

POLICY BRIEF

NO ROOM FOR DELAY

Analysis of CEA Plans to Implement
New Norms for Coal Power Plants

Centre for Science and Environment



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Disclaimer: *The analysis in this document has been made based on the minutes of meetings of the CEA committee for phase-in plans for implementation of new emission norms, held between September and October 2017. The analysis also considers notices issued by CPCB to power stations under Section 5 of the Environment (Protection) Act, 1986. Updates and data from subsequent discussions has not been considered in this report. CSE claims no responsibility for any discrepancies in the reported data.*

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OVERVIEW

In December 2015, the Ministry of Environment, Forest & Climate Change (MoEF&CC) announced tighter emission standards for coal-based thermal power plants¹. The new standards aim to drastically reduce emissions of NO_x, SO₂, PM, and mercury. In order to comply with these revised standards, existing plants were given two years (upto December 2017), while plants commissioned after 1 January 2017 were required to comply from the start of their operations.

In September 2016, Nine months after the norms were announced, Central Electricity Authority (CEA) asked Regional Power Committees (RPCs) to formulate a phasing plan for installing emission control technologies. CEA held several rounds of inconclusive meetings that produced reports with ever changing assessment of pollution control needs and timelines.

On September 1, 2017, the MoEF&CC and the Ministry of Power (MoP) met to discuss the phase in/retirement plans submitted in April 2017 by the RPCs². MoEF&CC and MoP agreed that the April 2017 plan needs to be tightened such that all power stations meet the environmental norms latest by 2022. Accordingly, the four RPCs were asked to come up with revised plans. In late September the RPCs released new plans.³⁻⁶

CSE's analysis of the RPC plans shows a dismal picture. First, very few plants are expected to comply in the next three years; the vast majority are asking for 4-5 years of extension. Second, even these weak plans don't seem credible as they are not based on evaluation of progress made by plants and current status or detailed project planning. There are neither any firm commitments by plants nor have the regulators proposed any penal action in case of another round of delays. CSE has suggested an alternate plan that is more ambitious requiring the sector to comply within a much shorter, yet achievable timeframe. Moreover, CSE's recommendations are based on parameters such as population density and ambient pollution levels, which should logically drive implementation schedule.



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RPC's PHASE-IN PLANS

The latest RPC plan claims that roughly one third of the total capacity is non-compliant with the PM standards. They will have to undertake measures for compliance. (see Table 1: *Plans to meet with PM norms identified by the four RPCs*). Also, there was no discussion about 121.1 GW capacity in the RPC plan - we understand that CEA believes these plants are compliant (Indeed, CEA's April 2017 report said that approx 115 GW of capacity complies with PM norms). We believe this is an optimistic picture of compliance level; however, in the absence of detailed, reliable emissions data, we can neither confirm nor refute CEA's estimate.

TABLE 1: PLANS TO MEET PM NORMS AS IDENTIFIED BY THE FOUR RPCs (CAPACITIES IN GW)

Only 53 GW capacity will have to undertake measures for compliance

Regions	SR	WR	ER	NR	Total
Non-compliant	15.6	17.8	14.1	21.1	68.7
ESP up-gradation			0.6	12.4	13.0
Through FGD	11.0	13.7	8.7	7.2	40.1
To be retired	5.2	4.0	4.7	1.5	15.5
Compliant	23.6	58.8	18.0	20.7	121.1
Total	39.3	76.6	32.1	41.8	189.8

NOTE: SR = Southern Region; WR = Western Region; ER = Eastern Region; NR = Northern Region
Source: Regional power committees, 2017

For SO₂ emission control, RPCs identified that 160 GW capacity will have to install Flue Gas Desulphurization (FGDs) (see Table 2: *Overview – region-wise FGD plan*). As per this plan, however, only 20% of the capacity is targeted for compliance by 2020 (see Table 3: *FGD installation roadmap identified by the RPCs*) with significant back loading.

TABLE 2: OVERVIEW – REGION-WISE FGD PLAN (CAPACITIES IN GW)

85 percent capacity will install FGD

Regions	SR	WR	ER	NR	Total
Non-compliant	31.4	65.5	27.4	39.0	163.3
FGD planned	31.4	65.5	27.4	36.2	160.6
FGD not possible				2.8	2.8
Compliant	7.8	11.1	4.7	2.8	26.5
CFBC	1.4	2.1			3.5
FGD installed	1.2	4.9		1.3	7.5
To be retired	5.2	4.1	4.7	1.5	15.5
Total	39.3	76.6	32.1	41.8	189.8

Source: Regional power committees, 2017

**TABLE 3: FGD INSTALLATION ROADMAP IDENTIFIED BY THE RPCs
(CAPACITIES IN GW)**

Almost three-fourths capacity is scheduled for compliance in 2021-22

TARGET YEAR	SR	WR	ER	NR	Total
2019	3.6	0.0	0.0	1.3	4.9
2020	5.5	8.6	0.8	12.2	27.1
2021	7.9	34.5	9.0	12.4	63.8
2022	14.5	22.5	7.4	10.3	54.6
2023	-	-	9.0	-	9.0
Not Defined	-	-	1.1	-	1.1
Total	31.4	65.5	27.4	36.2	160.6

Source: Regional power committees, 2017

Weaknesses of the RPC plan

- **Unavailability of Credible Emissions Data:** Even after two years of the introduction of standards, detailed, credible emissions data is unavailable. This indicates lack of seriousness in the planning process. It is difficult to analyze needs of individual plants and overall timelines in the absence of emissions data.
- **Space constraint - A non issue:** For two years, CEA and RPCs insisted that space is a constraint to install FGDs – however, the number of plants for which space was an issue kept decreasing. Now, CEA thinks that FGDs should be installed in 160 GW capacity, which we believe is not the appropriate strategy. For 77 GW capacity consisting of units that are smaller than 500MW, the RPC plans suggest that a vast majority will install FGDs to meet the 600 mg/Nm³ norm. We feel this is unwarranted investment and has contributed to the industry asking for more time for compliance. We suggest alternatives (*given later in CSE plan*)
- **Back-loaded Plan:** There is heavy back loading on the commitments from power stations to install new equipment, especially FGD for SO₂ control. Almost all power stations commit to complete the exercise by 2022, without identifying specific, intermediate timelines on any steps that would be undertaken. This indicates that the proposed timelines have been given without commitment and will not be met unless there is credible penal action in the event of delay.
- **No Plan for NO_x Control:** Only the Southern RPC identified a schedule for NO_x control. The other RPCs have not given details about either the measures they will undertake or the timelines. Since NO_x emissions are directly linked to boiler efficiency, they deserve greater attention. In fact, CEA reports had concluded that NO_x control is a relatively minor retrofit that can be achieved during annual overhaul. The fact that most plants have not taken any steps to comply with NO_x norms is inexplicable.
- **Unclear ESP Timelines:** Timelines for ESP upgrades for non-compliant power stations were not given by three of the RPCs. Many stations intend to install FGDs to meet even ESP standards; only few plants plan to upgrade ESP upgrade. Given that FGD needs the inlet dust to be less than 100mg/Nm³, ESP upgrade would anyway be needed. Therefore, lack of ESP plan is a serious weakness.



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CPCB's REVISED DEADLINES

On 11 December 2017, Central Pollution Control Board (CPCB) issued section 5 notices to thermal power stations, asking them to take action for compliance with the 2015 norms⁷. This came after MoEF&CC's December 2017 deadline.

As per these notices, power stations totaling 163GW of capacity have been asked to implement the measures by December 2022. This is broadly in line with regional power committee timelines. For FGD installations, about 14GW capacity – mostly located around Delhi NCR – has been fast tracked for compliance by 2019 as compared to RPC plan⁸ (see Table 4: *FGD installation roadmap identified by the CPCB*).

TABLE 4: FGD INSTALLATION ROADMAP IDENTIFIED BY THE CPCB (CAPACITIES IN GW)

Acceleration of timelines for plants in NCR. Overall, the plan is still back-loaded

TARGET YEAR	SR	WR	ER	NR	Total Capacity (GW)
Immediately	0.8	1.3	-	1.5	3.6
2018	-	0.5	-	-	0.5
2019	2.4	-	-	12.0	14.4
2020	5.8	8.7	1.2	6.7	22.3
2021	7.7	33.8	8.8	9.5	59.7
2022	14.7	22.2	17.3	8.2	62.2
No Comments	-	0.6	-	-	0.6
Total Capacity (GW)	31.4	66.9	27.3	37.8	163.4

Source: CPCB Directions under Section 5 of Environment (Protection) Act to power stations, 2017

Unlike the RPC plan, CPCB has identified a PM compliance roadmap for 163GW capacity. Of this, 76 GW has been asked to take steps immediately (see Table 5: *ESP roadmap to meet PM norms identified by CPCB*). This is in contrast with the RPC plan which identified only 68GW capacity for action. However, the timelines for plants are invariably the same as those for FGDs, which makes little sense since ESP retrofit can be finished much faster than FGD.

TABLE 5: ESP ROADMAP TO MEET PM NORMS IDENTIFIED BY CPCB (CAPACITIES IN GW)

There is no mention of 23GW capacity in the CPCB action plan

TARGET YEAR	SR	WR	ER	NR	Total Capacity (GW)
Immediately	13.2	39.2	10.9	13.3	76.6
2019	1.3			4.7	6.0
2020	2.7	2.5	0.5	2.3	8.0
2021	2.8	10.7	3.1	6.1	22.6
2022	7.7	5.8	7.5	6.3	27.3
No Comments	3.6	8.7	5.4	5.1	22.8
Total Capacity (GW)	31.4	66.9	27.3	37.8	163.4

Source: CPCB Directions under Section 5 of Environment (Protection) Act to power stations, 2017

CPCB has asked plants to adopt immediate measures for NO_x control. However, the deadline for actual compliance has been set at 2022 for nearly all power plants. The 2022 timeline seems to have been based on RPC plans which said that plants need to install SCR/SNCR to meet the norms. While Section 5 notices by CPCB said that plants need to use measures such as low NO_x burner/OFA (which can be done during annual overhaul), they erroneously retained the longer timelines. (see Table 6: NO_x roadmap identified by CPCB).

TABLE 6: NO_x ROADMAP IDENTIFIED BY CPCB (CAPACITIES IN GW)

No action for NO_x control till 2022

TARGET YEAR	SR	WR	ER	NR	Total Capacity (GW)
2019	-	-	-	12.0	12.0
2022	31.4	66.9	27.3	25.8	151.4
Total Capacity (GW)	31.4	66.9	27.3	37.8	163.4

Source: CPCB Directions under Section 5 of Environment (Protection) Act to power stations, 2017

Weaknesses of the new CPCB plan

- **Compliance with NO_x norms** by 2022 despite the fact that suggested retrofit can be done during annual overhaul.
- ESP upgrade plans coincide with the FGD plans for most power stations. Inaction in the intervening period to at least control PM emissions is incomprehensible.
- Plants commissioned in 2017 should be compliant with the norms announced in 2015. It is highly unlikely that any of those plants are compliant with all norms, however, it seems that pollution control boards or CEA have not sought compliance status from these plants. For example, Rattan India's power station (5 X 270MW) claims to be norms compliant as per the RPC. However, CPCB has identified a target date of 2021 & 2022, without verifying compliance.
- Some plants had been identified as norms compliant by the RPCs; they were however asked to verify this. CPCB has taken no evident action on asking for proof of compliance from these power stations.
- There is no clarity about the applicability of the 2015 norms to captive power stations, especially those of capacity >100MW. No such plant has been issued any notices by CPCB so far.
- **Inconsistency with RPC phase out plan:** Plants that have been identified for phase-out's by the RPCs and/or retirement have also been issued notices. E.g. Guru Hargobind thermal power station in Punjab has been identified for FGD installations by CPCB. However, it is slated for retirement by 2019 as per the RPC plan.
- There are other evident discrepancies in issuing notices from CPCB. For instance, consider the following:
 - o CLP's Jhajjar power station has been given a deadline of 31 January 2019 to install FGD. However, the plant has been running an FGD since 2012.
 - o Unit 5 of Tata Power in Trombay has already installed FGD. However, it has been given a target date of 2018.



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CSE RECOMMENDATIONS

CSE believes that an aggressive timeline needs to be pursued in light of the gravity of the problem and lack of any meaningful effort by a majority of plants. Any relaxation may encourage further delays down the road.

1. Sulphur Dioxide (SO₂)

To maximize benefits from investment in pollution control, we believe densely populated and/or highly polluted areas should be first targeted. Both CEA and MoEF have indicated that this approach makes sense. Second, techno-economic considerations are also important – this means that larger (>500 MW size) and newer units which have to meet the tighter standard should prioritize FGD installation. Further, CPCB has now prioritized installation of control technology for power stations in states neighboring Delhi; however, air pollution is a problem in the entire Northern and Eastern Region. CSE therefore proposes that these be considered in the following manner:

- **Population Density:** Pollution control measures should be prioritized in areas with significant population. We have used population density of the district where a plant is located as a measure to figure out the number of people affected. Population density of 400/sq.km can be taken (average of India was 382 persons/sq.km. as per 2011 Census) to prioritize plants for installation of FGDs.
- **Pollution Levels:** CPCB had identified 43 highly polluted areas under the Comprehensive Environmental Pollution Index (CEPI) exercise⁹. Power stations located in these areas should also be prioritized.

For 111 GW (greater than 500MW units), densely populated and highly polluted areas should be prioritized in the first phase. With this we can achieve a compliance of 57 GW by December 2019. The balance should be asked to comply by December 2020 (see Table 7: *FGD Phase-in Plan for Units of 500MW and above*).

TABLE 7: FGD PHASE-IN PLAN FOR UNITS OF 500MW AND ABOVE

Densely populated and highly polluted areas must be prioritized

Criteria	Capacity (GW)	Compliance
Population density more than 400 per sq.km.+ highly polluted districts as per CEPI	56.7 *	Dec 2019
Population density below 400/ sq.km.	51.5	Dec 2020
Subtotal	108.2	
FGD installed	3.5	
Total	111.7	

*Includes two 490MW units of NTPC, Dadri

For the balance 78 GW (smaller than 500MW units), RPC plans suggest that no action is required on 12.4 GW capacity as they are in compliance because either they are CFBC boilers or have installed FGDs or are using low sulphur coal. In addition, RPC plans show that 15.5 GW would be retired. The RPC plans suggest that a vast majority of the remaining capacity will install FGDs to meet the 600 mg/Nm³ norm.

Our recommendation is that the remaining units totaling 48.8 GW may be asked to install **alternative SO₂ control measures**, including partial FGDs, lime injection in boilers, etc. or exploring fuel change (low sulphur coal) (see Table 8: *SO₂ control Plan for Units less than 500MW capacity*). Here also, a phased approach considering population and pollution levels should be adopted.

TABLE 8: SO₂ CONTROL PLAN FOR UNITS LESS THAN 500MW CAPACITY

Alternatives to FGD must be considered

Category	Capacity in GW	Compliance
No Action needed	27.9	
CFBC/FGD Installed	7.3	
In compliance (low sulphur coal etc)	5.1	
Retirement	15.5	
SO ₂ control (lime injection etc.)	48.8	
Population density more than 400 per sq.km.+ highly polluted districts as per CEPI	30.5	December, 2018
Population density below 400/ sq.km.	14.3	December 2019
Total	77.7	

2. Particulate matter (PM)

As per the RPCs reports, about 121 GW (~64 percent) does not require ESP retrofit, which we take to mean are in compliance. This seems to be an optimistic figure - *compliance should be reconfirmed by plants and cross-checked by regulators by March 2018*. Our estimate is that around 100GW may be in compliance. We believe that a majority of the balance (around 21 GW) comprises plants that were installed after 2008 and designed to meet the new standards but they may be exceeding the PM norms by a small number – this small share of capacity that may need to refurbish the ESP should do it by March 2018 (see Table 9: *ESP retrofit plans*).

TABLE 9: ESP RETROFIT PLANS

Majority can achieve compliance in a short span of time

Capacity in GW	To comply PM norms by
121.1	March 2018 (in compliance or minor retrofits)
53.1 (a)	March 2019
15.5 (b)	To be retired
189.8	Total

- Approx. 53 GW should be asked to comply by March 2019. Of this, 40 GW capacity plans to install FGD to cut emissions and meet the PM norms. Since optimal FGD would require low PM concentration (50-100mg/Nm³), we suggest these should overhaul the ESPs in addition to 13GW of capacity that plans to upgrade ESP.
- To reiterate, this number is based on RPC plans. Over 34 GW of capacity is more than 25 years old and we believe most of it is non-compliant. There, a larger number of plants can be retired

3. Oxides of Nitrogen (NO_x)

As per the continuous emissions monitoring data (CEMS) data collected from CPCB for 93 GW of monitored capacity, about 50 percent capacity complies with the relevant NO_x standards. Using this as the benchmark, we may assume that 50 percent of all power stations are compliant with the NO_x standard. Hence, NO_x control measures should be implemented



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in two stages (see Table 10: *Retrofit plans to comply with norms for oxides of nitrogen*) –

- 135.1 GW may be asked to complete the installation in the next overhaul cycle by December 2018,
- Balance 47 GW can be given the deadline of December 2019.

TABLE 10: RETROFIT PLANS TO COMPLY WITH NORMS FOR OXIDES OF NITROGEN

Full compliance can be achieved by 2019

To comply by	Capacity in GW
To be retired	15.5
December, 2018	135.1
December, 2019	40.1
Total	189.8

In summary, we recommend that:

- About 67% capacity meet PM standards by December 2017. If some of these are not able to meet by a small margin, they could be asked to do minor retrofits and meet PM norms by March 2018. The remaining one-third capacity should meet PM norms by March 2019.
- 90% of the capacity should meet SO₂ norms by December 2020. The remaining 10%, which are located in sparsely populated areas should meet standards by December 2021.
- 135.1 GW plants should be asked to comply with the NO_x norms by December 2018. The remaining can meet the norms during annual maintenance by December 2019.
- Overall, in the next 3 years, we can achieve close to 90% compliance which would be a great achievement.
- The plant-wise compliance schedule is attached in Annexures 2 to 5.

Finally, we note our report of charting timelines as a starting point for discussions. Getting detailed emissions data will be immensely helpful to further refine what plants need and how much time they need. CEA, RPCs, and CPCB should immediately share emissions data – we assume that at the very least RPCs have collected recent emissions data through manual sampling conducted recently. This is important since CEMS data is still not fully reliable. Also, RPCs should be asked to release documents/reports used to arrive at the phase-in schedule for each plant. It will help MoEF/CPCB confirm the credibility of the plans. Second, they can form the basis of committed action plan backed by punitive action to enforce compliance.

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ANNEXURES

ANNEXURE 1 – OBSERVATIONS AND DIFFERENCES BETWEEN RPC AND CPCB PLANS

Parameter	RPC Plan October 2017	CPCB Plan December 2017
PM	<ul style="list-style-type: none"> 121 GW will not be opting for any action for SPM control. While this level of compliance seems optimistic, we note that almost 110 GW was installed after 2008 – most of this capacity was likely designed to meet the new norms so at most some plants will need to upgrade the ESPs. Retrofit requirements have been identified for about 68 GW to meet SPM norms. Of this, 42 GW employ FGD to meet the PM norms but have no plans to upgrade the ESP. About 15 GW has retirement plans. Only 13 GW have identified an ESP retrofit plan. 	<ul style="list-style-type: none"> Detailed plans have been identified for ESP upgrades/retrofits for these power stations. Implementation dates have been given on a unit wise basis as well, totaling to 140 GW. CPCB has asked units totaling to 76 GW to retrofit their ESPs immediately. No comments have been issued for about 23GW power stations.
SO ₂	<ul style="list-style-type: none"> RPCs agree that installation of FGD systems in power plants close to urban settlements should be prioritized, considering the impacts on human health. However, it is unclear if this parameter has been factored in drawing the schedule. 160 GW has been identified for FGD installations to meet the SO₂ norms. However, the target for 2019 is a mere 5 GW. FGD installations for 64 GW (40 percent of identified capacity) are targeted for the year 2021, while 55 GW (about 35 percent) is targeted for 2022. 	<ul style="list-style-type: none"> CPCB has accelerated compliance deadlines for power stations located in Punjab, Haryana and Western UP to 2019. This has been done keeping in mind the air pollution problem in Delhi-NCR. Few other power plants located in urban centers have also been given accelerated timelines. 163 GW has been identified for FGD installations to meet the SO₂ norms. The target for 2019 is 18 GW. FGD installations for 55 GW (40 percent of identified capacity) are targeted for the year 2021, while 62 GW (about 40 percent) is targeted for 2022.
NO _x	<ul style="list-style-type: none"> Only the Southern RPC has identified a schedule for NO_x control, which was within the next annual overhauling schedule. The other RPCs are unclear on the measures they will undertake, and the timeline of compliance. 	<ul style="list-style-type: none"> Power plants have been asked to implement Low NO_x burners and Over fire air (OFA) dampers or any other suitable measure. NO_x control targets have been stated clearly. Deadline has been set at 2022 for most plants. There are accelerated deadlines of 2019 for plants which also have accelerated FGD deadlines.

ANNEXURE 2 – PHASE IN PLAN FOR FGD INSTALLATION (UNITS LARGER THAN 500 MW)
COMPLY BY DEC 2019 - Located in districts that have population density in excess of 400/
sq.km. or are critically polluted

PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	SECTOR	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
DR. N.TATA RAO TPS	VIJAYAWADA	ANDHRA PRADESH	2009	STATE	7	500	519
SIMHADRI (STAGE 1)	VISHAKHAPATNAM	ANDHRA PRADESH	2002	CENTRAL	1	500	519
SIMHADRI (STAGE 1)	VISHAKHAPATNAM	ANDHRA PRADESH	2002	CENTRAL	2	500	519
SIMHADRI (STAGE 2)	VISHAKHAPATNAM	ANDHRA PRADESH	2011	CENTRAL	4	500	519
SIMHADRI (STAGE 2)	VISHAKHAPATNAM	ANDHRA PRADESH	2011	CENTRAL	3	500	519
VIZAG TPP	VISHAKHAPATNAM	ANDHRA PRADESH	2014	PRIVATE	1	520	519
VIZAG TPP	VISHAKHAPATNAM	ANDHRA PRADESH	2014	PRIVATE	2	520	519
KAHALGAON BHAGALPUR	BHAGALPUR	BIHAR	2008	CENTRAL	5	500	1180
KAHALGAON BHAGALPUR	BHAGALPUR	BIHAR	2008	CENTRAL	6	500	1180
KAHALGAON BHAGALPUR	BHAGALPUR	BIHAR	2008	CENTRAL	7	500	1180
BARH SUPER THERMAL POWER PLANT STAGE-II	PATNA	BIHAR	2014	CENTRAL	5	660	1803
BARH SUPER THERMAL POWER PLANT STAGE-II	PATNA	BIHAR	2014	CENTRAL	4	660	1803
MARWA THERMAL POWER PLANT	JANJGIR	CHHATTISGARH	2014	STATE	1	500	421
MARWA THERMAL POWER PLANT	JANJGIR	CHHATTISGARH	2014	STATE	2	500	421
BARADARHA TPS	JANJGIR-CHAMPA	CHHATTISGARH	2014	PRIVATE	1	600	421
BARADARHA TPS	JANJGIR-CHAMPA	CHHATTISGARH	2014	PRIVATE	2	600	421
NARIYARA THERMAL POWER PLANT (AKALTARA)	JANJGIR-CHAMPA	CHHATTISGARH	2013	PRIVATE	1	600	421
NARIYARA THERMAL POWER PLANT (AKALTARA)	JANJGIR-CHAMPA	CHHATTISGARH	2013	PRIVATE	2	600	421
KORBA STPS	KORBA	CHHATTISGARH	2010	CENTRAL	7	500	183
KORBA STPS	KORBA	CHHATTISGARH	1989	CENTRAL	6	500	183
KORBA STPS	KORBA	CHHATTISGARH	1987	CENTRAL	4	500	183
KORBA STPS	KORBA	CHHATTISGARH	1988	CENTRAL	5	500	183
KORBA-WEST TPS (HASDEO)	KORBA	CHHATTISGARH	2013	STATE	5	500	183
HISAR (RAJIV GANDHI)	HISAR	HARYANA	2010	STATE	1	600	438
HISAR (RAJIV GANDHI)	HISAR	HARYANA	2010	STATE	2	600	438
ARAVALI THERMAL POWER PLANT (INDIRA GANDHI)	JHAJJAR	HARYANA	2011	CENTRAL-STATE JV	1	500	522
ARAVALI THERMAL POWER PLANT (INDIRA GANDHI)	JHAJJAR	HARYANA	2011	CENTRAL-STATE JV	2	500	522



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PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	SECTOR	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
ARAVALI THERMAL POWER PLANT (INDIRA GANDHI)	JHAJJAR	HARYANA	2011	CENTRAL-STATE JV	3	500	522
MAHATMA GANDHI THERMAL POWER STATION	JHAJJAR	HARYANA	2012	PRIVATE	1	660	522
MAHATMA GANDHI THERMAL POWER STATION	JHAJJAR	HARYANA	2012	PRIVATE	2	660	522
MAITHON RIGHT BANK THERMAL POWER PLANT	DHANBAD	JHARKHAND	2010	PRIVATE	2	525	1284
MAITHON RIGHT BANK THERMAL POWER PLANT	DHANBAD	JHARKHAND	2010	PRIVATE	1	525	1284
KODARMA	KODERMA	JHARKHAND	2013	CENTRAL-STATE JV	1	500	427
KODARMA	KODERMA	JHARKHAND	2013	CENTRAL-STATE JV	2	500	427
BOKARO 'A' TPS	BOKARO	JHARKHAND	2016	CENTRAL	1	500	716
YERMARUS	RAICHUR	KARNATAKA	2015	STATE	1	800	457
YERMARUS	RAICHUR	KARNATAKA	2016	STATE	2	800	457
CHANDRAPUR (MAH.)	CHANDRAPUR	MAHARASHTRA	2015	STATE	9	500	192
CHANDRAPUR (MAH.)	CHANDRAPUR	MAHARASHTRA	2015	STATE	8	500	192
KHAPARKHEDA	NAGPUR	MAHARASHTRA	2011	STATE	5	500	470
KORADI TPS	NAGPUR	MAHARASHTRA	2015	STATE	9	660	470
KORADI TPS	NAGPUR	MAHARASHTRA	2015	STATE	8	660	470
KORADI TPS	NAGPUR	MAHARASHTRA	2016	STATE	10	660	470
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	2016	CENTRAL	4	660	470
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	2016	CENTRAL	3	660	470
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	2013	CENTRAL	2	500	470
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	2013	CENTRAL	1	500	470
CHANDRAPUR (MAH.)	CHANDRAPUR	MAHARASHTRA	1991	STATE	5	500	192
CHANDRAPUR (MAH.)	CHANDRAPUR	MAHARASHTRA	1992	STATE	6	500	192
CHANDRAPUR (MAH.)	CHANDRAPUR	MAHARASHTRA	1997	STATE	7	500	192
DERANG	ANGUL	ORISSA	2014	PRIVATE	1	600	199
DERANG	ANGUL	ORISSA	2014	PRIVATE	2	600	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	1	500	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	2	500	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	4	500	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	5	500	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	6	500	199
TALCHER KANIHA	ANGUL	ORISSA	1995	CENTRAL	3	500	199

PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	SECTOR	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
RAJPURA THERMAL POWER PLANT	PATIALA	PUNJAB	2014	PRIVATE	1	700	596
RAJPURA THERMAL POWER PLANT	PATIALA	PUNJAB	2014	PRIVATE	2	700	596
METTUR TPS	SALEM	TAMIL NADU	2014	STATE	5	600	663
NORTH CHENNAI POWER CO. LTD.	TIRUVALLUR	TAMIL NADU	2013	STATE	4	600	1049
NORTH CHENNAI POWER CO. LTD.	TIRUVALLUR	TAMIL NADU	2013	STATE	5	600	1049
VALLUR THERMAL POWER PLANT	TIRUVALLUR	TAMIL NADU	2014	CENTRAL	1	500	1049
VALLUR THERMAL POWER PLANT	TIRUVALLUR	TAMIL NADU	2014	CENTRAL	2	500	1049
VALLUR THERMAL POWER PLANT	TIRUVALLUR	TAMIL NADU	2014	CENTRAL	3	500	1049
BARA TPP (PRAGYARAJ)	ALLAHABAD	UTTAR PRADESH	2015	PRIVATE	1	660	1087
BARA TPP (PRAGYARAJ)	ALLAHABAD	UTTAR PRADESH	2015	PRIVATE	2	660	1087
DADRI (NCTPP)	DELHI	UTTAR PRADESH	2010		5	490	
DADRI (NCTPP)	DELHI	UTTAR PRADESH	2010		6	490	
ANPARA C	SONBHADRA	UTTAR PRADESH	2011	PRIVATE	2	600	270
ANPARA C	SONBHADRA	UTTAR PRADESH	2011	PRIVATE	1	600	270
ANPARA TPS	SONBHADRA	UTTAR PRADESH	1994	STATE	4	500	270
ANPARA TPS	SONBHADRA	UTTAR PRADESH	1994	STATE	5	500	270
ANPARA TPS	SONBHADRA	UTTAR PRADESH	2015	STATE	6	500	270
ANPARA TPS	SONBHADRA	UTTAR PRADESH	2015	STATE	7	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	1988	CENTRAL	1	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	2005	CENTRAL	3	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	2005	CENTRAL	4	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	2005	CENTRAL	5	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	2005	CENTRAL	6	500	270
RIHAND STPS	SONBHADRA	UTTAR PRADESH	1989	CENTRAL	2	500	270
SINGRAULI STPS	SONBHADRA	UTTAR PRADESH	1986	CENTRAL	6	500	270
SINGRAULI STPS	SONBHADRA	UTTAR PRADESH	1987	CENTRAL	7	500	270
MEJIA	BANKURA	WEST BENGAL	2012	CENTRAL-STATE JV	7	500	523
MEJIA	BANKURA	WEST BENGAL	2012	CENTRAL-STATE JV	8	500	523
DURGAPUR STEEL TPS	BURDWAN	WEST BENGAL	2013	CENTRAL-STATE JV	1	500	1100
DURGAPUR STEEL TPS	BURDWAN	WEST BENGAL	2013	CENTRAL-STATE JV	2	500	1100
SAGARDIGHI	MURSHIDABAD	WEST BENGAL	2016	STATE	4	500	1334
SAGARDIGHI	MURSHIDABAD	WEST BENGAL	2016	STATE	3	500	1334


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PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	SECTOR	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
RAGHUNATHPUR (STAGE 1) THERMAL POWER PLANT	PURULIA	WEST BENGAL	2014	CENTRAL-STATE JV	1	600	468
RAGHUNATHPUR (STAGE 1) THERMAL POWER PLANT	PURULIA	WEST BENGAL	2014	CENTRAL-STATE JV	2	600	468
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	1992	CENTRAL	4	500	1334
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	1994	CENTRAL	5	500	1334
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	2012	CENTRAL	6	500	1334
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2012	CENTRAL	11	500	157
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2012	CENTRAL	12	500	157
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2000	CENTRAL	7	500	157
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2000	CENTRAL	8	500	157
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2007	CENTRAL	9	500	157
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2012	CENTRAL	10	500	157
NIGRI	SINGRAULI	MADHYA PRADESH	2014	PRIVATE	1	660	157
NIGRI	SINGRAULI	MADHYA PRADESH	2014	PRIVATE	2	660	157
MAHAN TPP	SINGRAULI	MADHYA PRADESH	2013	PRIVATE	1	600	157
TOTAL						56,750	

COMPLY BY DEC 2020 – Units larger than 500MW located in districts with population density below 400 persons/sq/km.

PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	CENTRAL/STATE/PRIVATE	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
SGPL TPP	KRISHNAPATNAM	ANDHRA PRADESH	2015	PRIVATE	1	660	227
SGPL TPP	KRISHNAPATNAM	ANDHRA PRADESH	2015	PRIVATE	2	660	227
NELCAST ENERGY CORPORATION LTD. (PANAIPURAM)	NELLORE	ANDHRA PRADESH	2015	PRIVATE	1	660	227
NELCAST ENERGY CORPORATION LTD. (PANAIPURAM)	NELLORE	ANDHRA PRADESH	2015	PRIVATE	2	660	227
SRI DAMODARAM SANJEEVAIAH TPS	NELLORE	ANDHRA PRADESH	2014	STATE	1	800	227
SRI DAMODARAM SANJEEVAIAH TPS	NELLORE	ANDHRA PRADESH	2014	STATE	2	800	227
SIPAT	BILASPUR	CHHATTISGARH	2007	CENTRAL	4	660	322
SIPAT	BILASPUR	CHHATTISGARH	2007	CENTRAL	5	660	322
SIPAT	BILASPUR	CHHATTISGARH	2007	CENTRAL	1	500	322
SIPAT	BILASPUR	CHHATTISGARH	2007	CENTRAL	2	500	322
SIPAT	BILASPUR	CHHATTISGARH	2007	CENTRAL	3	660	322
ADANI KORBA WEST POWER STATION (AVANTHA BHANDAR)	RAIGARH	CHHATTISGARH	2014	PRIVATE	1	600	211
TAMNAR	RAIGARH	CHHATTISGARH	2014	PRIVATE	1	600	211
TAMNAR	RAIGARH	CHHATTISGARH	2014	PRIVATE	2	600	211
TAMNAR	RAIGARH	CHHATTISGARH	2015	PRIVATE	3	600	211
TAMNAR	RAIGARH	CHHATTISGARH	2015	PRIVATE	4	600	211
RAIKHEDA TPP	RAIPUR	CHHATTISGARH	2014	PRIVATE	1	685	310
RAIKHEDA TPP	RAIPUR	CHHATTISGARH	2014	PRIVATE	2	685	310
UKAI TPS	TAPI	GUJARAT	2013	STATE	6	500	249
BELLARY (KUDITINI THERMAL POWER STATION)	BELLARY	KARNATAKA	2012	STATE	1	500	300
BELLARY (KUDITINI THERMAL POWER STATION)	BELLARY	KARNATAKA	2003	STATE	2	500	300
BELLARY (KUDITINI THERMAL POWER STATION)	BELLARY	KARNATAKA	2016	STATE	3	700	300
KUDGI STPP	BIJAPUR	KARNATAKA	2016	CENTRAL	1	800	207
KUDGI STPP	BIJAPUR	KARNATAKA	2017	CENTRAL	2	800	207
M B POWER LTD.	ANUPPUR	MADHYA PRADESH	2014	PRIVATE	2	600	200
M B POWER LTD.	ANUPPUR	MADHYA PRADESH	2014	PRIVATE	1	600	200
SEIONI TPP	SEONI	MADHYA PRADESH	2016	PRIVATE	1	600	232



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PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	CENTRAL/STATE/ PRIVATE	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	1	660	232
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	2	660	232
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	3	660	232
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	4	660	232
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	5	660	232
SASAN ULTRA MEGA POWER PLANT	SIDHI	MADHYA PRADESH	2013	PRIVATE	6	660	232
ADANI TIRORA (PHASE 1)	GONDIA	MAHARASHTRA	2012	PRIVATE	1	660	253
ADANI TIRORA (PHASE 1)	GONDIA	MAHARASHTRA	2012	PRIVATE	2	660	253
ADANI TIRORA (PHASE 2)	GONDIA	MAHARASHTRA	2013	PRIVATE	4	660	253
ADANI TIRORA (PHASE 2)	GONDIA	MAHARASHTRA	2013	PRIVATE	5	660	253
ADANI TIRORA (PHASE 2)	GONDIA	MAHARASHTRA	2013	PRIVATE	3	660	253
BHUSAWAL TPS	JALGAON	MAHARASHTRA	2012	STATE	4	500	359
BHUSAWAL TPS	JALGAON	MAHARASHTRA	2012	STATE	5	500	359
STERLITE ENERGY LTD.	JHARSUGUDA	ORISSA	2010	PRIVATE	1	600	274
STERLITE ENERGY LTD.	JHARSUGUDA	ORISSA	2010	PRIVATE	2	600	274
STERLITE ENERGY LTD.	JHARSUGUDA	ORISSA	2010	PRIVATE	3	600	274
STERLITE ENERGY LTD.	JHARSUGUDA	ORISSA	2010	PRIVATE	4	600	274
TALWANDI SABO THERMAL POWER PLANT	MANSA	PUNJAB	2013	PRIVATE	2	660	350
TALWANDI SABO THERMAL POWER PLANT	MANSA	PUNJAB	2013	PRIVATE	3	660	350
TALWANDI SABO THERMAL POWER PLANT	MANSA	PUNJAB	2013	PRIVATE	1	660	350
KALISINDH	JHALAWAR	RAJASTHAN	2014	STATE	1	600	227
KALISINDH	JHALAWAR	RAJASTHAN	2014	STATE	2	600	227
MUTHIARA TPP	TUTICORIN	TAMIL NADU	2014	PRIVATE	1	600	367
MUTHIARA TPP	TUTICORIN	TAMIL NADU	2014	PRIVATE	2	600	367
TUTICORIN (JV) TPP	TUTICORIN	TAMIL NADU	2015	CENTRAL	1	500	367
TUTICORIN (JV) TPP	TUTICORIN	TAMIL NADU	2015	CENTRAL	2	500	367
RAMAGUNDEM STPS	KARIMNAGAR	TELANGANA	1988	CENTRAL	4	500	322
RAMAGUNDEM STPS	KARIMNAGAR	TELANGANA	1989	CENTRAL	5	500	322
RAMAGUNDEM STPS	KARIMNAGAR	TELANGANA	1989	CENTRAL	6	500	322
RAMAGUNDEM STPS	KARIMNAGAR	TELANGANA	2004	CENTRAL	7	500	322
KOTHAGUNDEM-VI	KHAMMAM	TELANGANA	2011	STATE	3	500	322

PLANT NAME	DISTRICT	STATE	COMMISSIONING YEAR	CENTRAL/STATE/ PRIVATE	UNIT NUMBER	CAPACITY IN MW	POPULATION DENSITY (PERSON PER SQ.KM)
SINGARENI	MANCHERIAL	TELANGANA	2015	STATE	1	600	170
SINGARENI	MANCHERIAL	TELANGANA	2016	STATE	2	600	170
KAKATIYA	WARANGAL	TELANGANA	2010	STATE	1	500	274
KAKATIYA	WARANGAL	TELANGANA	2016	STATE	2	600	274
LALITPUR TPP (LPGCL)	LALITPUR	UTTAR PRADESH	2015	PRIVATE	1	660	242
LALITPUR TPP (LPGCL)	LALITPUR	UTTAR PRADESH	2015	PRIVATE	2	660	242
LALITPUR TPP (LPGCL)	LALITPUR	UTTAR PRADESH	2015	PRIVATE	3	660	242
ADANI MUNDRA (PHASE 2)	KUTCH	GUJARAT	2011	PRIVATE	5	660	46
ADANI MUNDRA (PHASE 2)	KUTCH	GUJARAT	2011	PRIVATE	6	660	46
ADANI MUNDRA (PHASE 3)	KUTCH	GUJARAT	2012	PRIVATE	7	660	46
MUNDRA ULTRA MEGA POWER PLANT	KUTCH	GUJARAT	2013	PRIVATE	1	800	46
MUNDRA ULTRA MEGA POWER PLANT	KUTCH	GUJARAT	2013	PRIVATE	2	800	46
MUNDRA ULTRA MEGA POWER PLANT	KUTCH	GUJARAT	2013	PRIVATE	3	800	46
MUNDRA ULTRA MEGA POWER PLANT	KUTCH	GUJARAT	2013	PRIVATE	4	800	46
MUNDRA ULTRA MEGA POWER PLANT	KUTCH	GUJARAT	2013	PRIVATE	5	800	46
ADANI MUNDRA (PHASE 3)	KUTCH	GUJARAT	2012	PRIVATE	8	660	46
ADANI MUNDRA (PHASE 3)	KUTCH	GUJARAT	2012	PRIVATE	9	660	46
SALAYA	JAMNAGAR	GUJARAT	2012	PRIVATE	1	600	153
SALAYA	JAMNAGAR	GUJARAT	2012	PRIVATE	2	600	153
SANJAY GANDHI	UMARIA	MADHYA PRADESH	2007	STATE	5	500	158
MALWA THERMAL POWER PLANT (SHRI SINGHAJI)	KHANDWA	MADHYA PRADESH	2014	STATE	1	600	178
MALWA THERMAL POWER PLANT (SHRI SINGHAJI)	KHANDWA	MADHYA PRADESH	2014	STATE	2	600	178
KAWAI TPP	BARAN	RAJASTHAN	2014	STATE	1	660	175
KAWAI TPP	BARAN	RAJASTHAN	2014	STATE	2	660	175
TOTAL						51,530	


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**ANNEXURE 3 – PHASE IN PLAN FOR SO₂ CONTROL (UNITS SMALLER THAN 500 MW)
TO COMPLY BY DEC 2019 (low sulphur coal, lime injection etc) - Population density more than
400/sq.km. or critically polluted**

NAME OF PLANT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
BEGUSARAI	BEGUSARAI	STATE	BIHAR	7	105	32	1540
BEGUSARAI	BEGUSARAI	STATE	BIHAR	6	105	34	1540
MUZAFFARPUR TPS	MUZAFFARPUR	CENTRAL	JHARKHAND	4	195	0	1506
MUZAFFARPUR TPS	MUZAFFARPUR	CENTRAL	BIHAR	3	195	2	1506
RAMAGUNDEM STPS	KARIM NAGAR	CENTRAL	TELANGANA	3	200	33	1449
RAMAGUNDEM STPS	KARIM NAGAR	CENTRAL	TELANGANA	2	200	33	1449
RAMAGUNDEM STPS	KARIM NAGAR	CENTRAL	TELANGANA	1	200	34	1449
FARAKKA STPS	MURSHIDABAD	CENTRAL	WEST BENGAL	3	200	30	1334
FARAKKA STPS	MURSHIDABAD	CENTRAL	WEST BENGAL	2	200	31	1334
FARAKKA STPS	MURSHIDABAD	CENTRAL	WEST BENGAL	1	200	31	1334
SAGARDIGHI TPS	MURSHIDABAD	STATE	WEST BENGAL	1	300	9	1334
SAGARDIGHI TPS	MURSHIDABAD	STATE	WEST BENGAL	2	300	10	1334
KAHALGAON TPS	BHAGALPUR	CENTRAL	BIHAR	1	210	25	1180
KAHALGAON TPS	BHAGALPUR	CENTRAL	BIHAR	4	210	21	1180
KAHALGAON TPS	BHAGALPUR	CENTRAL	BIHAR	3	210	22	1180
KAHALGAON TPS	BHAGALPUR	CENTRAL	BIHAR	2	210	23	1180
GH TPS (LEH.MOH.)	BHATINDA	STATE SECTOR	PUNJAB	3	250	9	1180
GH TPS (LEH.MOH.)	BHATINDA	STATE SECTOR	PUNJAB	4	250	9	1180
GH TPS (LEH.MOH.)	BHATINDA	STATE	PUNJAB	2	210	19	1180
GH TPS (LEH.MOH.)	BHATINDA	STATE	PUNJAB	1	210	20	1180
BANDEL TPS	HOOGLHY	STATE	WEST BENGAL	5	210	35	1076
HALDIA TPP	PURBA MEDINIPUR	PRIVATE	WEST BENGAL	2	300	2	1076
HALDIA TPP	PURBA MEDINIPUR	PRIVATE	WEST BENGAL	1	300	2	1076
INDIA POWER TPP	PURBA MEDINIPUR	PRIVATE	WEST BENGAL	1	150	0	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	5	210	24	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	1	210	24	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	6	210	26	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	2	210	27	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	3	210	32	1076
KOLAGHAT TPS	PURBA MEDINIPUR	STATE	WEST BENGAL	4	210	33	1076
SANTALDIH TPS	PURULIA	STATE	WEST BENGAL	6	250	6	1076
SANTALDIH TPS	PURULIA	STATE	WEST BENGAL	5	250	10	1076
HARDUAGANJ TPS	ALIGARH	STATE SECTOR	UTTAR PARDESH	9	250	5	1007
HARDUAGANJ TPS	ALIGARH	STATE SECTOR	UTTAR PARDESH	8	250	6	1007
PANIPAT TPS	PANIPAT	STATE SECTOR	HARYANA	8	250	12	949
PANIPAT TPS	PANIPAT	STATE SECTOR	HARYANA	7	250	13	949
PANIPAT TPS	PANIPAT	STATE	HARYANA	6	210	16	949
BUDGE BUDGE TPS	SOUTH 24 PARGANAS	PRIVATE	WEST BENGAL	3	250	8	819
BUDGE BUDGE TPS	SOUTH 24 PARGANAS	PRIVATE	WEST BENGAL	2	250	18	819

NAME OF PLANT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
BUDGE BUDGE TPS	SOUTH 24 PARGANAS	PRIVATE	WEST BENGAL	1	250	20	819
NABI NAGAR TPP	AURANGABAD	CENTRAL	BIHAR	2	250	0	760
NABI NAGAR TPP	AURANGABAD	CENTRAL	BIHAR	1	250	1	760
UNCHAHAH TPS	RAEBARELI	CENTRAL	UTTAR PRADESH	2	210	28	739
UNCHAHAH TPS	RAEBARELI	CENTRAL	UTTAR PRADESH	1	210	29	739
UNCHAHAH TPS	RAEBARELI	CENTRAL	UTTAR PRADESH	5	210	11	739
UNCHAHAH TPS	RAEBARELI	CENTRAL	UTTAR PRADESH	3	210	18	739
UNCHAHAH TPS	RAEBARELI	CENTRAL	UTTAR PRADESH	4	210	18	739
BOKARO	BOKARO	CENTRAL	JHARKHAND	1	210	31	716
JOJOBERA TPS	BOKARO	PRIVATE	JHARKHAND	3	120	15	716
JOJOBERA TPS	BOKARO	PRIVATE	JHARKHAND	2	120	16	716
BOKARO	BOKARO	CENTRAL	JHARKHAND	2	210	27	716
NEYVELI (EXT) TPS	CUDDALORE	CENTRAL	TAMIL NADU	2	210	14	702
NEYVELI (EXT) TPS	CUDDALORE	CENTRAL	TAMIL NADU	1	210	15	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	7	210	24	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	6	210	25	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	5	210	25	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	4	210	26	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	1	210	29	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	3	210	30	702
NEYVELI TPS -II	CUDDALORE	CENTRAL	TAMIL NADU	2	210	30	702
TAQA, NEWELL	CUDDALORE	PRIVATE	TAMIL NADU	2	250	15	702
DADRI (NCTPP)	DELHI	CENTRAL	UTTAR PRADESH	3	210	24	702
DADRI (NCTPP)	DELHI	CENTRAL	UTTAR PRADESH	2	210	25	702
DADRI (NCTPP)	DELHI	CENTRAL	UTTAR PRADESH	1	210	26	702
DADRI (NCTPP)	DELHI	CENTRAL	UTTAR PRADESH	4	210	23	702
YAMUNA NAGAR TPS	YAMUNANAGAR	STATE SECTOR	HARYANA	2	300	9	687
YAMUNA NAGAR TPS	YAMUNANAGAR	STATE SECTOR	HARYANA	1	300	10	687
ROSA TPP PH-I	SHAHJAHANPUR	PRIVATE SECTOR	UTTAR PRADESH	4	300	5	684
ROSA TPP PH-I	SHAHJAHANPUR	PRIVATE SECTOR	UTTAR PRADESH	3	300	6	684
ROSA TPP PH-I	SHAHJAHANPUR	PRIVATE SECTOR	UTTAR PRADESH	1	300	7	684
ROSA TPP PH-I	SHAHJAHANPUR	PRIVATE SECTOR	UTTAR PRADESH	2	300	7	684
JAMSHEDPUR	JAMSHEDPUR	PRIVATE	JHARKHAND	3	120	6	648
JAMSHEDPUR	JAMSHEDPUR	PRIVATE	JHARKHAND	2	120	12	648
JAMSHEDPUR	JAMSHEDPUR	PRIVATE	JHARKHAND	1	120	15	648


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NAME OF PLANT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
MAHADEV PRASAD STPP	JAMSHEDPUR	PRIVATE	JHARKHAND	2	270	4	648
MAHADEV PRASAD STPP	JAMSHEDPUR	PRIVATE	JHARKHAND	1	270	5	648
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	6	250	10	523
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	5	250	10	523
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	4	210	13	523
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	3	210	19	523
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	2	210	20	523
MEJIA TPS	BANKURA	CENTRAL	WEST BENGAL	1	210	21	523
DR. N. TATA RAO TPS	VIJAYAWADA	STATE	ANDHRA PRADESH	7	210	8	519
BUTIBORI TPP	NAGPUR	PRIVATE	MAHARASHTRA	2	300	4	470
BUTIBORI TPP	NAGPUR	PRIVATE	MAHARASHTRA	1	300	5	470
GOINDWAL SAHIB	TARN TARAN	PRIVATE SECTOR	PUNJAB	1	270	1	464
GOINDWAL SAHIB	TARN TARAN	PRIVATE SECTOR	PUNJAB	2	270	1	464
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	3	210	26	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	2	210	31	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	1	210	32	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	8	250	7	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	7	210	15	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	6	210	18	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	5	210	18	457
RAICHUR TPS	RAICHUR	STATE	KARNATAKA	4	210	23	457
UCHPINDA TPP	JANJGIR-CHAMPA	PRIVATE	CHHATTISGARH	3	360	1	421
UCHPINDA TPP	JANJGIR-CHAMPA	PRIVATE	CHHATTISGARH	1	360	2	421
IB VALLEY TPS	JHARSUGUDA	STATE	ODISHA	2	210	22	274
IB VALLEY TPS	JHARSUGUDA	STATE	ODISHA	1	210	23	274
JHARSUGUDA	JHARSUGUDA	PRIVATE	ORISSA	1	350	2	274
JHARSUGUDA	JHARSUGUDA	STATE	ORISSA	1	210	23	274
JHARSUGUDA	JHARSUGUDA	STATE	ORISSA	2	210	23	274
ANPARA TPS	SONBHADRA	STATE	UTTAR PRADESH	3	210	29	270
ANPARA TPS	SONBHADRA	STATE	UTTAR PRADESH	2	210	30	270
ANPARA TPS	SONBHADRA	STATE	UTTAR PRADESH	1	210	31	270
OBRA TPS	SONBHADRA	STATE	UTTAR PRADESH	13	200	35	270
OBRA TPS	SONBHADRA	STATE	UTTAR PRADESH	12	200	36	270
OBRA TPS	SONBHADRA	STATE	UTTAR PRADESH	9	200	37	270
OBRA TPS	SONBHADRA	STATE	UTTAR PRADESH	10	200	38	270
OBRA TPS	SONBHADRA	STATE	UTTAR PRADESH	11	200	40	270
SINGRAULI STPS	SONBHADRA	CENTRAL	UTTAR PRADESH	5	200	33	270
SINGRAULI STPS	SONBHADRA	CENTRAL	UTTAR PRADESH	3	200	34	270
SINGRAULI STPS	SONBHADRA	CENTRAL	UTTAR PRADESH	4	200	34	270
SINGRAULI STPS	SONBHADRA	CENTRAL	UTTAR PRADESH	1	200	35	270

NAME OF PLANT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
SINGRAULI STPS	SONBHADRA	CENTRAL	UTTAR PRADESH	2	200	35	270
BINJKOTE TPP	RAIGARH	PRIVATE	CHHATTISGARH	1	300	0	211
OP JINDAL TPS	RAIGARH	PRIVATE	CHHATTISGARH	2	250	9	211
OP JINDAL TPS	RAIGARH	PRIVATE	CHHATTISGARH	3	250	9	211
OP JINDAL TPS	RAIGARH	PRIVATE	CHHATTISGARH	4	250	9	211
OP JINDAL TPS	RAIGARH	PRIVATE	CHHATTISGARH	1	250	10	211
DHARIWAL TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	2	300	3	192
DHARIWAL TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	1	300	4	192
EMCO WARORA TPS	CHANDRAPUR	PRIVATE	MAHARASHTRA	2	300	4	192
EMCO WARORA TPS	CHANDRAPUR	PRIVATE	MAHARASHTRA	1	300	4	192
WARDHA WARORA TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	4	135	6	192
WARDHA WARORA TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	3	135	6	192
WARDHA WARORA TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	2	135	7	192
WARDHA WARORA TPP	CHANDRAPUR	PRIVATE	MAHARASHTRA	1	135	7	192
BALCO TPS	KORBA	PRIVATE	CHHATTISGARH	2	300	1	183
BALCO TPS	KORBA	PRIVATE	CHHATTISGARH	1	300	2	183
BANDAKHAR TPP	KORBA	PRIVATE	CHHATTISGARH	1	300	2	183
DSPM TPS	KORBA	STATE	CHHATTISGARH	1	250	10	183
DSPM TPS	KORBA	STATE	CHHATTISGARH	2	250	10	183
PATHADI TPP	KORBA	PRIVATE	CHHATTISGARH	2	300	7	183
PATHADI TPP	KORBA	PRIVATE	CHHATTISGARH	1	300	8	183
TOTAL					30,720		


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TO COMPLY BY DEC 2020 (low sulphur coal, lime injection etc) - Population density less than 400/sq.km.

NAME OF PROJECT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
PARICHA TPS	JHANSI	STATE SECTOR	UTTAR PRADESH	6	250	4	398
PARICHA TPS	JHANSI	STATE SECTOR	UTTAR PRADESH	5	250	5	398
PARICHA TPS	JHANSI	STATE	UTTAR PRADESH	3	210	11	398
PARICHA TPS	JHANSI	STATE	UTTAR PRADESH	4	210	11	398
NASIK (P) TPS	NASIK	PRIVATE	MAHARASHTRA	5	270	0	393
NASIK (P) TPS	NASIK	PRIVATE	MAHARASHTRA	4	270	0	393
NASIK (P) TPS	NASIK	PRIVATE	MAHARASHTRA	3	270	0	393
NASIK (P) TPS	NASIK	PRIVATE	MAHARASHTRA	1	270	3	393
KOTA TPS	KOTA	STATE	RAJASTHAN	5	210	23	374
KOTA TPS	KOTA	STATE	RAJASTHAN	7	195	14	374
KOTA TPS	KOTA	STATE	RAJASTHAN	6	195	23	374
MUNDRA TPS	KUTCH	PRIVATE	GUJARAT	4	330	7	374
MUNDRA TPS	KUTCH	PRIVATE	GUJARAT	3	330	7	374
MUNDRA TPS	KUTCH	PRIVATE	GUJARAT	2	330	7	374
MUNDRA TPS	KUTCH	PRIVATE	GUJARAT	1	330	8	374
JALGAON TPS	JALGAON	STATE	MAHARASHTRA	3	210	35	359
JALGAON TPS	JALGAON	STATE	MAHARASHTRA	2	210	38	359
TORANGALLU TPS EXT	BELLARY	PRIVATE	KARNATAKA	2	300	8	300
TORANGALLU TPS EXT	BELLARY	PRIVATE	KARNATAKA	1	300	8	300
BANDEL TPS	KOLKATTA	STATE	WEST BENGAL	4	60	51	280
BANDEL TPS	KOLKATTA	STATE	WEST BENGAL	3	60	51	280
BANDEL TPS	KOLKATTA	STATE	WEST BENGAL	2	60	52	280
BANDEL TPS	KOLKATTA	STATE	WEST BENGAL	1	60	52	280
SOUTHERN REPL, TPS	KOLKATTA	PRIVATE	WEST BENGAL	1	68	26	280
SOUTHERN REPL, TPS	KOLKATTA	PRIVATE	WEST BENGAL	2	68	27	280
RAYALASEEMA TPS	KADAPA	STATE	ANDHRA PRADESH	5	210	6	274
RAYALASEEMA TPS	KADAPA	STATE	ANDHRA PRADESH	3	210	10	274
RAYALASEEMA TPS	KADAPA	STATE	ANDHRA PRADESH	4	210	10	274
RAYALASEEMA TPS	KADAPA	STATE	ANDHRA PRADESH	2	210	22	274
RAYALASEEMA TPS	KADAPA	STATE	ANDHRA PRADESH	1	210	23	274
KAMALANGA TPS	DHENKANAL	PRIVATE	ODISHA	3	350	3	268
KAMALANGA TPS	DHENKANAL	PRIVATE	ODISHA	2	350	4	268
KAMALANGA TPS	DHENKANAL	PRIVATE	ODISHA	1	350	4	268
BHILAI TPS	DURG	CENTRAL	CHHATTISGARH	2	250	8	268
BHILAI TPS	DURG	CENTRAL	CHHATTISGARH	1	250	9	268
D.P.L. TPS	DURGAPUR	STATE	WEST BENGAL	6	110	32	268
D.P.L. TPS	DURGAPUR	STATE	WEST BENGAL	7	300	10	268
D.P.L. TPS EXT.	DURGAPUR	STATE	WEST BENGAL	8	250	3	268

NAME OF PROJECT	DISTRICT	SECTOR	STATE	UNIT NO	CAPACITY	AGE IN YEARS	POPULATION DENSITY
PARLI TPS	BEED	STATE	MAHARASHTRA	8	250	1	242
PARLI TPS	BEED	STATE	MAHARASHTRA	7	250	7	242
PARLI TPS	BEED	STATE	MAHARASHTRA	6	250	10	242
NAWAPARA TPP	RAIPUR	PRIVATE	CHHATTISGARH	2	300	0	211
AMARKANTAK EXT TPS	ANUPPUR	STATE	MADHYA PRADESH	5	210	9	200
CHANDRAPURA(DVC)	CHANDRAPURA	CENTRAL	JHARKHAND	7	250	8	192
CHANDRAPURA(DVC)	CHANDRAPURA	CENTRAL	JHARKHAND	8	250	7	192
NORTH CHENNAI TPS	CHENNAI	STATE	TAMIL NADU	3	210	21	192
NORTH CHENNAI TPS	CHENNAI	STATE	TAMIL NADU	2	210	22	192
NORTH CHENNAI TPS	CHENNAI	STATE	TAMIL NADU	1	210	23	192
SURATGARH TPS	GANGANAGAR	STATE SECTOR	RAJASTHAN	6	250	8	179
SURATGARH TPS	GANGANAGAR	STATE SECTOR	RAJASTHAN	5	250	14	179
SURATGARH TPS	GANGANAGAR	STATE SECTOR	RAJASTHAN	4	250	15	179
SURATGARH TPS	GANGANAGAR	STATE	RAJASTHAN	3	250	16	179
SURATGARH TPS	GANGANAGAR	STATE	RAJASTHAN	2	250	17	179
SURATGARH TPS	GANGANAGAR	STATE	RAJASTHAN	1	250	19	179
CHHABRA TPP	BARAN	STATE SECTOR	RAJASTHAN	1	250	8	175
CHHABRA TPP	BARAN	STATE SECTOR	RAJASTHAN	4	250	3	175
CHHABRA TPP	BARAN	STATE SECTOR	RAJASTHAN	3	250	4	175
CHHABRA TPP	BARAN	STATE SECTOR	RAJASTHAN	2	250	7	175
SATPURA TPS	BETUL	STATE	MADHYA PRADESH	11	250	3	157
SATPURA TPS	BETUL	STATE	MADHYA PRADESH	10	250	4	157
SIKKA REP TPS	JAMNAGAR	STATE	GUJARAT	4	250	2	153
SIKKA REP TPS	JAMNAGAR	STATE	GUJARAT	3	250	2	153
TOTAL					14,466		


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ANNEXURE 4 – PHASE IN PLAN FOR ESP UPGRADATION

Plants to comply by March, 2019

PLANT NAME	DISTRICT	STATE	UNIT NO	CAPACITY
DR. N.TATA RAO TPS	VIJAYAWADA	ANDHRA PRADESH	7	500
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	4	660
BARA TPP (PRAGYARAJ)	ALLAHABAD	UTTAR PRADESH	3	660
SINGRAULI STPS	SONBHADRA	UTTAR PRADESH	7	500
SRI DAMODARAM SANJEEVAIAH TPS	NELLORE	ANDHRA PRADESH	1	800
TRN ENERGY PVT. LTD. (NAWAPARA TPP)	RAIGARH	CHHATTISGARH	2	300
TUTICORIN (JV) TPP	TUTICORIN	TAMIL NADU	2	500
KAKATIYA	WARANGAL	TELANGANA	1	500
UNCHAHAHAR TPS	RAEBARELI	UTTAR PARDESH	6	500
SAGARDIGHI TPS	MURSHIDABAD	WEST BENGAL	1	300
BINJKOTE TPP (SKS POWER)	RAIGARH	CHHATTISGARH	1	300
CHHABRA TPP	BARAN	RAJASTHAN	5	660
RAYALASEEMA TPS	KADAPA	ANDHRA PRADESH	5	210
RAYALASEEMA TPS	KADAPA	ANDHRA PRADESH	3	210
KUTCH LIGNITE TPS (GSECL)	KUTCH	GUJARAT	4	75
SURAT LIGNITE (CFBC)	SURAT	GUJARAT	3	125
SURAT LIGNITE (CFBC)	SURAT	GUJARAT	4	125
AKRIMOTA (CFBC)	KUTCH	GUJARAT	1	125
AKRIMOTA (CFBC)	KUTCH	GUJARAT	2	125
TENUGHAT TPP	TENUGHAT	JHARKHAND	1	210
SOLAPUR TPS (NTPC)	SOLAPUR	MAHARASHTRA	1	660
CHANDRAPUR (MAHA GENCO)	CHANDRAPUR	MAHARASHTRA	8	500
KHAPARKHEDA	NAGPUR	MAHARASHTRA	1	210
KHAPARKHEDA	NAGPUR	MAHARASHTRA	2	210
KHAPARKHEDA	NAGPUR	MAHARASHTRA	3	210
KORADI TPS	NAGPUR	MAHARASHTRA	7	210
METTUR TPS	SALEM	TAMIL NADU	1	210
METTUR TPS	SALEM	TAMIL NADU	2	210
METTUR TPS	SALEM	TAMIL NADU	3	210
METTUR TPS	SALEM	TAMIL NADU	4	210
ANPARA TPS	SONBHADRA	UTTAR PRADESH	7	500
RIHAND STPS	SONBHADRA	UTTAR PRADESH	2	500
RIHAND STPS	SONBHADRA	UTTAR PRADESH	3	500
RIHAND STPS	SONBHADRA	UTTAR PRADESH	4	500
SINGRAULI STPS	SONBHADRA	UTTAR PRADESH	6	500
MEJIA	BANKURA	WEST BENGAL	7	500
MEJIA	BANKURA	WEST BENGAL	8	500
UKAI TPS	TAPI	GUJARAT	3	200
UKAI TPS	TAPI	GUJARAT	4	200
UKAI TPS	TAPI	GUJARAT	5	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	9	500
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	10	500
BHUSAWAL TPS (MAHAGENCO)	JALGAON	MAHARASHTRA	4	500
BHUSAWAL TPS (MAHAGENCO)	JALGAON	MAHARASHTRA	5	500
TUTICORIN (JV) TPP	TUTICORIN	TAMIL NADU	1	500

PLANT NAME	DISTRICT	STATE	UNIT NO	CAPACITY
SANJAY GANDHI TPS (MPPGCL)	UMARIA	MADHYA PRADESH	1	210
SANJAY GANDHI TPS (MPPGCL)	UMARIA	MADHYA PRADESH	2	210
SANJAY GANDHI TPS (MPPGCL)	UMARIA	MADHYA PRADESH	3	210
SANJAY GANDHI TPS (MPPGCL)	UMARIA	MADHYA PRADESH	4	210
SANJAY GANDHI TPS (MPPGCL)	UMARIA	MADHYA PRADESH	5	500
RAICHUR TPS	RAICHUR	KARNATAKA	1	210
RAICHUR TPS	RAICHUR	KARNATAKA	2	210
RAICHUR TPS	RAICHUR	KARNATAKA	3	210
RAICHUR TPS	RAICHUR	KARNATAKA	4	210
ROSA TPP PH-I	SHAHJAHANPUR	UTTAR PARDESH	3	300
ROSA TPP PH-I	SHAHJAHANPUR	UTTAR PARDESH	1	300
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	2	210
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	3	210
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	5	210
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	6	210
SANTALDIH TPS	PURULIA	WEST BENGAL	6	250
SANTALDIH TPS	PURULIA	WEST BENGAL	5	250
SAGARDIGHI TPS	MURSHIDABAD	WEST BENGAL	2	300
BALCO TPS	KORBA	CHHATISGARH	2	300
BALCO TPS	KORBA	CHHATISGARH	1	300
SINGRAULI STPS	SONBHADRA	UTTAR PARDESH	1	200
SINGRAULI STPS	SONBHADRA	UTTAR PARDESH	2	200
SINGRAULI STPS	SONBHADRA	UTTAR PARDESH	3	200
SINGRAULI STPS	SONBHADRA	UTTAR PARDESH	4	200
SINGRAULI STPS	SONBHADRA	UTTAR PARDESH	5	200
IB VALLEY TPS	JHARSUGUDA	ODISHA	2	210
IB VALLEY TPS	JHARSUGUDA	ODISHA	1	210
SATPURA TPS (MPPGCL)	BETUL	MADHYA PRADESH	11	250
SATPURA TPS (MPPGCL)	BETUL	MADHYA PRADESH	10	250
CHHABRA TPP	BARAN	RAJASTHAN	1	250
CHHABRA TPP	BARAN	RAJASTHAN	2	250
CHHABRA TPP	BARAN	RAJASTHAN	3	250
CHHABRA TPP	BARAN	RAJASTHAN	4	250
AMARKANTAK EXT TPS	ANUPPUR	MADHYA PRADESH	5	210
PARLI TPS	BEED	MAHARASHTRA	8	250
PARLI TPS	BEED	MAHARASHTRA	7	250
PARLI TPS	BEED	MAHARASHTRA	6	250
PARLI TPS	BEED	MAHARASHTRA	4	210
RAYALASEEMA TPS	KADAPA	ANDHRA PRADESH	4	210
RAYALASEEMA TPS	KADAPA	ANDHRA PRADESH	2	210
RAYALASEEMA TPS	KADAPA	ANDHRA PRADESH	1	210
KUTCH LIGNITE TPS (GSECL)	KUTCH	GUJARAT	1	70
KUTCH LIGNITE TPS (GSECL)	KUTCH	GUJARAT	2	70



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PLANT NAME	DISTRICT	STATE	UNIT NO	CAPACITY
KUTCH LIGNITE TPS (GSECL)	KUTCH	GUJARAT	3	75
NASIK TPS	NASIK	MAHARASHTRA	4	210
NASIK TPS	NASIK	MAHARASHTRA	5	210
PARICHA TPS	JHANSI	UTTAR PRADESH	6	250
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	1	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	2	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	3	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	4	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	5	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	6	210
WANAKBORI TPS (JECL)	KHEDA	GUJARAT	7	210
NASIK RATTAN INDIA TPP	NASIK	MAHARASHTRA	1	270
NASIK RATTAN INDIA TPP	NASIK	MAHARASHTRA	2	270
PARAS TPS (MAHAGENCO)	AKOLA	MAHARASHTRA	3	250
PARAS TPS (MAHAGENCO)	AKOLA	MAHARASHTRA	4	250
RAJWEST POWER	JODHPUR	RAJASTHAN	7	135
RAJWEST POWER	JODHPUR	RAJASTHAN	8	135
BAJAJ ENERGY	PILIBHIT	UTTAR PRADESH	1	45
BAJAJ ENERGY	PILIBHIT	UTTAR PRADESH	2	45
BAJAJ ENERGY	KHERI	UTTAR PRADESH	1	45
BAJAJ ENERGY	KHERI	UTTAR PRADESH	2	45
BAJAJ ENERGY	GONDA	UTTAR PRADESH	1	45
BAJAJ ENERGY	GONDA	UTTAR PRADESH	2	45
BAJAJ ENERGY	SHAHJAHANPUR	UTTAR PRADESH	1	45
BAJAJ ENERGY	SHAHJAHANPUR	UTTAR PRADESH	2	45
BAJAJ ENERGY	UTRAULA	UTTAR PRADESH	1	45
BAJAJ ENERGY	UTRAULA	UTTAR PRADESH	2	45
SIMHADRI (STAGE 2)	VISHAKHAPATNAM	ANDHRA PRADESH	3	500
SIMHADRI (STAGE 2)	VISHAKHAPATNAM	ANDHRA PRADESH	4	500
KORBA STPS (NTPC)	KORBA	CHHATTISGARH	4	500
KORBA STPS (NTPC)	KORBA	CHHATTISGARH	5	500
KORBA STPS (NTPC)	KORBA	CHHATTISGARH	3	200
KORBA STPS (NTPC)	KORBA	CHHATTISGARH	1	200
BOKARO 'A' TPS	BOKARO	JHARKHAND	1	500
YERMARUS	RAICHUR	KARNATAKA	2	800
KORADI TPS	NAGPUR	MAHARASHTRA	10	660
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	3	660
MAUDA THERMAL POWER PLANT	NAGPUR	MAHARASHTRA	2	500
TALCHER KANIHA (NTPC)	ANGUL	ORISSA	5	500
TALCHER KANIHA (NTPC)	ANGUL	ORISSA	6	500
ANPARA TPS	SONBHADRA	UTTAR PRADESH	4	500
ANPARA TPS	SONBHADRA	UTTAR PRADESH	5	500
RIHAND STPS	SONBHADRA	UTTAR PRADESH	1	500
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	4	500
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	5	500
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	6	500
UKAI TPS	TAPI	GUJARAT	6	500

PLANT NAME	DISTRICT	STATE	UNIT NO	CAPACITY
KUDGI STPP (NTPC)	BIJAPUR	KARNATAKA	2	800
KUDGI STPP (NTPC)	BIJAPUR	KARNATAKA	3	800
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	1	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	2	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	3	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	4	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	5	210
VINDHYACHAL STPS	SINGRAULI	MADHYA PRADESH	6	210
RAMAGUNDEM STPS (NTPC)	KARIMNAGAR	TELANGANA	2	200
RAMAGUNDEM STPS (NTPC)	KARIMNAGAR	TELANGANA	4	500
RAMAGUNDEM STPS (NTPC)	KARIMNAGAR	TELANGANA	5	500
RAMAGUNDEM STPS (NTPC)	KARIMNAGAR	TELANGANA	6	500
RAMAGUNDEM STPS (NTPC)	KARIMNAGAR	TELANGANA	7	500
RAICHUR TPS	RAICHUR	KARNATAKA	5	210
RAICHUR TPS	RAICHUR	KARNATAKA	6	210
RAICHUR TPS	RAICHUR	KARNATAKA	7	210
RAICHUR TPS	RAICHUR	KARNATAKA	8	250
MEJIA TPS	BANKURA	WEST BENGAL	6	250
MEJIA TPS	BANKURA	WEST BENGAL	5	250
MEJIA TPS	BANKURA	WEST BENGAL	4	210
MEJIA TPS	BANKURA	WEST BENGAL	3	210
MEJIA TPS	BANKURA	WEST BENGAL	2	210
MEJIA TPS	BANKURA	WEST BENGAL	1	210
UNCHAHAH TPS	RAEBARELI	UTTAR PARDESH	1	210
UNCHAHAH TPS	RAEBARELI	UTTAR PARDESH	2	210
UNCHAHAH TPS	RAEBARELI	UTTAR PARDESH	3	210
UNCHAHAH TPS	RAEBARELI	UTTAR PARDESH	4	210
UNCHAHAH TPS	RAEBARELI	UTTAR PARDESH	5	210
NABI NAGAR TPP	AURANGABAD	BIHAR	2	250
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	1	210
KOLAGHAT TPS	PURBA MEDINIPUR	WEST BENGAL	4	210
KAHALGAON TPS	BHAGALPUR	BIHAR	1	210
KAHALGAON TPS	BHAGALPUR	BIHAR	4	210
KAHALGAON TPS	BHAGALPUR	BIHAR	3	210
KAHALGAON TPS	BHAGALPUR	BIHAR	2	210
FARAKKA STPS	MURSHIDABAD	WEST BENGAL	1	200
MUZAFFARPUR TPS	MUZAFFARPUR	BIHAR	4	195
MUZAFFARPUR TPS	MUZAFFARPUR	BIHAR	3	195
ANPARA TPS	SONBHADRA	UTTAR PARDESH	3	210
ANPARA TPS	SONBHADRA	UTTAR PARDESH	2	210
ANPARA TPS	SONBHADRA	UTTAR PARDESH	1	210
OBRA TPS	SONBHADRA	UTTAR PARDESH	13	200
OBRA TPS	SONBHADRA	UTTAR PARDESH	12	200



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PLANT NAME	DISTRICT	STATE	UNIT NO	CAPACITY
OBRA TPS	SONBHADRA	UTTAR PARDESH	10	200
OBRA TPS	SONBHADRA	UTTAR PARDESH	11	200
IND-BARATH TPS	JHARSUGUDA	ORISSA	1	350
SURATGARH TPS (RRVUNL)	GANGANAGAR	RAJASTHAN	6	250
NORTH CHENNAI TPS (TANGEDCO)	CHENNAI	TAMIL NADU	3	210
NORTH CHENNAI TPS (TANGEDCO)	CHENNAI	TAMIL NADU	2	210
NORTH CHENNAI TPS (TANGEDCO)	CHENNAI	TAMIL NADU	1	210
D.PL. TPS	DURGAPUR	WEST BENGAL	6	110
D.PL. TPS	DURGAPUR	WEST BENGAL	7	300
D.PL. TPS EXT.	DURGAPUR	WEST BENGAL	8	250
TORANGALLU TPS EXT (JSW ENERGY)	BELLARY	KARNATAKA	2	300
TORANGALLU TPS EXT (JSW ENERGY)	BELLARY	KARNATAKA	1	300
KOTA TPS	KOTA	RAJASTHAN	5	210
KOTA TPS	KOTA	RAJASTHAN	6	195
KOTA TPS	KOTA	RAJASTHAN	7	195
PARICHA TPS	JHANSI	UTTAR PARDESH	5	250
PARICHA TPS	JHANSI	UTTAR PARDESH	3	210
PARICHA TPS	JHANSI	UTTAR PARDESH	4	210
NASIK RATTAN INDIA TPP	NASIK	MAHARASHTRA	3	270
NASIK RATTAN INDIA TPP	NASIK	MAHARASHTRA	4	270
NASIK RATTAN INDIA TPP	NASIK	MAHARASHTRA	5	270
RAJWEST POWER	JODHPUR	RAJASTHAN	1	135
RAJWEST POWER	JODHPUR	RAJASTHAN	2	135
RAJWEST POWER	JODHPUR	RAJASTHAN	3	135
RAJWEST POWER	JODHPUR	RAJASTHAN	4	135
RAJWEST POWER	JODHPUR	RAJASTHAN	5	135
RAJWEST POWER	JODHPUR	RAJASTHAN	6	135
TOTAL				57,950

Please Note: This plan is based on section 5 directions issued by Central Pollution Control Board. CSE bears no responsibility on the veracity of the data provided by them

ANNEXURE 5 -LIST OF STATIONS IDENTIFIED FOR RETIREMENT

NAME OF PROJECT	SECTOR	STATE	UNIT NO	CAPACITY IN MW	AGE IN YEARS	PHASE OUT PLAN
BARAUNI TPS	STATE	BIHAR	6	105	34	
BARAUNI TPS	STATE	BIHAR	7	105	32	
MUZAFFARPUR TPS	CENTRAL	BIHAR	1	110	32	12/31/2023
MUZAFFARPUR TPS	CENTRAL	BIHAR	2	110	31	12/31/2024
BOKARO B TPS	CENTRAL	JHARKHAND	1	210	31	
BOKARO B TPS	CENTRAL	JHARKHAND	2	210	27	
BOKARO B TPS	CENTRAL	JHARKHAND	3	210	24	
CHANDRAPURA(DVC)	CENTRAL	JHARKHAND	1	130	53	
CHANDRAPURA(DVC)	CENTRAL	JHARKHAND	2	130	53	
CHANDRAPURA(DVC)	CENTRAL	JHARKHAND	3	130	49	
PATRATU TPS	STATE	JHARKHAND	1	40	51	
PATRATU TPS	STATE	JHARKHAND	2	40	50	
PATRATU TPS	STATE	JHARKHAND	3	40	48	
PATRATU TPS	STATE	JHARKHAND	4	40	48	
PATRATU TPS	STATE	JHARKHAND	5	90	46	
PATRATU TPS	STATE	JHARKHAND	6	90	45	
PATRATU TPS	STATE	JHARKHAND	7	105	40	12/31/2017
PATRATU TPS	STATE	JHARKHAND	8	105	39	
PATRATU TPS	STATE	JHARKHAND	9	110	33	12/31/2017
PATRATU TPS	STATE	JHARKHAND	10	110	31	12/31/2017
TENUGHAT TPS	STATE	JHARKHAND	1	210	23	
TENUGHAT TPS	STATE	JHARKHAND	2	210	21	
IND BARATH TPP	PRIVATE	ODISHA	1	350	1	
TALCHER (OLD) TPS	CENTRAL	ODISHA	1	60	50	12/31/2023
TALCHER (OLD) TPS	CENTRAL	ODISHA	2	60	49	12/31/2023
TALCHER (OLD) TPS	CENTRAL	ODISHA	3	60	49	12/31/2023
TALCHER (OLD) TPS	CENTRAL	ODISHA	4	60	48	12/31/2023
TALCHER (OLD) TPS	CENTRAL	ODISHA	5	110	35	12/31/2023
TALCHER (OLD) TPS	CENTRAL	ODISHA	6	110	34	12/31/2023
TITAGARH TPS	PRIVATE	WEST BENGAL	1	60	32	
TITAGARH TPS	PRIVATE	WEST BENGAL	2	60	35	
TITAGARH TPS	PRIVATE	WEST BENGAL	3	60	34	
TITAGARH TPS	PRIVATE	WEST BENGAL	4	60	33	
D.P.L. TPS	STATE	WEST BENGAL	3	70	53	
D.P.L. TPS	STATE	WEST BENGAL	4	75	53	
D.P.L. TPS	STATE	WEST BENGAL	5	75	51	
DURGAPUR TPS	CENTRAL	WEST BENGAL	3	130	50	
DURGAPUR TPS	CENTRAL	WEST BENGAL	4	210	36	
SANTALDIH TPS	STATE	WEST BENGAL	1	120	44	
SANTALDIH TPS	STATE	WEST BENGAL	2	120	42	



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NAME OF PROJECT	SECTOR	STATE	UNIT NO	CAPACITY IN MW	AGE IN YEARS	PHASE OUT PLAN
SANTALDIH TPS	STATE	WEST BENGAL	3	120	39	
SANTALDIH TPS	STATE	WEST BENGAL	4	120	36	
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	1	210	38	12/31/2018
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	2	210	37	12/31/2019
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	3	210	28	11/30/2019
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	4	210	27	6/30/2020
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	5	210	23	12/31/2020
DR. N. TATA RAO TPS	STATE	ANDHRA PRADESH	6	500	22	12/31/2021
TUTICORNI (P) TPP	PRIVATE	TAMIL NADU	1	150	4	12/31/2019
TUTICORNI (P) TPP	PRIVATE	TAMIL NADU	2	150	3	11/30/2020
NEYVELI TPS -I	CENTRAL	TAMIL NADU	1	50	55	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	2	50	54	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	3	50	54	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	4	50	54	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	5	50	53	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	6	50	52	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	7	100	50	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	8	100	48	
NEYVELI TPS -I	CENTRAL	TAMIL NADU	9	100	47	
ENNORE TPS	STATE	TAMIL NADU	1	60	47	
ENNORE TPS	STATE	TAMIL NADU	2	60	46	
ENNORE TPS	STATE	TAMIL NADU	3	110	45	
ENNORE TPS	STATE	TAMIL NADU	4	110	44	
ENNORE TPS	STATE	TAMIL NADU	5	110	42	
TUTICORIN TPS	STATE	TAMIL NADU	1	210	38	11/30/2018
TUTICORIN TPS	STATE	TAMIL NADU	2	210	37	10/31/2019
TUTICORIN TPS	STATE	TAMIL NADU	3	210	35	6/30/2020
TUTICORIN TPS	STATE	TAMIL NADU	4	210	25	11/30/2020
TUTICORIN TPS	STATE	TELANGANA	5	210	26	6/30/2021
KOTHAGUDEM TPS (NEW)	STATE	TELANGANA	9	250	20	7/31/2020
KOTHAGUDEM TPS (NEW)	STATE	TELANGANA	10	250	19	6/30/2021
KOTHAGUDEM TPS A	STATE	TELANGANA	1	60	51	
KOTHAGUDEM TPS A	STATE	TELANGANA	2	60	51	
KOTHAGUDEM TPS A	STATE	TELANGANA	3	60	50	
KOTHAGUDEM TPS A	STATE	TELANGANA	4	60	50	
KOTHAGUDEM TPS B	STATE	TELANGANA	5	120	43	
KOTHAGUDEM TPS B	STATE	TELANGANA	6	120	43	
KOTHAGUDEM TPS C	STATE	TELANGANA	7	120	40	
KOTHAGUDEM TPS C	STATE	TELANGANA	8	120	39	
RAMAGUNDEM-B TPS	STATE	TELANGANA	1	63	46	
KORBA-II	STATE	CHHATTISGARH	1	50	51	
KORBA-II	STATE	CHHATTISGARH	2	50	50	
KORBA-II	STATE	CHHATTISGARH	3	50	49	
KORBA-II	STATE	CHHATTISGARH	4	50	49	

NAME OF PROJECT	SECTOR	STATE	UNIT NO	CAPACITY IN MW	AGE IN YEARS	PHASE OUT PLAN
KORBA-III	STATE	CHHATTISGARH	1	120	41	12/31/2018
KORBA-III	STATE	CHHATTISGARH	2	120	36	3/31/2019
KORBA-WEST TPS	STATE	CHHATTISGARH	1	210	34	1/31/2020
KORBA-WEST TPS	STATE	CHHATTISGARH	2	210	34	3/31/2020
KORBA-WEST TPS	STATE	CHHATTISGARH	3	210	32	6/30/2021
KORBA-WEST TPS	STATE	CHHATTISGARH	4	210	31	12/31/2020
GANDHI NAGAT TPS	STATE	GUJARAT	1	120	40	
GANDHI NAGAT TPS	STATE	GUJARAT	2	120	40	
SIKKA REP TPS	STATE	GUJARAT	1	120	29	
SIKKA REP TPS	STATE	GUJARAT	2	120	24	6/30/2017
UKAI TPS	STATE	GUJARAT	1	120	41	
UKAI TPS	STATE	GUJARAT	2	120	41	
SABARMATI	PRIVATE	GUJARAT	15	30	55	12/31/2017
SABARMATI	PRIVATE	GUJARAT	16	30	54	12/31/2017
SATPURA TPS	STATE	MADHYA PRADESH	6	200	38	
SATPURA TPS	STATE	MADHYA PRADESH	7	210	37	
SATPURA TPS	STATE	MADHYA PRADESH	8	210	34	
SATPURA TPS	STATE	MADHYA PRADESH	9	210	33	
GEPL TPP PH-I	PRIVATE	MAHARASHTRA	1	60	5	3/31/2018
GEPL TPP PH-I	PRIVATE	MAHARASHTRA	2	60	5	3/31/2018
BHUSAWAL TPS	STATE	MAHARASHTRA	2	210	38	4/1/2017
CHANDRAPURA STPS	STATE	MAHARASHTRA	1	210	34	
CHANDRAPURA STPS	STATE	MAHARASHTRA	2	210	33	
KORADI TPS	STATE	MAHARASHTRA	5	200	39	
PARLI TPS	STATE	MAHARASHTRA	3	210	37	
BADARPUR TPS	CENTRAL	DELHI	1	95	44	JULY'18
BADARPUR TPS	CENTRAL	DELHI	2	95	43	JULY'18
BADARPUR TPS	CENTRAL	DELHI	3	95	42	JULY'18
GND TPS (BHATINDA)	STATE	PUNJAB	1	110	43	DEC'17
ROPAR TPS	STATE	PUNJAB	1	210	33	DEC'17
ROPAR TPS	STATE	PUNJAB	2	210	32	DEC'17
ROPAR TPS	STATE	PUNJAB	3	210	29	DEC'22
ROPAR TPS	STATE	PUNJAB	4	210	28	DEC'22
OBRA TPS	STATE	UTTAR PRADESH	8	94	42	DEC'18
PANKI TPS	STATE	UTTAR PRADESH	3	105	41	DEC'18
PANKI TPS	STATE	UTTAR PRADESH	4	105	40	DEC'18
TOTAL				15,552		


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