ash utilization during the year 2016-17	10
4.3	Thermal Power Stations that have achieved 100% or more Fly Ash utilization during the year 2016-17	10
4.4	Thermal Power Stations with ash utilization range of less than 100% and up to 75% during the year 2016-17	12
4.5	Thermal Power Stations with ash utilization range of less than 75% and up to 60% during the year 2016-17	14
4.6	Thermal Power Stations with ash utilization level of less than 60% during the year 2016-17	15
5.0	Ash Utilization status as per Notification of 3rd November , 2009 during the year 2016-17 (target achieved and not achieved)	17
6.0	Modes of Fly Ash utilization during the year 2016-17	24
7.0	Progressive fly ash generation & utilization during the period from 1996-97 to 2016-17	25
8.0	Progressive fly ash utilization in various modes/sectors during the period from 1998-99 to 2016-17	26
8.1	Cement Industry	26
8.2	Reclamation of low lying area	27
8.3	Construction of Road, Embankments, Flyovers and raising of Ash dykes.	27
8.4	Back Filling/Stowing of Mines	28
8.5	Building materials like bricks, blocks, tiles etc.	28
8.6	Agriculture	29
9.0	Web based monitoring system and a mobile application for utilization of fly ash	29
10.0	Conclusions & Recommendations	30
11.0	Abbreviations	32
Annex-I	Fly ash generation and its utilization at coal/lignite based thermal power stations in the country during the year 2016-17 (Power Utility Wise)	
Annex-II	Fly ash generation and its utilization at coal/lignite based thermal power stations in the country during the year 2016-17 (State Wise)	
Annex-III	MoEF&CC's Notification of dated 25.01.2016	
Annex-IV	MoEF&CC's Notification of dated 02.01.2014	

LIST OF TABLES

TABLE No.	TITLE OF TABLE	PAGE No.
I	Summary of fly ash generation and utilization during the year 2016-17	2
II	Thermal Power units Commissioned during the year 2016-17	2
III	Thermal Power Units retired during the year 2016-17	3
IV	Power Utility wise fly ash generation & utilization for the year 2016-17	3
V	State wise fly ash generation & utilization during the year 2016-17	7
VI	Targets for fly ash utilization for Thermal Power Station in operation as on 03.11.2009	8
VII	Targets for fly ash utilization for Thermal Power Station commissioned after 03.11.2009	8
VIII	Status of utilization of fly ash as per MoEF&CC's notification dated 3rd November, 2009 for the year 2016-17	9
IX	Range of percentage Fly ash utilization during the year 2016-17	10
X	Thermal Power Stations with fly ash utilization level of 100% or more during the year 2016-17	10
XI	Thermal Power Stations with fly ash utilization level of less than 100% and up to 75% during the year 2016-17	12
XII	Thermal Power Stations with ash utilization level of less than 75% and up to 60% during the year 2016-17	14
XIII	Thermal Power Stations with Ash Utilization Level of below 60% during the Year 2016-17	15
XIV	Fly Ash Utilization status as per notification of 3rd Nov.,2009 during the year 2016-17 (Target Achieved)	17
XV	Fly Ash Utilization status as per notification of 3rd Nov.,2009 during the year 2016-17 (Target Not Achieved)	19
XVI	Modes of fly ash utilization during Year 2016-17	24
XVII	Progressive Fly Ash generation & utilization during the period from 1996-97 to 2016-17	25

LIST OF FIGURES

Figure No.	TITLE OF FIGURE	PAGE No.
1	Mode of fly ash utilization during 2016-17	24
2	Progressive generation & utilization of fly ash during the Period from 1996-97 to 2016-17	26
3	Progressive utilization of fly ash in cement manufacturing and concrete during the Period from 1998-99 to 2016-17	26
4	Progressive utilization of fly ash in reclamation of low lying areas during the period from 1998-99 to 2016-17	27
5	Progressive utilization of fly ash in construction of roads/embankments/ash dyke raising during the period from 1998-99 to 2016-17	27
6	Progressive utilization of fly ash in Mine filling during the period from 1998-99 to 2016-17	28
7	Progressive utilization of fly ash in manufacture of fly ash based brick/blocks/ tiles during the period from 1998-99 to 2016-17	28
8	Progressive utilization of fly ash in agriculture during the period from 1998-99 to 2016-17	29

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 YEAR 2016-17)

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 coals which have 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 the fly ash generation and its utilization at coal/ lignite based thermal power stations in the country since 1996. Data on fly ash generation and utilization including modes of utilization is obtained from thermal power stations on half yearly as well as on 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 report is forwarded to Ministry of Power, Ministry of Science & Technology and Ministry of Environment, Forests and Climate Change. It 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 in the country, in order to facilitate and promote the utilization of fly ash.

In order 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 (MoEF&CC) has issued various Notifications on fly ash utilization. First Notification was issued on 14th September, 1999 which was subsequently amended in year 2003, 2009 and 2016 vide Notifications dated 27th August, 2003; 3rd November, 2009 and 25th January,2016 respectively. The amendment Notification of year 2009 prescribes the 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. 3rd 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's notification (i.e. 3rd November, 2009) are to achieve the target of fly ash utilization as 50% in the first year, 70% during in second year, 90% during third year and 100% during fourth year depending upon their date of commissioning. Ministry of Environment, Forest and Climate change has recently issued an amendment to the Notification on 25th January,2016 in order to widen the scope of fly ash utilization, besides engraining upon Power Utilities to bear the cost of the transportation. The target date for 100% fly ash utilization has also extended to 31st December,2017.

The report on fly ash generation and its utilization at coal/lignite based thermal power stations provides factual information and the status of fly ash utilization in the country. It also facilitates to ascertain the level of fly ash utilization achieved by various power stations in relation to targets prescribed in MoEF's amendment notification of 3rd November, 2009 and 25th January, 2016 and to take corrective measures in cases of Thermal Power Stations that are lagging behind achieving the prescribed targets of fly ash utilization.

2.0 ASH GENERATION & UTILIZATION DURING THE YEAR 2016-17

2.1 A Brief Summary

Fly ash generation & utilization data for the Year 2016-17 (April 2016 to March 2017) has been received from **155** (One hundred fifty-five) coal/lignite based thermal power stations of various power utilities in the country. Data 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 DURING THE YEAR 2016-17

Description		Year 2016-17
• Nos. of Thermal Power Stations from which data was received	:	**155**
• Installed capacity (MW)	:	**157377.00**
• Coal consumed (Million tons)	:	**509.46**
• Fly Ash Generation (Million tons)	:	**169.25**
• Fly Ash Utilization (Million tons)	:	**107.10**
• Percentage Utilization	:	**63.28**
• Percentage Average Ash Content (%)	:	**33.22**

Power Station wise fly ash generation & its utilization status including modes of utilization for the 2016-17 for all the **155** thermal power stations is given in the statement at **Annex-I** and State wise fly ash generation & its utilization status is given in **Annex-II.**

2.2 Thermal Power Units Commissioned during the Year 2016-17:

During the Year 2016-17, five Thermal power plants with total installed capacity of 2150 MW as given in Table-II below have been commissioned:

TABLE-II

THERMAL POWER UNITS COMMISSIONED DURING THE YEAR 2016-17

Sl. No.	Name of Thermal Power Station	Name of Power Utility	Unit No.	Capacity (MW)	Date of Commission
(1)	(2)	(3)	(4)	(5)	(6)
2016-17					
1	MARWA TENDUBHATA	C.S.P.G.C.L (Chhattisgarh)	2	1000.00	31.07.2016
2	JHABUA POWER LIMITED	M/S JHABUA POWER LIMITED (MP)	1	600.00	02.05.2016
3	BONGAIGAON	NTPC LTD. (Assam)	1	250.00	01.04.2016
4	RAIGARH TPP	TRN ENERGY Pvt. Ltd.(Chhattisgarh)	1	300.00	13.08.2016
		Total for 2016-17		**2150.00**	

2.3 Retirement of Thermal Power Units during the Year 2016-17:

During the Year 2016-17, the following units with installed capacity as given in Table-III below have been decommissioned:

TABLE-III

THERMAL POWER UNITS RETIRED DURING THE YEAR 2016-17

Sl. No.	Name of Thermal Power Station	Name of Power Utility	Unit No.	Capacity (MW)	Date of Retirement
(1)	(2)	(3)	(4)	(5)	(6)
2016-17					
1	Chndrapur TPS	M.S.P.G.C.L	1 & 2	2X210	21.10.2016
2	Parli TPS	M.S.P.G.C.L	3	210	21.10.2016
3	Durgapur TPS	D.V.C	3	140	21.10.2016
4	Santaldih TPS	W.B.P.D.C.L	1 to 4	4X120	21.12.2016
5	Patratu TPS	J.U.U.N.L	1,2,3,5 & 8	3x50 +1x100+1x110	21.12.2016
6	Ennore TPS	TANGEDCO	I to IV , V	2X60 + 2X110 + 1X110	12.01.2017
7	Gandhinagar TPS	G.S.E.C.L	1 & 2	2X120	12.01.2017
8	Lakwa TPS	A.P.G.C.L	I	15	12.01.2017
9	Chandrapura TPS	D.V.C	1	130	17.01.2017
Total for 2016-17				**2445**	

2.4 Power Utility Wise Status of Fly Ash Generation & its Utilization during the Year 2016-17

The status of fly ash generation & utilization for the year 2016-17 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-IV:

TABLE-IV

POWER UTILITY WISE FLY ASH GENERATION AND UTILIZATION FOR THE YEAR 2016-17

Sl. No.	Name of Power Utility	No. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-tonne)	Fly Ash Utilization (Million-tonne)	Percentage Utilization %
1	2	3	4	5	6	7
1	Andhra Pradesh Power Generation Corporation (APGENCO)	5	3872.50	8.5248	5.0950	59.77
2	APPDCL(Andhra Pradesh)	1	1600.00	1.4540	0.5090	35.01
3	APL (Gujarat)	1	4620.00	0.9940	1.0650	107.14
4	APCPL (Haryana)	1	1500.00	1.3240	1.0018	75.66
5	ACB (INDIA) Ltd. (Chhattisgarh)	4	390.00	1.6703	1.6822	100.71
6	AMNEPL (Maharashtra)	1	246.00	0.0000	0.0000	0.000
7	ADANI POWER LTD. (Maharashtra)	1	3300.00	3.5286	2.1950	62.21
8	ADANI POWER RAJASTHAN LTD. (Rajasthan)	1	1320.00	0.5293	0.3837	72.49
9	ADHUNIK POWER & NATURAL RESOURCES LTD. (Jharkhand)	1	540.00	0.7357	0.6557	89.13
10	BEPL (UP)	5	450.00	0.6861	0.6858	99.95

Sl. No.	Name of Power Utility	No. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-tonne)	Fly Ash Utilization (Million-tonne)	Percentage Utilization %
1	2	3	4	5	6	7
11	Bihar State Power Generation Co. Ltd.	1	220.00	0.0000	0.0000	0.0000
12	C.E.S.C. Ltd. (West Bengal)	3	1125.00	1.1537	1.1537	100.00
13	C.G.P.L (Gujarat)	1	4000.00	0.7860	0.6320	80.41
14	Chhattisgarh State Power Generation Company Ltd. (C.S.P.G.C.L.)	4	3280.00	5.2995	0.9332	17.61
15	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1	1200.00	0.0902	0.0922	102.23
16	Damoadar Valley Corporation (D.V.C.)	7	7770.00	9.4930	9.0393	95.22
17	Durgapur Projects Ltd. (D.P.L.)	1	660.00	0.5796	0.5099	87.97
18	D.P.S.C.Ltd. (W.B)	1	30.00	0.0000	0.0000	0.000
19	Dhariwal Infrastructure Ltd. (Maharashtra)	1	600.00	0.3410	0.3400	99.71
20	E.P.G.L (Gujarat)	1	1200.00	0.2370	0.2359	99.54
21	ESSAR POWER MP LTD.(M.P)	1	1200.00	0.0000	0.0000	0.000
22	Gujarat Industries Power Corporation Ltd. (G.I.P.C.L.)	1	500.00	0.5848	0.5848	100.00
23	Gujarat Mineral Development Corporation Ltd. (G.M.D.C.L.)	1	250.00	0.1916	0.2621	136.82
24	G.S.E.C.L. (Gujarat)	5	4480.00	0.2957	0.3715	125.63
25	Gupta Energy Pvt. LTD.(Maharashtra)	1	120.00	0.0000	0.0000	0.000
26	GMR Kamalanga Energy LTD. (Odisha)	1	1050.00	1.4390	1.2202	84.80
27	GMR Warora Energy LTD. (Maharashtra)	1	600.00	0.6928	0.6604	95.32
28	GMR Chhattisgarh Energy LTD. (Chhattisgarh)	1	1370.00	0.1375	0.1231	89.49
29	Haryana Power Generation Cor. Ltd. (H.P.G.C.L.)	3	2730.00	2.2060	3.8012	172.32
30	HALDIA ENERGY LIMITTED (W.B.)	1	600.00	0.9120	0.9090	99.67
31	Inderprastha Power Generation Company Ltd. (.I.P.G.C.L)	1	135.00	0.0000	0.0000	#DIV/0!
32	Ideal Energy Projects Ltd.(Maharashtra)	1	270.00	0.0000	0.0000	0.000
33	INDIAN METALS & FERRO	1	258.00	0.4837	0.4836	99.97

Sl. No.	Name of Power Utility	No. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-tonne)	Fly Ash Utilization (Million-tonne)	Percentage Utilization %
1	2	3	4	5	6	7
	ALLOYS LTD. (Odisha)					
34	I.P.C.L. (W.B.)	1	12.00	0.0288	0.0288	100.00
35	Jharkhand Urja Utpadan Nigam Limited (J.U.U.N.L.)	1	455.00	0.0000	0.0000	#DIV/0!
36	J.H.P.L (HR)	1	1320.00	0.6113	0.4892	80.03
37	J.P.L (Chhattisgarh)	2	3400.00	3.1560	1.3200	41.83
38	JSW Energy Ltd.	2	2060.00	0.3839	0.3840	100.03
39	Karnataka Power Corporation Ltd.(K.P.C.L.)	2	3420.00	2.7821	1.4380	51.69
40	Kanti Bijlee Utpadan Nigam Ltd.(K.B.U.N.L.)	1	220.00	0.2496	0.0699	28.01
41	KSK Mahanadi Power Company Limited (Chhattisgarh)	1	1200.00	1.4036	1.1503	81.95
42	Lanco Power Ltd. (Chhattisgarh)	1	600.00	0.9622	0.4130	42.92
43	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	1	1980.00	0.87	0.59	68.09
44	Madhya Pradesh Power Generation Corporation Ltd. (M.P.P.G.C.L.)	4	4080.00	3.6774	2.2300	60.64
45	Maithon Power Limited (Jharkhand)	1	1050.00	1.7600	1.9359	109.99
46	Maharashtra State Power Generation Corporation Ltd. (M.S.P.G.C.L)	7	10480.00	8.9006	5.4998	61.79
47	Meenakshi Energy Pvt. Ltd. (A.P)	1	300.00	0.0432	0.0931	215.34
48	MARUTI CLEAN COAL AND POWER LTD. (Chhattisgarh)	1	300.00	0.4717	0.2612	55.36
49	M/S JHABUA POWER LIMITED (MP)	1	600.00	0.1021	0.0794	77.72
50	Neyvelli Lignite Corporation Ltd. (N.L.C.LTD)	5	3240.00	1.4794	1.4459	97.73
51	NSPCL (Chhattisgarh)	1	500.00	1.0207	1.1184	109.57
52	N.T.P.C.LTD.	18	34425.00	58.4660	29.5730	50.58
53	NTECL (Tamil Nadu)	1	1500.00	1.7040	0.7295	42.81
54	Orissa Power Generation Corporation Ltd. (O.P.G.C.L.)	1	420.00	1.2374	0.4347	35.13
55	Punjab State Power Corporation Ltd. (P.S.P.C.L).	3	2640.00	0.8799	1.4296	162.48

Sl. No.	Name of Power Utility	No. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-tonne)	Fly Ash Utilization (Million-tonne)	Percentage Utilization %
1	2	3	4	5	6	7
56	PRAYAGRAJ POWER GENERATION COMPANY LTD. (U.P.)	1	1320.00	1.0730	0.2887	26.91
57	R.K.M.POWERGEN PVT. LTD (PGCIL) (Chhattisgarh)	1	720.00	0.0000	0.0000	#DIV/0!
58	Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (R.R.V.U.N.L.)	5	5190.00	4.9153	4.6252	94.10
59	Reliance Infrastructure Limited (R.I.L)	1	500.00	0.5910	0.6235	105.51
60	RPSCL (UP)	1	1200.00	1.7185	1.2223	71.13
61	R.W.P.L. (JSW)	1	1080.00	1.0301	1.1490	111.54
62	RATTANINDIA POWER LTD. (Maharashtra)	1	1350.00	0.31	0.31	100.03
63	Spectrum Coal & Power Ltd.(Chhattisgarh)	1	100.00	0.3082	0.2015	65.38
64	SEPL(Andhra Pradesh)	1	600.00	0.0411	0.0411	99.97
65	Taqa Neyveli Power Company Pvt.Ltd.	1	250.00	0.0078	0.0076	97.52
66	Tata Power Company (T.P.CO.)	2	1297.50	1.1054	1.1199	101.31
67	T.N.G & D Corporation (Tamil Nadu)	3	2490.00	3.1859	2.6455	83.04
68	TRN ENERGY Pvt. Ltd.(Chhattisgarh)	1	300.00	0.2210	0.1135	51.37
69	Torent Power Ltd.	1	422.00	0.3951	0.3951	100.00
70	TSGENCO (Telangana)	2	1100.00	1.1658	0.5076	43.54
71	T.S.P.G.C.L. (Telangana)	1	720.00	1.5093	0.4577	30.32
72	UPCL (Karnataka)	1	1200.00	0.1398	0.1170	83.69
73	Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.(U.P.R.V.U.N.L.)	5	5844.00	11.3311	2.8848	25.46
74	VIDARBHA INDUSTRIES POWER LTD. (Maharashtra)	1	600.00	0.6940	0.6956	100.22
75	West Bangal Power Development Corporation Limited (W.B.P.D.C.L)	5	4865.00	4.6949	4.0912	87.14
76	WPCL (KSKEV Ltd.) (Maharashtra)	1	540.00	0.2620	0.2620	100.00
	GRAND TOTAL	**155**	**157377.00**	**169.2533**	**107.0956**	**63.28**

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

The data of fly ash generation and utilization for year 2016-17 was received from 76 Power Utilities out of which **21** Power Utilities have achieved fly ash utilization level of 100% or more and **23** Power Utilities have achieved fly ash utilization level in the range of less than 100% to 75%;

The performance of these power utilities in fly ash utilization has been excellent during the aforesaid period (i.e. during the year 2016-17).

2.5 State wise Status of Fly Ash Generation & its Utilization during the Year 2016-17

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-V below:

TABLE-V

STATE WISE FLY ASH GENERATION AND ITS UTILIZATION DURING THE YEAR 2016-17

Sl. No.	Name of State	Nos. of TPS	Installed Capacity (MW)	Fly Ash Generation (Million-tonne)	Fly Ash Utilization (Million-tonne)	Percentage Utilization %
1	2	3	4	5	6	7
1	ANDHARAPRADESH	10	10972.50	17.8322	12.6832	71.13
2	ASSAM	1	250.00	0.2070	0.0000	0.00
3	BIHAR	4	4100.00	7.3916	2.3929	32.37
4	CHHATISGARH	20	17740.00	25.1658	10.8393	43.07
5	DELHI	2	840.00	0.3650	0.5720	156.71
6	GUJARAT	11	15472.00	3.4842	3.5465	101.79
7	HARYANA	5	5550.00	4.1413	5.2922	127.79
8	JHARKHAND	7	5612.50	6.7453	7.2876	108.04
9	KARNATAKA	4	5480.00	3.0739	1.7080	55.56
10	MADHYA PRADESH	7	10640.00	11.4186	4.1064	35.96
11	MAHARASHTRA	20	21556.00	16.4984	11.7649	71.31
12	ODISHA	5	5188.00	11.4560	6.3975	55.84
13	PUNJAB	3	2640.00	0.8799	1.4296	162.48
14	RAJASTHAN	8	7840.00	6.7657	6.4489	95.32
15	TAMILNADU	10	8430.00	6.1763	4.6297	74.96
16	TELANGANA	3	1820.00	2.6751	0.9652	36.08
17	UTTAR PRADESH	18	19104.00	28.2732	13.2480	46.86
18	WEST BENGAL	17	14142.00	16.7039	13.7837	82.52
	GRAND TOTAL	**155**	**157377.00**	**169.2533**	**107.0956**	**63.2754**

It may be seen from Table-V above that:

(i) 7 states namely Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Maharashtra, Odisha, Uttar Pradesh and West Bengal have generated more than 10 million-ton of fly ash with U.P as the maximum of 28.2732 million ton during the Year 2016-17.

(ii) During the Year 2016-17, - Union territory of Delhi and states of Gujarat, Haryana, Jharkhand & Punjab have achieved fly ash utilization level of more than 100 %. Similarly, States of Rajasthan achieved the fly ash utilization level of more than 90 %.

(iii) During 2016-17, thermal power stations in Bihar, Chhattisgarh, Madhya Pradesh, Telangana and Uttar Pradesh utilized less than 50% of fly ash.

3.0 TARGETS FOR FLY ASH UTILIZATION AS PER MoEF'S NOTIFICATION OF 3rd NOVEMBER, 2009

The notification set the target for the thermal power station which was in operation before the date of notification i.e 3.11.2009 as well as the new thermal power station to be commissioned after the notification i.e 3.11.2009. The same have been brought out below:

3.1 Thermal Power Station in Operation as on 3rd November, 2009

All coal and, or lignite based thermal Power Stations and, or expansion units in operation before the date of MoEF's notification i.e. 03.11.2009 were to achieve the target of fly ash utilization as per the Table-VI given below:

TABLE-VI
TARGETS FOR FLY ASH UTILIZATION FOR THERMAL POWER STATIONS IN OPERATION BEFORE 3rd NOVEMBER, 2009

Sl. No.	Target of Fly Ash Utilization (In Percentage)	Target Date
(1)	(2)	(3)
1	At least 50% of Fly Ash generation	One year from the date of issue of notification
2	At least 60% of Fly Ash generation	Two years from the date of issue of notification
3	At least 75% of Fly Ash generation	Three years from the date of issue of notification
4	At least 90% of Fly Ash generation	Four years from the date of issue of notification
5	100% of Fly Ash generation	Five years from the date of issue of notification

The unutilized fly ash, if any, in relation to the target during a year would be required to be utilized within next two years in addition to the targets stipulated for those years and the balance unutilized fly ash accumulated during first five years (the difference between the generation and the utilization target) would be required to be utilized progressively over the next five years in addition to 100% utilization of current generation of fly ash.

3.2 Thermal Power Station Commissioned after 3rd November, 2009

New coal and, or lignite based thermal Power Stations and, or expansion units commissioned after issue of MoEF's notification of 3rd November, 2009 are to achieve the target of fly ash utilization as per Table-VII given below:

TABLE-VII
TARGETS FOR FLY ASH UTILIZATION FOR THERMAL POWER STATION COMMISSIONED AFTER 3rd NOVEMBER, 2009

Sl. No.	Fly Ash Utilization Level	Target Date
(1)	(2)	(3)
1	At least 50% of fly ash generation	One year from the date of Commissioning
2	At least 70% of fly ash generation	Two years from the date of Commissioning
3	90% of fly ash generation	Three years from the date of Commissioning
4	100% of fly ash generation	Four years from the date of commissioning

The unutilized fly ash, if any, in relation to the target during a year would be required to be utilized within next two years in addition to the targets stipulated for these years and the balance unutilized fly ash accumulated during first four years (the difference between the generation and utilization target) would be required to be utilized progressively over next five years in addition to 100% utilization of current generation of fly ash.

4.0 PRESENT STATUS OF FLY ASH UTILIZATION AS PER MoEF'S NOTIFICATION OF 3rd NOVEMBER, 2009

Fly ash generation and utilization data received from Thermal Power Stations/Power Utilities in the country for the year 2016-17 has been broadly analyzed to ascertain the power stations which have achieved the targets of fly ash utilization as prescribed in MoEF's notification of 3rd November, 2009.

During the Year 2016-17, all those thermal power stations which were in operation on the date of issue of MoEF's notification (i.e. 3rd November, 2009) should have achieved the target of fly ash utilization of 100% within five years from the date of notification i.e. by 3rd November, 2014. All those thermal power stations which have come into operation after the date of issue of MoEF's notification (i.e. 3rd November, 2009) should have achieved the target of fly ash utilization as specified in Table-VII above depending upon their date of commissioning. .

4.1 Status during the Year 2016-17

To have a broad assessment of the achievement of targets of fly ash utilization by those thermal power stations which were in operation as on 3rd November, 2009 (i.e. date of MoEF's Notification) for the year 2016-17, the fly ash utilization in terms of percentage as achieved by thermal power stations as on 31st March, 2017 has been compared with the targets of fly ash utilization required to be achieved by them as for the Year 2016-17 as per MoEF's Notification of 3rd November, 2009.

For thermal power stations which were commissioned after 3rd November, 2009 (i.e. date of MoEF's Notification), the fly ash utilization in terms of percentage as achieved by them as on 31st March, 2017 for the year 2016-17 has been compared with the targets of fly ash utilization required to be achieved by them as per MoEF's Notification of 3rd November, 2009

For thermal power stations which were in operation for less than one year as on 31st March, 2017 for the Year 2016-17, the target of fly ash utilization of 50% as applicable for the 1st year from the date of commissioning has been considered.

Based on above, the status of achievement of targets of fly ash utilization as prescribed in MoEF's notification of 3rd November, 2009 for the Year 2016-17 has been assessed and status of the same is given in Table-VIII below.

TABLE-VIII

STATUS OF UTILIZATION OF FLY ASH AS PER MOEF'S NOTIFICATION DATED 3rd NOVEMBER, 2009 FOR THE YEAR 2016-17

Sl. No.	Description	Nos. of TPS
(1)	(2)	(3)
1	Nos. of TPS which have achieved the target of fly ash utilization as per MoEF's Notification of 3rd November, 2009	**56**
2	Nos. of TPS which have not been able to achieve the target of fly ash utilization as per MoEF's Notification of 3rd November, 2009	**89**
3	Nos. of TPS which have not generated any significant fly ash or any fly ash	**10**
	Total	**155**

It may be seen from Table-VIII above that:

During the Year 2016-17, out of **155** (one hundred fifty-five) thermal power stations for which data was received, **56 (fifty-six)** power stations have achieved the targets of fly ash utilization as stipulated in MoEF's Notification of 3rd November, 2009.

To increase the fly ash utilization MoEF&CC have issued an amendment on 25th January, 2016. The amendment is enclosed at **Annex-III**. As per the amendment notification the target date for 100% ash utilization has been revised to 31st December,2017

To reduce the fly ash generation and transportation cost of coal MoEF&CC have issued a notification dated 2nd January, 2014. The copy of the notification dated 2nd January, 2014 may be seen at **Annex-IV**.

4.2 Range of Fly Ash Utilization during the Year 2016-17

Based on the fly ash utilization data received from Thermal Power Stations/Power Utilities, the thermal power stations have been grouped into 5 categories as noted below depending upon range of utilization of fly ash by the stations:

TABLE-IX

RANGE OF PERCENTAGE FLY ASH UTILIZATION DURING THE YEAR 2016-17

Sl. No.	Level of Fly Ash utilization	Nos. of Power Stations
(1)	(2)	(3)
1	100% and more than 100%	**50**
2	Less than 100% and up to 75%	**42**
3	Less than 75% and up to 60%	**11**
4	Less than 60%	**42**
5	Nos. of TPS which have not generated any significant fly ash or any fly ash	**10**
	Total	**155**

4.3 Thermal Power Stations that have achieved Fly Ash utilization level of 100% or more during the Year 2016-17

The following Thermal Power Stations achieved the fly ash utilization level of 100% or more during the year 2016-17. The fly ash utilization level achieved by each of these power stations is given in Table-X below:

TABLE–X

THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF 100% OR MORE DURING THE YEAR 2016-17

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	KASAI PALI	ACB(INDIA)L (Chhattisgarh)	270.00	1.1354	1.1571	101.91
2	CHAKABURA TPP	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.18591	0.18591	100.00
3	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.16477	0.16477	100.00
4	MUNDRA TPS	APL (Gujrat)	4620.00	0.9940	1.0650	107.14
5	B.B.G.S.	C.E.S.C. (West Bengal)	750.00	1.0500	1.0500	100.00
6	S.G.S.	C.E.S.C. (West Bengal)	135.00	0.0777	0.0777	100.00
7	T.G.S.	C.E.S.C. (West Bengal)	240.00	0.0260	0.0260	100.00
8	MUTIARA	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1200.00	0.0902	0.0922	102.23
9	BOKARO 'B'	D.V.C.(Jharkhand)	1130.00	0.5046	1.1738	232.63

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
10	DURGAPUR	D.V.C.(West Bengal)	210.00	0.1993	0.5648	283.31
11	MEJIA	D.V.C.(West Bengal)	2340.00	3.7276	3.9889	107.01
12	SURAT LIGNITE	G.I.P.C.L. (Gujarat)	500.00	0.5848	0.5848	100.00
13	AKRIMOTA	G.M.D.C.L. (Gujarat)	250.00	0.1916	0.2621	136.82
14	GANDHINAGAR	G.S.E.C.L. (Gujarat)	630.00	0.0446	0.0834	186.99
15	KUTCH LIGNITE	G.S.E.C.L. (Gujarat)	290.00	0.0303	0.0303	100.00
16	SIKKA	G.S.E.C.L. (Gujarat)	740.00	0.0102	0.0291	285.29
17	WANAKBORI	G.S.E.C.L. (Gujarat)	1470.00	0.0911	0.1226	134.58
18	YAMUNANAGAR	H.P.G.C.L.(Haryana)	600.00	0.6400	1.5129	236.39
19	PANIPAT	H.P.G.C.L.(Haryana)	930.00	0.5560	1.3570	244.06
20	DISHERGARH POWER STATION	IPCL (W.B)	12.00	0.0288	0.0288	100.00
21	VIJAYANAGAR	JSW Energy Limited (Karnataka)	860.00	0.1520	0.1530	100.66
22	MAITHON RBTPP	MPL (Jharkhand)	1050.00	1.7600	1.9359	109.99
23	NASHIK	M.S.P.G.C.L. (Maharashtra)	630.00	0.8441	1.1528	136.56
24	PARLI	M.S.P.G.C.L. (Maharashtra)	1170.00	0.4070	0.7217	177.32
25	THAMMINAPATNAM TPS	MEENAKSHI ENERGY Pvt. Ltd.(Andhra Pradesh)	300.00	0.0432	0.0931	215.34
26	NEYVELI - II	NLC LTD. (Tamil Nadu)	1470.00	0.5966	0.6786	113.75
27	NEYVELI - II EXPN	NLC LTD. (Tamil Nadu)	500.00	0.0690	0.0695	100.78
28	BARSINGSAR LIGNITE	NLC LTD. (Rajasthan)	250.00	0.2910	0.2910	100.00
29	BHILAI	NSPCL (Chhattisgarh)	500.00	1.0207	1.1184	109.57
30	BADARPUR	NTPC LTD (Delhi).	705.00	0.3650	0.5720	156.71
31	DADRI	NTPC LTD. (U.P.)	1820.00	1.8340	3.7310	203.44
32	FEROZE GANDHI UNACHAR	NTPC LTD.(U.P.)	1050.00	1.4860	1.8750	126.18
33	TANDA	NTPC LTD. (U.P.)	440.00	0.7490	0.8850	118.16
34	TALCHAR(TPS)	NTPC LTD (Odisha).	460.00	1.1750	1.1830	100.68
35	MOUDA TPS	NTPC LTD. (Maharashtra)	1000.00	0.8980	0.8990	100.11
36	BATHINDA	P.S.P.C.L. (Punjab)	460.00	0.1700	0.2839	166.95
37	LEHRA MOHABAT	P.S.P.C.L. (Punjab)	920.00	0.0633	0.0663	104.80
38	ROPAR	P.S.P.C.L. (Punjab)	1260.00	0.6466	1.0794	166.95
39	KOTA	RRVUNL (Rajasthan)	1240.00	1.5389	1.5521	100.86
40	CHHABRA	RRVUNL (Rajasthan)	1000.00	1.4254	1.4520	101.87
41	JALIPA KAPURDI	RWPL (Rajasthan)	1080.00	1.0301	1.1490	111.54
42	DAHANU	RELIANCE INFRASTRUCTURE Ltd. (Maharashtra)	500.00	0.5910	0.6235	105.51

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
43	AMRAVATI TPS	RATTANINDIA POWER LTD. (Maharashtra)	1350	0.3085	0.3086	100.03
44	JOJOBERA	T.P.CO. (Jharkhand)	547.50	1.0554	1.0698	101.37
45	TROMBAY	T.P.CO. (Maharashtra)	750.00	0.0500	0.0501	100.20
46	SABARMATI	TORENT POWER LTD.(Gujarat)	422.00	0.3951	0.3951	100.00
47	PANKI	U.P.R.V.U.N.L. (U.P.)	210.00	0.2429	0.3482	143.32
48	BUTIBORI	VIDARBHA INDUSTRIES POWER LTD. (Maharashtra)	600.00	0.6940	0.6956	100.22
49	KOLAGHAT	W.B.P.D.C.L(W.B.)	1260.00	2.0578	2.4209	117.65
50	SAI WARDHA POWER Ltd. ,WARORA	WPCL (Maharashtra)	540.00	0.2620	0.2620	100.00

It may be seen from Table-X above that:

During the Year 2016-17, **50** thermal power stations have achieved the fly ash utilization level of 100% or more including **39** thermal power stations which have achieved fly ash utilization level of more than 100%.

Fly ash utilization level of more than 100% indicates that besides ash generation during the period of report 2016-17, additional fly ash from ash pond was utilized.

4.4 Thermal Power Stations in Fly Ash Utilization Range of less than 100% and up to 75% during the Year 2016-17

The Thermal Power Stations which have achieved the fly ash utilization level of less than 100% and up to 75% during the year 2016-17 along with fly ash utilization level achieved by each of these power stations are given in Table-XI below:

TABLE-XI

THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF LESS THAN 100% AND UP TO 75% DURING THE YEAR 2016-17

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Dr. N.T.R (Vijayawada)	APGENCO (Andhra Pradesh)	1760.00	4.0174	3.0282	75.3766
2	RAYALSEEMA	APGENCO (Andhra Pradesh)	1050.00	1.9834	1.5426	77.7778
3	SVPPL Renki	ACB India Limited (Chhattisgarh)	60.00	0.1843	0.1745	94.6779

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
4	INDIRA GANDHI	APCPL (Haryana)	1500.00	1.3240	1.0018	75.6637
5	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LTD. (Jharkhand)	540.00	0.7357	0.6557	89.1291
6	BARKHERA	BEPL (UP)	90.00	0.1335	0.1334	99.9303
7	KHAMBER KHERA	BEPL (UP)	90.00	0.1249	0.1248	99.9343
8	KUNDARKI	BEPL (UP)	90.00	0.1487	0.1487	99.9602
9	MAQSOODAPUR	BEPL (UP)	90.00	0.1329	0.1328	99.9617
10	UTRAULA	BEPL (UP)	90.00	0.1462	0.1461	99.9808
11	MUNDRA UMPP	CGPL (Gujrat)	4000.00	0.7860	0.6320	80.4071
12	CHANDRAPURA	D.V.C.(Jharkhand)	890.00	1.7132	1.6762	97.8406
13	KODERMA	D.V.C. (Jharkhand)	1000.00	0.9765	0.7762	79.4879
14	D.P.P.S.	D.P.L (West Bengal).	660.00	0.5796	0.5099	87.9660
15	DHARIWAL INFRASTRUCTURE Ltd.	Dhariwal Infrastructure Ltd.(Maharashtra)	600.00	0.3410	0.3400	99.7067
16	SALAYA	EPGL (Gujarat)	1200.00	0.2370	0.2359	99.5359
17	UKAI	G.S.E.C.L. (Gujarat)	1350.00	0.1195	0.1061	88.7866
18	GMR WAROARA ENERGY Ltd.	GMR WAROARA ENERGY LTD. (Maharashtra)	600.00	0.6928	0.6604	95.3200
19	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY LTD. (Odisha)	1050.00	1.4390	1.2202	84.7957
20	GMR Chhattisgarh	GMR Chhattisgarh Energy LTD. (Chhattisgarh)	1370.00	0.1375	0.1231	89.4914
21	HISAR	H.P.G.C.L.(Haryana)	1200.00	1.0100	0.9313	92.2146
22	HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED (W.B)	600.00	0.9120	0.9090	99.6711
23	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd.(Odisha)	258.00	0.4837	0.4836	99.9750
24	MAHATMA GANDHI	JHPL (Haryana)	1320.00	0.6113	0.4892	80.0301
25	RATNAGIRI	JSW Energy Ltd (Maharashtra)	1200.00	0.2319	0.2310	99.6119
26	KMPCL (AKALTARA)	KSK Mahanadi Power Company Limited (Chhattisgarh)	1200.00	1.4036	1.1503	81.9536
27	SANJAY GANDHI	M.P.P.G.C.L. (M.P.)	1340.00	1.8285	1.4173	77.5133
28	BHUSAWAL	M.S.P.G.C.L.(Maharashtra)	1420.00	0.6274	0.4935	78.6517
29	PARAS	M.S.P.G.C.L.(Maharashtra)	500.00	0.4356	0.4292	98.5326
30	JHABUA POWER LIMITED	M/S JHABUA POWER LIMITED (MP)	600.00	0.1021	0.0794	77.7228
31	NEYVELI -I EXPN	NLC LTD.(Tamil Nadu)	420.00	0.2324	0.2297	98.8343
32	RAMAGUNDAM	NTPC LTD. (Andhra Pradesh).	2600.00	4.7110	4.3860	93.1013
33	SIMHADRI	NTPC LTD. (Andhra Pradesh).	2000.00	3.0580	2.5590	83.6821
34	SURATGARH	RRVUNL (Rajasthan)	1500.00	0.9324	0.8578	91.9971
35	SIMHAPURI	SEPL(Andhra Pradesh)	600.00	0.0411	0.0411	99.9686
36	CUDDALORE	TAQA NEYVELLY POWER CO.PVT. LTD. (Tamil Nadu)	250.00	0.0078	0.0076	97.5203

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
37	METTUR-I	T.N.G & D Corporation (Tamil Nadu)	840.00	1.4403	1.3269	92.1267
38	METTUR-II	T.N.G & D Corporation (Tamil Nadu)	600.00	0.6270	0.6156	98.1941
39	HARDUAGANJ	U.P.R.V.U.N.L. (U.P.)	670.00	0.8886	0.7440	83.7228
40	PARICHHA	U.P.R.V.U.N.L. (U.P.)	1140.00	1.6366	1.3791	84.2653
41	UDUPI	UPCL (Karnataka)	1200.00	0.1398	0.1170	83.6910
42	BANDEL	W.B.P.D.C.L (W.B.)	455.00	0.0540	0.0525	97.2164

It may be seen from Table-XI above that **42** thermal power stations during the year 2016-17 have achieved fly ash utilization level in the range of less than 100% to 75%.

4.5 Thermal Power Stations in Fly Ash Utilization Range of less than 75% and up to 60% during the Year 2016-17

The Thermal Power Stations which have achieved the fly ash utilization level of less than 75% and up to 60% during the year 2016-17 along with fly ash utilization level achieved by each of these power stations are given in Table-XII below:

TABLE-XII

THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF LESS THAN 75% AND UP TO 60% DURING THE YEAR 2016-17.

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	TIRORA	ADANI POWER LTD. (Maharastra)	3300.00	3.5286	2.1950	62.21
2	KAWAI	ADANI POWER RAJASTHAN LTD. (Rajasthan)	1320.00	0.5293	0.3837	72.49
3	LALITPUR	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	1980.00	0.8655	0.5893	68.09
4	NEYVELI - I	NLC LTD.(Tamilnadu)	600.00	0.2905	0.1771	60.95
5	KALISINDH	RRVUNL (Rajasthan)	1200.00	1.0186	0.7633	74.94
6	ROSA PHASE-I	RPSCL(U.P)	1200.00	1.7185	1.2223	71.13
7	RATIZA TPS	SPECTRUM COAL & POWER LTD.(Chhattisgarh)	100.00	0.3082	0.2015	65.38
8	TUTICORIN	T.N.G & D	1050.00	1.1186	0.7030	62.85

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Corporation (Tamil Nadu)				
9	KAKATIA (Stage-I)	T.S.G.E.N.C.O. (Telangana)	500.00	0.6014	0.4375	72.76
10	BANDEL	W.B.P.D.C.L(W.B.)	1600.00	1.1238	0.7713	68.63
11	SANTALDIH	W.B.P.D.C.L (W.B.)	500.00	0.0961	0.0608	63.20

It may be seen from Table-XII above that **11** thermal power stations during the year 2016-17 have achieved fly ash utilization level of less than 75% and up to 60%.

4.6 Thermal Power Stations with Fly Ash Utilization Level of less than 60% during the Year 2016-17

The Thermal Power Stations which have achieved the fly ash utilization level of less than 60% during the year 2016-17 along with fly ash utilization level achieved by each of these power stations are given in Table-XIII:

TABLE-XIII

THERMAL POWER STATIONS WITH FLY ASH UTILIZATION LEVEL OF BELOW 60% DURING THE YEAR 2016-17

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	RAMAGUNDAM'B'	APGENCO (Andhra Pradesh)/Telangana	62.50	0.1114	0.0163	14.66
2	KOTHAGUDEM-V	APGENCO (Andhra Pradesh)	500.00	1.4505	0.0013	0.09
3	KOTHAGUDEM-VI	APGENCO (Andhra Pradesh)	500.00	0.9620	0.5066	52.66
4	SRI DAMODARAM SANJEEVAIAH	APPDCL (Andhra Pradesh)	1600.00	1.4540	0.5090	35.01
5	KORBA (EAST)	C.S.P.G.C.L (Chhattisgarh)	440.00	0.9995	0.5016	50.19
6	MARWA TENDUBHATA	C.S.P.G.C.L (Chhattisgarh)	1000.00	0.0828	0.0035	4.23
7	DSPM	C.S.P.G.C.L. (Chhattisgarh)	500.00	1.1899	0.3629	30.50
8	KORBA (WEST)	C.S.P.G.C.L Chhattisgarh	1340.00	3.0272	0.0651	2.15
9	DURGAPUR STEEL	D.V.C. (West Bengal)	1000.00	1.9347	0.8535	44.12
10	RAGHUNATHPUR	D.V.C. (West Bengal)	1200.00	0.4372	0.0059	1.34
11	O.P.Jindal Super TPP (Stage-I)	JPL (Chhattisgarh.)	1000.00	1.5010	0.7920	52.76
12	O.P.Jindal Super TPP(Stage-II)	JPL (Chhattisgarh.)	2400.00	1.6550	0.5280	31.90
13	BELLARI	K.P.C.L (Karnataka)	1700.00	0.1545	0.0510	33.01

Sl. No.	Name of TPS	Power Utility	Installed Capacity (MW)	Fly ash Generation (Mt)	Fly ash Utilization (Mt)	% age
(1)	(2)	(3)	(4)	(5)	(6)	(7)
14	RAICHUR	K.P.C.L.(Karnataka)	1720.00	2.6276	1.3870	52.79
15	MUZAFFARPUR TPS	K.B.U.N.L (Bihar)	220.00	0.2496	0.0699	28.01
16	AMARKANTAK TPS	LANCO POWER Ltd. (Chhattisgarh)	600.00	0.9622	0.4130	42.92
17	SATPURA	M.P.P.G.C.L. (M.P.)	1330.00	0.9044	0.5423	59.97
18	AMARKANTAK	M.P.P.G.C.L. (M.P.)	210.00	0.3186	0.1809	56.77
19	SHREE SINGAJI TPS	M.P.P.G.C.L. (M.P.)	1200.00	0.6260	0.0895	14.30
20	CHANDRAPUR	M.S.P.G.C.L. (Maharashtra)	2340.00	3.4082	1.6224	47.60
21	KHAPARKHEDA	M.S.P.G.C.L. (Maharashtra)	1340.00	2.0183	0.7312	36.23
22	KORADI	M.S.P.G.C.L. (Maharashtra)	3080.00	1.1600	0.3490	30.09
23	MCCPL BANDHAKHAR	MARUTI CLEAN COAL AND POWER LTD. (Chhattisgarh)	300.00	0.4717	0.2612	55.36
24	VALLUR	NTECL (Tamil Nadu)	1500.00	1.7040	0.7295	42.81
25	SINGRAULI	NTPC LTD. (U.P.)	2000.00	3.6770	0.3340	9.08
26	RIHAND	NTPC LTD. (U.P.)	3000.00	4.8530	0.7520	15.50
27	KORBA	NTPC (Chhattisgarh).	2600.00	5.0660	2.2780	44.97
28	VINDHYACHAL	NTPC LTD. (M.P.)	4760.00	7.6390	1.7970	23.52
29	SIPAT	NTPC LTD. (Chhattisgarh).	2980.00	5.4490	1.2450	22.85
30	FARAKKA	NTPC LTD. (W.B.)	2100.00	3.0360	1.6780	55.27
31	KAHALGAON	NTPC LTD.(Bihar)	2340.00	5.0560	2.2270	44.05
32	BARH SUPER TPS	NTPC LTD (Bihar)	1320.00	2.0860	0.0960	4.60
33	TALCHAR(KAN)	NTPC LTD. (Odisha).	3000.00	7.1210	3.0760	43.20
34	BONGAIGAON	NTPC LTD. (Assam)	250.00	0.2070	0.0000	0.00
35	IB VALLEY	O.P.G.C.L.(Odisha)	420.00	1.2374	0.4347	35.13
36	PARAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD. (U.P.)	1320.00	1.0730	0.2887	26.91
37	KOTHAGUDEM (Stage I to IV)	T.S.P.G.C.L (Telangana)	720.00	1.5093	0.4577	30.32
38	KAKATIA (Stage-II)	T.S.G.E.N.C.O. (Telangana)	600.00	0.5644	0.0700	12.40
39	RAIGARH TPP	TRN ENERGY Pvt. Ltd.(Chhattisgarh)	300.00	0.2210	0.1135	51.37
40	ANPARA 'A' & 'B'	U.P.R.V.U.N.L. (U.P.)	2630.00	7.1784	0.0308	0.43
41	OBRA	U.P.R.V.U.N.L. (U.P.)	1194.00	1.3845	0.3828	27.65
42	BAKRESWAR	W.B.P.D.C.L(W.B.)	1050.00	1.3632	0.7858	57.64

It may be seen from Table-XIII above that:

During the year 2016-17, out of **155** (one hundred fifty-five) thermal power stations, **42** stations could not reach the level of fly ash utilization to 60%.

Following 10 Nos. Thermal Power Stations did not generate any fly ash during 2016-17:

1. **Mihan (AMNEPL)**-TPS is under shut down condition since 5th November, 2013.
2. **Baraun**i **(B.S.P.G.C.LTD)-**Both Unit No. 6 & 7 are under ongoing R&M works since long.
3. **Mahan (ESSAR POWER MP LTD)-** COD declared on 29.04.2013, after that however no generation took place; hence Fly Ash Generation during April 2016 to March 2017 is nil.
4. **GEPL TPP (GUPTA ENERGY PVT. LTD)** – Both Unit-1 & 2 are under shutdown due to non-availability of coal source/coal blocks/coal linkage.
5. **Rajghat (IPGCL) -** TPS is not in operation since 21.05.2015 and it is in the process of closure.
6. **Chinakuri (DPSCL)** - Plant under shutdown from 21st November 2011.
7. **Bela (IDAL ENERGY PROJECTS LTD)** - COD declared on 18.07.2013. However, plant has not run significantly from COD.
8. **Patratu(J.U.U.N.L)-** CEA is advice Patratu Vidyut Utpadan Nigam Ltd. (PVUNL) to retire Unit No. 4, 6 & 7**.** Unit No. 9 & 10 is still under review.
9. **Unchpinda {(R.K.M POWERGEN PVT. LTD (PGCIL)}-**Unit No. I & II are not in operation after COD due to delay in completion of PPA formalities and Fund disbursement. HCSD system is under installation.
10. **Giral (RRVUNL) -** TPS is under forced shut down condition since January 2016.

5.0 FLY ASH UTILIZATION STATUS AS PER NOTIFICATION OF 3RD NOVEMBER, 2009 DURING THE YEAR 2016-17 (TARGET ACHIEVED/NOT ACHIEVED)

As per the targets mandated by the MoEF&CC's notification of dated 3rd November, 2009 for fly ash utilization by the power stations, a total of **56** stations achieved their target and as many as **89** Nos. could not reach the targets, while there were **10** stations where no fly ash was generated. The details are given at Table- XIV & XV respectively. However, the date of achieving the 100% ash utilization target is now extended to 31st December, 2017 as per new amendment notification dated 25th January, 2016.

TABLE-XIV
FLY ASH UTILIZATION STATUS AS PER NOTIFICATION OF 3RD NOVEMBER, 2009 DURING THE YEAR 2016-17 (TARGET ACHIEVED)

Sl. No	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity (MW)	Fly ash Generation	Fly ash Utilization	% age	Target in %age
1	2	3	4	5	6	7	8	9
1	KASAI PALI	ACB(INDIA)L (Chhattisgarh)	13.12.2011	270	1.1354	1.1571	101.9137	100
2	CHAKABURA TPP	ACB (INDIA) Ltd. (Chhattisgarh)	27.02.2007	30.00	0.1859	0.1859	100.0000	100
3	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd. (Chhattisgarh)	28.03.2014	30.00	0.1648	0.1648	100.0000	90
4	MUNDRA TPS	APL (Gujrat)	04.08.2009	4620.00	0.9940	1.0650	107.1429	100
5	B.B.G.S.	C.E.S.C. (West Bengal)	16.09.1997	750.00	1.0500	1.0500	100.0000	100
6	S.G.S.	C.E.S.C. (West Bengal)	12.08.1990	135.00	0.0777	0.0777	100.0000	100
7	T.G.S.	C.E.S.C. (West Bengal)	05.03.1983	240.00	0.0260	0.0260	100.0000	100
8	MUTIARA	COASTAL ENERGEN PVT. Ltd. (Tamil Nadu)	23.12.2014	1200.00	0.0902	0.0922	102.2264	70
9	BOKARO 'B'	D.V.C. (Jharkhand)	24.03.1986	1130.0000	0.5046	1.1738	232.6333	100
10	DURGAPUR	D.V.C. (West Bengal)	Sep,1982	210.00	0.1993	0.5648	283.3145	100
11	MEJIA	D.V.C. (West Bengal)	01.12.1997	2340.00	3.7276	3.9889	107.0107	100
12	DHARIWAL INFRASTRUCTURE Ltd.	Dhaliwal Infrastructure Ltd. (Maharashtra)	11.2.2014	600.00	0.3410	0.3400	99.7067	90

Sl. No	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity (MW)	Fly ash Generation	Fly ash Utilization	% age	Target in %age
1	2	3	4	5	6	7	8	9
13	SURAT LIGNITE	G.I.P.C.L. (Gujarat)	06.11.1999/15.02.2000	500.00	0.5848	0.5848	100.0001	100
14	AKRIMOTA	G.M.D.C.L. (Gujarat)	31.03.2005	250.00	0.1916	0.2621	136.8167	100
15	GANDHINAGAR	G.S.E.C.L. (Gujarat)	13.03.1977/20.03.1990	630.00	0.0446	0.0834	186.9955	100
16	KUTCH LIGNITE	G.S.E.C.L. (Gujarat)	09.01.1990	290.00	0.0303	0.0303	100.0000	100
17	SIKKA	G.S.E.C.L. (Gujarat)	26.03.1988	740.00	0.0102	0.0291	285.2941	100
18	WANAKBORI	G.S.E.C.L. (Gujarat)	23.03.1982	1470.00	0.0911	0.1226	134.5774	100
19	GMR Chhattisgarh	GMR Chhattisgarh Energy LTD. (Chhattisgarh)	1.06.2015	1370.00	0.1375	0.1231	89.4914	70
20	YAMUNANAGAR	H.P.G.C.L. (Haryana)	14.04.2008	600.00	0.6400	1.5129	236.3906	100
21	PANIPAT	H.P.G.C.L. (Haryana)	01.11.1979/28.03.1989	930.00	0.5560	1.3570	244.0647	100
22	HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED (W.B)	28-01-15	600.00	0.9120	0.9090	99.6711	70
23	DISHERGARH POWER STATION	IPCL (West Bengal)	25.09.2012	12.00	0.0288	0.0288	100.0000	100
24	VIJAYANAGAR	JSW Energy Limited (Karnataka)	18.01.2000	860.00	0.1520	0.1530	100.6579	100
25	LALITPUR	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	26.03.2016	1980.00	0.8655	0.5893	68.0921	50
26	MAITHON RBTPP	MPL (Jharkhand)	01.09.2011	1050.00	1.7600	1.9359	109.9928	100
27	NASHIK	M.S.P.G.C.L. (Maharashtra)	26.04.1979	630.00	0.8441	1.1528	136.5633	100
28	PARLI	M.S.P.G.C.L. (Maharashtra)	10.10.1980/26.03.1985	1170.00	0.4070	0.7217	177.3219	100
29	THAMMINAPATNAM TPS	MEENAKSHI ENERGY Pvt. Ltd. (Andhra Pradesh)	10.07.2012	300.00	0.0432	0.0931	215.3429	100
30	JHABUA POWER LIMITED	M/S JHABUA POWER LIMITED (MP)	02.05.2016	600.00	0.1021	0.0794	77.7228	50
31	NEYVELI - II	NLC LTD. (Tamil Nadu)	17.01.1988	1470.00	0.5966	0.6786	113.7500	100
32	NEYVELI - II EXPN	NLC LTD. (Tamil Nadu)	05.07.2015	500.00	0.0690	0.0695	100.7836	50
33	BARSINGSAR LIGNITE	NLC LTD. (Rajasthan)	27.10.2009	250.00	0.2910	0.2910	100.0001	100
34	BHILAI	NSPCL (Chhattisgarh)	05.01.2009	500.00	1.0207	1.1184	109.5674	100
35	BADARPUR	NTPC LTD (Delhi).	July-73	705.00	0.3650	0.5720	156.7123	100
36	DADRI	NTPC LTD. (U.P.)	Oct,1991	1820.00	1.8340	3.7310	203.4351	100
37	FEROZE GANDHI UNACHAR	NTPC LTD.(U.P.)	01-11-88	1050.00	1.4860	1.8750	126.1777	100
38	TANDA	NTPC LTD. (U.P.)	01-01-00	440.00	0.7490	0.8850	118.1575	100
39	TALCHAR(TPS)	NTPC LTD (Odisha).	03.06.1995	460.00	1.1750	1.1830	100.6809	100
40	MOUDA TPS	NTPC LTD. (Maharashtra)	01-04-12	1000.00	0.8980	0.8990	100.1114	100

Sl. No	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity (MW)	Fly ash Generation	Fly ash Utilization	% age	Target in %age
1	2	3	4	5	6	7	8	9
41	BATHINDA	P.S.P.C.L. (Punjab)	22.09.1974	460.00	0.1700	0.2839	166.9529	100
42	LEHRA MOHABAT	P.S.P.C.L. (Punjab)	25.05.1998	920.00	0.0633	0.0663	104.8039	100
43	ROPAR	P.S.P.C.L. (Punjab)	01.01.1985	1260.00	0.6466	1.0794	166.9465	100
44	CHHABRA	RRVUNL (Rajasthan)	11.06.2010	1000.00	1.4254	1.4520	101.8681	100
45	KOTA	RRVUNL (Rajasthan)	17.01.1983	1240.00	1.5389	1.5521	100.8597	100
46	JALIPA KAPURDI	RWPL (Rajasthan)	26.11.2009	1080.00	1.0301	1.1490	111.5376	100
47	DAHANU	RELIANCE INFRASTRUCTURE Ltd. (Maharashtra)	01.07.1995	500.00	0.5910	0.6235	105.5071	100
48	AMRAVATI TPS	RATTANINDIA POWER LTD. (Maharashtra)	03.06.2013	1350.00	0.3085	0.3086	100.0253	100
49	JOJOBERA	T.P.CO. (Jharkhand)	01-04-96	547.50	1.0554	1.0698	101.3653	100
50	TROMBAY	T.P.CO. (Maharashtra)	06.06.2005/1984	750.00	0.0500	0.0501	100.2000	100
51	SABARMATI	TORENT POWER LTD.(Gujarat)	13.04.1997	422.00	0.3951	0.3951	100.0000	100
52	RAIGARH TPP	TRN ENERGY Pvt. Ltd. (Chhattisgarh)	13.08.2016	300.00	0.2210	0.1135	51.3700	50
53	PANKI	U.P.R.V.U.N.L. (U.P.)	10-11-76	210.00	0.2429	0.3482	143.3248	100
54	BUTIBORI	VIDARBHA INDUSTRIES POWER LTD. (Maharashtra)	04.04.2013	600.00	0.6940	0.6956	100.2196	100
55	KOLAGHAT	W.B.P.D.C.L (W.B.)	14.08.1984	1260.00	2.0578	2.4209	117.6451	100
56	SAI WARDHA POWER Ltd. ,WARORA	WPCL (Maharashtra)	15.04.2010	540.00	0.2620	0.2620	100.0000	100

TABLE-XV
FLY ASH UTILIZATION STATUS AS PER NOTIFICATION OF 3RD NOVEMBER,2009 DURING THE YEAR 2016-17 (TARGET NOT ACHIEVED)

Sl. No.	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity	Fly ash Generation	Fly ash Utilization	% age	Target in % age
1	2	3	4	5	6	7	8	9
1	Dr. N.T.R (Vijayawada)	APGENCO (Andhra Pradesh)	Nov-79	1760.00	4.0174	3.0282	75.3766	100
2	RAYALSEEMA	APGENCO (Andhra Pradesh)	Nov-94	1050.00	1.9834	1.5426	77.7778	100
3	RAMAGUNDAM'B'	APGENCO (Andhra Pradesh)	17.10.1971	62.50	0.1114	0.0163	14.6633	100
4	KOTHAGUDEM-V	APGENCO (Andhra Pradesh)	01-03-97	500.00	1.4505	0.0013	0.0863	100
5	KOTHAGUDEM-VI	APGENCO (Andhra Pradesh)	23-10-11	500.00	0.9620	0.5066	52.6580	100
6	SRI DAMODARAM SANJEEVAIAH	APGENCO (Andhra Pradesh)	05.02.2015	1600.00	1.4540	0.5090	35.0069	70

Sl. No.	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity	Fly ash Generation	Fly ash Utilization	% age	Target in % age
1	2	3	4	5	6	7	8	9
7	SVPPL Renki	ACB India Limited (Chhattisgarh)	21.10.2011/ 02.10.2015	60.00	0.1843	0.1745	94.6779	100
8	INDIRA GANDHI	APCPL (Haryana)	31.10.2010	1500.00	1.3240	1.0018	75.6637	100
9	TIRORA	ADANI POWER LTD. (Maharashtra)	23.09.2012	3300.00	3.5286	2.1950	62.2060	100
10	KAWAI	ADANI POWER RAJASTHAN LTD. (Rajasthan)	31.05.2013	1320.00	0.5293	0.3837	72.4920	90
11	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LTD. (Jharkhand)	21.01.2013	540.00	0.7357	0.6557	89.1291	100
12	BARKHERA	BEPL (UP)	29.10.2011	90.00	0.1335	0.1334	99.9303	100
13	KHAMBER KHERA	BEPL (UP)	30.09.2011	90.00	0.1249	0.1248	99.9343	100
14	KUNDARKI	BEPL (UP)	03.01.2012	90.00	0.14875	0.14869	99.9602	100
15	MAQSOODAPUR	BEPL (UP)	27.10.2011	90.00	0.1329	0.1328	99.9617	100
16	UTRAULA	BEPL (UP)	30.01.2012	90.00	0.1462	0.1461	99.9808	100
17	KORBA (EAST)	C.S.P.G.C.L (Chhattisgarh)	01.10.1966	440.00	0.9995	0.5016	50.1862	100
18	MARWA TENDUBHATA	C.S.P.G.C.L (Chhattisgarh)	31.07.2016	1000.00	0.0828	0.0035	4.2291	50
19	DSPM	C.S.P.G.C.L. (Chhattisgarh)	21.10.2007	500.00	1.1899	0.3629	30.5015	100
20	KORBA (WEST)	C.S.P.G.C.L Chhattisgarh	21.06.1983	1340.00	3.0272	0.0651	2.1500	100
21	MUNDRA UMPP	CGPL (Gujrat)	07.03.2012	4000.00	0.7860	0.6320	80.4071	100
22	CHANDRAPURA	D.V.C. (Jharkhand)	10.10.1964	890.00	1.7132	1.6762	97.8406	100
23	DURGAPUR STEEL	D.V.C. (West Bengal)	15.05.2012	1000.00	1.9347	0.8535	44.1183	100
24	KODERMA	D.V.C. (Jharkhand)	18.07.2013	1000.00	0.9765	0.7762	79.4879	90
25	RAGHUNATHPUR	D.V.C. (West Bengal)	18.07.2014	1200.00	0.4372	0.0059	1.3438	90
26	D.P.P.S.	D.P.L (West Bengal).	03.07.1985	660.00	0.5796	0.5099	87.9660	100
27	SALAYA	EPGL (Gujarat)	01.04.2012	1200.00	0.2370	0.2359	99.5359	100
28	UKAI	G.S.E.C.L. (Gujarat)	19.03.1976	1350.00	0.1195	0.1061	88.7866	100
29	GMR WAROARA ENERGY Ltd.	GMR WAROARA ENERGY LTD. (Maharashtra)	19.03.2013	600.00	0.6928	0.6604	95.3200	100
30	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY LTD. (Odisha)	30.04.2013	1050.00	1.4390	1.2202	84.7957	100
31	HISAR	H.P.G.C.L. (Haryana)	24.08.2010	1200.00	1.0100	0.9313	92.2146	100
32	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd.(Odisha)	31.12.2012/ 02.1989	258.00	0.4837	0.4836	99.9750	100

Sl. No.	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity	Fly ash Generation	Fly ash Utilization	% age	Target in % age
1	2	3	4	5	6	7	8	9
33	MAHATMA GANDHI	JHPL (Haryana)	29.03.2012	1320.00	0.6113	0.4892	80.0301	100
34	O.P.Jindal Super TPP (Stage-I)	JPL (Chhattisgarh.)	08.12.2007	1000.00	1.5010	0.7920	52.7648	100
35	O.P.Jindal Super TPP(Stage-II)	JPL (Chhattisgarh.)	14.03.2014	2400.00	1.6550	0.5280	31.9033	90
36	RATNAGIRI	JSW Energy Ltd (Maharashtra)	01.09.2010	1200.00	0.2319	0.2310	99.6119	100
37	BELLARI	K.P.C.L (Karnataka)	25.03.2008	1700.00	0.1545	0.0510	33.0052	100
38	RAICHUR	K.P.C.L. (Karnataka)	29.03.1985	1720.00	2.6276	1.3870	52.7858	100
39	MUZAFFARPUR TPS	K.B.U.N.L (Bihar)	31.03.1985	220.00	0.2496	0.0699	28.0100	100
40	KMPCL (AKALTARA)	KSK Mahanadi Power Company Limited (Chhattisgarh)	14.08.2013/ Sept,2013	1200.00	1.4036	1.1503	81.9536	70
41	AMARKANTAK TPS	LANCO POWER Ltd. (Chhattisgarh)	01.05.2009	600.00	0.9622	0.4130	42.9220	100
42	SANJAY GANDHI	M.P.P.G.C.L. (M.P.)	07.10.1993	1340.00	1.8285	1.4173	77.5133	100
43	SATPURA	M.P.P.G.C.L. (M.P.)	01.07.1979	1330.00	0.9044	0.5423	59.9659	100
44	AMARKANTAK	M.P.P.G.C.L. (M.P.)	10.09.2009	210.00	0.3186	0.1809	56.7678	100
45	SHREE SINGAJI TPS	M.P.P.G.C.L. (M.P.)	01.02.2014	1200.00	0.6260	0.0895	14.2965	90
46	BHUSAWAL	M.S.P.G.C.L. (Maharashtra)	30.08.1979	1420.00	0.6274	0.4935	78.6517	100
47	CHANDRAPUR	M.S.P.G.C.L. (Maharashtra)	15.08.1983	2340.00	3.4082	1.6224	47.6035	100
48	KHAPARKHEDA	M.S.P.G.C.L. (Maharashtra)	26.03.1989	1340.00	2.0183	0.7312	36.2301	100
49	KORADI	M.S.P.G.C.L. (Maharashtra)	03.06.1974	3080.00	1.1600	0.3490	30.0862	100
50	PARAS	M.S.P.G.C.L. (Maharashtra)	31.03.2008	500.00	0.4356	0.4292	98.5326	100
51	MCCPL BANDHAKHAR	MARUTI CLEAN COAL AND POWER LTD. (Chhattisgarh)	30.07.2015	300.00	0.4717	0.2612	55.3629	70
52	NEYVELI - I	NLC LTD. (Tamil Nadu)	1962	600.00	0.2905	0.1771	60.9466	100
53	NEYVELI -I EXPN	NLC LTD. (Tamil Nadu)	21.10.2002	420.00	0.2324	0.2297	98.8343	100
54	VALLUR	NTECL (Tamil Nadu)	09.03.2012	1500.00	1.7040	0.7295	42.8110	100
55	SINGRAULI	NTPC LTD. (U.P.)	February-82	2000.00	3.6770	0.3340	9.0835	100
56	RIHAND	NTPC LTD. (U.P.)	March-88	3000.00	4.8530	0.7520	15.4956	100

Sl. No.	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity	Fly ash Generation	Fly ash Utilization	% age	Target in % age
1	2	3	4	5	6	7	8	9
57	KORBA	NTPC (Chhattisgarh).	01-03-83	2600.00	5.0660	2.2780	44.9664	100
58	VINDHYACHAL	NTPC LTD. (M.P.)	01-10-87	4760.00	7.6390	1.7970	23.5240	100
59	SIPAT	NTPC LTD. (Chhattisgarh).	01-05-07	2980.00	5.4490	1.2450	22.8482	100
60	RAMAGUNDAM	NTPC LTD. (Andhra Pradesh).	01-11-83	2600.00	4.7110	4.3860	93.1013	100
61	SIMHADRI	NTPC LTD. (Andhra Pradesh).	01-02-02	2000.00	3.0580	2.5590	83.6821	100
62	FARAKKA	NTPC LTD. (W.B.)	01-01-86	2100.00	3.0360	1.6780	55.2701	100
63	KAHALGAON	NTPC LTD.(Bihar)	01-03-92	2340.00	5.0560	2.2270	44.0467	100
64	BARH SUPER TPS	NTPC LTD (Bihar)	01-11-14	1320.00	2.0860	0.0960	4.6021	90
65	TALCHAR(KAN)	NTPC LTD. (Odisha).	01-02-95	3000.00	7.1210	3.0760	43.1962	100
66	BONGAIGAON	NTPC LTD. (Assam)	01.04.2016	250.00	0.2070	0.0000	0.0000	50
67	IB VALLEY	O.P.G.C.L. (Odisha)	21.12.1994	420.00	1.2374	0.4347	35.1334	100
68	PARAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD. (U.P.)	29.02.2016	1320.00	1.0730	0.2887	26.9059	50
69	SURATGARH	RRVUNL (Rajasthan)	31.10.1998	1500.00	0.9324	0.8578	91.9971	100
70	KALISINDH	RRVUNL (Rajasthan)	07.05.2014	1200.00	1.0186	0.7633	74.9382	90
71	ROSA PHASE-I	RPSCL(U.P)	12.03.2010	1200.00	1.7185	1.2223	71.1274	100
72	SIMHAPURI	SEPL (Andhra Pradesh)	29.02.2012	600.00	0.0411	0.0411	99.9686	100
73	RATIZA TPS	SPECTRUM COAL & POWER LTD. (Chhattisgarh)	27.02.2013	100.00	0.3082	0.2015	65.3819	100
74	CUDDALORE	TAQA NEYVELI POWER CO.PVT. LTD. (Tamil Nadu)	15.12.2002	250.00	0.0078	0.0076	97.5203	100
75	TUTICORIN	T.N.G & D Corporation (Tamil Nadu)	31.03.1991/ 09.07.1979	1050.00	1.1186	0.7030	62.8451	100
76	METTUR-I	T.N.G & D Corporation (Tamil Nadu)	07.03.1990/ 07.01.1987	840.00	1.4403	1.3269	92.1267	100
77	METTUR-II	T.N.G & D Corporation (Tamil Nadu)	11.10.2012	600.00	0.6270	0.6156	98.1941	100

Sl. No.	Name of TPS	Power Utility	Date of Commissioning	Installed Capacity	Fly ash Generation	Fly ash Utilization	% age	Target in % age
1	2	3	4	5	6	7	8	9
78	KAKATIA (Stage-I)	T.S.G.E.N.C.O. (Telangana)	31-03-10	500.00	0.6014	0.4375	72.7575	100
79	KAKATIA (Stage-II)	T.S.G.E.N.C.O. (Telangana)	24.03.2016	600.00	0.5644	0.0700	12.4040	50
80	KOTHAGUDEM (Stage I to IV)	T.S.P.G.C.L (Telangana)	04-07-66	720.00	1.5093	0.4577	30.3219	100
81	ANPARA 'A' & 'B'	U.P.R.V.U.N.L. (U.P.)	01-01-87	2630.00	7.1784	0.0308	0.4291	100
82	HARDUAGANJ	U.P.R.V.U.N.L. (U.P.)	31-03-77	670.00	0.8886	0.7440	83.7228	100
83	OBRA	U.P.R.V.U.N.L. (U.P.)	15-08-67	1194.00	1.3845	0.3828	27.6490	100
84	PARICHHA	U.P.R.V.U.N.L. (U.P.)	31.03.1984	1140.00	1.6366	1.3791	84.2653	100
85	UDUPI	UPCL (Karnataka)	11.11.2010	1200.00	0.1398	0.1170	83.6910	100
86	SAGARDIGHI	W.B.P.D.C.L (W.B.)	21.12.2007/ 07.09.2008	1600.00	1.1238	0.7713	68.6325	100
87	BANDEL	W.B.P.D.C.L (W.B.)	04.09.1965	455.00	0.0540	0.0525	97.2164	100
88	SANTALDIH	W.B.P.D.C.L (W.B.)	01.04.2009	500.00	0.0961	0.0608	63.1954	100
89	BAKRESWAR	W.B.P.D.C.L (W.B.)	18.07.1999	1050.00	1.3632	0.7858	57.6442	100
LIST OF THERMAL POWER STATIONS WITH NO FLY ASH GENERATION								
1	MIHAN	AMNEPL (Maharashtra)	20.04.2011	246.00	0.0000	0.0000	0.0000	
2	BARAUNI	B.S.P.G.C. LTD.(Bihar)	01.05.1983	220.00	0.0000	0.0000	0.0000	
3	MAHAN	ESSAR POWER MP LTD.(M.P.)	01.04.2012	1200.00	0.0000	0.0000	0.0000	
4	GEPL TPP	GUPTA ENERGY Pvt. Ltd. (Maharashtra)	19.07.2012	120.00	0.0000	0.0000	0.0000	
5	RAJGHAT	IPGCL (Delhi)	20.02.1990	135.00	0.0000	0.0000	0.0000	
6	CHINAKURI	IPCL (Formerly DPSCL) (West Bengal)	21.11.2011	30.00	0.0000	0.0000	0.0000	
7	BELA TPS	IDEAL ENERGY PROJECTS Ltd. (Maharashtra)	18.07.2013	270.00	0.0000	0.0000	0.0000	
8	PATRATU	J.U.U.N.L (Jharkhand)	30.01.1969	455.00	0.0000	0.0000	0.0000	
9	UNCHPINDA	R.K.M.POWERGEN PVT. LTD (PGCIL)	26.11.2015	720.00	0.0000	0.0000	0.0000	
10	GIRAL	RRVUNL (Rajasthan)	28.02.2007	250.00	0.0000	0.0000	0.0000	

6.0 MODES OF FLY ASH UTILIZATION DURING THE YEAR 2016-17

The data on fly ash utilization received from Thermal Power Stations/Power Utilities for the year 2016-17 has been analyzed 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 year 2016-17 along with utilization in each mode are given in Table-XVI below:

TABLE-XVI
MODES OF FLY ASH UTILIZATION DURING THE YEAR 2016-17

Sl. No.	Mode of utilization	Quantity of Fly Ash utilized in the mode of utilization	
		Million-ton	Percentage (%)
(1)	(2)	(3)	(4)
1	Cement	40.5869	23.98
2	Mine filling	11.7827	6.96
3	Bricks & Tiles	14.9110	8.81
4	Reclamation of low lying area	11.0392	6.52
5	Ash Dyke Raising	11.8888	7.02
6	Roads & flyovers	6.1942	3.66
7	Agriculture	1.9243	1.14
8	Concrete	0.7647	0.45
9	Hydro Power Sector	0.0197	0.01
10	Others	7.9840	4.72
11	Unutilized Fly Ash	62.1577	36.72
	Total	**169.2534**	**100.00**

The pie diagram showing the modes of utilization of fly ash during the Year 2016-17 is given in Figure-1 below:

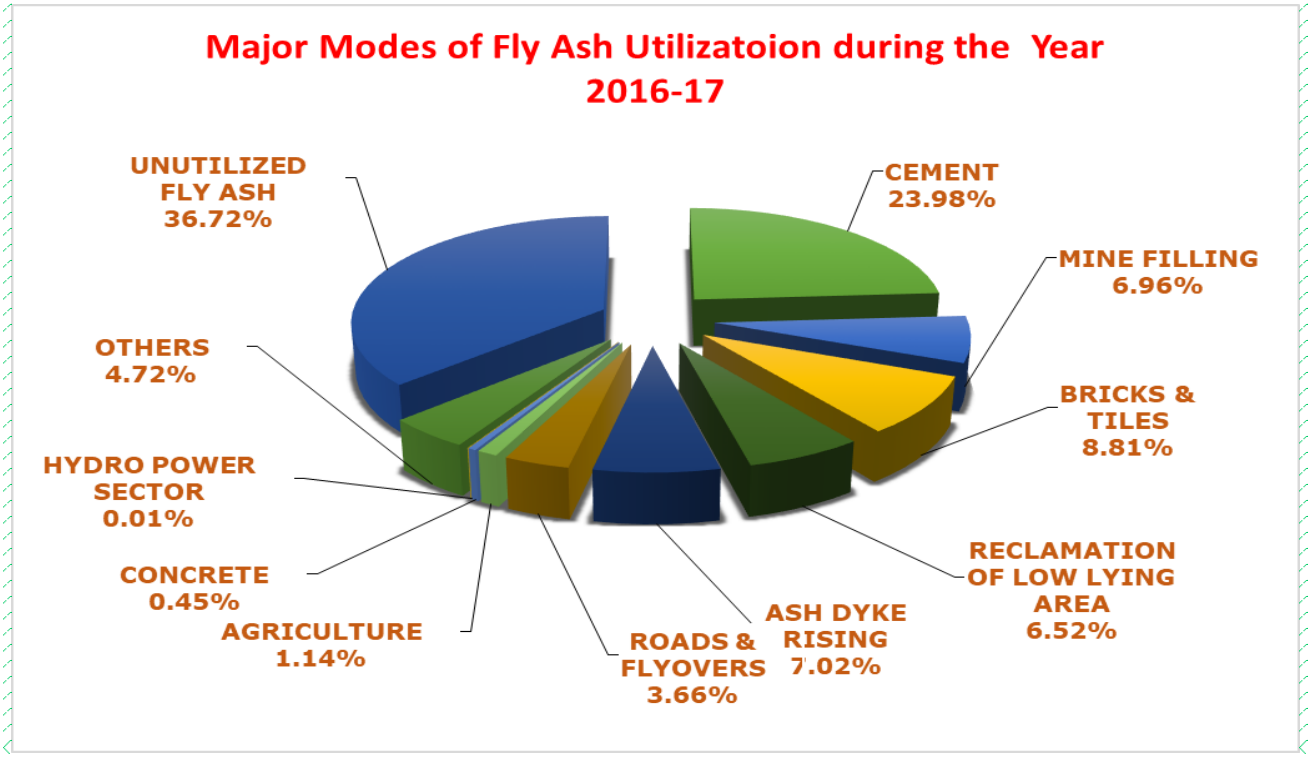

FIGURE-1

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

During the Year 2016-17, the maximum utilization of fly ash to the extent of 23.98% of total fly ash generated was in the Cement sector, followed by 8.81 % in making bricks & tiles, 7.02 % in ash dyke raising, 6.96 mine filling, 6.52 % in reclamation of low lying area, 3.66 % in roads & embankments, 1.14 % in Agriculture, 0.45 % in Concrete, 0.01 % in Hydro Power Sector, 4.72 % in Others and 36.73% remained as unutilized fly ash.

7.0 PROGRESSIVE FLY ASH GENERATION & UTILIZATION DURING THE PERIOD FROM 1996-97 TO 2016-17

Central Electricity Authority has been monitoring since 1996-1997, the fly ash generation and its utilization at coal/lignite based thermal power stations in the country. Based on data of fly ash generation and utilization received from Thermal Power Stations/Power Utilities since 1996-97, the progressive fly ash generation and its utilization for the period from 1996-97 to 2016-17 is given in Table-XVII below:

TABLE-XVII

PROGRESSIVE FLY ASH GENERATION AND ITS UTILIZATION DURING THE PERIOD FROM 1996-97 TO 2016-17

Sl. No.	Year	Fly Ash Generation (Million-ton))	Fly Ash Utilization (Million-ton)	Fly Ash Utilization in % age
(1)	(2)	(3)	(4)	(5)
1	1996-97	68.88	6.64	9.63
2	1997-98	78.06	8.43	10.80
3	1998-99	78.99	9.22	11.68
4	1999-2000	74.03	8.91	12.03
5	2000-01	86.29	13.54	15.70
6	2001-02	82.81	15.57	18.80
7	2002-03	91.65	20.79	22.68
8	2003-04	96.28	28.29	29.39
9	2004-05	98.57	37.49	38.04
10	2005-06	98.97	45.22	45.69
11	2006-07	108.15	55.01	50.86
12	2007-08	116.94	61.98	53.00
13	2008-09	116.69	66.64	57.11
14	2009-10	123.54	77.33	62.60
15	2010-11	131.09	73.13	55.79
16	2011-12	145.41	85.05	58.48
17	2012-13	163.56	100.37	61.37
18	2013-14	172.87	99.62	57.63
19	2014-15	184.14	102.54	55.69
20	2015-16	176.74	107.77	60.97
21	2016-17	169.25	107.10	63.28

A graph showing progressive fly ash generation and its utilization for the period from 1996-97 to 2016-17 is given in Figure-2 below:

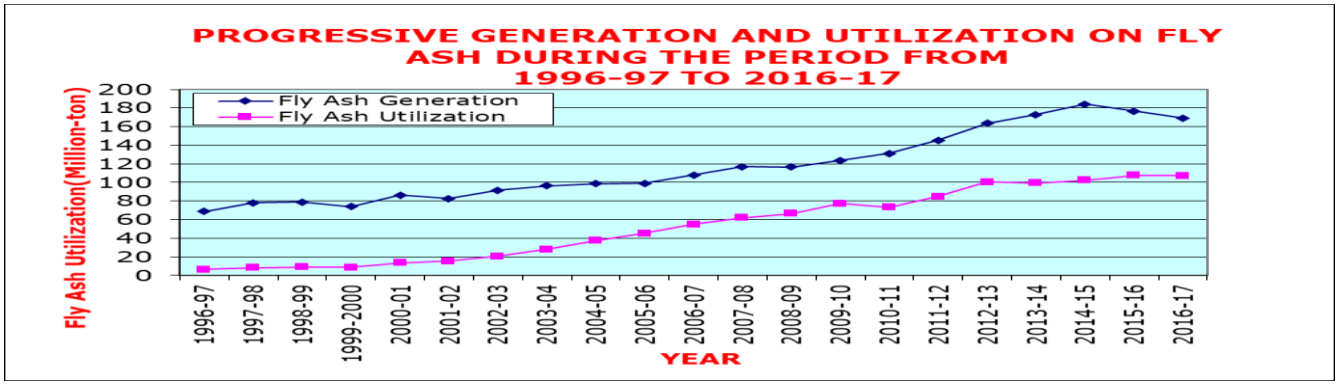

FIGURE-2

It may be seen from Table-XVII and Figure-2 above that:

(i) The fly ash generation as well as utilization has generally been increasing since 1996-97.

(ii) Fly ash utilization has increased from 9.63% in 1996-97 to the highest level of 63.28% during 2016-17.

(iii) The fly ash generation has increased from 68.88 million-ton in 1996-97 to 169.25 million-ton in 2016-17 i.e. nearly 2.45 times.

(iv) However, fly ash utilization has increased from 6.64 million-ton in 1996-97 to a level of 107.10 million ton in 2016-17 i.e. nearly more than 16 times over the same period.

(v) From the Table XVII, it is seen that quantities of fly ash generation during 2014-15, 2015-16 and 2016-17 have been 184.14, 176.74 and 169.25 million-ton respectively. Fly ash utilization during the said three years are 102.54, 107.77 and 107.10 million-ton. The utilization of fly ash during 2015-16 and that during 2016-17 are almost same with marginal fall during current year i.e. 2016-17.

8.0 PROGRESSIVE FLY ASH UTILIZATION IN VARIOUS MODES DURING THE PERIOD FROM 1998-99 TO 2016-17

8.1 Cement Industry

Fly ash is being used by Cement Industry as a pozzolanic material in manufacturing of Portland Pozzolana Cement. It saves both precious lime stone and coal. The utilization of fly ash in manufacturing of cement is highly value added use. A graph showing progressive utilization of fly ash by Cement Industry for the period from 1998-99 to 2016-17 is given in Figure-3 below:

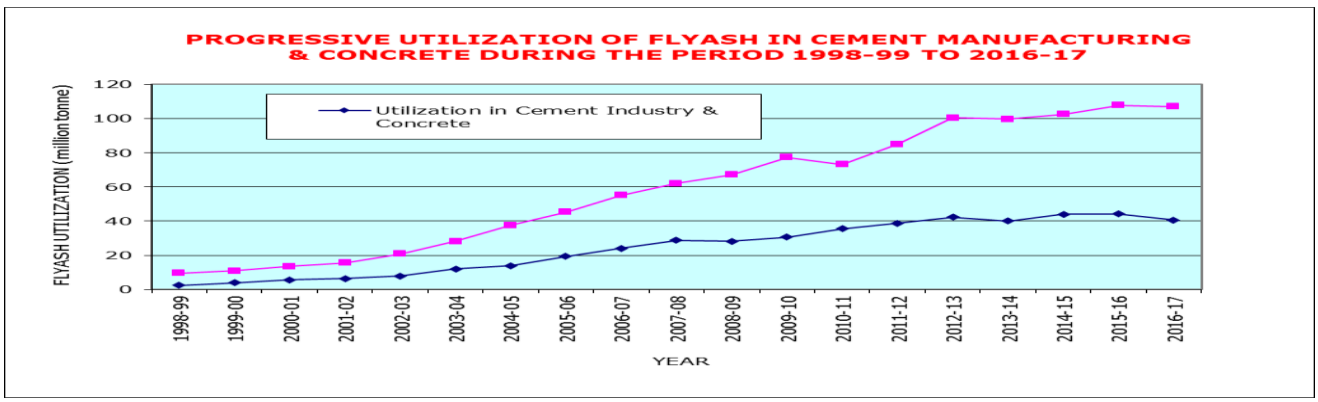

FIGURE-3

It may be seen from Figure-3 above that 2.45 million-ton of fly ash was used by Cement Industry in 1998-99 which increased to 40.59 million-ton during 2016-17 and constituted 23.98 % of total fly ash utilization in the aforesaid year.

8.2 Reclamation of Low Lying Areas

Fly ash as a substitute of soil/sand is used for reclamation of low lying areas thereby saving top soil. A graph showing the progressive utilization of fly ash in reclamation of low lying area for the period from 1998-99 to 2016-17 is given in Figure-4.

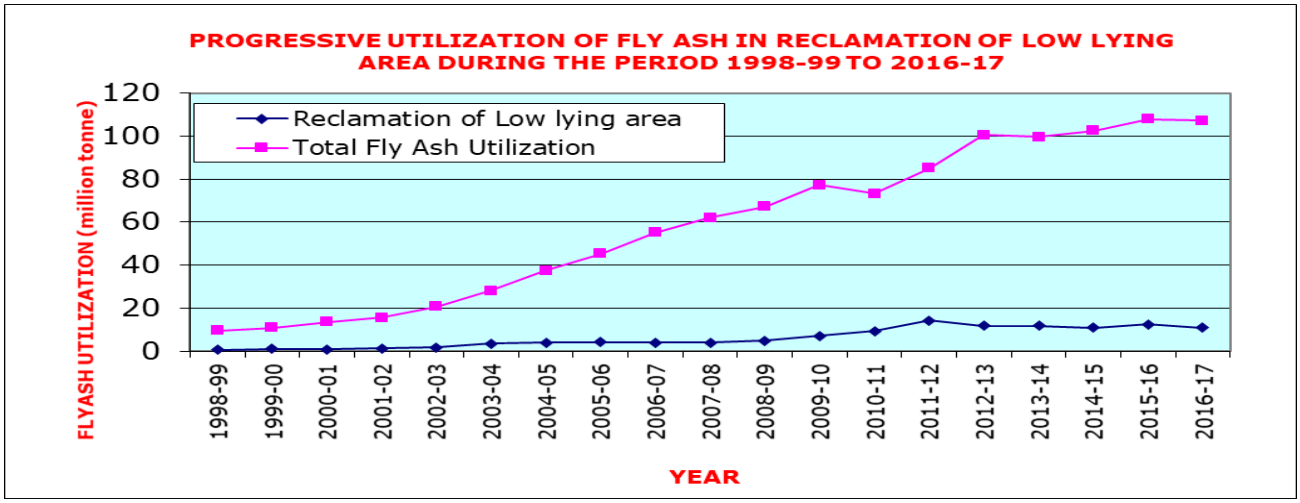

FIGURE-4

It may be seen from Figure-4 above that 4.17 million-ton of fly ash was used for reclamation of low lying area in 1998-99 which has increased to 11.04 million ton in 2016-17 constituting 6.52% of total fly ash utilization during the aforesaid year. However, utilization under this mode has become stable availability wise.

8.3 Construction of Roads/Embankments/Flyovers and raising of Ash Dykes

Fly ash is being used in construction of roads/embankments/flyovers and the raising of ash dykes. It has a large potential for fly ash utilization. A graph showing the progressive utilization of fly ash in the construction of roads & embankments and the raising of ash dykes for the period from 1998-99 to 2016-17 is given in Figure-5 below:

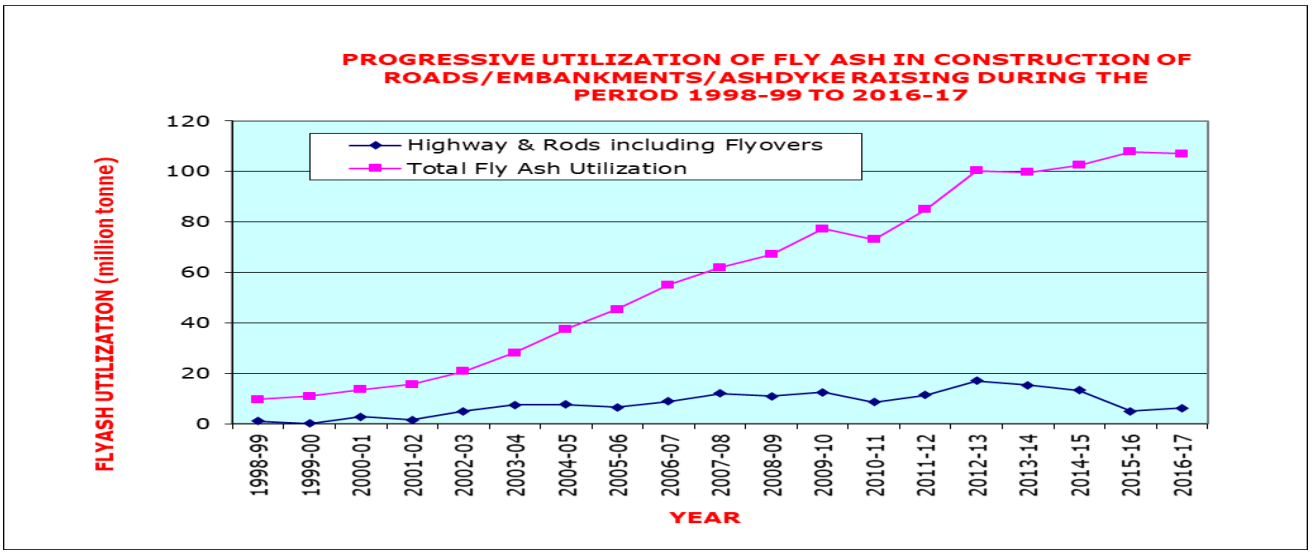

FIGURE-5

It may be seen from Figure-5 above that 1.055 million-ton of fly ash was used in the construction of roads/embankments/flyovers and raising of ash dykes etc. during 1998-99 which increased to 6.19 million-ton in 2016-17 and constituted 3.66 % of total fly ash utilization in the aforesaid year. However, falling trend in recent past is seen.

8.4 Back Filling/Stowing of Mines

Fly ash is being used for backfilling of open cast mines and stowing of underground mines which results in saving of top fertile soil and precious river sand. It has large potential for fly ash utilization especially for pit head thermal power stations. A graph showing the progressive utilization of fly ash in backfilling/stowing of mines for the period from 1998-99 to 2016-17 is given in Figure-6:

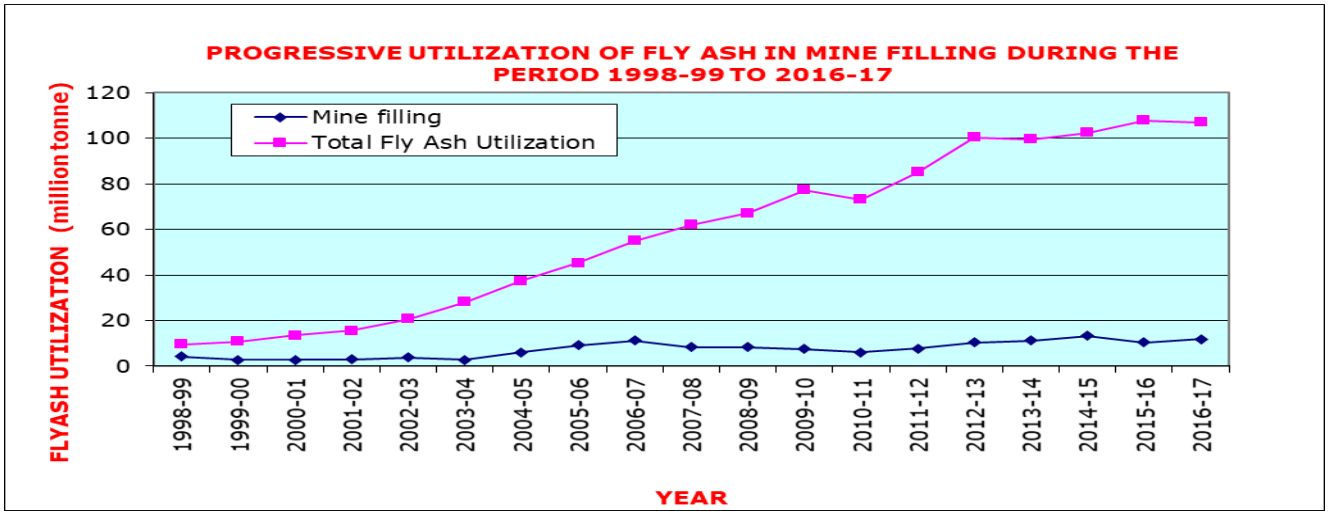

FIGURE-6

It may be seen from Figure-6 above that 0.65 million-ton of fly ash was used for backfilling/stowing of open cast and underground mines during 1998-99 which increased to 10.33 at in 2015-16 and the same has increased to 11.79 million-ton in 2016-17 constituting 6.96 % of total fly ash utilization in the aforesaid year. The trend was on increasing side and increase in this year as compared to last year.

8.5 Building Materials like Bricks, Blocks and Tiles etc.

Fly ash is used in manufacturing of fly ash based building products like bricks, blocks, tiles etc which results in saving of fertile top soil. Fly ash based bricks/blocks/tiles are as good as clay based conventional building products. It has substantial potential of fly ash utilization especially for thermal power stations located near load centers. A graph showing progressive utilization of fly ash in making of fly ash based building products for the period from 1998-99 to 2016-17 is given in Figure -7.

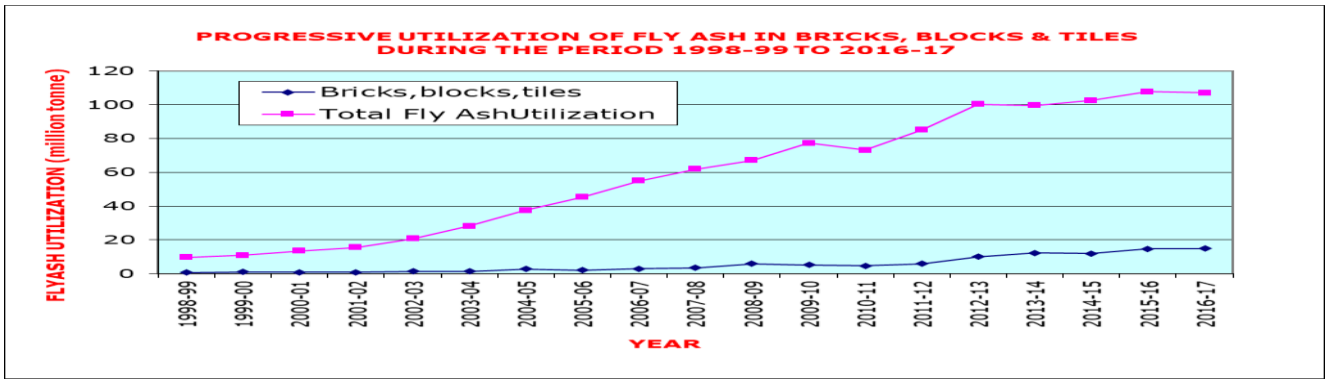

FIGURE-7

It may be seen from Figure-7 above that 0.70 million-ton of fly ash was used for making of fly ash based bricks/blocks/tiles etc during 1998-99 which increased to 14.91 million-ton in 2016-17 and constituted 8.81 % of total fly ash utilization in the aforesaid year.

8.6 Agriculture

Fly ash is being used as manure in agricultural sector as it has many micronutrients. The progressive utilization of fly ash in Agricultural Sector for the period from 1998-99 to 2016-17 is given in Figure-8.

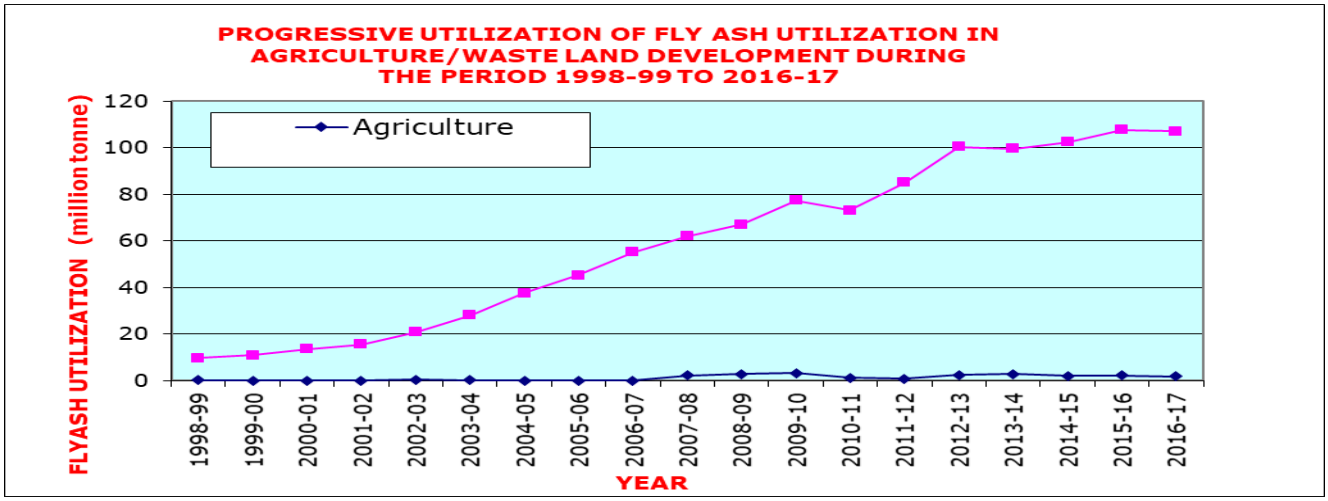

FIGURE-8

It may be seen from Figure-8 above that 0.13 million ton of fly ash was used in agricultural sector during 1998-99, which increased to 1.92 million ton in 2016-17 and constituted about 1.14 % of total fly ash utilization in the aforesaid year.

9.0 WEB BASED MONITORING SYSTEM AND A MOBILE APPLICATION FOR UTILIZATION OF FLY ASH

Annual Fly ash utilization has remained 60% of the fly ash generated and therefore, it has become a matter of concern in view of its environmental effect. Besides, progressive accumulation may lead to a situation when ash pond may not be in a position to accommodate fly ash further. Due to the importance of utilization of fly ash & slag for reducing the burden on the environment, NITI AAYOG has convened several meetings on policy framework on utilization of fly ash and slag. During its one of the meeting held on 17.03.2017, it has been decided that an online repository of the fly ash generated by thermal power plants indicating the following parameters should be launched by Ministry of Power by 15th April, 2017:

- Cumulative amount of fly ash available in the ash ponds as on 31.3.2017
- Quantum of fly ash generated for the respective month (Ex. For the month of April 2017)
- Number of ash ponds available and their approved capacity in metric tonne
- Cumulative stock of fly ash available in the ponds for the month as on 30th April 2017
- Total quantum of fly ash disposed to the consuming industries, which is located within the vicinity of 100 Kms, 101-500 Kms, etc. along with the details of the consumers. In this detail, it should also be indicated whether the transportation was paid by the thermal power or not. Similarly, it should also indicate whether fly ash has been given free or it has been charged. If it has been charged then the rate should also be indicated for each consumer
- Balance stock of fly ash available in the ash ponds for the month ending April ,2017

Accordingly, a web based monitoring system and a mobile application (AshTrack) have been developed. Login ID and password have been issued to Power Utilities/ Thermal Power Stations for uploading the monthly data of fly ash generation and its utilization. A workshop for facilitating the users had been organized on 28th August, 2017.Further, two video conferences had also been organized on the above issues on dated 12.09.2017 and 05.10.2017 with the help of M/s NTPC Limited. Feeding of data by the Thermal Power Stations on the web based monitoring system is under progress.

10.0 CONCLUSIONS & RECOMMENDATIONS

1. The fly ash generation during 2016-17 is 169.25 MT due to combustion of 509.46 MT coal. During 2015-16, 176.74 MT of fly ash was generated due to combustion of 536.64 MT coal. However, the fly ash utilizations during 2015-16 and 2016-17 are 107.77 MT and 107.10 MT respectively. It is seen that the absolute quantity of fly ash utilization has remained almost same. However, the percentage utilization of fly ash has increased.

2. The highest level of fly ash utilization of about 63.28% is achieved during the year 2016-17. It would require a lot of efforts to achieve the target of 100% utilization of fly ash by 31st December, 2017 as stipulated in MoEF's Notification of 25th January, 2016. The stipulations of notification of 2009 and recent amendment should be effectively implemented. As per this report about 36.72% un-utilized fly ash is lying dumped at the various Thermal Power Staions in the country.

3. 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 Stations need 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.

   - As per MoEF&CC's Amendment Notification dated 25.01.2016, Para 2(b)(14) " The coal or lignite based thermal power plants shall within a radius of three hundred kilometers bear the entire cost of transportation of ash to the site of road construction projects under Pradhan Mantri Gramin Sadak Yojana and asset creation programmes of the Government involving construction of building, road dams and embankments ". The meaning of the words "Asset Creation Programme of the Government" may be read in the context of projects carried out under certain plan scheme of the Government Department. In this regard, The Ministry of Environment, Forest and climate change (MoEF&CC) has clarified that road being constructed by NHAI as well as the State Government are covered by the Notification dated 25.01.2017 in order to fully utilize the fly ash.

   - 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 RDSO, a research organization under the Ministry of Railways.

   - Thermal Power Stations have to 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. Department of Science and Technology Govt. of India, through their research Projects, has established that use of fly ash in agriculture is safe.

- A large number of technologies have been developed for gainful utilization and safe management of fly ash through research projects funded by Fly Ash Mission/ Fly Ash Unit under Ministry of Science & Technology, GOI since 1994. Propagation of these technologies by establishing 'Self-sustaining technology demonstration centers' would facilitate and accelerate the fly ash utilization in the country.

- Thermal Power Stations have to 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's notification of 3rd November, 2009.

- There is a need to encourage 'Industry–Institute Interactions' for entrepreneur development, creating awareness and organizing training programmes and workshops.

- Induction of 'Fly Ash' as a subject in academic curriculum of Engineering and Architecture is needed.

- The meeting of working group for assessing the infrastructure requirement for facilitating transportation of fly ash by Rail held on 28.07.2016, where the issues were discussed and the issues involved are (i) To develop uploading facility at user, (ii) Development of new rakes having top loading and pneumatic side unloading, (iii) availability of rakes and attractive tariff structure and (iv)Development of fly ash depot near consumption centres.

***

11.0 Abbreviations

CEA	:	Central Electricity Authority
MoEF	:	Ministry of Environment & Forest
MoEF&CC	:	Ministry of Environment & Forest and Climate Change (erstwhile MoEF)
MW	:	Mega Watt
MoP	:	Ministry of Power
MT	:	Million Tonnes
TPS	:	Thermal Power Stations
APGENCO	:	Andhra Pradesh Power Generation Corporation Ltd.
APPDCL	:	Andhra Pradesh Power Distribution Company Limited
ACBPL	:	Aryan Coal Benefication Private Ltd.
APL	:	Adani Power Ltd.,
APCPL	:	Aravali Power Corporation Pvt.Ltd.
AMNEPL	:	Abhijet MADC Nagpur energy Pvt. Ltd.
BEPL	:	Bajaj Energy Pvt. Ltd.
BSPGC	:	Bihar State Power Generation Company
CESC	:	Calcutta Electric Supply Company
CGPL	:	Coastal Gujarat Power Ltd.
CSPGCL	:	Chattisgargh State Power Generation Company Ltd.
DVC	:	Damodar Valley Corporation
DPL	:	Durgapur Project Ltd.
DPSC	:	Dishergarh Power Supply Company Ltd.
EPGL	:	Essar Power Gujarat Ltd.
GIPCL	:	Gujarat Industries Power Corporation Ltd.
GMDCL	:	Gujarat Mineral Development Corporation Ltd.
GSECL	:	Gujarat State Electric Corporation Ltd.
HPGCL	:	Haryana Power Generating company Ltd.
IPGCL	:	Indraprastha Power Generation Company Ltd.
JSEB	:	Jharkhand State Electricity Board.
JHPL	:	Jhajjar Power Ltd.
JPL	:	Jindal Power Ltd.
JSW	:	Jindal Steel Works
KPCL	:	Karnataka Power Corporation Ltd.
KBUNL	:	Kanti Bijlee Utpadan Nigam Ltd.
MPPGCL	:	Madhya Pradesh Power Generating Company Ltd.
MPL	:	Maithon Power Ltd.
MSPGCL	:	Maharashtra State Power Generating Company Ltd.
NLC	:	Neyveli Lignite Corporation
NSPCL	:	NTPC -SAIL Power Corporation Ltd.
NTPC	:	National thermal Power Corporation
NTECL	:	NTPC – Tamilnadu Electric Company Ltd.
OPGCL	:	Odisha Power Generation Corporation Ltd.
PSPCL	:	Punjab State Power Corporation Ltd.
RRVUNL	:	Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
RIL	:	Reliance Infrastructure Ltd.
RPSCL	:	Rosa Power Supply Company Ltd.
RWPL	:	Raj West Power Ltd.
SEL	:	Sterlite energy Ltd.
SVPPL	:	Shri Vardhman Power Pvt. Ltd.
ST-CMS	:	ST-CMS
TPCO	:	Tata Power Company Ltd.
TVNL	:	Tenunghat Vidyut Nigam Ltd.
TNG&D	:	Tamil Nadu Generating and Distribution Corporation Ltd.
UPCl	:	Udupi Power Company Ltd.
UPRVUNL	:	Uttar Pradeh Rajaya Vidyut Utpadan Nigam Ltd.
VESPL	:	Vandanca energy Supply Power Ltd.
WBPDCL	:	West Bengal Power Development Corporation Ltd.
WPCL	:	Wardha Power Company Ltd.
GEPL	:	Gupta Power Company Ltd.

VIP: Vidharbha Industries Power Ltd.
EPL: Essar Power Ltd.
ACB : Aryan Coal Beneficiary Ltd.
AP : Andhra Pradesh
MP : Madhya Pradesh
TN : Tamil Nadu
UP : Uttar Pradesh
WB: West Bengal

Annex-I

FLY ASH GENERATION AND ITS UTILIZATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS IN THE COUNTRY FOR THE YEAR 2016-17(APRIL-2016 TO MARCH-2017) (POWER UTILITY WISE)

Sl no.	Name of TPS	Power Utility & state	Installed Capacity	Coal Consumed	Ash Content of coal	Fly Ash Genaration	Fly Ash Utilization	%age utilization	In making of Fly Ash based/Brick/Blocks/Tiles etc.	In manufacture of portland pozzolana cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro power sector in RCC Dam construction	In Ash Dyke raising	In reclamation of low lying Arae	In Mining filling	In agriculture /waste land Development	Others	Total Utilization	Date Of Commission	Total filled up data
			(MW)	(MT)	%age (7)/(5)x100	(MT)	(MT)	%age (8)/(7)x100	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT) Σ(10) to		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
1	Dr. N.T.R (Vijawada)	APGENCO (Andhra Pradesh)	1760.00	8.8835	45.2238	4.0174	3.0282	75.3766	1.7581	0.7937	0.0325	0.0504			0.2703			0.1232	3.0282	01-11-1979	1
2	RAYALSEEMA	APGENCO (Andhra Pradesh)	1050.00	4.7241	41.9689	1.9834	1.5426	78.5577	0.3044	1.2382				0.0000					1.5426	16-11-1994	1
3	RAMAGUNDAM'B'	APGENCO (Andhra Pradesh)	62.50	0.3296	33.8101	0.1114	0.0163	14.6633	0.0000	0.0163									0.0163	17.10.1971	1
4	KOTHAGUDEM-V	APGENCO (Andhra Pradesh)	500.00	2.7232	53.2665	1.4505	0.0013	0.0863	0.0001	0.0011									0.0013	01-03-1997	1
5	KOTHAGUDEM-VI	APGENCO (Andhra Pradesh)	500.00	2.2004	43.7207	0.9620	0.5066	52.6580	0.0216	0.4850									0.5066	23-10-2011	1
6	SRI DAMODARAM SANJEEVAIAH	APGENCO (Andhra Pradesh)	1600.00	5.0440	28.8263	1.4540	0.5090	35.0069	0.1020	0.3820					0.0220			0.0030	0.5090	05.02.2015	1
7	KASAI PALI	ACB(INDIA)L (Chhattishgarh)	270.00	2.0004	56.7577	1.1354	1.1571	101.9137	0.0864		0.0620				1.0087				1.1571	13.12.2011	1
8	SVPPL Renki	ACB India Limited (Chhattisgarh)	60.00	0.3127	58.9296	0.1843	0.1745	94.6779	0.0780						0.0965				0.1745	21.10.2011/02.10.2015	1
9	CHAKABURA TPP	ACB (INDIA) Ltd. (Chhattisgarh)	30.00	0.3380	55.0006	0.1859	0.1859	100.0000	0.0146						0.1713				0.1859	27.02.2007	1
10	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd. (Chhattishgarh)	30.00	0.2997	54.9813	0.1648	0.1648	100.0000	0.0146						0.1502				0.1648	28.03.2014	1
11	INDIRA GANDHI	APCPL (Haryana)	1500.00	4.0789	32.4598	1.3240	1.0018	75.6637	0.1446	0.8572									1.0018	31.10.2010	1
12	MUNDRA TPS	APL (Gujrat)	4620.00	15.5260	6.4022	0.9940	1.0650	107.1429	0.0013	0.4210	0.1040				0.2878			0.2510	1.0650	04.08.2009	1
13	TIRORA	ADANI POWER LTD. (Maharastra)	3300.00	11.0755	31.8595	3.5286	2.1950	62.2060	0.0552	0.0072	0.0145			0.3565	0.3322		0.0006	1.4288	2.1950	23.09.2012	1
14	KAWAI	ADANI POWER RAJASTHAN LTD. (Rajasthan)	1320.00	4.0748	12.9896	0.5293	0.3837	72.4920	0.0027	0.3810					0.0000			0.0000	0.3837	31.05.2013	1
15	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LTD. (Jharkhand)	540.00	2.2480	32.7262	0.7357	0.6557	89.1291	0.0074	0.0297				0.3351	0.2834				0.6557	21.01.2013	1
16	MIHAN	AMNEPL (Maharashtra) **(No Generation)**	246.00		#DIV/0!			#DIV/0!											0.0000	20.04.2011	1
17	BARKHERA	BEPL (UP)	90.00	0.3299	40.4569	0.1335	0.1334	99.9303	0.0004	0.0431					0.0898				0.1334	29.10.2011	1
18	KHAMBER KHERA	BEPL (UP)	90.00	0.3127	39.9316	0.1249	0.1248	99.9343	0.0025	0.1036					0.0187				0.1248	30.09.2011	1
19	KUNDARKI	BEPL (UP)	90.00	0.3824	38.8980	0.1487	0.1487	99.9602	0.0012	0.1158					0.0317				0.1487	03.01.2012	1
20	MAQSOODAPUR	BEPL (UP)	90.00	0.3524	37.7006	0.1329	0.1328	99.9617	0.0008	0.0273					0.1046				0.1328	27.10.2011	1
21	UTRAULA	BEPL (UP)	90.00	0.3655	39.9933	0.1462	0.1461	99.9808	0.0000	0.0900					0.0561				0.1461	30.01.2012	1
22	BARAUNI	B.S.P.G.C. LTD.(Bihar) **(No Generation)**	220.00		#DIV/0!			#DIV/0!											0.0000	01.05.1983	1

Annex-I

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Sl no.	Name of TPS	Power Utility & state	Installed Capacity	Coal Consumed	Ash Content of coal	Fly Ash Genaration	Fly Ash Utilization	%age utilization	In making of Fly Ash based/Brick/Blocks/Tiles etc.	In manufacture of portland pozzolana cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro power sector in RCC Dam construction	In Ash Dyke raising	In reclamation of low lying Arae	In Mining filling	In agriculture /waste land Development	Others	Total Utilization	Date Of Commission	Total filled up data
			(MW)	(MT)	%age (7)/(5)x100	(MT)	(MT)	%age (8)/(7)x100	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT) $\Sigma_{(10)\ to}$		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
23	B.B.G.S.	C.E.S.C. (West Bengal)	750.00	3.1580	33.2489	1.0500	1.0500	100.0000	0.0370	0.7870		0.0040			0.2220				1.0500	16.09.1997	1
24	S.G.S.	C.E.S.C. (West Bengal)	135.00	0.3210	24.2056	0.0777	0.0777	100.0000	0.0069	0.0529		0.0071			0.0108				0.0777	12.08.1990	1
25	T.G.S.	C.E.S.C. (West Bengal)	240.00	0.1670	15.5689	0.0260	0.0260	100.0000	0.0110	0.0120	0.0000				0.0030				0.0260	05.03.1983	1
26	KORBA (EAST)	C.S.P.G.C.L (Chhattisgarh)	440.00	2.2239	44.9438	0.9995	0.5016	50.1862	0.0011					0.1565	0.3403			0.0037	0.5016	01.10.1966	1
27	MARWA TENDUBHATA	C.S.P.G.C.L (Chhattisgarh)	1000.00	0.1942	42.6616	0.0828	0.0035	4.2291	0.0006	0.0011					0.0018				0.0035	31.07.2016	1
28	DSPM	C.S.P.G.C.L. (Chhattisgarh)	500.00	2.7013	44.0495	1.1899	0.3629	30.5015						0.3619			0.0010		0.3629	21.10.2007	1
29	KORBA (WEST)	C.S.P.G.C.L Chhattisgarh	1340.00	7.0930	42.6792	3.0272	0.0651	2.1500	0.0035					0.0285	0.0133			0.0198	0.0651	21.06.1983	1
30	MUTIARA	COASTAL ENERGEN PVT. LTD (Tamil Nadu)	1200.00	2.3463	3.8460	0.0902	0.0922	102.2264	0.0247	0.0675									0.0922	23.12.2014	1
31	MUNDRA UMPP	CGPL (Gujrat)	4000.00	10.8000	7.2778	0.7860	0.6320	80.4071		0.6320									0.6320	07.03.2012	1
32	BOKARO 'B'	D.V.C.(Jharkhand)	1130.00	1.1094	45.4835	0.5046	1.1738	232.6333	0.00008							1.1738			1.1738	24.03.1986	1
33	CHANDRAPURA	D.V.C.(Jharkhand)	890.00	3.6710	46.6678	1.7132	1.6762	97.8406	0.00032	0.0482						1.6277			1.6762	10.10.1964	1
34	DURGAPUR	D.V.C.(West Bengal)	210.00	0.4393	45.3772	0.1993	0.5648	283.3145		0.0158						0.5490			0.5648	Sep,1982	1
35	MEJIA	D.V.C.(West Bengal)	2340.00	8.1857	45.5381	3.7276	3.9889	107.0107	0.0137	0.9113	0.0000				0.0286	3.0353			3.9889	01.12.1997	1
36	DURGAPUR STEEL	D.V.C. (West Bengal)	1000.00	4.2967	45.0267	1.9347	0.8535	44.1183	0.0164	0.7855	0.0066				0.0450				0.8535	15.05.2012	1
37	KODERMA	D.V.C. (Jharkhand)	1000.00	2.3157	42.1667	0.9765	0.7762	79.4879	0.0141	0.4135	0.0000			0.0153	0.3332				0.7762	18.07.2013	1
38	RAGHUNATHPUR	D.V.C. (West Bengal)	1200.00	1.1995	36.4480	0.4372	0.0059	1.3438	0.0059										0.0059	18.07.2014	1
39	D.P.P.S.	D.P.L (West Bengal).	660.00	1.4422	40.1916	0.5796	0.5099	87.9660	0.0133	0.3842	0.1043				0.0081				0.5099	03.07.1985	1
40	DHARIWAL INFRASTRUCTURE Ltd.	Dhariwal Infrastructure Ltd.(Maharashtra)	600.00	1.0090	33.7958	0.3410	0.3400	99.7067		0.3070				0.0330					0.3400	11.2.2014	1
41	MAHAN	ESSAR POWER MP LTD.(M.P.) **(No Generation)**	1200.00		#DIV/0!			#DIV/0!											0.0000	01.04.2012	1
42	SALAYA	EPGL (Gujarat)	1200.00	2.3840	9.9413	0.2370	0.2359	99.536	0.0007	0.2080				0.0012	0.0260				0.2359	01.04.2012	1
43	SURAT LIGNITE	G.I.P.C.L. (Gujarat)	500.00	3.3582	17.4153	0.5848	0.5848	100.0001	0.4964									0.0885	0.5848	06.11.1999/15.02.2000	1
44	AKRIMOTA	G.M.D.C.L. (Gujarat)	250.00	1.2838	14.9243	0.1916	0.2621	136.8167								0.2621			0.2621	31.03.2005	1
45	GANDHINAGAR	G.S.E.C.L. (Gujarat)	630.00	0.1375	32.4364	0.0446	0.0834	186.9955	0.0274	0.0443		0.0113						0.0004	0.0834	13.03.1977/20.03.1990	1

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			(MW)	(MT)	%age (7)/(5)x100	(MT)	(MT)	%age (8)/(7)x100	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT) $\Sigma_{(10)\text{ to}}$		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
46	KUTCH LIGNITE	G.S.E.C.L. (Gujarat)	290.00	0.1671	18.1329	0.0303	0.0303	100.0000		0.0028						0.0275			0.0303	09.01.1990	1
47	SIKKA	G.S.E.C.L. (Gujarat)	740.00	0.1116	9.1398	0.0102	0.0291	285.2941	0.0124	0.0167									0.0291	26.03.1988	1
48	UKAI	G.S.E.C.L. (Gujarat)	1350.00	0.3500	34.1429	0.1195	0.1061	88.7866	0.0596	0.0308				0.0048				0.0109	0.1061	19.03.1976	1
49	WANAKBORI	G.S.E.C.L. (Gujarat)	1470.00	0.2630	34.6388	0.0911	0.1226	134.5774	0.0137	0.0591				0.0322				0.0176	0.1226	23.03.1982	1
50	GMR WAROARA ENERGY Ltd.	GMR WAROARA ENERGY LTD. (Maharashtra)	600.00	2.2653	30.5831	0.6928	0.6604	95.3200	0.0283	0.5895	0.0425								0.6604	19.03.2013	1
51	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY LTD. (Odisha)	1050.00	4.1373	34.7813	1.4390	1.2202	84.7957	0.3140						0.9062				1.2202	30.04.2013	1
52	GMR Chhattisgarh	GMR Chhattisgarh Energy LTD. (Chhattisgarh)	1370.00	0.5076	27.0997	0.1375	0.1231	89.4914	0.0028	0.1203									0.1231	1.06.2015	1
53	GEPL TPP	GUPTA ENERGY Pvt. Ltd.(Maharashtra) **(No Generation)**	120.00		#DIV/0!			#DIV/0!											0.0000	19.07.2012	1
54	HISAR	H.P.G.C.L.(Haryana)	1200.00	2.6544	38.0480	1.0100	0.9313	92.2146	0.0049	0.6273	0.2227	0.0352		0.0412					0.9313	24.08.2010	1
55	YAMUNANAGAR	H.P.G.C.L.(Haryana)	600.00	2.1740	29.4388	0.6400	1.5129	236.3906	0.0270	0.5340	0.7540						0.0244	0.1735	1.5129	14.04.2008	1
56	PANIPAT	H.P.G.C.L.(Haryana)	930.00	1.4260	38.9902	0.5560	1.3570	244.0647	0.0470	0.8470	0.4280			0.0000	0.0220			0.0130	1.3570	01.11.1979/28.03.1989	1
57	HALDIA ENERGY LIMITED	HALDIA ENERGY LIMITED (W.B)	600.00	2.7980	32.5947	0.9120	0.9090	99.6711	0.0330	0.8040					0.0750				0.9120	28-01-2015	1
58	RAJGHAT	IPGCL (Delhi) **(No Generation)**	135.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!	0.0000	0.0000	0.0000								0.0000	20.02.1990	1
59	DISHERGARH POWER STATION	IPCL (W.B)	12.00	0.0566	50.8022	0.0288	0.0288	100.0000								0.0288			0.0288	25.09.2012	1
60	CHINAKURI	IPCL(Formerly DPSCL) (W.B) **(No Generation)**	30.00		#DIV/0!			#DIV/0!											0.0000	20.09.1990/Shutdown 21.11.2011	1
61	BELA TPS	IDEAL ENERGY PROJECTS Ltd.(Maharashtra) (No Generation)	270.00		#DIV/0!			#DIV/0!											0.0000	18.07.2013	1
62	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd.(Odisha)	258.00	1.0520	45.9764	0.4837	0.4836	99.9750	0.0850		0.1643				0.2304			0.0039	0.4836	31.12.2012/02.1989	1
63	MAHATMA GANDHI	JHPL (Haryana)	1320.00	1.8378	33.2630	0.6113	0.4892	80.0301	0.0201	0.4598								0.0093	0.4892	29.03.2012	1
64	O.P.Jindal Super TPP (Stage-I)	JPL (Chhattisgarh.)	1000.00	3.4490	43.5199	1.5010	0.7920	52.7648						0.3170	0.4750				0.7920	08.12.2007	1
65	O.P.Jindal Super TPP(Stage-II)	JPL (Chhattisgarh.)	2400.00	3.7560	44.0628	1.6550	0.5280	31.9033	0.0610					0.4670					0.5280	14.03.2014	1
66	PATRATU	J.U.U.N.L (Jharkhand) **(No Generation)**	455.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!	0.0000						0.0000				0.0000	30.01.1969	1
67	RATNAGIRI	JSW Energy Ltd (Maharashtra)	1200.00	2.6951	8.6044	0.2319	0.2310	99.6119	0.0250	0.0570		0.1490							0.2310	01.09.2010	1

Annex-I

FLY ASH GENERATION AND ITS UTILIZATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS IN THE COUNTRY FOR THE YEAR 2016-17(APRIL-2016 TO MARCH-2017) (POWER UTILITY WISE)

Sl no.	Name of TPS	Power Utility & state	Installed Capacity	Coal Consumed	Ash Content of coal	Fly Ash Genaration	Fly Ash Utilization	%age utilization	In making of Fly Ash based/Brick/Blocks/Tiles etc.	In manufacture of portland pozzolana cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro power sector in RCC Dam construction	In Ash Dyke raising	In reclamation of low lying Arae	In Mining filling	In agriculture /waste land Development	Others	Total Utilization	Date Of Commission	Total filled up data
			(MW)	(MT)	%age (7)/(5)x100	(MT)	(MT)	%age (8)/(7)x100	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT) $\Sigma_{(10)\ to}$		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
68	VIJAYANAGAR	JSW Energy Limited (Karnataka)	860.00	1.5280	9.9476	0.1520	0.1530	100.6579	0.0120	0.1130				0.0070				0.0210	0.1530	18.01.2000	1
69	BELLARI	K.P.C.L (Karnataka)	1700.00	0.4284	36.0678	0.1545	0.0510	33.0052		0.0510									0.0510	25.03.2008	1
70	RAICHUR	K.P.C.L.(Karnataka)	1720.00	7.7610	33.8565	2.6276	1.3870	52.7858	0.2950	1.0920									1.3870	29.03.1985	1
71	MUZAFFARPUR TPS	K.B.U.N.L (Bihar)	220.00	0.6099	40.9170	0.2496	0.0699	28.0100	0.0029						0.0000			0.0670	0.0699	31.03.1985	1
72	KMPCL (AKALTARA)	KSK Mahanadi Power Company Limited (Chhattisgarh)	1200.00	4.0459	34.6921	1.4036	1.1503	81.9536	0.0012	1.1478	0.0013								1.1503	14.08.2013/ Sept,2013	1
73	AMARKANTAK TPS	LANCO POWER Ltd. (Chhattisgarh)	600.00	2.9605	32.5018	0.9622	0.4130	42.9220	0.00000	0.3452								0.0678	0.4130	01.05.2009	1
74	LALITPUR	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	1980.00	2.6790	32.3064	0.8655	0.5893	68.0921	0.0032	0.5661							0.0200		0.5893	26.03.2016	1
75	MAITHON RBTPP	MPL (Jharkhand)	1050.00	4.2910	41.0161	1.7600	1.9359	109.9928	0.0903	0.0064	0.0895					1.7496			1.9359	01.09.2011	1
76	SANJAY GANDHI	M.P.P.G.C.L. (M.P.)	1340.00	4.9475	36.9573	1.8285	1.4173	77.5133	0.0555	1.3615	0.0003								1.4173	07.10.1993	1
77	SATPURA	M.P.P.G.C.L. (M.P.)	1330.00	2.6775	33.7769	0.9044	0.5423	59.9659	0.4052	0.0233		0.0129				0.0900		0.0109	0.5423	01.07.1979	1
78	AMARKANTAK	M.P.P.G.C.L. (M.P.)	210.00	0.8844	36.0251	0.3186	0.1809	56.7678	0.0541	0.1122	0.0145						0.0001		0.1809	10.09.2009	1
79	SHREE SINGAJI TPS	M.P.P.G.C.L. (M.P.)	1200.00	1.6010	39.1009	0.6260	0.0895	14.2965	0.0079	0.0136								0.0680	0.0895	01.02.2014	1
80	BHUSAWAL	M.S.P.G.C.L.(Maharashtra)	1420.00	1.9760	31.7525	0.6274	0.4935	78.6517	0.2059	0.1210							0.1029	0.0637	0.4935	30.08.1979	1
81	CHANDRAPUR	M.S.P.G.C.L.(Maharashtra)	2340.00	8.9916	37.9041	3.4082	1.6224	47.6035	0.0303	0.9214	0.0690				0.1645	0.0270	0.0222	0.3880	1.6224	15.08.1983	1
82	KHAPARKHEDA	M.S.P.G.C.L.(Maharashtra)	1340.00	5.9362	34.0000	2.0183	0.7312	36.2301	0.2032		0.0000			0.3480				0.1800	0.7312	26.03.1989	1
83	KORADI	M.S.P.G.C.L.(Maharashtra)	3080.00	3.0300	38.2838	1.1600	0.3490	30.0862	0.2720		0.0770								0.3490	03.06.1974	1
84	NASHIK	M.S.P.G.C.L.(Maharashtra)	630.00	2.5059	33.6856	0.8441	1.1528	136.5633	0.8249	0.2817	0.0001			0.0461					1.1528	26.04.1979	1
85	PARLI	M.S.P.G.C.L.(Maharashtra)	1170.00	1.0600	38.3962	0.4070	0.7217	177.3219	0.3570	0.1610							0.0297	0.1740	0.7217	10.10.1980/26.03.1985	1
86	PARAS	M.S.P.G.C.L.(Maharashtra)	500.00	1.2810	34.0000	0.4356	0.4292	98.5326	0.0807	0.3484									0.4292	31.03.2008	1
87	MCCPL BANDHAKHAR	MARUTI CLEAN COAL AND POWER LTD. (Chhattisgarh)	300.00	1.0591	44.5404	0.4717	0.2612	55.3629	0.0025					0.0399	0.2188				0.2612	30.07.2015	1
88	THAMMINAPATNAM TPS	MEENAKSHI ENERGY Pvt. Ltd.(Andhra Pradesh)	300.00	0.9494	4.5531	0.0432	0.0931	215.3429	0.0231					0.0700					0.0931	10.07.2012	1
89	JHABUA POWER LIMITED	M/S JHABUA POWER LIMITED (MP)	600.00	0.3183	32.0839	0.1021	0.0794	77.72	0.0118	0.0524	0.0042							0.0110	0.0794	02.05.2016	1

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			(MW)	(MT)	%age (7)/(5)x100	(MT)	(MT)	%age (8)/(7)x100	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT)	(MT) $\Sigma_{(10)\ to}$		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
90	NEYVELI - I	NLC LTD.(Tamil Nadu)	600.00	5.7820	5.0242	0.2905	0.1771	60.9466	0.0351	0.1392								0.0028	0.1771	1962	1
91	NEYVELI -I EXPN	NLC LTD.(Tamil Nadu)	420.00	3.4357	6.7638	0.2324	0.2297	98.8343	0.0421	0.1451					0.0389	0.0034		0.0001	0.2297	21.10.2002	1
92	NEYVELI - II	NLC LTD.(Tamil Nadu)	1470.00	1.2017	49.6449	0.5966	0.6786	113.7500	0.1494	0.2787						0.2505			0.6786	17.01.1988	1
93	NEYVELI - II EXPN	NLC LTD. (Tamil Nadu)	500.00	1.6315	4.2287	0.0690	0.0695	100.7836	0.0407					0.0095		0.0193			0.0695	05.07.2015	1
94	BARSINGSAR LIGNITE	NLC LTD. (Rajasthan)	250.00	1.4127	20.5989	0.2910	0.2910	100.0001	0.0718	0.1093						0.1099			0.2910	27.10.2009	1
95	BHILAI	NSPCL (Chhattisgarh)	500.00	2.4441	41.7626	1.0207	1.1184	109.5674	0.1530	0.7437	0.0873			0.0800				0.0544	1.1184	05.01.2009	1
96	VALLUR	NTECL (TamiL Nadu)	1500.00	6.1960	27.5016	1.7040	0.7295	42.8110	0.0696	0.0961		0.1011			0.0257			0.4370	0.7295	09.03.2012	1
97	BADARPUR	NTPC LTD (Delhi).	705.00	1.2130	30.0907	0.3650	0.5720	156.7123	0.1860	0.1790	0.2070								0.5720	Jul-73	1
98	DADRI	NTPC LTD. (U.P.)	1820.00	5.5060	33.3091	1.8340	3.7310	203.4351	0.3130	1.0820	1.9100				0.4210			0.0000	3.7260	Oct,1991	1
99	SINGRAULI	NTPC LTD. (U.P.)	2000.00	10.4590	35.1563	3.6770	0.3340	9.0835	0.0100	0.0200				0.3040					0.3340	Feb-82	1
100	RIHAND	NTPC LTD. (U.P.)	3000.00	14.4750	33.5268	4.8530	0.7520	15.4956	0.1110	0.0270				0.2160	0.3630			0.0350	0.7520	Mar-88	1
101	FEROZE GANDHI UNACHAR	NTPC LTD.(U.P.)	1050.00	4.7270	31.4364	1.4860	1.8750	126.1777	0.0230	1.0220	0.3940			0.2100	0.0210			0.2050	1.8750	Nov-88	1
102	TANDA	NTPC LTD. (U.P.)	440.00	2.2240	33.6781	0.7490	0.8850	118.1575	0.1940	0.3470	0.0440			0.1230	0.0100			0.1670	0.8850	Jan-00	1
103	KORBA	NTPC (Chhattisgarh).	2600.00	13.2120	38.3439	5.0660	2.2780	44.9664	0.1680	0.0260	0.0220			1.0340	0.0190	0.0070		1.0020	2.2780	Mar-83	1
104	VINDHYACHAL	NTPC LTD.(M.P.)	4760.00	21.8570	34.9499	7.6390	1.7970	23.5240	0.1280	0.0390				0.7530	0.1120			0.7670	1.7990	Oct-87	1
105	SIPAT	NTPC LTD. (Chhattisgarh).	2980.00	15.4400	35.2915	5.4490	1.2450	22.8482	0.2340	0.4590	0.0020			0.2740	0.2560			0.0200	1.2450	May-07	1
106	RAMAGUNDAM	NTPC LTD. (Andhra Pradesh).	2600.00	12.5680	37.4841	4.7110	4.3860	93.1013	1.5530	0.8100	0.0000			0.0720	0.0450	1.4980		0.4080	4.3860	Nov-83	1
107	SIMHADRI	NTPC LTD. (Andhra Pradesh).	2000.00	9.4550	32.3427	3.0580	2.5590	83.6821	0.4750	0.2500	0.0000			1.6280	0.2060				2.5590	Feb-02	1
108	FARAKKA	NTPC LTD. (W.B.)	2100.00	9.2060	32.9785	3.0360	1.6780	55.2701	0.0310	0.2610	0.0610			0.1100	0.9620			0.2530	1.6780	Jan-86	1
109	KAHALGAON	NTPC LTD.(Bihar)	2340.00	12.9810	38.9492	5.0560	2.2270	44.0467	0.1790	0.6530	0.0450			0.4250	0.5590			0.3660	2.2270	Mar-92	1
110	BARH SUPER TPS	NTPC LTD (Bihar)	1320.00	5.0550	41.2661	2.0860	0.0960	4.6021	0.0290	0.0370	0.0300								0.0960	Nov-14	1
111	TALCHAR(TPS)	NTPC LTD(Odisha).	460.00	3.0140	38.9847	1.1750	1.1830	100.6809	0.0260					0.0090		1.1480			1.1830	03.06.1995	1
112	TALCHAR(KAN)	NTPC LTD.(Odisha).	3000.00	18.4860	38.5210	7.1210	3.0760	43.1962	0.1080	0.0250				2.9430					3.0760	Feb-95	1

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(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
113	MOUDA TPS	NTPC LTD. (Maharashtra)	1000.00	2.8120	31.9346	0.8980	0.8990	100.1114	0.4810	0.1050	0.3050							0.0080	0.8990	Apr-12	1
114	BONGAIGAON	NTPC LTD. (Assam)	250.00	0.8150	25.3988	0.2070	0.0000												0.0000	01.04.2016	1
115	IB VALLEY	O.P.G.C.L.(Odisha)	420.00	2.9129	42.4785	1.2374	0.4347	35.1334	0.0267		0.1167			0.1179	0.1593			0.0142	0.4347	21.12.1994	1
116	BATHINDA	P.S.P.C.L. (Punjab)	460.00	0.4518	37.6331	0.1700	0.2839	166.9529	0.0266	0.1745	0.0828								0.2839	22.09.1974	1
117	LEHRA MOHABAT	P.S.P.C.L. (Punjab)	920.00	0.1639	38.6157	0.0633	0.0663	104.8039	0.0021	0.0437	0.0193	0.0012							0.0663	25.05.1998	1
118	ROPAR	P.S.P.C.L. (Punjab)	1260.00	1.8579	34.8008	0.6466	1.0794	166.9465	0.0279	0.7793	0.0926	0.0058			0.1734			0.0003	1.0794	01.01.1985	1
119	PARAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD. (U.P.)	1320.00	2.8950	37.0639	1.0730	0.2887	26.9059		0.2887									0.2887	29.02.2016	1
120	UNCHPINDA	R.K.M.POWERGEN PVT. LTD (PGCIL) (Chhattisgarh)	720.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!												26.11.2015	1
121	KOTA	RRVUNL (Rajasthan)	1240.00	4.9508	31.0837	1.5389	1.5521	100.8597	0.5240	1.0103		0.0081					0.0068	0.0029	1.5521	17.01.1983	1
122	CHHABRA	RRVUNL (Rajasthan)	1000.00	4.3534	32.7423	1.4254	1.4520	101.8681	0.3225	0.8914			0.0197					0.2185	1.4520	11.06.2010	1
123	GIRAL	RRVUNL (Rajasthan) **(No Generation)**	250.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!								0.0000			0.0000	28.02.2007	1
124	SURATGARH	RRVUNL (Rajasthan)	1500.00	2.7102	34.4017	0.9324	0.8578	91.9971	0.1352	0.5046								0.2179	0.8578	31.10.1998	1
125	KALISINDH	RRVUNL (Rajasthan)	1200.00	3.3647	30.2740	1.0186	0.7633	74.9382	0.1117	0.6472	0.0018				0.0028				0.7633	07.05.2014	1
126	JALIPA KAPURDI	RWPL (Rajasthan)	1080.00	6.2804	16.4021	1.0301	1.1490	111.5376	0.0861	0.8931						0.1698			1.1490	26.11.2009	1
127	ROSA PHASE-I	RPSCL(U.P)	1200.00	5.0697	33.8982	1.7185	1.2223	71.1274	0.0013	0.6299	0.1111	0.0010		0.2656	0.2134				1.2223	12.03.2010	1
128	DAHANU	RELIANCE INFRASTRUCTURE Ltd. (Maharashtra)	500.00	2.1550	27.4246	0.5910	0.6235	105.5071	0.0008			0.2970		0.1130				0.2128	0.6235	01.07.1995	1
129	AMRAVATI TPS	RATTANINDIA POWER LTD. (Maharashtra)	1350.00	1.1057	27.8975	0.3085	0.3086	100.0253	0.2581		0.0049			0.0284	0.0172				0.3085	03.06.2013	1
130	SIMHAPURI	SEPL(Andhra Pradesh)	600.00	0.9186	4.4770	0.04113	0.04111	99.9686	0.0373			0.0017			0.0021				0.0411	29.02.2012	1
131	RATIZA TPS	SPECTRUM COAL & POWER LTD.(Chhattisgarh)	100.00	0.5157	59.7530	0.3082	0.2015	65.3819	0.0141						0.1873				0.2015	27.02.2013	1
132	CUDDALORE	TAQA NEYVELLY POWER CO.PVT. LTD. (Tamil Nadu)	250.00	0.1129	6.8748	0.0078	0.0076	97.5203	0.0015	0.0061									0.0076	15.12.2002	1
133	JOJOBERA	T.P.CO. (Jharkhnad)	547.50	2.5416	41.5262	1.0554	1.0698	101.3653	0.0049	0.6534		0.0111			0.4004				1.0698	Apr-96	1
134	TROMBAY	T.P.CO.(Maharashtra)	750.00	2.4940	2.0048	0.0500	0.0501	100.2000				0.0417				0.0060	0.0024	0.0000	0.0501	06.06.2005/1984	1

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(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	(21)	(22)
135	SABARMATI	TORENT POWER LTD.(Gujarat)	422.00	1.5886	24.8710	0.3951	0.3951	100.0000		0.2995				0.0912			0.0044		0.3951	13.04.1997	1
136	TUTICORIN	T.N.G & D Corporation (Tamil Nadu)	1050.00	4.0733	27.4628	1.1186	0.7030	62.8451	0.1124	0.5494					0.0412				0.7030	31.03.1991/09.07.1979	1
137	METTUR-I	T.N.G & D Corporation (Tamil Nadu)	840.00	4.1004	35.1254	1.4403	1.3269	92.1267	0.2300	1.0969									1.3269	07.03.1990/07.01.1987	1
138	METTUR-II	T.N.G & D Corporation (Tamil Nadu)	600.00	2.2800	27.4984	0.6270	0.6156	98.1941	0.2576	0.2013				0.1567					0.6156	11.10.2012	1
139	KOTHAGUDEM (Stage I to IV)	T.S.P.G.C.L (Telangana)	720.00	4.2883	35.1963	1.5093	0.4577	30.3219	0.2206	0.2370									0.4577	04-07-1966	1
140	KAKATIA (Stage-I)	T.S.G.E.N.C.O. (Telangana)	500.00	2.0812	28.8955	0.6014	0.4375	72.7575	0.0013	0.4363									0.4375	31-03-2010	1
141	KAKATIA (Stage-II)	T.S.G.E.N.C.O. (Telangana)	600.00	2.0250	27.8717	0.5644	0.0700	12.4040	0.0009	0.0692									0.0700	24.03.2016	1
142	RAIGARH TPP	TRN ENERGY Pvt. Ltd.(Chhattisgarh)	300.00	0.5264	41.9867	0.2210	0.1135	51.3700							0.1135				0.1135	13.08.2016	1
143	ANPARA 'A' & 'B'	U.P.R.V.U.N.L. (U.P.)	2630.00	10.7488	66.7836	7.1784	0.0308	0.4291		0.0202					0.0103			0.0003	0.0308	Jan-87	1
144	HARDUAGANJ	U.P.R.V.U.N.L. (U.P.)	670.00	2.5364	35.0341	0.8886	0.7440	83.7228	0.0266	0.2993					0.4181				0.7440	31-03-1977	1
145	OBRA	U.P.R.V.U.N.L. (U.P.)	1194.00	3.2529	42.5620	1.3845	0.3828	27.6490	0.0033	0.2356	0.1440								0.3829	15-08-1967	1
146	PANKI	U.P.R.V.U.N.L. (U.P.)	210.00	0.7404	32.8084	0.2429	0.3482	143.3248	0.0056	0.0329	0.3097								0.3482	10-11-1976	1
147	PARICHHA	U.P.R.V.U.N.L. (U.P.)	1140.00	4.5399	36.0498	1.6366	1.3791	84.2653	0.1311	0.9745				0.2644	0.0091			0.0001	1.3791	31.03.1984	1
148	UDUPI	UPCL (Karnatak)	1200.00	3.3815	4.1343	0.1398	0.1170	83.6910	0.0088	0.0820		0.0262							0.1170	11.11.2010	1
149	BUTIBORI	VIDARBHA INDUSTRIES POWER LTD. (Maharashtra)	600.00	2.3089	30.0593	0.6940	0.6956	100.2196	0.2184	0.3204	0.0077				0.1490				0.6956	04.04.2013	1
150	KOLAGHAT	W.B.P.D.C.L(W.B.)	1260.00	4.9905	41.2343	2.0578	2.4209	117.6451	0.0581	0.2811							1.6887	0.3930	2.4209	14.08.1984	1
151	SAGARDIGHI	W.B.P.D.C.L(W.B.)	1600.00	2.9901	37.5840	1.1238	0.7713	68.6325	0.2927	0.4786								0.0000	0.7713	21.12.2007/07.09.2008	1
152	BANDEL	W.B.P.D.C.L (W.B.)	455.00	0.1420	38.0074	0.0540	0.0525	97.2164	0.0010	0.0251	0.0052						0.0212		0.0525	04.09.1965	1
153	SANTALDIH	W.B.P.D.C.L (W.B.)	500.00	0.2257	42.6007	0.0961	0.0608	63.1954	0.0007	0.0031					0.0561			0.0009	0.0608	01.04.2009	1
154	BAKRESWAR	W.B.P.D.C.L(W.B.)	1050.00	4.5463	29.9855	1.3632	0.7858	57.6442	0.0087	0.7771									0.7858	18.07.1999	1
155	SAI WARDHA POWER Ltd. ,WARORA	WPCL (Maharashtra)	540.00	0.9710	26.9825	0.2620	0.2620	100.0000		0.2620									0.2620	15.04.2010	1
		Grand Total	**157377.00**	**509.46**	**33.222**	**169.2533**	**107.0956**	**63.2754**	**14.9110**	**40.5869**	**6.1942**	**0.7647**	**0.0197**	**11.8888**	**11.0392**	**11.7827**	**1.9243**	**7.9840**	**107.0957**		**155**

ANNEX-II

FLY ASH GENERATION AND ITS UTILIZATION AT COAL/LIGNITE BASED THERMAL POWER STATIONS IN THE COUNTRY FOR THE YEAR 2016-17(APRIL-2016 TO MARCH-2017) (State WISE)

Sl no.		Name of TPS	Power Utility & state	Installed Capacity	Coal Consumed	Ash Content of coal	Fly Ash Genaration	Fly Ash Utilization	%age utilization	In making of Fly Ash based/Brick /Blocks/Tiles etc.	In manufacture of portland pozzolana cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro power sector in RCC Dam construction	In Ash Dyke raising	In reclamation of low lying Arae	In Mining filling	In agriculture/ waste land Development	Others	Total Utilization
				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10)\text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
			ANDRA PRADESH																	
1	I	Dr. N.T.R (Vijayawada)	APGENCO	1760.00	8.8835	45.2238	4.0174	3.0282	75.3766	1.7581	0.7937	0.0325	0.0504			0.2703			0.1232	3.0282
2	II	RAYALSEEMA	APGENCO	1050.00	4.7241	41.9689	1.9834	1.5426	78.5577	0.3044	1.2382									1.5426
3	III	SRI DAMODARAM SANJEEVAIAH	APPDCL	1600.00	5.0440	28.8263	1.4540	0.5090	35.0069	0.1020	0.3820					0.0220			0.0030	0.5090
4	IV	RAMAGUNDAM'B'	APGENCO	62.50	0.3296	33.8101	0.1114	0.0163	14.6633		0.0163									0.0163
5	V	RAMAGUNDAM	N.T.P.C.	2600.00	12.5680	37.4841	4.7110	4.3860	93.1013	1.5530	0.8100				0.0720	0.0450	1.4980		0.4080	4.3860
6	VI	SIMHADRI	N.T.P.C.	2000.00	9.4550	32.3427	3.0580	2.5590	83.6821	0.4750	0.2500				1.6280	0.2060				2.5590
7	VII	KOTHAGUDEM-V	APGENCO	500.00	2.7232	53.2665	1.4505	0.0013	0.0863	0.0001	0.0011									0.0013
8	VIII	KOTHAGUDEM-VI	APGENCO	500.00	2.2004	43.7207	0.9620	0.5066	52.6580	0.0216	0.4850									0.5066
9	IX	THAMMINAPATNAM TPS	MEENAKSHI ENERGY Pvt. Ltd.	300.00	0.9494	4.5531	0.0432	0.0931	215.3429	0.0231					0.0700					0.0931
10	X	SIMHAPURI	SEPL	600.00	0.9186	4.4770	0.0411	0.0411	99.9686	0.0373			0.0017			0.0021				0.0411
			ASSAM																	
11	I	BONGAIGAON	NTPC LTD. (Assam)	250.00	0.8150	25.3988	0.2070	0.0000	0.0000	0.0000	0.0000									0.0000
			BIHAR																	
12	I	MUZAFFARPUR TPS	K.B.U.N.L	220.00	0.6099	40.9170	0.2496	0.0699	28.0100	0.0029									0.0670	0.0699
13	II	KAHALGAON	N.T.P.C.LTD.	2340.00	12.9810	38.9492	5.0560	2.2270	44.0467	0.1790	0.6530	0.0450			0.4250	0.5590			0.3660	2.2270
14	III	BARH SUPER TPS	N.T.P.C.LTD	1320.00	5.0550	41.2661	2.0860	0.0960	4.6021	0.0290	0.0370	0.0300								0.0960
15	IV	BARAUNI	B.S.P.G.C. LTD. **No Generation**	220.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
			CHHATTISGARH																	
16	I	KASAI PALI	ACB(INDIA)Ltd.	270.00	2.0004	56.7577	1.1354	1.1571	101.9137	0.0864		0.0620				1.0087				1.1571
17	II	CHAKABURA TPP	ACB (INDIA) Ltd.	30.00	0.3380	55.0006	0.1859	0.1859	100.0000	0.0146						0.1713				0.1859
18	III	CHAKABURA TPP (EXTN)	ACB (INDIA) Ltd.	30.00	0.2997	54.9813	0.1648	0.1648	100.0000	0.0146						0.1502				0.1648
19	IV	SVPPL Renki	ACB India Limited	60.00	0.3127	58.9296	0.1843	0.1745	94.6779	0.0780						0.0965				0.1745
20	V	DSPM	C.S.P.G.C.L.	500.00	2.7013	44.0495	1.1899	0.3629	30.5015						0.3619			0.0010		0.3629
21	VI	KORBA (EAST)	C.S.P.G.C.L.	440.00	2.2239	44.9438	0.9995	0.5016	50.1862	0.0011					0.1565	0.3403			0.0037	0.5016
22	VII	MARWA TENDUBHATA	C.S.P.G.C.L.	1000.00	0.1942	42.6616	0.0828	0.0035	4.2291	0.0006	0.0011					0.0018				0.0035
23	VIII	KORBA (WEST)	C.S.P.G.C.L.	1340.00	7.0930	42.6792	3.0272	0.0651	2.1500	0.0035					0.0285	0.0133			0.0198	0.0651

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				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10) \text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
24	IX	O.P.Jindal Super TPP (Stage-I)	JPL	1000.00	3.4490	43.5199	1.5010	0.7920	52.7648						0.3170	0.4750				0.7920
25	X	O.P.Jindal Super TPP(Stage-II)	JPL	2400.00	3.7560	44.0628	1.6550	0.5280	31.9033	0.0610					0.4670					0.5280
26	XI	AMARKANTAK TPS	LANCO POWER Ltd.	600.00	2.9605	32.5018	0.9622	0.4130	42.9220	0.0000	0.3452								0.0678	0.4130
27	XII	BHILAI	NSPCL	500.00	2.4441	41.7626	1.0207	1.1184	109.5674	0.1530	0.7437	0.0873	0.0000	0.0000	0.0800	0.0000	0.0000	0.0000	0.0544	1.1184
28	XIII	KORBA	N.T.P.C.LTD.	2600.00	13.2120	38.3439	5.0660	2.2780	44.9664	0.1680	0.0260	0.0220			1.0340	0.0190	0.0070		1.0020	2.2780
29	XIV	SIPAT	N.T.P.C.LTD.	2980.00	15.4400	35.2915	5.4490	1.2450	22.8482	0.2340	0.4590	0.0020			0.2740	0.2560			0.0200	1.2450
30	XV	GMR Chhattisgarh	GMR Chhattisgarh Energy Ltd.	1370.00	0.5076	27.0997	0.1375	0.1231	89.4914	0.0028	0.1203									0.1231
31	XVI	KMPCL (AKALTARA)	KSK Mahanadi Power Company Limited	1200.00	4.0459	34.6921	1.4036	1.1503	81.9536	0.0012	1.1478	0.0013								1.1503
32	XVII	MCCPL BANDHAKHAR	Maruti Clean Coal and Power Limited	300.00	1.0591	44.5404	0.4717	0.2612	55.3629	0.0025					0.0399	0.2188				0.2612
33	XVIII	RATIZA TPS	Spectrum Coal & Power Limited	100.00	0.5157	59.7530	0.3082	0.2015	65.3819	0.0141						0.1873				0.2015
34	XIX	UNCHPINDA	R.K.M POWERGEN PVT. LTD (PGCIL)	720.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
35	XX	RAIGARH TPP	TRN ENERGY PVT.LTD	300.00	0.5264	41.9867	0.2210	0.1135	51.3700							0.1135				0.1135
			DELHI																	
36		BADARPUR	N.T.P.C.LTD	705.00	1.2130	30.0907	0.3650	0.5720	156.7123	0.1860	0.1790	0.2070								0.5720
37		RAJGHAT	IPGCL	135.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
			GUJARAT																	
38	I	MUNDRA TPS	APL	4620.00	15.5260	6.4022	0.9940	1.0650	107.1429	0.0013	0.4210	0.1040				0.2878			0.2510	1.0650
39	II	MUNDRA UMPP	CGPL	4000.00	10.8000	7.2778	0.7860	0.6320	80.4071		0.6320									0.6320
40	III	SALAYA	EPGL	1200.00	2.3840	9.9413	0.2370	0.2359	99.5359	0.0007	0.2080				0.0012	0.0260				0.2359
41	IV	SURAT LIGNITE	G.I.P.C.L.	500.00	3.3582	17.4153	0.584846	0.584847	100.0001	0.4964									0.0885	0.5848
42	V	AKRIMOTA	G.M.D.C.L.	250.00	1.2838	14.9243	0.1916	0.2621	136.8167								0.2621			0.2621
43	VI	GANDHINAGAR	G.S.E.C.L.	630.00	0.1375	32.4364	0.0446	0.0834	186.9955	0.0274	0.0443		0.0113						0.0004	0.0834
44	VII	KUTCH LIGNITE	G.S.E.C.L.	290.00	0.1671	18.1329	0.0303	0.0303	100.0000		0.0028						0.0275			0.0303
45	VIII	SIKKA	G.S.E.C.L.	740.00	0.1116	9.1398	0.0102	0.0291	285.2941	0.0124	0.0167									0.0291
46	IX	UKAI	G.S.E.C.L.	1350.00	0.3500	34.1429	0.1195	0.1061	88.7866	0.0596	0.0308				0.0048				0.0109	0.1061
47	X	WANAKBORI	G.S.E.C.L.	1470.00	0.2630	34.6388	0.0911	0.1226	134.5774	0.0137	0.0591				0.0322				0.0176	0.1226

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				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10) \text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
48	XI	SABARMATI	TORENT POWER Ltd.	422.00	1.5886	24.8710	0.3951	0.3951	100.0000		0.2995				0.0912			0.0044		0.3951
			HARYANA																	
49	I	INDIRA GANDHI	APCPL	1500.00	4.0789	32.4598	1.3240	1.0018	75.6637	0.1446	0.8572									1.0018
50	II	HISAR	H.P.G.C.L.	1200.00	2.6544	38.0480	1.0100	0.9313	92.2146	0.0049	0.6273	0.2227	0.0352		0.0412					0.9313
51	III	YAMUNANAGAR	H.P.G.C.L.	600.00	2.1740	29.4388	0.6400	1.5129	236.3906	0.0270	0.5340	0.7540						0.0244	0.1735	1.5129
52	IV	PANIPAT	H.P.G.C.L.	930.00	1.4260	38.9902	0.5560	1.3570	244.0647	0.0470	0.8470	0.4280			0.0000	0.0220			0.0130	1.3570
53	V	MAHATMA GANDHI	JHPL	1320.00	1.8378	33.2630	0.6113	0.4892	80.0301	0.0201	0.4598								0.0093	0.4892
			JHARKHAND																	
54	I	ADHUNIK PNR LTD.	ADHUNIK POWER & NATURAL RESOURCES LTD.	540.00	2.2480	32.7262	0.7357	0.6557	89.1291	0.0074	0.0297				0.3351	0.2834				0.6557
55	II	BOKARO 'B'	D.V.C.	1130.00	1.1094	45.4835	0.5046	1.1738	232.6333	0.00008							1.17375			1.1738
56	III	CHANDRAPURA	D.V.C.	890.00	3.6710	46.6678	1.7132	1.6762	97.8406	0.00032	0.0482						1.6277			1.6762
57	IV	KODERMA	D.V.C.	1000.00	2.3157	42.1667	0.9765	0.7762	79.4879	0.0141	0.4135				0.0153	0.3332				0.7762
58	V	PATRATU	J.U.U.N.L	455.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!	0.0000										0.0000
59	VI	MAITHON RBTPP	MPL	1050.00	4.2910	41.0161	1.7600	1.9359	109.9928	0.0903	0.0064	0.0895					1.7496			1.9359
60	VII	JOJOBERA	T.P.CO.	547.50	2.5416	41.5262	1.0554	1.0698	101.3653	0.0049	0.6534		0.0111			0.4004				1.0698
			KARNATAKA																	
61	I	VIJAYANAGAR	JSW Energy Limited	860.00	1.5280	9.9476	0.1520	0.1530	100.6579	0.0120	0.1130				0.0070				0.0210	0.1530
62	II	BELLARY	K.P.C.L	1700.00	0.4284	36.0678	0.1545	0.0510	33.0052		0.0510									0.0510
63	III	RAICHUR	K.P.C.L	1720.00	7.7610	33.8565	2.6276	1.3870	52.7858	0.2950	1.0920									1.3870
64	IV	UDUPI	UPCL	1200.00	3.3815	4.1343	0.1398	0.1170	83.6910	0.0088	0.0820		0.0262							0.1170
			MADHYA PRADESH																	
65	I	MAHAN	ESSAR POWER MP LTD. **No Generation**	1200.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
66	II	SANJAY GANDHI	M.P.P.G.C.L.	1340.00	4.9475	36.9573	1.8285	1.4173	77.5133	0.0555	1.3615	0.0003								1.4173
67	III	SATPURA	M.P.P.G.C.L.	1330.00	2.6775	33.7769	0.9044	0.5423	59.9659	0.4052	0.0233		0.0129				0.0900		0.0109	0.5423
68	IV	AMARKANTAK	M.P.P.G.C.L.	210.00	0.8844	36.0251	0.3186	0.1809	56.7678	0.0541	0.1122	0.0145						0.0001		0.1809
69	V	SHREE SINGAJI TPS	M.P.P.G.C.L.	1200.00	1.6010	39.1009	0.6260	0.0895	14.2965	0.0079	0.0136								0.0680	0.0895
70	VI	JHABUA POWER LIMITED	M/s JHABUA POWER LTD.	600.00	0.3183	32.0839	0.1021	0.0794	77.7228	0.0118	0.0524	0.0042							0.0110	0.0794

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(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
71	VII	VINDHYACHAL	N.T.P.C.LTD.	4760.00	21.8570	34.9499	7.6390	1.7970	23.5240	0.1280	0.0390				0.7530	0.1120			0.7670	1.7990
			MAHARASHTRA																	
72	I	TIRORA	ADANI POWER Ltd.	3300.00	11.0755	31.8595	3.5286	2.1950	62.2060	0.0552	0.0072	0.0145			0.3565	0.3322		0.0006	1.4288	2.1950
73	II	MIHAN	AMNEPL **No Generation**	246.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
74	III	BELA TPS	IDEAL ENERGY PROJECTS Ltd. **No Generation**	270.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
75	IV	RATNAGIRI	JSW Energy Ltd	1200.00	2.6951	8.6044	0.2319	0.2310	99.6119	0.0250	0.0570		0.1490							0.2310
76	V	BHUSAWAL	M.S.P.G.C.L.	1420.00	1.9760	31.7525	0.6274	0.4935	78.6517	0.2059	0.1210							0.1029	0.0637	0.4935
77	VI	CHANDRAPUR	M.S.P.G.C.L.	2340.00	8.9916	37.9041	3.4082	1.6224	47.6035	0.0303	0.9214	0.0690				0.1645	0.0270	0.0222	0.3880	1.6224
78	VII	KHAPARKHEDA	M.S.P.G.C.L.	1340.00	5.9362	34.0000	2.0183	0.7312	36.2301	0.2032					0.3480				0.1800	0.7312
79	VIII	KORADI	M.S.P.G.C.L.	3080.00	3.0300	38.2838	1.1600	0.3490	30.0862	0.2720		0.0770								0.3490
80	IX	NASIK	M.S.P.G.C.L.	630.00	2.5059	33.6856	0.8441	1.1528	136.5633	0.8249	0.2817	0.0001			0.0461					1.1528
81	X	PARLI	M.S.P.G.C.L.	1170.00	1.0600	38.3962	0.4070	0.7217	177.3219	0.3570	0.1610							0.0297	0.1740	0.7217
82	XI	PARAS	M.S.P.G.C.L.	500.00	1.2810	34.0000	0.4356	0.4292	98.5326	0.0807	0.3484									0.4292
83	XII	MOUDA TPS	N.T.P.C.LTD	1000.00	2.8120	31.9346	0.8980	0.8990	100.1114	0.4810	0.1050	0.3050							0.0080	0.8990
84	XIII	DAHANU	RELIANCE INFRASTRUCTURE Ltd.	500.00	2.1550	27.4246	0.5910	0.6235	105.5071	0.0008			0.2970		0.1130				0.2128	0.6235
85	XIV	AMRAVATI TPS	RATTANINDIA POWER LTD.	1350.00	1.1057	27.8975	0.3085	0.3086	100.0253	0.2581		0.0049			0.0284	0.0172				0.3085
86	XV	TROMBAY	T.P.CO.	750.00	2.4940	2.0048	0.0500	0.0501	100.2000				0.0417				0.0060	0.0024		0.0501
87	XVI	SAI WARDHA POWER Ltd., WARORA	WPCL	540.00	0.9710	26.9825	0.2620	0.2620	100.0000		0.2620									0.2620
88	XVII	GMR WAROARA ENERGY Ltd.	GMR WAROARA ENERGY Ltd.	600.00	2.2653	30.5831	0.6928	0.6604	95.3200	0.0283	0.5895	0.0425								0.6604
89	XVIII	DHARIWAL INFRASTRUCTURE Ltd.	Dhariwal Infrastructure Ltd.	600.00	1.0090	33.7958	0.3410	0.3400	99.7067		0.3070				0.0330					0.3400
90	XIX	GEPL TPP	GUPTA ENERGY Pvt. Ltd. **No Generation**	120.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
91	X	BUTIBORI	VIDHARBHA INDUSTRIES POWER LTD.	600.00	2.3089	30.0593	0.6940	0.6956	100.2196	0.2184	0.3204	0.0077				0.1490				0.6956
			ODISHA																	
92	I	INDIAN METALS & FERRO ALLOYS LTD.	INDIAN METALS & FERRO ALLOYS Ltd.	258.00	1.0520	45.9764	0.4837	0.4836	99.9750	0.0850		0.1643				0.2304			0.0039	0.4836
93	II	TALCHAR(TPS)	N.T.P.C.LTD	460.00	3.0140	38.9847	1.1750	1.1830	100.6809	0.0260	0.0000				0.0090		1.1480			1.1830

ANNEX-II

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Sl no.		Name of TPS	Power Utility & state	Installed Capacity	Coal Consumed	Ash Content of coal	Fly Ash Genaration	Fly Ash Utilization	%age utilization	In making of Fly Ash based/Brick /Blocks/Tiles etc.	In manufacture of portland pozzolana cement	In construction of Highways & Roads including flyovers	Part replacement of cement in concrete	In Hydro power sector in RCC Dam construction	In Ash Dyke raising	In reclamation of low lying Arae	In Mining filling	In agriculture/ waste land Development	Others	Total Utilization
				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10) \text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
94	III	TALCHAR(KAN)	N.T.P.C.LTD	3000.00	18.4860	38.5210	7.1210	3.0760	43.1962	0.1080	0.0250				2.9430					3.0760
95	IV	IB VALLEY	O.P.G.C.L.	420.00	2.9129	42.4785	1.2374	0.4347	35.1334	0.0267		0.1167			0.1179	0.1593			0.0142	0.4347
96	V	GMR KAMALANGA TPP	GMR KAMALANGA ENERGY Ltd.	1050.00	4.1373	34.7813	1.4390	1.2202	84.7957	0.3140						0.9062				1.2202
			PUNJAB																	
97		BATHINDA	P.S.P.C.L.	460.00	0.4518	37.6331	0.1700	0.2839	166.9529	0.0266	0.1745	0.0828								0.2839
98		LEHRA MOHABAT	P.S.P.C.L.	920.00	0.1639	38.6157	0.0633	0.0663	104.8039	0.0021	0.0437	0.0193	0.0012							0.0663
99		ROPAR	P.S.P.C.L.	1260.00	1.8579	34.8008	0.6466	1.0794	166.9465	0.0279	0.7793	0.0926	0.0058			0.1734			0.0003	1.0794
			RAJASTHAN																	
100	I	KAWAI	ADANI POWER RAJASTHAN Ltd.	1320.00	4.0748	12.9896	0.5293	0.3837	72.4920	0.0027	0.3810									0.3837
101	II	BARSINGSAR LIGNITE	NLC	250.00	1.4127	20.5989	0.290996	0.290997	100.0001	0.0718	0.1093						0.1099			0.290997
102	III	KOTA	RRVUNL	1240.00	4.9508	31.0837	1.5389	1.5521	100.8597	0.5240	1.0103		0.0081					0.0068	0.0029	1.5521
103	IV	CHHABRA	RRVUNL	1000.00	4.3534	32.7423	1.4254	1.4520	101.8681	0.3225	0.8914			0.0197					0.2185	1.4520
104	V	GIRAL	RRVUNL	250.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
105	VI	KALISINDH	RRVUNL	1200.00	3.3647	30.2740	1.0186	0.7633	74.9382	0.1117	0.6472	0.0018				0.0028				0.7633
106	VII	JALIPA KAPURDI	RWPL	1080.00	6.2804	16.4021	1.0301	1.1490	111.5376	0.0861	0.8931						0.1698			1.1490
107	VIII	SURATGARH	RRVUNL	1500.00	2.7102	34.4017	0.9324	0.8578	91.9971	0.1352	0.5046								0.2179	0.8578
			TAMIL NADU																	
108	I	NEYVELI - I	N.L.C.LTD	600.00	5.7820	5.0242	0.2905	0.1771	60.9466	0.0351	0.1392								0.0028	0.1771
109	II	NEYVELI -I EXPN	N.L.C.LTD	420.00	3.4357	6.7638	0.2324	0.2297	98.8343	0.0421	0.1451					0.0389	0.0034		0.0001	0.2297
110	III	NEYVELI - II	N.L.C.LTD	1470.00	1.2017	49.6449	0.5966	0.6786	113.7500	0.1494	0.2787						0.2505			0.6786
111	IV	NEYVELI - II EXPN	N.L.C.LTD	500.00	1.6315	4.2287	0.0690	0.0695	100.7836	0.0407					0.0095		0.0193			0.0695
112	V	VALLUR	NTECL	1500.00	6.1960	27.5016	1.7040	0.7295	42.8110	0.0696	0.0961		0.1011			0.0257			0.4370	0.7295
113	VI	CUDDALORE	TAQA NEYVELLY POWER CO. LTD	250.00	0.1129	6.8748	0.0078	0.0076	97.5203	0.0015	0.0061						0.0000			0.0076
114	VII	METTUR-I	T.N.G & D Corporation	840.00	4.1004	35.1254	1.4403	1.3269	92.1267	0.2300	1.0969									1.3269
115	VIII	METTUR-II	T.N.G & D Corporation	600.00	2.2800	27.4984	0.6270	0.6156	98.1941	0.2576	0.2013				0.1567					0.6156
116	IX	TUTICORIN	T.N.G & D Corporation	1050.00	4.0733	27.4628	1.1186	0.7030	62.8451	0.1124	0.5494					0.0412				0.7030
117	X	MUTIARA	COASTEL ENERGEN PVT LTD.	1200.00	2.3463	3.8460	0.0902	0.0922	102.2264	0.0247	0.0675									0.0922

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				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10) \text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
			TELANGANA																	
118	I	KOTHAGUDEM (Stage I to IV)	T.S.P.G.C.L	720.00	4.2883	35.1963	1.5093	0.4577	30.3219	0.2206	0.2370									0.4577
119	II	KAKATIA (Stage-I)	T.S.G.E.N.C.O.	500.00	2.0812	28.8955	0.6014	0.4375	72.7575	0.0013	0.4363									0.4375
120	III	KAKATIA (Stage-II)	T.S.G.E.N.C.O.	600.00	2.0250	27.8717	0.5644	0.0700	12.4040	0.0009	0.0692									0.0700
			UTTAR PRADESH																	
121	I	BARKHERA	BEPL	90.00	0.3299	40.4569	0.1335	0.1334	99.9303	0.0004	0.0431					0.0898				0.1334
122	II	KHAMBER KHERA	BEPL	90.00	0.3127	39.9316	0.1249	0.1248	99.9343	0.0025	0.1036					0.0187				0.1248
123	III	KUNDARKI	BEPL	90.00	0.3824	38.8980	0.14875	0.14869	99.9602	0.0012	0.1158					0.0317				0.1487
124	IV	MAQSOODAPUR	BEPL	90.00	0.3524	37.7006	0.13285	0.13280	99.9617	0.0008	0.0273					0.1046				0.1328
125	V	UTRAULA	BEPL	90.00	0.3655	39.9933	0.14617	0.14614	99.9808		0.0900					0.0561				0.1461
126	VI	LALITPUR	LALITPUR POWER GENERATION COMPANY LTD.	1980.00	2.6790	32.3064	0.8655	0.5893	68.0921	0.0032	0.5661							0.0200		0.5893
127	VII	DADRI	N.T.P.C.LTD.	1820.00	5.5060	33.3091	1.8340	3.7310	203.4351	0.3130	1.0820	1.9100				0.4210				3.7260
128	VIII	SINGRAULI	N.T.P.C.LTD.	2000.00	10.4590	35.1563	3.6770	0.3340	9.0835	0.0100	0.0200				0.3040					0.3340
129	IX	RIHAND	N.T.P.C.LTD.	3000.00	14.4750	33.5268	4.8530	0.7520	15.4956	0.1110	0.0270				0.2160	0.3630			0.0350	0.7520
130	X	FEROZE GANDHI UNACHAR	N.T.P.C.LTD.	1050.00	4.7270	31.4364	1.4860	1.8750	126.1777	0.0230	1.0220	0.3940			0.2100	0.0210			0.2050	1.8750
131	XI	TANDA	N.T.P.C.LTD.	440.00	2.2240	33.6781	0.7490	0.8850	118.1575	0.1940	0.3470	0.0440			0.1230	0.0100			0.1670	0.8850
132	XII	ROSA PHASE-I	RPSCL	1200.00	5.0697	33.8982	1.7185	1.2223	71.1274	0.0013	0.6299	0.1111	0.0010		0.2656	0.2134				1.2223
133	XIII	ANPARA 'A' & 'B'	U.P.R.V.U.N.L.	2630.00	10.7488	66.7836	7.1784	0.0308	0.4291		0.0202					0.0103			0.0003	0.0308
134	XIV	HARDUAGANJ	U.P.R.V.U.N.L.	670.00	2.5364	35.0341	0.8886	0.7440	83.7228	0.0266	0.2993					0.4181				0.7440
135	XV	OBRA	U.P.R.V.U.N.L.	1194.00	3.2529	42.5620	1.3845	0.3828	27.6490	0.0033	0.2356	0.1440								0.3829
136	XVI	PANKI	U.P.R.V.U.N.L.	210.00	0.7404	32.8084	0.2429	0.3482	143.3248	0.0056	0.0329	0.3097								0.3482
137	XVII	PARICHHA	U.P.R.V.U.N.L.	1140.00	4.5399	36.0498	1.6366	1.3791	84.2653	0.1311	0.9745				0.2644	0.0091			0.0001	1.3791
138	XVIII	PARAYAGRAJ TPS	PRAYAGRAJ POWER GENERATION COMPANY LTD.	1320.00	2.8950	37.0639	1.0730	0.2887	26.9059		0.2887									0.2887
			WEST BENGAL																	
139	I	B.B.G.S.	C.E.S.C.	750.00	3.1580	33.2489	1.0500	1.0500	100.0000	0.0370	0.7870		0.0040			0.2220				1.0500
140	II	S.G.S.	C.E.S.C.	135.00	0.3210	24.2056	0.0777	0.0777	100.0000	0.0069	0.0529		0.0071			0.0108				0.0777
141	III	T.G.S.	C.E.S.C.	240.00	0.1670	15.5689	0.0260	0.0260	100.0000	0.0110	0.0120	0.0000				0.0030				0.0260

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				(MW)	MT	%age (7)/(5)x100	MT	MT	%age (8)/(7)x100	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	(MT) $\Sigma_{(10)\text{ to}}$
(1)		**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**
142	IV	DURGAPUR	D.V.C.	210.00	0.4393	45.3772	0.1993	0.5648	283.3145		0.0158						0.5490			0.5648
143	V	MEJIA	D.V.C.	2340.00	8.1857	45.5381	3.7276	3.9889	107.0107	0.0137	0.9113					0.0286	3.0353			3.9889
144	VI	DURGAPUR STEEL	D.V.C.	1000.00	4.2967	45.0267	1.9347	0.8535	44.1183	0.0164	0.7855	0.0066				0.0450				0.8535
145	VII	RAGHUNATHPUR	D.V.C.	1200.00	1.1995	36.4480	0.4372	0.0059	1.3438	0.0059										0.0059
146	VIII	D.P.P.S.	D.P.L	660.00	1.4422	40.1916	0.5796	0.5099	87.9660	0.0133	0.3842	0.1043				0.0081				0.5099
147	IX	FARAKKA	N.T.P.C.LTD	2100.00	9.2060	32.9785	3.0360	1.6780	55.2701	0.0310	0.2610	0.0610			0.1100	0.9620			0.2530	1.6780
148	X	KOLAGHAT	W.B.P.D.C.L	1260.00	4.9905	41.2343	2.0578	2.4209	117.6451	0.0581	0.2811							1.6887	0.3930	2.4209
149	XI	SAGARDIGHI	W.B.P.D.C.L	1600.00	2.9901	37.5840	1.1238	0.7713	68.6325	0.2927	0.4786								0.0000	0.7713
150	XII	BANDEL	W.B.P.D.C.L	455.00	0.1420	38.0074	0.0540	0.0525	97.2164	0.0010	0.0251	0.0052						0.0212		0.0525
151	XIII	SANTALDIH	W.B.P.D.C.L	500.00	0.2257	42.6007	0.0961	0.0608	63.1954	0.0007	0.0031					0.0561			0.0009	0.0608
152	XIV	BAKRESWAR	W.B.P.D.C.L	1050.00	4.5463	29.9855	1.3632	0.7858	57.6442	0.0087	0.7771									0.7858
153	XV	HALDIA ENERGY LIMITED (W.B)	HALDIA ENERGY LIMITED	600.00	2.7980	32.5947	0.9120	0.9090	99.6711	0.0330	0.8040					0.0750				0.9120
154	XVI	CHINAKURI	DPSCL **No Generation**	30.00	0.0000	#DIV/0!	0.0000	0.0000	#DIV/0!											0.0000
155	XVII	DISHERGARH POWER STATION	IPCL	12.00	0.0566	50.8022	0.0288	0.0288	100.0000								0.0288			0.0288
			Grand Total	**157377.00**	**509.46**	**33.2220**	**169.2533**	**107.0956**	**63.2754**	**14.9110**	**40.5869**	**6.1942**	**0.7647**	**0.0197**	**11.8888**	**11.0392**	**11.7827**	**1.9243**	**7.9840**	**107.0957**

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

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अधिसूचना

नई दिल्ली, 25 जनवरी, 2016

का.आ. 254(अ).—भारत सरकार, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 (जिसे इसमें इसके पश्चात् उक्त अधिसूचना कहा गया है) में कतिपय संशोधनों का प्रारूप, जिन्हें केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) के अंतर्गत करने का प्रस्ताव करती है, भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 1396(अ), तारीख 25 मई, 2015 द्वारा प्रकाशित किया गया था, जिसके द्वारा ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, उस तारीख से, जिसको उक्त प्रारूप संशोधनों को अंतर्विष्ट करने वाली राजपत्र की प्रतियां जनता को उपलब्ध करा दी जाती हैं, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे;

और उक्त राजपत्र की प्रतियां 25 मई, 2015 को जनता को उपलब्ध करा दी गई थी;

और उक्त प्रारूप अधिसूचना के संबंध में, ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, प्राप्त सभी आक्षेपों और सुझावों पर केन्द्रीय सरकार द्वारा सम्यक् रूप से विचार कर लिया गया है;

अत:, अब, केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए उक्त अधिसूचना में निम्नलिखित संशोधन करती है, अर्थात् :-

1. उक्त अधिसूचना के पैरा 1 में-

(क) उप पैरा 1(क) में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;

(ख) उप पैरा 3 में "100 कि.मी." अंकों और शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;

(ग) उप पैरा 5 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;

(घ) उप पैरा 7 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;

2. उक्त अधिसूचना के पैरा 2 में:-

(क) उप पैरा (1) के पश्चात् निम्नलिखित परंतुक अंत:स्थापित किया जाएगा, अर्थात्:-

"परंतु यह और कि शुष्क ईएसपी फ्लाई ऐश के 20 प्रतिशत का नि:शुल्क प्रदाय करने का निर्बंधन उन तापीय विद्युत संयंत्रों पर लागू नहीं होगा, जो विहित रीति में सौ प्रतिशत फ्लाई ऐश का उपयोग करने में समर्थ हैं।"

(ख) उप पैरा (7) के पश्चात् निम्नलिखित उप पैरा अंत:स्थापित किए जाएंगे, अर्थात् :-

"(8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैपटिव और/या सह उत्पादन केन्द्र भी हैं), अधिसूचना की तारीख से तीन मास के भीतर उनके पास उपलब्ध प्रत्येक किस्म की ऐश के स्टाक के ब्यौरे अपनी वेबसाइट पर अपलोड करेगा और उसके पश्चात् मास में कम से कम एक बार स्टाक की स्थिति को अद्यतन करेगा।

(9) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र समर्पित शुष्क ऐश साइलोस प्रतिष्ठापित करेगा, जिनके पास पृथक् पहुंच मार्ग होंगे, जिससे कि फ्लाई ऐश के परिदान को सुगम बनाया जा सके।

(10) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र से 100 किलोमीटर की परिधि के भीतर सड़क संनिर्माण परियोजनाओं या ऐश आधारित उत्पादों के संनिर्माण के लिए या कृषि संबंधित क्रियाकलापों में मृदा अनुकूलक के रूप में उपयोग के लिए ऐश के परिवहन की लागत ऐसे कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र द्वारा वहन की जाएगी और 100 किलोमीटर की परिधि से परे और 300 किलोमीटर की परिधि के भीतर ऐसे परिवहन की लागत को उपयोक्ता और कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र के बीच समान रूप से अंश भाजित की जाएगी।

(11) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र अपने परिसरों के भीतर या अपने परिसरों के आस-पास ऐश आधारित उत्पाद संनिर्माण सुविधाओं का संवर्धन करेंगे, उन्हें अपनाएंगे और उनकी स्थापना करेंगे (वित्तीय और अन्य सहबद्ध अवसंरचना)।

(12) नगरों के आस-पास बने कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र ऐश आधारित उत्पाद विनिर्माण इकाइयों का संवर्धन करेंगे और उनकी स्थापना का समर्थन और उसमें सहायता करेंगे ताकि ईंटों और अन्य भवन संनिर्माण सामग्रियों की अपेक्षाओं की पूर्ति की जा सके और साथ ही परिवहन में कमी की जा सके।

(13) यह सुनिश्चित करने के लिए कि किसी सड़क संनिर्माण का संविदाकार सड़क निर्माण में ऐश का उपयोग करता है, सड़क संनिर्माण के लिए संबद्ध प्राधिकारी संविदाकार को किए जाने वाले संदाय को तापीय विद्युत संयंत्र से ऐश के प्रदाय के प्रमाणीकरण के साथ जोड़ेगा।

(14) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, 300 किलोमीटर की परिधि के भीतर प्रधानमंत्री ग्रामीण सड़क योजना के अधीन सड़क संनिर्माण परियोजनाओं और भवनों, सड़कों, बांधों और तटबंधों के संनिर्माण को अंतर्वलित करने वाले सरकार के आस्ति सृजन कार्यक्रमों के स्थल तक ऐश के परिवहन की संपूर्ण लागत का वहन करेगा।"।

3. उक्त अधिसूचना के पैरा (2) के उप-पैरा (2क) को उप-पैरा (15) के रूप में पढ़ा जाए और उक्त उप-पैरा के अंत में निम्नलिखित उप-पैरा जोड़ा जाएगा, अर्थात् :-

"और तटीय जिलों में अवस्थित कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र तटरेखा सुरक्षा उपायों का समर्थन करेंगे, उनके संनिर्माण में सहायता करेंगे या उसमें प्रत्यक्ष रूप से सम्मिलित होंगे।"

4. उक्त अधिसूचना के पैरा 3 में उप-पैरा (7) के पश्चात् निम्नलिखित अंत:स्थापित किया जाएगा, अर्थात् :-

"(8) विभिन्न संनिर्माण परियोजनाओं का अनुमोदन करने वाले सभी राज्य प्राधिकारियों का यह उत्तरदायित्व होगा कि वे यह सुनिश्चित करें कि फ्लाई ऐश का उपयोग करने या फ्लाई ऐश आधारित उत्पादों के लिए तापीय विद्युत संयंत्रों और संनिर्माण अभिकरण या संविदाकारों के बीच परस्पर समझ ज्ञापन या कोई अन्य ठहराव किया जाता है।

(9) राज्य प्राधिकारी, दस लाख या अधिक की जनसंख्या वाले नगरों की भवन निर्माण संबंधी उप विधियों का संशोधन करेंगे ताकि भार वहन करने वाली संरचनाओं हेतु तकनीकी अपेक्षाओं के अनुसार आवश्यक विनिर्देशों को ध्यान में रखते हुए ऐश आधारित ईंटों के आज्ञापक उपयोग को सुनिश्चित किया जा सके।

(10) संबद्ध प्राधिकारी सभी सरकारी स्कीमों या कार्यक्रमों में, उदाहरणार्थ महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 (मनरेगा), स्वच्छ भारत अभियान, शहरी और ग्रामीण आवासन स्कीम, जहां संनिर्मित क्षेत्र एक हजार वर्ग फुट से अधिक है और अवसंरचना संबंधी संनिर्माण में, जिसके अंतर्गत अभिहित औद्योगिक संपदाओं या पार्कों या विशेष आर्थिक जोनों में भवन निर्माण भी है, ऐश आधारित ईंटों या उत्पादों के आज्ञापक उपयोग को सुनिश्चित करेंगे ।

(11) कृषि मंत्रालय कृषि क्रियाकलापों में ऐश के मृदा अनुकूलक के रूप में उपयोग का संवर्धन करने पर विचार कर सकेगा ।"

5. सभी संबद्ध प्राधिकारियों द्वारा उपरोक्त उपबंधों का अनुपालन करने की समयावधि 31 दिसंबर, 2017 है । कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, उनके द्वारा उत्पादित फ्लाई ऐश के 100 प्रतिशत उपयोग के अतिरिक्त उपरोक्त उपबंधों का अनुपालन 31 दिसंबर, 2017 से पूर्व करेंगे ।

[फा. सं. 9-8/2005-एचएसएमडी]

बिश्वनाथ सिन्हा, संयुक्त सचिव

टिप्पण:- मूल अधिसूचना भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 द्वारा प्रकाशित की गई थी और इसमें पश्चातवर्ती संशोधन अधिसूचना सं. का.आ. 979(अ), तारीख 27 अगस्त, 2003 और का.आ. 2804(अ), तारीख 3 नवंबर, 2009 द्वारा किए गए थे ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 25th January, 2016

S.O. 254(E).—Whereas a draft of certain amendments to the Government of India in the Ministry of Environment, Forests and Climate Change number S.O. 763(E), dated the 14th September, 1999 (hereinafter referred to as the said notification) which the Central Government proposes to make under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, **was** published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii), *vide* S.O. 1396(E), dated the 25th May, 2015 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft amendments were made available to the public.

And, whereas copies of the said Gazette were made available to the public on 25th May, 2015;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments to the said notification, namely: —

1. In the said notification, in paragraph 1,-

(a) in sub-paragraph 1(A), for the words "hundred kilometers", the words "three hundred kilometers" shall be substituted;

(b) in sub-paragraph (3), for the figures and letters "100 km", the words "three hundred kilometers" shall be substituted;

(c) in sub-paragraph (5), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted;

(d) in sub-paragraph (7), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted.

2. In the said notification, in paragraph 2:-

(a) after sub-paragraph (1), the following proviso shall be inserted, namely:-

"provided further that the restriction to provide 20 % of dry ESP fly ash free of cost shall not apply to those thermal power plants which are able to utlise 100 % fly ash in the prescribed manner."

(b) after sub-paragraph (7), the following sub-paragraphs shall be inserted, namely:-

"(8) Every coal or lignite based thermal power plants (including captive and or co-generating stations) shall, within three months from the date of notification, upload on their website the details of stock of each type of ash available with them and thereafter shall update the stock position at least once a Month.

(9) Every coal or lignite based thermal power plants shall install dedicated dry ash silos having separate access roads so as to ease the delivery of fly ash.

(10) The cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred kilometers from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant and the cost of transportation beyond the radius of hundred kilometers and up to three hundred kilometers shall be shared equally between the user and the coal or lignite based thermal power plant.

(11) The coal or lignite based thermal power plants shall promote, adopt and set up (financial and other associated infrastructure) the ash based product manufacturing facilities within their premises or in the vicinity of their premises so as to reduce the transportation of ash.

(12) The coal or lignite based thermal power plants in the vicinity of the cities shall promote, support and assist in setting up of ash based product manufacturing units so as to meet the requirements of bricks and other building construction materials and also to reduce the transportation.

(13) To ensure that the contractor of road construction utilizes the ash in the road, the Authority concerned for road construction shall link the payment of contractor with the certification of ash supply from the thermal power plants.

(14) The coal or lignite based thermal power plants shall within a radius of three hundred kilometers bear the entire cost of transportation of ash to the site of road construction projects under Pradhan Mantri Gramin Sadak Yojna and asset creation programmes of the Government involving construction of buildings, road, dams and embankments".

3. In the said notification, in paragraph 2, sub-paragraph (2A) be read as sub-paragraph (15) and at the end of the said sub-paragraph, the following sub-paragraph shall be added, namely:-

"and the coal or lignite based thermal power plants located in coastal districts shall support, assist or directly engage into construction of shore line protection measures."

4. In the said notification, in paragraph 3, after sub-paragraph (7), the following shall be inserted, namely:-

"(8) It shall be the responsibility of all State Authorities approving various construction projects to ensure that Memorandum of Understanding or any other arrangement for using fly ash or fly ash based products is made between the thermal power plants and the construction agency or contractors.

(9) The State Authorities shall amend Building Bye Laws of the cities having population One million or more so as to ensure the mandatory use of ash based bricks keeping in view the specifications necessary as per technical requirements for load bearing structures.

(10) The concerned Authority shall ensure mandatory use of ash based bricks or products in all Government Scheme or programmes e.g. Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MNREGA), SWACHH BHARAT ABIYAN, Urban and Rural Housing Scheme, where built up area is more than 1000 square feet and in infrastructure construction including buildings in designated industrial Estates or Parks or Special Economic Zone.

(11) The Ministry of Agriculture may consider the promotion of ash utilisation in agriculture as soil conditioner."

5. The time period to comply with the above provisions by all concerned authorities is 31st December, 2017. The coal or lignite based thermal power plants shall comply with the above provision in addition to 100 % utilization of fly ash generated by them before 31st December, 2017.

[F. No. 9-8/2005-HSMD]

BISHWANATH SINHA, Jt. Secy.

Note:- The principal notification was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii) *vide* notification S.O. 763(E), dated the 14th September, 1999 and was subsequently amended *vide* notification S.O. 979(E), dated the 27th August, 2003 and S.O. 2804(E), dated the 3rd November, 2009.

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ANNEX–IV

रजिस्ट्री सं० डी० एल०-33004/99

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भारत का राजपत्र
The Gazette of India

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पर्यावरण और वन मंत्रालय

अधिसूचना

नई दिल्ली, 2 जनवरी, 2014

सा.का.नि. 02(अ).—केन्द्रीय सरकार ने, पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के साथ पठित पर्यावरण संरक्षण अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (2) और धारा 25 का प्रयोग करते हुए, पर्यावरण (संरक्षण) नियम, 1986 का और संशोधन करने के लिए भारत के राजपत्र, असाधारण में सं. सा.का.नि. 552(अ), तारीख 11 जुलाई, 2012 द्वारा सभी व्यक्तियों तथा संगठनों की जानकारी के लिए जिनके उनसे प्रभावित होने की संभावना थी, प्रारूप नियम प्रकाशित किए थे और यह सूचना दी थी कि उक्त प्रारूप नियमों पर उस तारीख से जिसको राजपत्र की प्रतियां, जिसमें सूचना प्रकाशित की जाती है, जनता को उपलब्ध करा दी जाती हैं, साठ दिनों की अवधि की समाप्ति के पश्चात् विचार किया जाएगा;

और जनता को उक्त राजपत्र की प्रतियां 31 जुलाई, 2012 को उपलब्ध करा दी गईं थी;

और केन्द्रीय सरकार द्वारा उपर वर्णित प्रारूप नियमों पर प्राप्त सुझावों या आक्षेपों पर सम्यक्तः विचार किया गया है;

अतः अब केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के साथ पठित पर्यावरण संरक्षण अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (2), धारा 6 और धारा 25 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, पर्यावरण (संरक्षण) नियम, 1986 का और संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात् : —

1. (1) इन नियमों का संक्षिप्त नाम पर्यावरण (संरक्षण) संशोधन नियम, 2014 है ।

(2) ये राजपत्र में प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. पर्यावरण (संरक्षण) अधिनियम, 1986 में, नियम 3 के उप-नियम (8) के स्थान पर निम्नलिखित उप-नियम रखा जाएगा, अर्थात् : —

"(8) इसमें नीचे विनिर्दिष्ट तारीख से निम्नलिखित कोयला आधारित ताप ऊर्जा संयंत्र त्रैमासिक औसत आधार पर कच्चा अथवा मिश्रित अथवा सज्जीकृत कोयले का जिसमें भष्म अंतर्वस्तु 34% से अनधिक हो, उपयोग करेंगे, अर्थात् : —

(क) एकल ताप विद्युत संयंत्र (किसी भी क्षमता का) या 100 मेगावाट या अधिक प्रतिष्ठापित क्षमता का या उससे अधिक क्षमता का प्रतिष्ठापित कैप्टिव ताप विद्युत संयंत्र जो गर्तमुख से 1000 किलोमीटर से अधिक दूरी पर या किसी शहरी क्षेत्र या किसी पारिस्थितिकीय रूप से संवेदनशील क्षेत्र में या गंभीर रूप से प्रदूषित औद्योगिक क्षेत्र में आवस्थित है, गर्तमुख से उसकी दूरी पर ध्यान दिए बिना सिवाय किसी गर्तमुख विद्युत संयंत्र के, तुरंत प्रभाव से,;

(ख) एकल ताप विद्युत संयंत्र (किसी भी क्षमता का) या 100 मेगावाट या उससे अधिक प्रतिष्ठापित क्षमता का कैप्टिव ताप विद्युत संयंत्र जो गर्तमुख से 750-1000 किलोमीटर के बीच की दूरी पर अवस्थित है, 1 जनवरी, 2015 से;

(ग) एकल ताप ऊर्जा संयंत्र (किसी भी क्षमता का) या 100 मेगावाट या उससे अधिक प्रतिष्ठापित क्षमता का कैप्टिव ताप विद्युत संयंत्र जो गर्तमुख से 500-749 किलोमीटर के बीच की दूरी पर अवस्थित है, 5 जून, 2016 से;

परंतु यह कि ऐसे किसी ताप ऊर्जा संयंत्र के संबंध में, जो परिसंचारी तरल-तर दहन या वायुमंडलीय तरल-तर दहन या संपीड़ित द्रवित तरल-तर दहन या समाकलित गैसीकरण संयुक्त आवर्तन चक्र प्रौद्योगिकियों का या ऐसी कोई स्वच्छ प्रौद्योगिकियों का, जो केन्द्रीय सरकार द्वारा राजपत्र में अधिसूचित की जाएं, प्रयोग कर रहा है, खंड (क), (ख) और (ग) लागू नहीं होंगे ।

स्पष्टीकरण : — इस नियम के प्रयोजन के लिए, —

(i) 'सज्जीकृत कोयला' से ऐसा कोयला अभिप्रेत है जिसमें उच्चतर कैलोरी मान अंतर्विष्ट है किंतु भौतिक पृथक्करण या धोवन प्रक्रिया के माध्यम से अभिप्राप्त कच्चे कोयले में अंतर्विष्ट मूल भष्म से निम्नतर भष्म अंतर्विष्ट है;

(ii) 'कैप्टिव ताप ऊर्जा संयंत्र' से ऐसा ताप ऊर्जा संयंत्र अभिप्रेत हैं जो किसी उद्योग द्वारा उसके अनन्य उपयोग के लिए विद्युत सृजन के लिए स्थापित किया गया है;

(iii) 'अत्यधिक प्रदूषित औद्योगिक क्षेत्र' से ऐसा औद्योगिक समूह या क्षेत्र अभिप्रेत है, जहां प्रदूषण गंभीर स्तर पर पहुंच चुका है या पहुंच जाने की संभावना है और जिसकी केन्द्रीय सरकार या राज्य सरकार या केन्द्रीय प्रदूषण नियंत्रण बोर्ड या राज्य प्रदूषण नियंत्रण बोर्ड द्वारा ऐसे क्षेत्र के रूप में पहचान की जा चुकी है;

(iv) 'पारिस्थितिकीय रूप से संवेदनशील क्षेत्र' से, ऐसा क्षेत्र अभिप्रेत है, जहां पारिस्थितिकीय संतुलन आसानी से विक्षुब्ध होने की संभावना है और जिसकी केन्द्रीय सरकार द्वारा पहचान की गई है और उसे अधिसूचित किया गया है;

(v) 'प्रतिष्ठापित क्षमता' की संगणना किसी सीमा के भीतर सभी इकाईयों की व्यष्टिक क्षमता को जोड़कर की जाएगी;

(vi) 'गर्तमुख विद्युत संयंत्र' से कोई केपटिव या एकल विद्युत केन्द्र अभिप्रेत है जिसका खनन क्षेत्र से लदाई बिन्दु तक विद्युत केन्द्र में सामान्य लोक परिवहन प्रणाली का उपयोग किए बिना विद्युत केन्द्र में कोयले के परिवहन के लिए उसके अनन्य उपयोग के लिए केपटिव परिवहन प्रणाली है;

(vii) 'एकल ताप विद्युत संयंत्र' से ऐसा विद्युत संयंत्र अभिप्रेत है जिसकी स्थापना विद्युत ग्रिड में विद्युत आपूर्ति के लिए विद्युत के सृजन के लिए या उन अवस्थानों पर जिन्हें विद्युत वितरण प्रणाली के साथ सुसज्जित नहीं किया गया है, विद्युत आपूर्ति के लिए की गई है; और

(viii) 'शहरी क्षेत्र' से ऐसे शहर की क्षेत्र सीमा अभिप्रेत जिसकी जनसंख्या नवीनतम जनगणना के अनुसार दस लाख से अधिक हो ।"।

[फा. सं. क्यू-15017/11/2011-सी.पी.डब्ल्यू.]

सुशील कुमार, अपर सचिव

टिप्पण.—मूल नियम भारत के राजपत्र में सं. का. आ. 844(अ), तारीख 19 नवम्बर, 1986 द्वारा प्रकाशित किए गए थे और पश्चात्वर्ती संशोधन सं. का.आ. 82(अ), तारीख 16 फरवरी, 1987; का.आ. 64(अ), तारीख 18 जनवरी, 1988;

सा.का.नि., 931(अ), तारीख 27 अक्तूबर, 1989; का.आ. 23 (अ), तारीख 16 जनवरी, 1991; सा.का.नि. 95(अ), तारीख 12 फरवरी, 1992; सा.का.नि. 329(अ), तारीख 13 मार्च, 1992; सा.का.नि. 562(अ), तारीख 27 मई, 1992; सा.का. नि. 884(अ), तारीख 20 नवम्बर, 1992; सा.का.नि. 386(अ), तारीख 22 अप्रैल, 1993; सा.का.नि. 422(अ), तारीख 19 मई, 1993; सा.का.नि. 801(अ), तारीख 31 दिसंबर, 1993; सा.का.नि. 320(अ), तारीख 16 मार्च, 1994; सा.का.नि. 560(अ), तारीख 19 सितंबर, 1997; सा.का.नि. 378(अ), तारीख 30 जून, 1998; सा.का.नि. 07(अ), तारीख 22 दिसंबर, 1998; सा.का.नि. 407(अ), तारीख 31 मई, 2001; और सा.का.नि. 826(अ), तारीख 16 नवंबर, 2009 और सा.का.नि. 513(अ), तारीख 28 जून, 2012 द्वारा किए गए ।

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 2nd January, 2014

G.S.R. 02(E).—Whereas the Central Government had, in exercise of its powers under sub-section (2) of Section 3 and Section 25 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 5 of the Environment (Protection) Rules, 1986, published draft rules further to amend the Environment (Protection) Rules, 1986, in the Gazette of India, Extraordinary, *vide* number G.S.R. 552(E), dated 11th July, 2012 for information of all persons and organizations likely to be affected thereby; and notice was given that the said draft rules would be taken into consideration by the Central Government on or after the expiry of a period of sixty days from the date on which copies of the Gazette containing this notification are made available to the public;

And whereas, the copies of the said Gazette notification were made available to the public on the 31st July, 2012;

And whereas, the suggestions or objections received in response to the above mentioned draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by Section 3, Section 6 and Section 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely :—

1. (1) These rules may be called the Environment (Protection) Amendment Rules, 2014.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in rule 3, for sub-rule (8), the following sub-rule shall be substituted, namely :—

"(8) With effect from the date specified hereunder, the following coal based thermal power plants shall be supplied with, and shall use, raw or blended or beneficiated coal with ash content not exceeding thirty-four per cent, on quarterly average basis, namely :—

(a) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located beyond 1000 kilometres from the pit-head or, in an urban area or an ecologically sensitive area or a critically polluted industrial area, irrespective of its distance from the pit-head, except a pit-head power plant, with immediate effect;

(b) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 750 – 1000 kilometres from the pit-head, with effect from the 1st day of January, 2015;

(c) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 500-749 kilometres from the pit-head, with effect from the 5th day of June, 2016:

Provided that in respect of a thermal power plant using Circulating Fluidised Bed Combustion or Atmosphere Fluidised Bed Combustion or Pressurized Fluidised Bed Combustion or Integrated Gasification Combined Cycle technologies or any other clean technologies as may be notified by the Central Government in the Official Gazette, the provisions of clauses (a), (b) and (c) shall not be applicable.

Explanation: For the purpose of this rule,—

(i) 'beneficiated coal' means coal containing higher calorific value but lower ash than the original ash content in the raw coal obtained through physical separation or washing process;

(ii) 'captive thermal power plant' means a power plant which is set up by an industry to generate electricity for its exclusive use;

(iii) 'critically polluted industrial area' means an industrial cluster or area where pollution levels have reached or likely to reach critical level, and has been identified as such by the Central Government or the State Government or the Central Pollution Control Board or a State Pollution Control Board;

(iv) 'ecologically sensitive area' means an area whose ecological balance is prone to be easily disturbed and has been identified and notified by the Central Government;

(v) 'installed capacity' shall be calculated by adding, individual capacity of all units within a boundary;

(vi) 'pit-head power plant' means any captive or stand-alone power station having captive transportation system for its exclusive use for transportation of coal from the loading point at the mining end, up to the uploading point at the power station without using the normal public transportation system;

(vii) 'stand-alone thermal power plant' means a power plant which is set up to generate electricity for feeding to electricity grid or for locations that are nor fitted with an electricity distribution system; and

(viii) 'urban area' means an area limit of a city having a population of more than one million according to the last census. ".

[F. No. Q-15017/11/2011-CPW]

SUSHEEL KUMAR, Addl. Secy.

Note:—The Principal rules were published in the Gazette of India *vide* number S.O. 844(E), dated the 19th November, 1986 and subsequently amended *vide* numbers S.O. 82(E), dated 16th February, 1987; S.O. 64(E), dated 18th January, 1988; G.S.R. 931(E), dated 27th October, 1989; S.O. 23(E), dated 16th January, 1991; G.S.R. 95(E), dated 12th February, 1992; G.S.R. 329(E), dated 13th March, 1992; G.S.R. 562(E), dated 27th May, 1992; G.S.R. 884(E), dated 20th November, 1992; G.S.R. 386(E), dated 22nd April, 1993; G.S.R. 422(E), dated 19th May, 1993; G.S.R. 801(E), dated 31st December, 1993; G.S.R. 320(E), dated 16th March, 1994; G.S.R. 560(E), dated 19th September, 1997; G.S.R. 378(E), dated 30th June, 1998; G.S.R. 7(E), dated 22nd December, 1998; G.S.R. 407(E), dated 31st May, 2001; G.S.R. 826(E), dated 16th November, 2009 and G.S.R. 513(E), dated 28th June, 2012.

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