Report 84
April 17, 2018

Second report on schedule for the expeditious implementation of the 7.12.2015 emission standards for thermal power plants (TPPs) submitted in response to IA dated 27.3.2018 by the Ministry of Environment and Forests

Previous report on TPP emission standards was Report no 81, dated February 14, 2018

Environment Pollution (Prevention and Control) Authority for NCR (EPCA)

1. Background and EPCA recommendations in Report no 81

On 7.12.2017, MoEF&CC filed an affidavit in compliance with the order the Hon'ble Court dated 17.11.2017, which had issued notice, based on the application moved by the *Amicus Curie: "Direct the implementation of the 2015 emission standards for power plants as per schedule, i.e. by December 2017.*

On 14.2.2017 EPCA submitted its report no 81, in response to the IA, which recommended the following:

1. The timeline of 2022 can be advanced substantially and MOEF&CC may be directed to revise the deadlines accordingly.
    i. The final deadline for all plants to meet all emission norms should be advanced to 2020, as against 2022.
    ii. All plants must be required to meet PM and NOX standards within the next two years; 2018-2019.
    iii. TPPs must be required to meet SO2 norms by 2020, but the schedule for phasing in the norms should be based on population density and pollution. Therefore, the plants located in critically polluted areas and with high population density should be required to meet the norm by 2019. Even if it takes 24 months to install FGDs, therefore, if the process is started expeditiously, it can be completed by 2020 at the latest.
    iv. MOEF&CC, in consultation with MOP, must finalize the list of plants, which will not be required to meet the standards as they are scheduled for shut-down/retirement. The list of these plants must be made

available to the Hon'ble Court so that there is clarity and closure on this matter and no plant is in non-compliance post 2020.

v. All new plants installed after January 2017 must be required to meet PM and NOx norms before being commissioned. All these plants must be required to meet SOx norms by 2019. A list of these plants and their schedule must also be given to the Hon'ble Supreme Court so that there is careful monitoring of the directions.

vi. TPP, which have got EC but have not yet been commissioned, should not be allowed to be operational without meeting the 2015 standards.

vii. No new TPP should be given EC or commissioned, without full compliance with the 2015 standards.

2. MOEF&CC in consultation with CPCB may be directed to review the technical feasibility of NOx standard of 100 mg/NM3, which is for plants installed after January 2017 and revise it if necessary. However, no further dilution of NOx standard should be allowed and all plants should meet the set standard (600 mg/NM3 or 300 mg/NM3) in the next 2 years.

3. MOEF&CC may be directed not to revise the water consumption standard for plants installed after January 2017. But it could consider allowing coastal plants to be exempt from the water norm, provided the EC conditions set the necessary environmental safeguards.

4. MOEF&CC in consultation with CPCB may be directed to review the protocol for continuous emission monitoring (CEMs) and to revise it to make it more robust, transparent and issue guidelines for its use for regulatory purposes in a time-bound manner. This work is urgently required as otherwise all the effort to improve emission profiles, by installing equipment for pollution control will be negated.

5. The Hon'ble Court may consider imposing a penalty for ensuring effective and expeditious compliance with its orders. The penalty of Rs lakh per day per non-compliant pollutant can be considered effective from January 1, 2018 or January 1, 2019. This will provide an incentive to industry to make the transition at the earliest.

It is also important to note that the timeline for implementation can be more aggressive because of the special circumstances of power availability in the country, which is in surplus. According to 2017 data of the Central Electricity Authority[1], the country has an installed capacity of 3,14,642 MW, of which 1,88,487 is coal based generation and another 25,329 MW is gas based power plants. The same report shows that the coal and lignite plants are working at between 50-60 per cent of the Plant Load Factor (PLF) at best through the year and across the different regions. It is well known that gas plants are working at even less of their PLF. Therefore the scheduling of closure for installing pollution equipment can be more aggressive and expeditious.

It is also clear that the sector has lost two years, since the notification was issued. Given the dire urgency of the air pollution emergency across the country, EPCA firmly believes that it is possible to advance the now extended deadline with more aggressive actions to source equipment and to phase-in shutdowns for installation.

2. MOEF&CC IA of 27.3.2018 in response to EPCA report no 81

2.1 Firm retirement plans for TPP, which cannot comply with December 7, 2015 notification

A total of 8966.50 MW (82 units) have been identified for retirement by March 2019 – this adds up to roughly 4.5 per cent of the installed capacity of 1,96,667[2].

2.2 SOx Control

It is stated that installation of FGD (Flue-Gas Desulphurization) units takes about 3 years from the date of placement of order, followed by shut down of the unit for a period ranging from 2-6 months. Furthermore, it takes minimum time of about 6 months for bidding and finalization of a tender. There are also few vendors available to supply and retrofit FGD in short span of time. The following is requested from the Hon'ble Supreme Court:

[1] January 2017, Central Electricity Authority, Ministry of Power, Report on Power Sector http://www.cea.nic.in/reports/monthly/executivesummary/2017/exe_summary-01.pdf

[2] As given in the IA page 5

a. Given the above, the phasing plan for implementation of FGD until December 2022, which is already tight, may be allowed.

b. FGD cannot be installed in some units that are less than 25 years of age. The Hon'ble Supreme Court is being requested to allowthese plants to run till they complete their life of 25 years (without emission control).

c. Units above 25 years, (where FGD and emission control) is not possible. The Hon'ble Supreme Court is being requested to allow these plants to run for a limited number of hours in a year in order to meet the balancing/peaking requirements to meet continuous supply in the grid.

2.3 PM control

It is stated that FGD and ESP in the units where both are required will be done in tandem to avoid shut down twice.

2.4NOx control

It is stated that as per the directions issued by CPCB, NOx control to meet emission standards, will be done in accordance with revised plan submitted by MoP by 2022.

As there is only one plan, which is for FGD installation, it is presumed that this means that NOx control will also be done in tandem with SOx control. Also, this plan does not include the full installed capacity of thermal power plants in the country. Therefore, it is not clear what will be the status of plants not listed in the FGD installation plan.

MOEF&CC has not agreed with EPCA's recommendation that the PM and NOx control can be de-linked from the FGD plan and done during the annual plant shut down for maintenance. This would have expedited work to control two critical pollutants.

2.5 Mercury control

Will happen with all other retro-fitments and therefore, will only be done by 2022.

2.6 Water consumption control

It is stated that 49 plants with capacity of 12,144 MW out of the installed (less than 10% of installed capacity) will not meet the stipulated water consumption standards. The Hon'ble Supreme Court

is being requested to allow these plants to continue functioning without meeting water consumption standards.

2.7 Compliance for new plants

The Hon'ble Supreme Court is being requested to allow for the grant in extension of Environmental Clearance (EC) of these plants, which have been commissioned or yet to be commissioned post 2017. The As per the current regulations, EC cannot be extended as plants are not in compliance with emission control standards.

2.8 100% flyash utilization (the issue has been raised by Advocate RitwikDutta)

It is stated that Ministry of Power (MoP) has requested that 100% utilization will only be possible to achieve by 2022. The matter is under consideration by MoEF&CC.

3. EPCA's response to MoEF&CC IA dated March 27, 2018

At the outset it is evident that MoEF&CC has accepted the plan of MoP and has agreed that nothing more can be done to expedite the implementation of the critical emission standards.

EPCA is constrained to point out that this position is extremely disappointing. It does not reflect the urgency of health-impacting pollution across the country by the coal-based thermal power plants.

The phase-in deadline as submitted in the annexure (pages 15-24) of the IA dated 27.3.2018 is as follows:

FDG Phasing plan year wise		
Year	Capacity (MW)	% of installed capacity
2018	500.00	0.27
2019	15050.00	8
2020	18080.00	10
2021	59477.00	32
2022	59970.00	32

Total	153077.00	81
Installed capacity*	**187700.50**	

*After removing the capacity to be retired in 2019

As per this schedule, by 2019, only some 8 per cent of the installed thermal power plants will meet emission standards. The phase-in schedulehas shifted the entire transition to 2021 and 2022 – a 7-year delay. Furthermore, it does not provide information for 20 per cent of the plants in the country.

This schedule does not reflect the following facts:

a. The notification was issued in 2015 and had to come into effect in 2017. The delay in starting to take action cannot be so easily condoned.

b. The 2015 notification itself came after 25 years and so the revision was long over-due. It also means that Indian thermal power plants are long outdated in terms of emission standards and control.

c. The 2015 notification, once implemented, would substantially reduce pollution from this sector, which is accepted to be a major contributor to air pollution in the country.

d. It does not see the need to expedite installation of PM and NOx control and has insisted that all up-gradation will be in tandem, even in this delayed deadline. This means that all the work is back-loaded and will not happen till 2021 or 2022 at the earliest.

e. It does not recognize that this is a special time when aggressive implementation is possible because of the surplus power availability in the country.

Current status of decision-making

EPCA has analyzed the phase-in plan for FGD installation for TPPs commissioned up to 31.12.2016 (as provided in Annexure pages 15-

24) to understand the stage at which the process is currently (see table).

EPCA has broadly divided the stages as:

A. Where **plants are in compliance** with standards
B. Where **tender has been awarded**
C. **Where tendering can be done**: NIT being floated/Bidding under progress for FGD/tenders under process/Bid document issued/tender will be floated shortly/pilot plant trials under process
D. **Where feasibility study has been done:** Administration approval in process (for FGD)/technical specifications are under finalization/Budgetary offer awaited from BHEL/ Finalization of specifications planned/tender specs under process
E. **Where feasibility study has been done but technical specs are not ready:**Feasibility study carried out/PPA issues pending with regulator
F. **Where feasibility study is under progress**: Feasibility Study under progress/through BHEL/petition pending with regulator
G. **Where there is no information**: Process for feasibility study to be completed/No date provided/information awaited/Not feasible

Table: TPPs in different stages of installing FGD (see Annexure 1-7 for details of plants in each phase)

	Stage of meeting norms for SOx/FGD	**MW**	**%of installed capacity**
A	Plants in compliance with standards	3085	1.64
B	Tenders awarded	840	0.45
C	NIT being floated/Bidding under progress for FGD/tenders under process/Bid document issued/tender will be floated shortly/pilot plant trials under process	34,565	18.41
D	Administration approval in process (for FGD)/technical specifications are under finalization/Budgetary offer awaited from BHEL/ Finalization of specifications planned/tender specs	37,270	19.86

	under process		
E	Feasibility study carried out/PPA issues pending with regulator	23,280	12.40
F	Feasibility Study under progress/through BHEL/petition pending with regulator	28,860	15.38
G	Process for feasibility study to be completed/No date provided/information awaited/Not feasible	25,177	13.41
		1,53,077	**81.55%**
	Total installed*	1,87,700.50	

*After deducting the 8966.50 MW planned for retirement by March 2019

The above analysis reveals the following:

1. Only some 840 MW of capacity has been awarded contract in January 2018 – as little as 0.45 per cent of the installed capacity. The date given for implementation (see Annexure 2) is 31.12.2019.

2. Some 35,565 MW of capacity is ready for issuing the tender, but in most cases, as per the schedule this will be done in 2019. This delay is inexplicable (see Annexure 3).

3. Another 37,270 MW of capacity is also in advanced stages and tenders can be issued. However, there seems to be no urgency to move on these plants and in all cases, the date for phasing in has been given as 2021-2022 (see Annexure 4).

4. In total, feasibility study has been done in 96,115 MW – roughly half the capacity (Annexure 3-4-5). Therefore, there seems to be no reason why in these cases the process cannot be expedited. If all tenders are issued within 2018 for these plants, the schedule for phase-in can be advanced to end of 2020 and even earlier as it could take less time to install the plants in different locations.

5. If the process in the 28,860 MW (Annexure 6) plants – where feasibility study is being done -- is expedited, then the tenders can be awarded by 2018-19 as well. All efforts should be to

ensure that these plants meet the deadline by 2020 at the latest. It is clear advancement of schedules will be possible as there will be sufficient 'learning' by then of the process and technology.

6. There is little information on the remaining plants – 25,177 MW and the 'missing' 34,623 MW. This needs to be provided and actions taken to ensure that these plants meet the emission standards or decisions are taken to refurbish plants/retire plants or switch them to cleaner fuels like natural gas.

It is therefore clear that the phase-in plan, as it is being implemented today, is already much delayed and does not show any sign of urgency to complete the process as fast as possible.

This is particularly important as the phase-in plan submitted by MOEF&CC does not accept that PM or NOX control will be done in advance. It requires this to be done in tandem with SOX control. As EPCA report no 81 has shown this strategy will delay crucial control on emissions.

EPCA would re-iterate its position elaborated in Report no 81 that either the deadline for all plants should be advanced to 2020 or that PM and NOX control measures should be undertaken in 2018-2019.

EPCA would also re-iterate its position that the Hon'ble Supreme Court may consider imposing a penalty of Rs 1 lakh per day per non-compliant pollutant effective from January 1, 2018 or January 1, 2019.

4. Recommendations for consideration of Hon'ble Court

The following table provides EPCA's recommendations in Report No 81; response of MOEF&CC in its IA dated 27.3.2018 and EPCA's response and recommendations to the Hon'ble Supreme Court for its consideration.

Table: EPCA's recommendations for consideration of the Hon'ble Supreme Court

	EPCA Report no 81	**MOEF&CC IA dated 27.3.2018**	**EPCA recommendations for consideration of the Hon'ble Supreme Court**
1.	Advance	Not possible	Analysis shows it can be done.

	deadline of all plants to 2020		Phase-in can be advanced if tenders are issued for all plants where feasibility studies are completed and all other plants expedite their process.
2.	Plants must meet PM and NOx standards in next 2 years: 2018-2019	Not possible. Will be done in tandem with FGD phase-in.	NOX and PM control can be done during the annual shut-down for plant maintenance and so can be done in advance by 2018-19. EPCA would recommend the following options: Either the FGD phase-in should be advanced to 2020 for all plants or plants must be required to meet PM and NOX standards by 2018-2019.
3.	Finalize list of plants, where FGD will not be installed/NOx and PM control not possible and are scheduled for retirement	8966 MW – roughly 4.5 per cent of installed capacity identified for retirement by March 2019	There is no clarity on 34,623 MW installed capacity. These plants are not included in the phase-in plan for FGD. MOEF&CC needs to clarify
		Hon'ble Supreme Court is requested to allow units that are less than 25 years of age to continue functioning without meeting standards	No list has been provided. But it suggests that the Hon'ble Supreme Court is being requested to allow for non-compliant plants to continue. This will set a dangerous precedent and must not be accepted.
		Hon'ble Supreme Court is requested to allow plants above 25 years of age where FGD and	No list is provided. But again, this exception would set a dangerous precedent. EPCA would recommend for

		emission control is not possible to continue functioning for a limited number of hours in a year	the consideration of the Hon'ble Court that this request must not be accepted.
4.	New plants after January 2017 must be required to meet NOx and PM before commissioning; SOX by 2019. Schedule should be provided	Hon'ble Supreme Court is requested to allow for extension of Environmental Clearance (EC) of these plants, which have been commissioned or yet to be commissioned post January 2017.	These plants cannot get extension of EC, as they are non-compliant with regulations. It would set a dangerous precedent if the Supreme Court grants extension of EC to non-compliant plants.
5.	Review technical feasibility of NOx standard of 100 mg/NM3, which is for plants installed after January 2017 and revise it <u>only</u> if necessary.	NTPC conducting studies to assess technical feasibility	
6.	Do not revise water consumption standard for plants installed after January 2017. But exempt coastal plants from the water norm, provided	Requests the Hon'ble Supreme Court to allow 49 plants (12,144 MW) to continue functioning even though they cannot meet the water consumption standard. Coastal plants are	No list is provided to understand current water consumption and challenges for reduction. Indian TPPs are known to be guzzlers of water, consuming higher than the global average. It is also clear that water is a scarce commodity and will become scarcer in the future. Therefore, allowing plants to

	EC conditions set the necessary safeguards for protection of marine ecology	being exempted.	continue to function even without reducing water consumption should not be allowed.
7.	Review protocol for CEMS to make it more robust, transparent and issue guidelines for its use for regulatory purpose	No response	EPCA would stress that this is critical and without this the enforcement of standards will not be possible. MOEF&CC may be directed to provide time-bound schedule for revising and implementing a robust CEMS, which is used for regulatory purposes.
8.	Hon'ble Supreme Court may consider imposing penalty of Rs 1 lakh/day/for each non-compliant pollutant from January 1, 2018 or January 1, 2019	No response	EPCA would strongly stress that this penalty is necessary for effective and expeditious compliance. It will provide incentive to TPPs to advance the process for all three pollutants or at least work to implement pollution control for PM and NOx at the earliest. Hon'ble Supreme Court is requested to consider imposing this penalty for effective implementation.

Annexure 1

Category A : Where plants are in compliance with standards					
Developer	**Name of Project**	**Total Capacity (MW)**	**Age in years**	**FGD Phasing Plan for implementation (DD/MM/YYYY)**	**Current Status**
GSECL	KUTCH LIG. TPS	70	27	31/12/2021	Boiler is CFBC, hence FGD is not required.
GSECL	KUTCH LIG. TPS	70	26	31/12/2021	Boiler is CFBC, hence FGD is not required.
GSECL	KUTCH LIG. TPS	75	20	31/12/2021	Boiler is CFBC, hence FGD is not required.
APGENCO	RAYALASEEMA TPS	210	6	30/06/2020	Complies with new Norms
APGENCO	RAYALASEEMA TPS	210	10	30/06/2021	Complies with new Norms
APGENCO	RAYALASEEMA TPS	210	10	30/09/2020	Complies with new Norms
APGENCO	RAYALASEEMA TPS	210	22	30/09/2021	Complies with new Norms
APGENCO	RAYALASEEMA TPS	210	23	31/12/2021	Complies with new Norms
TATA Power Co.	TROMBAY TPS	500	33	31/03/2018	FGD Installation-Sea water FGD is installed at Unit#5 and is already in operation to meet the SO2 emmissions norms.
CHINA LIGHT POWER	MAHATMA GANDHI TPS	660	5	31/12/2019	FGD Installed and is Under Renovation
CHINA LIGHT POWER	MAHATMA GANDHI TPS	660	5	31/12/2019	FGD Installed and is Under Renovation
Total		**3085**			

Annexure 2

Category B : Where tender awarded					
Developer	**Name of Project**	**Total Capacity (MW)**	**Age in years**	**FGD Phasing Plan for Implementation (DD/MM/YYYY)**	**Current Status**
NTPC	DADRI (NCTPP)	210	26	31/12/2019	NIT date 29-11-2017, Awarded on 30 Jan' 18
NTPC	DADRI (NCTPP)	210	25	31/12/2019	NIT date 29-11-2017, Awarded on 30 Jan' 18
NTPC	DADRI (NCTPP)	210	24	31/12/2019	NIT date 29-11-2017, Awarded on 30 Jan' 18
NTPC	DADRI (NCTPP)	210	23	31/12/2019	NIT date 29-11-2017, Awarded on 30 Jan' 18
Total		**840**			

Annexure 3

Category C : **Where tendering can be done**: NIT being floated/Bidding under progress for FGD/tenders under process/Bid document issued/tender will be floated shortly/pilot plant trials under process

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
GSECL	SIKKA REP. TPS	250	2	31/01/2022	Bidding Under Progresse
GSECL	SIKKA REP. TPS	250	2	31/01/2022	Bidding Under Progresse
NTPC	KUDGI	800	0	30/06/2022	FGD for Kudgi is under bidding. BOD(techo-commercial) done on 10th January 2018.
M/s O.P.Jindal	OP JINDAL TPS	250	9	30/06/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	OP JINDAL TPS	250	9	30/06/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	TAMNAR TPP	600	2	30/06/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	TAMNAR TPP	600	3	31/03/2021	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	OP JINDAL TPS	250	10	31/03/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	OP JINDAL TPS	250	9	31/03/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	TAMNAR TPP	600	2	31/03/2022	Issuance of Bid document on Nov 2017
M/s O.P.Jindal	TAMNAR TPP	600	3	31/12/2021	Issuance of Bid document on Nov 2017
NTPC	NABI NAGAR TPP	250	1	31/12/2021	NIT date 30.06.2017, Bid opened on 22.12.2017
NTPC	MOUDA TPS	660	1	31/12/2022	NIT date 30.06.2017, Bid opened on 22.12.2017
NTPC	BARH II	660	2	31/03/2022	NIT date 31.07.2017, Bid opend on 26.02.2018
NTPC	BARH II	660	4	30/09/2021	NIT date 31.07.2017, Bid opened on 26.02.2018
NTPC	RIHAND STPS	500	4	31/12/2020	NIT date 31.07.2017, Bid opened on 26.02.2018
NTPC	MOUDA TPS	500	5	31/12/2022	NIT date 31.07.2017, Bid opened on 26.02.2018
NTPC	MOUDA TPS	500	4	31/12/2022	NIT date 31.07.2017, Bid opened on 26.02.2018
NTPC & Bihar	MUZAFFARPUR TPS	195	2	31/12/2022	NIT date 31.07.2017, Bid opened on 26.02.2018
NTPC	SINGRAULI STPS	500	31	28/02/2021	NIT is planned in June, 2019.
NTPC	RIHAND STPS	500	29	28/02/2022	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	200	33	30/04/2021	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	500	18	30/06/2021	NIT is planned in June, 2019.

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
NTPC	VINDHYACHAL STPS	500	17	30/06/2021	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	200	33	30/06/2022	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	500	29	30/06/2022	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	500	28	30/09/2022	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	500	28	30/09/2022	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	200	34	31/03/2022	NIT is planned in June, 2019.
NTPC	RAMAGUNDEM	200	33	31/03/2022	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	200	34	31/08/2021	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	200	34	31/08/2021	NIT is planned in June, 2019.
NTPC	UNCHAHAR TPS	210	18	31/10/2022	NIT is planned in June, 2019.
NTPC	UNCHAHAR TPS	210	18	31/10/2022	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	500	30	31/12/2020	NIT is planned in June, 2019.
NTPC	RIHAND STPS	500	28	31/12/2021	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	200	35	31/12/2021	NIT is planned in June, 2019.
NTPC	SINGRAULI STPS	200	35	31/12/2021	NIT is planned in June, 2019.
NTPC	KAHALGAON TPS	210	25	31/12/2022	NIT is planned in June, 2019.
NTPC	KAHALGAON TPS	210	23	31/12/2022	NIT is planned in June, 2019.
NTPC	KAHALGAON TPS	210	22	31/12/2022	NIT is planned in June, 2019.
NTPC	KAHALGAON TPS	210	21	31/12/2022	NIT is planned in June, 2019.
NTPC	TALCHER STPS	500	22	31/12/2022	NIT is planned in June, 2019.
NTPC	TALCHER STPS	500	21	31/12/2022	NIT is planned in June, 2019.
NTPC	FARAKKA STPS	200	31	31/12/2022	NIT is planned in June, 2019.
NTPC	FARAKKA STPS	200	31	31/12/2022	NIT is planned in June, 2019.
NTPC	FARAKKA STPS	200	30	31/12/2022	NIT is planned in June, 2019.
NTPC	FARAKKA STPS	500	25	31/12/2022	NIT is planned in June, 2019.
NTPC	FARAKKA STPS	500	23	31/12/2022	NIT is planned in June, 2019.
NTPC	UNCHAHAR TPS	210	29	31/12/2022	NIT is planned in June, 2019.

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
NTPC	UNCHAHAR TPS	210	28	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	200	34	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	200	34	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	200	33	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	500	30	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	500	29	31/12/2022	NIT is planned in June, 2019.
NTPC	KORBA STPS	500	28	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	30	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	29	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	28	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	28	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	27	31/12/2022	NIT is planned in June, 2019.
NTPC	VINDHYACHAL STPS	210	26	31/12/2022	NIT is planned in June, 2019.
THERMAL POWER TECH CORP.LTD	PAINAMPURAM TPP	660	2	30/09/2021	Pilot plant trials under progress. Technology Finalization will be completed in few months.
Sembcorp Gayatri Pvt. Ltd.	Sembcorp Gayatri P.Ltd.	660	1	31/12/2021	Pilot plant trials under progress. Technology Finalization will be completed in few months.
THERMAL POWER TECH CORP.LTD	PAINAMPURAM TPP	660	2	31/12/2021	Pilot plant trials under progress. Technology Finalization will be completed in few months.
Reliance Power Ltd	SASAN UMTPP	660	4	30/06/2021	Tender Floated
Reliance Power Ltd	SASAN UMTPP	660	4	30/09/2021	Tender Floated
Reliance Power Ltd	SASAN UMTPP	660	2	30/09/2021	Tender Floated
Reliance Power Ltd	SASAN UMTPP	660	3	31/03/2022	Tender Floated
Reliance Power Ltd	SASAN UMTPP	660	3	31/03/2022	Tender Floated
Reliance Power Ltd	SASAN UMTPP	660	3	31/12/2021	Tender Floated
Rosa Power Supply Co	ROSA TPP Ph-I	300	5	31/10/2021	Tendering Under Process
Rosa Power Supply Co	ROSA TPP Ph-I	300	5	31/10/2021	Tendering Under Process
Rosa Power Supply Co	ROSA TPP Ph-I	300	7	31/12/2021	Tendering Under Process
Rosa Power Supply Co	ROSA TPP Ph-I	300	7	31/12/2021	Tendering Under Process

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
KPCL	BELLARY TPS	500	5	30/06/2021	Tenders will be floated shortly
KPCL	BELLARY TPS	500	10	31/12/2020	Tenders will be floated shortly
KPCL	BELLARY TPS	700	1	31/12/2021	Tenders will be floated shortly
WBPDC	SAGARDIGHI TPS	500	1	31/03/2020	Tendring Process to be intitiated in July 2018
WBPDC	SAGARDIGHI TPS	300	10	31/03/2021	Tendring Process to be intitiated in July 2018
WBPDC	SAGARDIGHI TPS	500	2	31/03/2022	Tendring Process to be intitiated in July 2018
WBPDC	SAGARDIGHI TPS	300	9	31/12/2020	Tendring Process to be intitiated in July 2018
WBPDC	SANTALDIH TPS	250	10	31/03/2021	Tendring Process to be intitiated in July 2019
WBPDC	SANTALDIH TPS	250	6	31/12/2021	Tendring Process to be intitiated in July 2019
WBPDC	KOLAGHAT TPS	210	32	30/09/2021	Tendring Process to be intitiated in July 2020
WBPDC	KOLAGHAT TPS	210	27	31/03/2021	Tendring Process to be intitiated in July 2020
WBPDC	KOLAGHAT TPS	210	24	30/06/2021	Tendring Process to be intitiated in March 2021
WBPDC	KOLAGHAT TPS	210	33	31/03/2022	Tendring Process to be intitiated in March 2021
WBPDC	KOLAGHAT TPS	210	26	31/12/2021	Tendring Process to be intitiated in March 2021
WBPDC	KOLAGHAT TPS	210	24	30/06/2022	Tendring Process to be intitiated in October 2018
Total		**34565**			

Annexure 4

Category D : Where feasibility study has been done and process is seemingly in advanced stage of finalization:
Administration approval in process (for FGD)/technical specifications are under finalization/Budgetary offer awaited from BHEL/ Finalization of specifications planned/tender specs under process

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
UPRVUNL	ANPARA TPS	500	23	28/02/2022	Administrative approval is under process.
UPRVUNL	PARICHHA TPS	250	5	28/02/2022	Administrative approval is under process.
UPRVUNL	ANPARA TPS	500	24	30/04/2022	Administrative approval is under process.
UPRVUNL	PARICHHA TPS	210	11	30/04/2022	Administrative approval is under process.
UPRVUNL	PARICHHA TPS	210	10	30/04/2022	Administrative approval is under process.
KPCL	RAICHUR TPS	210	31	30/06/2021	Administrative approval is under process.
KPCL	RAICHUR TPS	210	18	30/06/2022	Administrative approval is under process.
KPCL	RAICHUR TPS	210	26	30/09/2021	Administrative approval is under process.
KPCL	RAICHUR TPS	210	15	30/09/2022	Administrative approval is under process.
KPCL	RAICHUR TPS	210	32	31/03/2021	Administrative approval is under process.
KPCL	RAICHUR TPS	210	18	31/03/2022	Administrative approval is under process.
UPRVUNL	ANPARA TPS	210	31	31/10/2022	Administrative approval is under process.
UPRVUNL	HARDUAGANJ TPS	250	5	31/12/2019	Administrative approval is under process.
PSEB	GH TPS (LEH.MOH.)	210	19	31/12/2019	Administrative approval is under process.
PSEB	GH TPS (LEH.MOH.)	210	19	31/12/2019	Administrative approval is under process.
PSEB	GH TPS (LEH.MOH.)	250	9	31/12/2019	Administrative approval is under process.
PSEB	GH TPS (LEH.MOH.)	250	9	31/12/2019	Administrative approval is under process.
UPRVUNL	HARDUAGANJ TPS	250	6	31/12/2019	Administrative approval is under process.
UPRVUNL	PARICHHA TPS	250	4	31/12/2021	Administrative approval is under process.
KPCL	RAICHUR TPS	210	23	31/12/2021	Administrative approval is under process.
KPCL	YERMARUS TPP	800	1	31/12/2021	Administrative approval is under process.
KPCL	RAICHUR TPS	250	7	31/12/2022	Administrative approval is under process.
TANGEDCO	NORTH CHENNAI TPS	210	22	30/06/2022	Budgetary offer awaited from M/s. BHEL
TANGEDCO	NORTH CHENNAI TPS	210	21	31/03/2022	Budgetary offer awaited from M/s. BHEL
TANGEDCO	NORTH CHENNAI TPS	210	23	31/12/2022	Budgetary offer awaited from M/s. BHEL
GMR	RAIKHEDA TPP	685	2	30/06/2020	Feasiblity study carried out. PPA issues pending with regulator
GMR	RAIKHEDA TPP	685	1	30/09/2020	Feasiblity study carried out. PPA issues pending with regulator

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
GMR	KAMALANGA TPS	350	3	30/09/2021	Feasiblity study carried out. PPA issues pending with regulator
Talwandi Sabo Power Limited	TALWANDI SABO TPP	660	2	31/12/2019	Feasiblity Study Carried Out. PPA issues pending with regulator
Talwandi Sabo Power Limited	TALWANDI SABO TPP	660	1	31/12/2019	Feasiblity Study Carried Out. PPA issues pending with regulator
L&T Power Development LTD(Nabha)	Nabha TPP (Rajpura TPP)	700	3	31/12/2019	Feasiblity Study Carried Out. PPA issues pending with regulator
L&T Power Development LTD(Nabha)	Nabha TPP (Rajpura TPP)	700	3	31/12/2019	Feasiblity Study Carried Out. PPA issues pending with regulator
Talwandi Sabo Power Limited	TALWANDI SABO TPP	660	3	31/12/2019	Feasiblity Study Carried Out. PPA issues pending with regulator
GMR	KAMALANGA TPS	350	4	31/12/2021	Feasiblity study carried out. PPA issues pending with regulator
GMR	KAMALANGA TPS	350	4	31/12/2021	Feasiblity study carried out. PPA issues pending with regulator
Adani Power Maharashtra Ltd	TIRORA TPS	660	3	31/03/2021	Feasiblity Study carried out. Tender specification under process
Adani Power Maharashtra Ltd	TIRORA TPS	660	5	31/03/2022	Feasiblity Study carried out. Tender specification under process
Adani Power Maharashtra Ltd	TIRORA TPS	660	3	31/06/2021	Feasiblity Study carried out. Tender specification under process
Adani Power Maharashtra Ltd	TIRORA TPS	660	4	31/09/2021	Feasiblity Study carried out. Tender specification under process
Adani Power Maharashtra Ltd	TIRORA TPS	660	4	31/12/2021	Feasiblity Study carried out. Tender specification under process
NTPC	INDIRA GANDHI STPP	500	7	31/12/2019	Finalisation of specifications(FSC) is planned in April-18.
NTPC	INDIRA GANDHI STPP	500	6	31/12/2019	Finalisation of specifications(FSC) is planned in April-18.
NTPC	INDIRA GANDHI STPP	500	5	31/12/2019	Finalisation of specifications(FSC) is planned in April-18.
NTPC	RIHAND STPS	500	5	28/02/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	RIHAND STPS	500	12	30/04/2021	Finalisation of specifications(FSC) is planned in July-18.

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
NTPC	UNCHAHAR TPS	210	11	30/04/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIMHADRI	500	15	30/06/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	VINDHYACHAL STPS	500	11	30/09/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	VINDHYACHAL STPS	500	10	30/09/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIMHADRI	500	6	30/09/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIMHADRI	500	15	31/03/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	RIHAND STPS	500	12	31/10/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	DADRI (NCTPP)	490	7	31/12/2019	Finalisation of specifications(FSC) is planned in July-18.
NTPC	DADRI (NCTPP)	490	7	31/12/2019	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIPAT STPS	500	9	31/12/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIPAT STPS	500	8	31/12/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIPAT STPS	660	5	31/12/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	VINDHYACHAL STPS	500	5	31/12/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	VINDHYACHAL STPS	500	4	31/12/2021	Finalisation of specifications(FSC) is planned in July-18.
NTPC	KAHALGAON TPS	500	10	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	KAHALGAON TPS	500	9	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	KAHALGAON TPS	500	8	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	TALCHER STPS	500	14	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	TALCHER STPS	500	14	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	TALCHER STPS	500	13	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	TALCHER STPS	500	12	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	FARAKKA STPS	500	6	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIMHADRI	500	5	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	RAMAGUNDEM STPS	500	13	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	KORBA STPS	500	7	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIPAT STPS	660	6	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC	SIPAT STPS	660	5	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC & Sail	BHILAI TPS	250	9	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
NTPC & Sail	BHILAI TPS	250	8	31/12/2022	Finalisation of specifications(FSC) is planned in July-18.
Vidarbha Industries Ltd	BUTIBORI TPP	300	5	30/06/2021	Reliance Power has floated the International Competitive Bidding for implementation of FGD and technical offers have been received which are under evaluation.

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
Vidarbha Industries Ltd	BUTIBORI TPP	300	4	31/03/2021	Reliance Power has floated the International Competitive Bidding for implementation of FGD and technical offers have been received which are under evaluation.
Adani Power Ltd.	KAWAI TPS	660	4	31/08/2020	Technical Specification Finalisation Under Process
Singareni Colleries Co. Ltd.	SINGARENI TPP	600	1	30/09/2019	Tender specifications are under finalisation.
OPGCLtd	IB VALLEY TPS	210	23	30/09/2021	Tender specifications are under finalisation.
OPGCLtd	IB VALLEY TPS	210	22	30/09/2021	Tender specifications are under finalisation.
MPPGCL	SHRI SINGHAJI TPP	600	4	31/03/2021	Tender specifications are under finalisation.
MPPGCL	SHRI SINGHAJI TPP	600	3	31/03/2021	Tender specifications are under finalisation.
Singareni Colleries Co. Ltd.	SINGARENI TPP	600	1	31/12/2019	Tender specifications are under finalisation.
RKM Powergen Private Ltd.	UCHPINDA TPP	360	2	31/03/2022	Wet lime stone FGD system has been selected and technical conversation with vendor is under process.
RKM Powergen Private Ltd.	UCHPINDA TPP	360	1	31/12/2021	Wet lime stone FGD system has been selected and technical conversation with vendor is under process.
Total		**37270**			

Annexure 5

Category E : Where feasibility study has done and process can be expedited: Feasibility study carried out/PPA issues pending with regulator

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
UPRVUNL	ANPARA TPS	500	1	30/04/2021	Feasiblity Study Carried Out
Tata Power (CGPL)	MUNDRA UMTPP	800	5	30/06/2020	Feasiblity Study Carried Out
Adani Power Ltd.	KAWAI TPS	660	3	30/06/2020	Feasiblity Study Carried Out
CSEB	MARWA TPS	500	3	30/06/2021	Feasiblity Study Carried Out
CSPGCL	DSPM TPS	250	10	30/06/2021	Feasiblity Study Carried Out
UPRVUNL	ANPARA TPS	500	2	30/06/2021	Feasiblity Study Carried Out
Tata Power (CGPL)	MUNDRA UMTPP	800	5	30/06/2021	Feasiblity Study Carried Out
Adani Power Ltd.	MUNDRA TPS	660	6	30/06/2022	Feasiblity Study Carried Out
TATA Power Co.MPL	MAITHON RB TPP	525	5	30/06/2022	Feasiblity Study Carried Out
CSPGCL	DSPM TPS	250	10	30/09/2021	Feasiblity Study Carried Out
CSPGCL	KORBA-WEST Ext. TPS	500	4	30/09/2021	Feasiblity Study Carried Out
TATA Power Co. MPL	MAITHON RB TPP	525	6	30/09/2021	Feasiblity Study Carried Out
Adani Power Ltd.	MUNDRA TPS	330	7	30/09/2022	Feasiblity Study Carried Out
Adani Power Ltd.	MUNDRA TPS	330	7	30/09/2022	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	500	1	31/03/2020	Feasiblity Study Carried Out
MAHAGENCO	BHUSAWAL TPS	210	35	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	BHUSAWAL TPS	500	5	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	BHUSAWAL TPS	500	5	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	210	32	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	210	31	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	500	26	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	500	25	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	500	20	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	CHANDRAPUR STPS	500	2	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KHAPARKHEDA TPS	210	28	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KHAPARKHEDA TPS	210	27	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KHAPARKHEDA TPS	210	17	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KHAPARKHEDA TPS	210	16	31/03/2021	Feasiblity Study Carried Out

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
MAHAGENCO	KHAPARKHEDA TPS	500	6	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KORADI TPS	210	35	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KORADI TPS	210	34	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KORADI TPS	660	2	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	KORADI TPS	660	1	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	NASIK TPS	210	38	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	NASIK TPS	210	37	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	NASIK TPS	210	36	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	PARLI TPS	210	32	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	PARLI TPS	210	29	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	PARLI TPS	250	10	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	PARLI TPS	250	7	31/03/2021	Feasiblity Study Carried Out
MAHAGENCO	PARLI TPS	250	1	31/03/2021	Feasiblity Study Carried Out
CSEB	MARWA TPS	500	1	31/03/2021	Feasiblity Study Carried Out
Tata Power (CGPL)	MUNDRA UMTPP	800	5	31/03/2021	Feasiblity Study Carried Out
Adani Power Ltd.	MUNDRA TPS	660	6	31/03/2022	Feasiblity Study Carried Out
Tata Power (CGPL)	MUNDRA UMTPP	800	4	31/03/2022	Feasiblity Study Carried Out
Tata Power (CGPL)	MUNDRA UMTPP	800	4	31/03/2022	Feasiblity Study Carried Out
MAHAGENCO	KORADI TPS	660	0	31/12/2020	Feasiblity Study Carried Out
TenughatVN Ltd	TENUGHAT TPS	210	23	31/12/2020	Feasiblity Study Carried Out
TenughatVN Ltd	TENUGHAT TPS	210	21	31/12/2020	Feasiblity Study Carried Out
Adani Power Ltd.	MUNDRA TPS	330	7	31/12/2022	Feasiblity Study Carried Out
Jindal (Pvt Co)	TORANGALLU TPS EXT	300	8	30/09/2022	JSWEL are in discussion with several vendors for finalisation and will adhere to the installation schedule as per the phasing plan prepared by MoP.

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
Adani Power Ltd.	MUNDRA TPS	330	8	31/12/2022	* Feasibility study has been completed by Tata Consulting Engineers (TCE). * Installation of Wet Limestone based FGD with 100% Flue Gas capacity is finalised to meet the new emission level of SO2. * We had prepared the Tender Specifications for the Installation of Wet Limestone based FGD. * As CEA has released the Standard Technical Specification for Retrofit of Wet Limestone based FGD system in a typical 2x500 MW Thermal Power Plant, we are now in the process of modifying the Tender Specification referring the CEA document. * We are planning to adhere to the installation schedule as per the phasing plan prepared by MoP.
GSECL	UKAI TPS	500	4	31/03/2022	e-tender for EPC floated & technical bid opening is scheduled on 26.03.2018.
HNPCL	VIZAG TPP	520	1	31/12/2022	HNPCL had appointed a consultant who have submitted a feasibilty report which is alresdy forwarded to CEA. It is requested fix the time lines for commissioning of FGD of both the units to 31st Decmeber 2022.
HNPCL	VIZAG TPP	520	1	31/12/2022	HNPCL had appointed a consultant who have submitted a feasibilty report which is alresdy forwarded to CEA. It is requested fix the time lines for commissioning of FGD of both the units to 31st Decmeber 2022.
Total		**23280**			

Annexure 6

Category F : Where feasibility study is under progress: Feasibility Study under progress/through BHEL/petition pending with regulator

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
RRVUNL	SURATGARH TPS	250	8	28/02/2022	Feasbility Study Under Progress
RRVUNL	KALISINDH TPS	600	2	30/04/2021	Feasbility Study Under Progress
RRVUNL	SURATGARH TPS	250	14	30/04/2022	Feasbility Study Under Progress
UPRVUNL	OBRA TPS	200	35	30/04/2022	Feasbility Study Under Progress
TSGENCO	KAKATIYA TPS	600	1	30/06/2020	Feasbility Study Under Progress
NLC + TANGEDCO	TUTICORIN (JV) TPP	500	2	30/06/2020	Feasbility Study Under Progress
TAQA, Neyveli	TAQA, Neyveli	250	15	30/06/2020	Feasbility Study Under Progress
MPPGCL	SANJAY GANDHI TPS	210	18	30/06/2021	Feasbility Study Under Progress
MPPGCL	SANJAY GANDHI TPS	210	18	30/06/2021	Feasbility Study Under Progress
RRVUNL	KALISINDH TPS	600	3	30/06/2021	Feasbility Study Under Progress
D.V.C	DURGAPUR STEEL TPS	500	6	30/06/2021	Feasbility Study Under Progress
D.V.C	DURGAPUR STEEL TPS	500	5	30/06/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI (EXT) TPS	210	15	30/06/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	30	30/06/2021	Feasbility Study Under Progress
RRVUNL	SURATGARH TPS	250	15	30/06/2022	Feasbility Study Under Progress
D.V.C	BOKARO `A` TPS	500	1	30/06/2022	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	25	30/06/2022	Feasbility Study Under Progress
NTEC LTD.	VALLUR TPP	500	5	30/06/2022	Feasbility Study Under Progress
UPRVUNL	ANPARA TPS	210	29	30/06/2022	Feasbility Study Under Progress
UPRVUNL	OBRA TPS	200	36	30/06/2022	Feasbility Study Under Progress
TSGENCO	KOTHAGUDEM TPS	500	6	30/09/2019	Feasbility Study Under Progress
D.V.C	MEJIA TPS	500	7	30/09/2021	Feasbility Study Under Progress

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
D.V.C	MEJIA TPS	500	6	30/09/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	30	30/09/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	25	30/09/2022	Feasbility Study Under Progress
NTEC LTD.	VALLUR TPP	500	4	30/09/2022	Feasbility Study Under Progress
Coastal Energen Pvt. Ltd.	MUTHIARA TPP	600	3	30/09/2022	Feasbility Study Under Progress
TSGENCO	KAKATIYA TPS	500	7	31/03/2020	Feasbility Study Under Progress
MPPGCL	SANJAY GANDHI TPS	210	24	31/03/2021	Feasbility Study Under Progress
MPPGCL	SANJAY GANDHI TPS	210	24	31/03/2021	Feasbility Study Under Progress
MPPGCL	SANJAY GANDHI TPS	500	10	31/03/2021	Feasbility Study Under Progress
MPPGCL	SATPURA TPS	250	4	31/03/2021	Feasbility Study Under Progress
MPPGCL	SATPURA TPS	250	3	31/03/2021	Feasbility Study Under Progress
D.V.C	RAGHUNATHPUR TPP	600	3	31/03/2022	Feasbility Study Under Progress
D.V.C	RAGHUNATHPUR TPP	600	1	31/03/2022	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	26	31/03/2022	Feasbility Study Under Progress
RRVUNL	SURATGARH TPS	250	16	31/08/2022	Feasbility Study Under Progress
UPRVUNL	ANPARA TPS	210	30	31/08/2022	Feasbility Study Under Progress
UPRVUNL	OBRA TPS	200	37	31/08/2022	Feasbility Study Under Progress
RRVUNL	KOTA TPS	195	8	31/10/2022	Feasbility Study Under Progress
RRVUNL	SURATGARH TPS	250	17	31/10/2022	Feasbility Study Under Progress
UPRVUNL	OBRA TPS	200	38	31/10/2022	Feasbility Study Under Progress
HGPCorpn	PANIPAT TPS	250	12	31/12/2019	Feasbility Study Under Progress
HGPCorpn	PANIPAT TPS	210	16	31/12/2019	Feasbility Study Under Progress
HGPCorpn	PANIPAT TPS	250	13	31/12/2019	Feasbility Study Under Progress
HGPCorpn	YAMUNA NAGAR TPS	300	10	31/12/2019	Feasbility Study Under Progress
HGPCorpn	YAMUNA NAGAR TPS	300	9	31/12/2019	Feasbility Study Under Progress
HGPCorpn	RAJIV GANDHI TPS	600	7	31/12/2019	Feasbility Study Under Progress

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
HGPCorpn	RAJIV GANDHI TPS	600	7	31/12/2019	Feasbility Study Under Progress
TANGEDCO	METTUR TPS Ext.	600	5	31/12/2020	Feasbility Study Under Progress
GSECL	GANDHI NAGAR TPS	210	26	31/12/2021	Feasbility Study Under Progress
GSECL	GANDHI NAGAR TPS	210	19	31/12/2021	Feasbility Study Under Progress
GSECL	UKAI TPS	200	38	31/12/2021	Feasbility Study Under Progress
GSECL	UKAI TPS	210	32	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	35	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	34	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	33	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	31	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	31	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	30	31/12/2021	Feasbility Study Under Progress
GSECL	WANAKBORI TPS	210	18	31/12/2021	Feasbility Study Under Progress
D.V.C	KODARMA TPP	500	6	31/12/2021	Feasbility Study Under Progress
D.V.C	KODARMA TPP	500	4	31/12/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI (EXT) TPS	210	14	31/12/2021	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	29	31/12/2021	Feasbility Study Under Progress
NLC + TANGEDCO	TUTICORIN (JV) TPP	500	2	31/12/2021	Feasbility Study Under Progress
GSECL	GANDHI NAGAR TPS	210	27	31/12/2021	Feasbility Study Under Progress
RRVUNL	KOTA TPS	210	23	31/12/2022	Feasbility Study Under Progress
RRVUNL	KOTA TPS	195	14	31/12/2022	Feasbility Study Under Progress
RRVUNL	SURATGARH TPS	250	19	31/12/2022	Feasbility Study Under Progress
D.V.C	CHANDRAPURA(DVC)	250	8	31/12/2022	Feasbility Study Under Progress
D.V.C	CHANDRAPURA(DVC)	250	7	31/12/2022	Feasbility Study Under Progress
D.V.C	MEJIA TPS	210	21	31/12/2022	Feasbility Study Under Progress
D.V.C	MEJIA TPS	210	20	31/12/2022	Feasbility Study Under Progress

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
D.V.C	MEJIA TPS	210	19	31/12/2022	Feasbility Study Under Progress
D.V.C	MEJIA TPS	210	13	31/12/2022	Feasbility Study Under Progress
D.V.C	MEJIA TPS	250	10	31/12/2022	Feasbility Study Under Progress
D.V.C	MEJIA TPS	250	10	31/12/2022	Feasbility Study Under Progress
NEYVELI LIGNITE	NEYVELI TPS- II	210	24	31/12/2022	Feasbility Study Under Progress
NTEC LTD.	VALLUR TPP	500	3	31/12/2022	Feasbility Study Under Progress
UPRVUNL	OBRA TPS	200	40	31/12/2022	Feasbility Study Under Progress
Coastal Energen Pvt. Ltd.	MUTHIARA TPP	600	1	31/12/2022	Feasbility Study Under Progress
APPDCL	DAMODARAM	800	2	31/12/2019	Feasibilty studies are in progress through M/s BHEL.
APGENCO	Dr. N.TATA RAO TPS	500	8	31/12/2020	Feasibilty studies are in progress through M/s BHEL.
APPDCL	DAMODARAM	800	3	31/12/2020	Feasibilty studies are in progress through M/s BHEL.
GMR emco ENERGY ltd	EMCO WARORA TPS	300	4	31/03/2022	Feasiblity Study Under Progress. Petition Pending with regulator
GMR emco ENERGY ltd	EMCO WARORA TPS	300	4	31/03/2022	Feasiblity Study Under Progress. Petition Pending with regulator
Total		**28860**			

Annexure 7

Category G - Where there is no information: Process for feasibility study to be completed/No date provided/information awaited/Not feasible

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
Jindal (Pvt Co)	TORANGALLU TPS EXT	300	8	30/06/2022	JSWEL are in discussion with several vendors for finalisation and will adhere to the installation schedule as per the phasing plan prepared by MoP.
RRVUNL	CHHABRA TPP	250	4	31/08/2021	Due to space constraint, alternative options of FGD installations in combination with a short stack is being explored.
RRVUNL	CHHABRA TPP	250	3	31/08/2021	Due to space constraint, alternative options of FGD installations in combination with a short stack is being explored.
RRVUNL	CHHABRA TPP	250	7	31/10/2021	Due to space constraint, alternative options of FGD installations in combination with a short stack is being explored.
RRVUNL	CHHABRA TPP	250	8	31/12/2021	Due to space constraint, alternative options of FGD installations in combination with a short stack is being explored.
GVK Power Ltd.	GOINDWAL SAHIB	270	1	28/02/2020	Information awaited
Lalitpur Power Gen. Co	LALITPUR TPS	660	1	28/02/2021	Information awaited
GVK Power Ltd.	GOINDWAL SAHIB	270	1	30/04/2020	Information awaited
Prayagraj Power Generation Company LTD.	PRAYAGRAJ TPP	660	0	30/04/2020	Information awaited
Jaipraksh Power Venture Ltd	NIGRI TPP	660	3	30/06/2020	Information awaited
Prayagraj Power Generation Company LTD.	PRAYAGRAJ TPP	660	2	30/06/2020	Information awaited
Bharat Aluminium Co. Ltd.	BALCO TPS	300	1	30/06/2021	Information awaited
DB Power	BARADARHA TPS	600	3	30/06/2021	Information awaited
Essar Gujarat	SALAYA TPP	600	5	30/06/2021	Information awaited
D.P.L.	D.P.L. TPS	300	10	30/06/2022	Information awaited

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
KSK Mahanadi Power Co Ltd	AKALTARA TPS	600	4	30/06/2022	Information awaited
Adhunik Power&Natural Resources Ltd	MAHADEV PRASAD STPP	270	5	30/06/2022	Information awaited
Adhunik Power&Natural Resources Ltd	MAHADEV PRASAD STPP	270	4	30/06/2022	Information awaited
Adani Power Ltd.	UDUPI TPP	600	6	30/06/2022	Information awaited
MB Power	ANUPPUR TPP	600	1	30/06/2022	Information awaited
Lanko Anpara Pow Ltd	ANPARA C TPS	600	5	30/06/2022	Information awaited
DB Power	BARADARHA TPS	600	2	30/09/2020	Information awaited
Jaipraksh Power Venture Ltd	NIGRI TPP	660	2	30/09/2020	Information awaited
Bharat Aluminium Co. Ltd.	BALCO TPS	300	2	30/09/2021	Information awaited
Wardha P C P L	WARDHA WARORA TPP	135	7	30/09/2021	Information awaited
Wardha P C P L	WARDHA WARORA TPP	135	7	30/09/2021	Information awaited
Maruti Power Limited	BANDAKHAR TPP	300	2	31/03/2020	Information awaited
Jhabua Power Ltd.	SEIONI TPP	600	1	31/03/2020	Information awaited
M/s Lanko Amarkantak Ltd,	PATHADI TPP	300	8	31/03/2021	Information awaited
M/s Lanko Amarkantak Ltd,	PATHADI TPP	300	7	31/03/2021	Information awaited
Essar Gujarat	SALAYA TPP	600	5	31/03/2021	Information awaited
Ratan Power	NASIK (P) TPS	270	3	31/03/2021	Information awaited
JIPL	DERANG TPP	600	3	31/03/2021	Information awaited
JIPL	DERANG TPP	600	2	31/03/2021	Information awaited
D.P.L.	D.P.L. TPS	110	32	31/03/2022	Information awaited
D.P.L.	D.P.L. TPS EXT.	250	3	31/03/2022	Information awaited
KORBA-WEST TPS Pvt Ltd	AVANTHA BHANDAR	600	3	31/03/2022	Information awaited
KSK Mahanadi Power Co Ltd	AKALTARA TPS	600	3	31/03/2022	Information awaited
Adani Power Ltd.	UDUPI TPP	600	7	31/03/2022	Information awaited
MB Power	ANUPPUR TPP	600	2	31/03/2022	Information awaited
Dhariwal Infrastructure	DHARIWAL TPP	300	4	31/03/2022	Information awaited
Dhariwal Infrastructure	DHARIWAL TPP	300	3	31/03/2022	Information awaited
Ind barath	IND BARATH TPP	350	1	31/03/2022	Information awaited
Sterlite Energy Ltd	STERLITE TPP	600	6	31/03/2022	Information awaited

Developer	Name of Project	Total Capacity (MW)	Age in years	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Current Status
C.E.S.C. Pvt.	SOUTHERN REPL. TPS	67.5	26	31/03/2022	Information awaited
Lanko Anpara Pow Ltd	ANPARA C TPS	600	6	31/08/2022	Information awaited
Lalitpur Power Gen. Co	LALITPUR TPS	660	1	31/10/2021	Information awaited
ESSAR power	MAHAN TPP	600	4	31/12/2020	Information awaited
Lalitpur Power Gen. Co.	LALITPUR TPS	660	1	31/12/2020	Information awaited
Wardha P C P L	WARDHA WARORA TPP	135	6	31/12/2021	Information awaited
Wardha P C P L	WARDHA WARORA TPP	135	6	31/12/2021	Information awaited
C.E.S.C. Pvt.	SOUTHERN REPL. TPS	67.5	27	31/12/2021	Information awaited
Torrent Power Generation Ltd,.	SABARMATI	120	39	31/12/2022	Information awaited
Torrent Power Generation Ltd,.	SABARMATI	121	32	31/12/2022	Information awaited
Torrent Power Generation Ltd,.	SABARMATI	121	29	31/12/2022	Information awaited
C.E.S.C. Pvt.	BUDGE BUDGE TPS	250	20	31/12/2022	Information awaited
C.E.S.C. Pvt.	BUDGE BUDGE TPS	250	18	31/12/2022	Information awaited
C.E.S.C. Pvt.	BUDGE BUDGE TPS	250	8	31/12/2022	Information awaited
M/s Haldia Energy Limited	HALDIA TPP	300	2	31/12/2022	Information awaited
M/s Haldia Energy Limited	HALDIA TPP	300	2	31/12/2022	Information awaited
GSECL	UKAI TPS	200	38	31/12/2021	Not Feasible as per Developer
MPPGCL	AMARKANTAK EXT TPS	210	9	31/03/2021	Order placed on M/s FICHTNER Consulting Engineers (india) Ltd., Chennai for carrying out feasibility study.
TANGEDCO	NORTH CHENNAI Ext. TPS	600	4	30/09/2020	Requsted for FGD implementation date to be revised as 30.09.2022
TANGEDCO	NORTH CHENNAI Ext. TPS	600	4	31/12/2019	Requsted for FGD implementation date to be revised as 31.12.2021
Total		**25177**			