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Central Electricity Authority

तापीय परियोजना नवीनीकरण एवं आधुनिकीकरण प्रभाग

Thermal Projects Renovation & Modernisation Division



R&M of Turbine of Unit-3 (210 MW) of Wanakbori TPS of GSECL

Quarterly Review Report Renovation & Modernisation of Thermal Power Stations

Quarter: January - March, 2018

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Foreword

Renovation & Modernization (R&M) has been recognized as one of the cost effective options for obtaining the additional generation and better outputs from the existing old thermal power units. The R&M of such units is very essential for performance improvement of the units as well as to comply the stricter environmental norms for improving environmental conditions. On the other hand, the Life Extension (LE) of the old thermal power units is carried out with an aim to extend their useful life 15 to 20 years beyond the original design economical life.

The Thermal Projects Renovation & Modernization (TPR&M) Division is entrusted with the responsibility of monitoring the progress of R&M/LE activities in thermal power generating units in the country under Section 73(f) of the Electricity Act, 2003. Based on the interaction and information received from various utilities, the Quarterly Review Report (QRR) is prepared highlighting the latest status of the physical progress of R&M/LE works at various thermal units.

R&M/LE works in 02 units of capacity of 410 MW have been completed upto 31-03-2018. At present, 4 coal based generating units with aggregate capacity of 620 MW are under shut down for carrying out the R&M/LE works.

Under the Indo-Japan Co-operation, 3rd Phase MoU between CEA and JCOAL, Japan has been signed on 22nd January, 2016. A Replacement Study on replacement of old units by Super Critical Units is proposed to be carried at Talcher TPS (4X60 + 2X110) MW, NTPC. JCOAL has also submitted report on Environmental Study through Combustion Test of Talcher Coal. SCR Pilot test at NTPC's Sipat TPS is being carried out to meet the new environmental norms. One day workshop on " Project on Efficiency and Environmental Improvement for Sustainable, Stable and Low-carbon Supply of Electricity" was held on 10th Nov 2017 at New Delhi by CEA and JCOAL. Under Clean Coal Technology (CCT) Programme a study tour to Japan has been organised during current year from 29th Nov, 2017 to 7th Dec, 2017. The participants from CEA, MoP, DVC NTPC and State Utilities visited the latest USC power stations at Japan. A study on O&M enhancement of existing unit no.-1 of DTPS, DVC has been carried out by JCOAL. Interim Report of Activities during the Site Study for O&M Study at Durgapur Steel Thermal Power Station has been submitted by JCOAL to CEA on 15th Dec 2017. Final Report is under preparation and to be submitted in May 2018 by JCOAL. A diagnostic study for optimal environmental measures in Dadri TPS was carried out in January 2018. Mini-workshops were organized on 30-01-2018 at GSECL(Gujrat) and on 01-02-2018 at APGENCO (Andhra Pradesh) respectively for 2017-18 period under CEA-JCOAL Cooperation.

To ensure compliance of the new Environmental Norms notified by Ministry of Environment, Forest & Climate Change (MoEF&CC) on 7th Dec. 2015, phasing plan for FGD installation/ ESP –upgradation have prepared and concerned utilities are requested to furnish the details of action taken for timely compliance of these norms. Updated report in this regard has been sent to MoP.

Finally, I would like to express my sincere thanks and gratitude to the Utilities and other stakeholders for obeying CEA's guidelines during implementation of R&M/LE works at old thermal power plant and furnishing status of R&M for preparation of quarterly review report.

Dated: 03-05-2018

(B.C. Mallick)
CE (TPR&M)

Highlights

1. LE/ R&M Achievements during 12th Plan (2012-17)

Sl. No.	Particulars	State Sector		Central Sector		Total (State + Central)	
		No. of units	Capacity (MW)	No. of units	Capacity (MW)	No. of units	Capacity (MW)
A)	LE works						
1.	Completed during 12 th Plan	10	1380	11	1261.76	21	2641.76
B)	R&M works						
2.	Completed during 12 th Plan	05	850	11	3710.5	16	4560.5
	TOTAL	15	2230	22	4972.26	37	7202.26

2. LE / R&M Programme during (2017 - 22)

Category	LE/R&M works identified during 2017-22 No. of units & capacity (MW)		Total (State Sector + Central Sector)
	State Sector	Central Sector	
LE	34 (7570)	--	34 (7570)
R&M	30 (7135)	07 (224)	37 (7359)
Total	64 (14705)	07 (224)	71 (14929)

3. Achievements of R&M and LE Projects during 2017-18

Sl. No.	Particulars	LE/R&M works completed No. of units & capacity (MW)		Total (State Sector + Central Sector) MW
		State Sector	Central Sector	
1	LE	02(410)	--	02(410)
2	R&M	--	--	--
	Total	02(410)	--	02(410)

4. Implementation of Phasing Plan for FGD installation/ ESP upgradation in respect of new Environmental Norms notified by MoEF&CC on 7th Dec. 2015.

Ministry of Environment, Forest & Climate Change (MoEF&CC) notified “Environment (Protection) Amendment Rules, 2015” for thermal power stations on 07.12.2015. As per notification existing stations were required to comply with the new Standards within 2 years (i.e. by Dec. 2017) and the new stations including all station presently under construction were required to meet the new norms by 06-12-2017.

To review the various issues arising out of new environmental norms for thermal power stations, a meeting was held on 01.09.2017 in MoEF &CC among Secretary MoEF & CC, Secretary, MoP and Chairperson, CEA and it was decided that the action plan submitted by MoP to MoEF & CC extending up- to 2024

should commence from 2018 and implemented before 2022. In this regard utilities were requested to furnish the details of action taken and a report has been prepared and submitted to MoP on the status of phasing plan of FGD installation/ ESP upgradation at TPS.

5. External Co-operation for R&M/LE of TPS

The status of activities under external co-operation for R&M/LE of TPS is furnished below:-

(A) Indo-Japan Co-operation for Project on Efficiency & Environment Improvement for Sustainable, Stable and Low Carbon Supply of Electricity of Coal Fired Stations.

The 3rd Memorandum of Understanding (MoU) on Indo – Japan Cooperation for Project on Efficiency & Environment Improvement for Sustainable, Stable and Low Carbon Supply of Electricity between CEA and JCOAL was signed on 22nd January, 2016. The objective of the MoU is to address issues and barriers in promoting sustainable, stable and low-carbon thermal power development in India. Under this MoU, JCOAL has carried out feasibility study for replacement of Badarpur TPS by new units based on SC/USC technologies. RLA study of unit-3 (210 MW), Dadari TPS has been carried out by JCOAL. The feasibility study for Singrauli STPS Stg. I & II units (5x200 MW+2x200 MW) of NTPC has been carried out during December 2016 to March 2017. An Environmental Study through Combustion Test of Indian Coal has also been carried out by JCOAL. 25 tonnes, G12 grade coal was sent to Japan from Talcher coal mine for Combustion test. The combustion test was done at Akitsu Works, MHPS, Japan and report was submitted in January 2017. Under Clean Coal Technology (CCT) Programme a study tour to Japan has been organised during current year from 29th Nov, 2017 to 7th Dec, 2017. The participants from CEA, MoP, DVC, NTPC and State Utilities visited the latest USC power stations at Japan. A study on best O&M practices of thermal power unit has been carried out by JCOAL at unit-1, DTPS, DVC in 2017-18. Interim Report of Activities has been submitted by JCOAL to CEA on 15th Dec 2017. Final Report is under preparation and to be submitted in May 2018 by JCOAL. Mini-workshops were organized on 30-1-2018 at GSECL(Gujrat) and on 01-02-2018 at APGENCO (Andhra Pradesh) respectively for 2017-18 period under CEA-JCOAL Cooperation. SCR Pilot test at NTPC's Sipat TPS is being carried out to meet the NO_x level in the flue gas as per new environmental norms. A diagnostic study for optimal environmental measures at Dadri TPS was conducted in January, 2018.

Quarterly Review Report on Renovation, Modernisation and Life Extension of Thermal Power Plants

1.0 Introduction

At the time of independence, the total installed capacity in the power sector was 1362 MW of which steam power plants contributed 756 MW. The installed generation capacity has since grown manifold. The total installed capacity as on 31.03.2018 was 344002.39 MW of which thermal power plants contributed 222906.59 MW (64.80 %). The contribution of Coal, Gas and Diesel based thermal power plants of total installed capacity is 57.32 %, 7.24 % and 0.24 % respectively.

Renovation & Modernization (R&M) is seen as a cost-effective option for additional generation from the existing thermal power stations and better asset management due to its low cost and short gestation period. Besides generation improvement and improvement in availability, other benefits achieved from R&M / LE include life extension, improved safety, reliability & environmental conditions.

Many of the thermal power plants are not operating to their full potential and large numbers of thermal units including 200/210 MW units are old and outlived their normal economical design life. The 66 LMZ units of 200/210 MW Capacity are potential target for Energy Efficiency R&M (EE R&M).

2.0 Objective of R&M Programme

The main objective of Renovation & Modernisation (R&M) of thermal generating units is to make the operating units well equipped with modified / augmented with latest technology with a view to improve their performance in terms of output, reliability, availability, reduction of outage time, ease of maintenance and minimizing inefficiencies.

3.0 Objective of Life Extension Programme

The R&M programme is primarily aimed at generation sustenance and overcoming problems. The life extension (LE) programme on the other hand focuses on plant operation beyond their original design life after carrying out specific life assessment studies of critical components with an aim to increase the life beyond the design economic life of 25 years.

4.0 Renovation and Modernisation (R&M) and Life Extension Programme (LEP) from 7th Plan onwards till 11th Plan

R&M Programme in a structured manner was initiated in 1984 as a centrally sponsored programme during 7th Plan and the programme continued during the two Annual Plans 1990-91 & 1991-92. The Plan wise details are given below: -

S. No.	Five Year Plan	Year	No. of TPS / No. of Units	Capacity (MW)	Additional Generation Achieved MU/ Annum*	Equivalent MW**
1	7 th Plan & 2 Annual Plans	85-86 to 89-90 & 90-91, 91-92	34 / 163	13570	10000	2000
2	8 th Plan (R&M) (LEP)	1992 to 1997	44 / 198 43/(194) 1/(4)	20869 (20569) (300)	5085	763
3	9 th Plan (R&M) (LEP)	1997 to 2002	37 / 152 29/ (127) 8/ (25)	18991 (17306) (1685)	14500	2200
4	10 th Plan (R&M) (LEP)	2002 to 2007	9/25 5/(14) 4/(11)	3445 (2460) (985)	2000	300
5	11 th Plan (R&M) (LEP)	2007 to 2012	21/72 15/(59) 6/(13)	16146 (14855) (1291)	5400	820
6	12 th Plan (R&M) (LEP)	2012 to 2017	18/37 8/16 10/21	7202.5 4560.50 2641.76	----	----

*Tentative figure.

** Equivalent MW has been worked out assuming PLF prevailing during that period.

5.0 R&M/ LE Programme during (2017 - 22)

The Summary of R&M/ LE Programme to be implemented during 2017-22 is given below. The status of implementation of the R&M/LE works at various units is furnished at Annexure-1.

Category	LE/R&M works identified during 2017-22 No. of units & capacity (MW)		Total (State Sector + Central Sector)
	State Sector	Central Sector	
LE	34 (7570)	--	34 (7570)
R&M	30 (7135)	07 (224)	37 (7359)
Total	64 (14705)	07 (224)	71 (14929)

The Summary of achievements of R&M/ LE Projects is given below:

As on 31.03.2018

Year	LE No. of units (MW)		R & M No. of units (MW)		Total (state + central) No. of units (MW)		Total LE and R&M No. of units (MW)
	State	Central	State	Central	State	Central	
2017-18	02(410)	--	--	--	02(410)	--	02(410)
Total No. of units (MW)	02(410)	--	--	--	02(410)	--	02(410)
	02(410)		----		02(410)		

5.1 Details Achievements of LE and R&M Programme during 2017-22 upto 31.03.2018.

	Name of the TPS	Unit No.	Date of S/D	Capacity (MW)	Utility	Sector	Date of Achievement
1. 2017-18							
LE	Ukai TPS	4	07-12-2016	200	GSECL	State	17.05.2017
	Wanakbori TPS	3		210	GSECL	State	27-11-2017
R&M	--	--		--	--	--	--
Sub Total		02 (unit)		410			
Total LE	02 (410)	State	02(unit)	410			
		Centre	--	--			
Total R&M	00 (00)	State	--	--			
		Centre	--	--			
Grand Total		02(unit)		410			

Details of thermal power units where the R&M/ LE Works have been completed during 2017-22 up to 31.12.2017 are given at **Annexure 2& 3**.

5.2 Details of thermal units under shut down for R&M and LE works

The following 4 units are under shut down for R&M and Life Extension works.

Sl.No.	Name of Project	Utility	State	Unit No.	Capacity (MW)
1.	Obra TPS	UPRVUNL	U.P.	7	100
2.	Barauni TPS	BSPGCL	Bihar	6	110
3.	Koradi TPS	MSPGCL	Maharashtra	6	210
4.	Obra TPS	UPRVUNL	U.P.	12	200
Total					620

5.3 Status of R&M activities under Backward Region Grant Fund (BRGF) Scheme.

Under RSVY (now BRGF), Planning Commission in a meeting held on 10.05.2005 identified Barauni TPS, units 6&7 and Muzaffarpur TPS units 1&2 for carrying out Life Extension (LE) works. Subsequently, a five party agreement between the Government of India, Govt. of Bihar, BSEB, BHEL and NTPC was signed on 29.5.2006.

Planning Commission vide their letter dated 16.11.2009 approved Rs. 1053 crores including consultancy charges under the Special Plan for Bihar for LE works of Barauni TPS (Unit 6&7) and Muzaffarpur TPS (Unit 1&2) as per details given below:

Barauni TPS Unit (6&7)	:	Rs. 554.16 crores
Muzaffarpur TPS (1&2)	:	Rs. 471.80 Crores
Consultancy charges to NTPC _(for Barauni TPS only) :		Rs. 27.04 Crores

TOTAL : Rs. 1053.00 Crores

Details of Funds released by Planning Commission upto 31.03.2018:

i)	BHEL	:	Rs. 725.07 crores
ii)	KBUNL	:	Rs. 180.00 crores
iii)	NTPC	:	Rs. 20.11 crores
	Total	:	Rs. 925.18 crores

The remaining amount of Rs. 127.80 Crs has been released by the Govt. of India to BSPGCL. Now BSPGCL is releasing money directly to the vendors.

Name of TPS	Unit No.	Zero Date	Contractual Completion Date	Anticipated Completion Date	Present physical status as on 31.12.2015
Barauni TPS	7	15.11.2009	15.11.20011	Completed	Unit was synchronized on 03.08.2016.
	6	15.11. 2009	15.06.2012	May 2018	Boiler: 97% work completed Turbine : 98% work completed Anticipated completion of Unit- 6 is in May 2018.
Muzaffarpur TPS	1	15.04. 2010	15.04.2012	Completed	Unit synchronised on 05.07.2013.
	2	15.04. 2010	15.08.2012	Completed	Unit synchronised on 30.09.2014.

6. Implementation of Phasing Plan for FGD installation/ ESP upgradation in respect of new Environmental Norms notified by MoEF&CC on 7th Dec. 2015.

Ministry of Environment, Forest & Climate Change (MoEF&CC) notified “Environment (Protection) Amendment Rules, 2015” for thermal power stations on 07.12.2015. All existing stations are required to comply with the new Standards within 2 years (i.e. by Dec. 2017) and the new stations including all station presently under construction are required to meet the new norms by 01-01-2017.

To review the various issues arising out of new environmental norms for thermal power stations, a meeting was held on 01.09.2017 in MoEF&CC among Secretary MoEF & CC, Secretary, MoP and Chairperson, CEA and it was decided that the action plan submitted by MoP to MoEF & CC extending up- to 2024 should commence from 2018 and implemented before 2022.

The MOEFCC gave its concurrence to the revised implementation plan for FGD installation/ESP upgradation vide letter no. F. No. Q-15017/40/2007-CPW dated 07.12.2017

The implementation plan including units commissioned up- to 31.08.2017 is enclosed at Annexure 5. The year-wise FGD Phasing Plan and ESP Upgradation Plan are given below.

i) Year wise FGD Phasing Plan

Year	Capacity (MW)	No. of units
2018	500	1
2019	4940	8
2020	27230	55
2021	64027.5	172
2022	64704.5	178
Plan not Available	150	1
Total	161552	415

ii) Year wise ESP Upgradation Plan

Year	Capacity	Units
2018	500	1
2019	1300	2
2020	10705	28
2021	23495	97
2022	28525	94
Plan not Available	1400	9
Total	65925	231

To ensure compliance of the new Environmental Norms letters have been issued to concerned utilities for furnishing the details of action taken till date and further plan for FGD installation/ESP –upgradation.

.In view of the above CEA has started the monitoring of the implementation of the revised implementation plan.

According to the FGD phasing plan, 1 Unit of 500MW of Trombay TPS is to be completed by 2018. The current Status of FGD installation/ESP Upgradation for **Unit#5 of Trombay TPS of Tata Power is as follows:**

1. FGD Installation-Sea water FGD is installed at Unit#5 and is already in operation to meet the SO₂ emissions norms.
2. ESP Upgradation- Unit#5 ESP refurbishment project is already undertaken. Refurbishment of 2 Streams has been completed. Work on third Stream is in advanced stage of completion which would lead in meeting of the SPM Norms.

For Year 2019, According to the FGD phasing plan a total of 8 Units of Combined Capacity of 4940 MW are to be completed. Under this the status of following Units have been received and is as under.

- i) Mahatma Gandhi STPP, Jhajjar Power Ltd. (JPL), Haryana** has already installed FGD at the time of Project Construction. FGD is now under renovation for both the units in order to meet the parameters set by new MOEFCC guidelines. In this regard, OEM has already made a site visit to assess the suitability of existing system and improvements to be made to meet new SO₂ emission norms. MGTPS (JPL) has installed ESP and FF hybrid design for control of SPM. With the help of this, JPL is complying with environment norms for SPM and it remains below 50 Mg/Nm³.
- ii) Hinduja National Power Corporation Limited for the Vizag TPP** have appointed Tata Consultancy Engineers as their consultants who have visited the site along with a team for survey and collecting necessary inputs Technical and Operating Parameters to conceptualize the FGD requirement.

6.1 Summary of Current Status of Implementation of phasing plan for FGD Installation

S.No	Description	Capacity(MW)	Units
Central Sector			
1	Centre sector where FGD to be installed	46905	122
2	Finalisation of Specification planned	14190	29
3	Bids Awarded	2480	5
4	NIT done	840	4
5	NIT Planned	13740	44
6	Bids opened	4725	9
7	Feasibility study under process	10930	31
State Sector			
1	State sector where FGD to be installed	49085	156
2	Tendering process to be initiated	8880	24
3	Requested for FGD implementation date to be revised	1200	2
4	Not feasible as per developer	200	1
5	Feasibility study under process	17380	58
6	Feasibility study carried out	13090	37
7	Due to space constraint, alternative options of FGD installations being explored	1000	4
8	Complies with the norms	1050	5
9	Boiler is CFBC, hence FGD is not required.	215	3
10	Administrative approval is under process.	6070	22
Private Sector			
1	Private sector where FGD to be installed	57085	119
2	Tender Under process	11740	23
3	Bid under evaluation	3270	7
4	NIT issued	1200	2
5	As per developer. FGD Installation is not required.	540	2
6	FGD Installed	1820	3
7	Complies with the norms	300	1
8	Feasibility study carried out	22870	41
9	Feasibility under process	12165	34
10	Need Extension	3180	6

6.2 FGD- ESP Phasing Plan of Thermal Power Plants located in Delhi NCR

Sl. No.	Name of Thermal Power Station	Unit No.	Capacity (MW)	Timeline for FGD	Current Status
1	Dadri (NCTPP), U.P.		1820		
	Dadri (NCTPP), U.P.	1	210	31.12.2019	FGD: NIT done on 28 March 2018 with suitable technology to meet required emission limit. Bid opening will be done in last week of April 2018. Work will be awarded in May 2018. Scheduled Implementation is before Dec 2019. ESP: NTPC has already undertaken extensive R&M of ESPs in this unit.
	Dadri (NCTPP), U.P.	2	210	31.12.2019	FGD: NIT done on 28 March 2018 with suitable technology to meet required emission limit. Bid opening will be done in last week of April 2018. Work will be awarded in May 2018. Scheduled

					Implementation is before Dec 2019. ESP: NTPC has already undertaken extensive R&M of ESPs in this unit.
	Dadri (NCTPP), U.P.	3	210	31.12.2019	FGD: NIT done on 28 March 2018 with suitable technology to meet required emission limit. Bid opening will be done in last week of April 2018. Work will be awarded in May 2018. Scheduled Implementation is before Dec 2019. ESP: NTPC has already undertaken extensive R&M of ESPs in this unit.
	Dadri (NCTPP), U.P.	4	210	31.12.2019	FGD: NIT done on 28 March 2018 with suitable technology to meet required emission limit. Bid opening will be done in last week of April 2018. Work will be awarded in May 2018. Scheduled Implementation is before Dec 2019. ESP: NTPC has already undertaken extensive R&M of ESPs in this unit.
	Dadri (NCTPP), U.P.	5	490	31.12.2019	FGD: Bid Awarded on 30 th Jan'18. Implementation schedule is 18 to 21 months. ESP: Already designed to meet new SPM norms.
	Dadri (NCTPP), U.P.	6	490	31.12.2019	FGD: Bid Awarded on 30 th Jan'18. Implementation schedule is 18 to 21 months ESP: Already designed to meet new SPM norms.
2	GHTP (Lehra Mohabbat), Punjab		920		
	GHTP (Lehra Mohabbat), Punjab	1	210	31.12.2019	FGD: Proposal for hiring consultancy services for FGD Installation has been put up to higher Authorities of PSPCL ESP: Proposal for availing consultancy services to meet the new environmental norms is under consideration of higher authorities of PSPCL.
	GHTP (Lehra Mohabbat), Punjab	2	210	31.12.2019	FGD: Proposal for hiring consultancy services for FGD Installation has been put up to higher Authorities of PSPCL. ESP: Proposal for availing consultancy services to meet the new environmental norms is under consideration of higher authorities of PSPCL.
	GHTP (Lehra Mohabbat), Punjab	3	250	31.12.2019	FGD: Proposal for hiring consultancy services for FGD Installation has been put up to higher Authorities of PSPCL ESP: Proposal for availing consultancy services to meet the new environmental norms is under consideration of higher authorities of PSPCL.
	GHTP (Lehra Mohabbat), Punjab	4	250	31.12.2019	FGD: Proposal for hiring consultancy services for FGD Installation has been put up to higher Authorities of PSPCL ESP: Proposal for availing consultancy services to meet the new environmental norms is under consideration of higher authorities of PSPCL.
3	Harduaganj, U.P		500		
	Harduaganj, U.P	8	250	31.12.2019	FGD: Offer of Pre-Award Consultancy for FGD Installation has been obtained from M/s NTPC. Administrative approval is under process. ESP: Offer of Pre- Award Consultancy for retrofitting of ESP for Harduaganj (2x 250 MW) is awaited from M/s NTPC.
	Harduaganj, U.P	9	250	31.12.2019	FGD: Offer of Pre-Award Consultancy for FGD Installation has been obtained from M/s NTPC. Administrative approval is under process. ESP: Offer of Pre- Award Consultancy for retrofitting of ESP for Harduaganj (2x 250 MW) is awaited from M/s NTPC.
4	Indira Gandhi STPP, Haryana		1500		
	Indira Gandhi STPP, Haryana	1	500	31.12.2019	FGD: Bid Awarded in 30 Jan'18. Implementation schedule is 18 to 24 months ESP: Already designed to meet the environmental

					norms.
	Indira Gandhi STPP, Haryana	2	500	31.12.2019	FGD: Bid Awarded in 30 Jan'18. Implementation schedule is 18 to 24 months ESP: Already designed to meet the environmental norms.
	Indira Gandhi STPP, Haryana	3	500	31.12.2019	FGD: Bid Awarded in 30 Jan'18. Implementation schedule is 18 to 24 months ESP: Already designed to meet the environmental norms.
5	Mahatma Gandhi TPP, Haryana		1320		
	Mahatma Gandhi TPP, Haryana	1	660	31.12.2019	FGD: FGD Installed and is Under Renovation. ESP: MGTPS (JPL) has installed ESP and FF hybrid design for control of SPM. With the help of this, JPL is complying with environment norms for SPM and it remains below 50 Mg/Nm3.
	Mahatma Gandhi TPP, Haryana	2	660	31.12.2019	FGD: FGD Installed and is Under Renovation. ESP: MGTPS (JPL) has installed ESP and FF hybrid design for control of SPM. With the help of this, JPL is complying with environment norms for SPM and it remains below 50 Mg/Nm3.
6	Panipat TPS, Haryana		720		
	Panipat TPS, Haryana	6	210	31.12.2019	FGD: NTPC has been asked to submit their offer for consultancy work for pre-bid and post-bid activities for installation of FGD in this unit. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: Presently one field is out and same is being rectified.
	Panipat TPS, Haryana	7	250	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD at Unit-7, PTPS, Panipat. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: The overhauling of ESP fields in respect of unit- 7&8 has already been carried out and now all the ESP fields are in working order. After the overhauling of ESP, the value of SPM is below 100 mg/NM ³ . The installation of Ammonia flue gas conditioning system and FGD will further reduce the SPM values according to the new norms of 50 mg/m ³ shall be achieved. The Ammonia Flue Gas Conditioning (AFGC) System shall be installed in unit- 7 &8 of PTPS. The SPM levels are expected to be further reduced by 50% after installation of AFGC system, thus, meeting the new Norms of SPM.
	Panipat TPS, Haryana	8	250	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD at Unit-7, PTPS, Panipat. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: The overhauling of ESP fields in respect of unit- 7&8 has already been carried out and now all the ESP fields are in working order. After the overhauling of ESP, the value of SPM is below 100 mg/NM ³ . The installation of Ammonia flue gas conditioning system and FGD will further reduce the SPM values according to the new norms of 50 mg/m ³ shall be achieved. The Ammonia Flue Gas Conditioning (AFGC) System shall be installed in unit- 7 &8 of PTPS. The SPM levels are expected to be further reduced by 50% after installation of AFGC system, thus, meeting the new Norms of SPM.
7	Rajiv Gandhi TPS, Hisar, Haryana		1200		

	Rajiv Gandhi TPS, Hisar, Haryana	1	600	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: 2 nos. ESP fields in respect of unit-1 are not in service. For rectification of these fields NIT is in process and fields will be got repaired during forthcoming overhaul of unit. Besides the above, SPM will further reduce after installation of FGD.
	Rajiv Gandhi TPS, Hisar, Haryana	2	600	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: The overhauling of ESP in respect of Unit-2 has already been carried out and all the ESP fields are in working order. Besides the above, SPM will further reduce after installation of FGD.
8	Yamunanagar (DCTPS), Haryana		600		
	Yamunanagar (DCTPS), Haryana	1	300	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: The work for revival of ESP fields of Unit-1&2 has been awarded to M/s GE Power India Ltd. The work of unit- 1 is under progress and of unit- 2 will be carried out during annual overhauling due in April/ May, 2018. The firm has been asked for a guarantee of 50mg/ Nm³ as SPM values after revival of fields. After installation of FGD the values of SPM will further reduce.
	Yamunanagar (DCTPS), Haryana	2	300	31.12.2019	FGD: HPGCL is in the final stage of engaging NTPC as consultant for pre-bid and post-bid activities for installation of FGD. Further, necessary action shall be taken after appointment of NTPC as consultant ESP: The work for revival of ESP fields of Unit-1&2 has been awarded to M/s GE Power India Ltd. The work of unit- 1 is under progress and of unit- 2 will be carried out during annual overhauling due in April/ May, 2018. The firm has been asked for a guarantee of 50mg/ Nm³ as SPM values after revival of fields. After installation of FGD the values of SPM will further reduce.
9	Talwandi Sabo TPS, Mansa, Punjab		1980		
	Talwandi Sabo TPS (TSPL), Mansa, Punjab	1	660	31.12.2019	FGD: Feasibility Study Carried Out. PPA issues pending with regulator ESP: Talwandi Sabo Power Limited (TSPL) has already installed Hybrid ESP (ESP + Fabric Filter) to meet up the Particulate Matter emission limit as per new emission norms of MoEF&CC.
	Talwandi Sabo TPS, Mansa, Punjab	2	660	31.12.2019	FGD: Feasibility Study Carried Out. PPA issues pending with regulator. ESP: Talwandi Sabo Power Limited (TSPL) has already installed Hybrid ESP (ESP + Fabric Filter) to meet up the Particulate Matter emission limit as per new emission norms of MoEF&CC.
	Talwandi Sabo TPS, Mansa, Punjab	3	660	31.12.2019	FGD: Feasibility Study Carried Out. PPA issues pending with regulator. ESP: Talwandi Sabo Power Limited (TSPL) has

					already installed Hybrid ESP (ESP + Fabric Filter) to meet up the Particulate Matter emission limit as per new emission norms of MoEF&CC.
10	Nabha Power Ltd, Rajpura, Punjab		1400		
	Nabha Power Ltd, Rajpura, Punjab	1	700	31.12.2019	FGD: Feasibility Study Carried Out. Tender Specification completed. PPA issues pending with regulator. Tender Documents for inviting bids are under finalization. Bids shall be invited once the approval of the Regulatory commission is in place. ESP: Plant is fully complying new norms with regard to SPM level of 50mg/Nm3 with the present ESP. Therefore, no modification/ upgradation in the ESP is required.
	Nabha Power Ltd, Rajpura, Punjab	2	700	31.12.2019	FGD: Feasibility Study Carried Out. Tender Specification completed. PPA issues pending with regulator. Tender Documents for inviting bids are under finalization. Bids shall be invited once the approval of the Regulatory commission is in place. ESP: Plant is fully complying new norms with regard to SPM level of 50mg/Nm3 with the present ESP. Therefore, no modification/ upgradation in the ESP is required.

7.1 “Coal-Fired Generation Rehabilitation Project-India” funded by World Bank.

The World Bank has financed the “Coal-Fired Generation Rehabilitation Project-India” for demonstrating Energy Efficiency Rehabilitation & Modernization (EE R&M) at coal fired generating units through rehabilitation of 640 MW of capacity across three States-West Bengal, Haryana and Maharashtra. The above project has two components: -

Component-1. Energy Efficiency R&M at Pilot Projects

This component would fund implementation of Energy Efficient R&M of 640 MW capacity comprising Bandel TPS Unit-5(210 MW) of WBPCL, Koradi TPS Unit-6(210 MW) of Mahagenco and Panipat TPS Unit-3&4 (2x110 MW) of HPGCL. The World Bank has earmarked US \$ 180 million of IBRD loan and US \$ 37.9 million of GEF grants for the Component-1.

Component-2. Technical Assistance to CEA and Utilities

The Technical Assistance component of the project is aimed at providing support in implementation of EE R&M pilots, developing a pipeline of EE R&M interventions, addressing barriers to EE R&M projects and strengthening institutional capacities of implementing agencies for improved operation and maintenance practices. The World Bank has earmarked US \$ 7.5 million GEF grant for the Component-2.

7.1.1 World Bank Funded Energy Efficiency Pilot R&M Projects

(A) Bandel TPS (Unit-5, 210 MW)

The total estimated cost of R&M project is around US \$ 107.38 Million comprising of loan of around US \$ 59, GEF Grant of around US \$ 12.45 million. In addition to above, Technical Assistance of US \$ 1.3 million under GEF Grant has been provided for consultancy. Further,

additional US\$ 22.21 million comprising of IBRD loan of US\$ 18.01 million and GEF grant of US\$ 4.2 million due to restructuring of funds as a result of cancellation of R&M works in Panipat TPS have also been provided for Bandel TPS.

Status of Physical Progress

The unit- 5 was taken under S/D for R&M/LE works in November.2013 and the unit synchronized on coal on 21st September, 2015. The unit attained a load of 215 MW on 24th November, 2015.

(B) Koradi TPS (Unit-6, 210 MW)

Background

The total estimated cost of the project is around US\$ 110.5 Million and the fund allocation for the Koradi TPS is loan of around US \$ 59 million (Loan)), grant of around US \$ 12.45 million. In addition to above Technical Assistance of US \$ 3.3 million under GEF Grant has been provided for 10 consultancy studies.

The Commercial Operation Date of the unit is 30.03.1982 & the unit is about 34 years old. The estimated cost of the R&M project based on award of contract is Rs. 486 Crore. The zero date for R&M project is 3rd March, 2014. The unit is under shutdown since 20th July, 2015 and targeted synchronization date is 18-02-2018.

Status of Physical Progress

i) BTG Package: i) Mahagenco issued that the Letter of Award to BHEL on May 31, 2013. The contract was signed on December 18, 2013. Overall 89.61% work of BTG package completed. Approximately 96% of the material (on Amount basis) is supplied by BHEL at site & further supply is in progress. 100% civil work and 95% electrical work of new ESP Control Room building at new location are completed. Turbine Mill overhauling work is 60 % completed. Coal Mill erection of 4 out of 6 are completed. All 3 FD fan replaced. Erection of BFP is 100% completed. Turbine is on barring since dated 10-01-2018.Overhauling of CW/CEP pumps are 100% completed. Generator package electrical is 80% completed and GTR erection is 99% completed.

ii) Electrical Package: Mahagenco issued the Letter of Award to M/s ABB Ltd on March 19, 2012 and the final contract was signed on May 25, 2012. Later on the package price escalation issue was resolved & M/s ABB restarted the work at site from 07.10.2015. Overall 78.79% work of Electrical package completed. Approximately 79.66 % of the material (on Amount basis) is supplied by M/s ABB at site & further supply is in progress. Breaker ON/OFF time test completed. Retrofitting of HT breakers completed. HT/LT Motors overhaul are 70% and 75% completed respectively.LT Motor Erection and Testing is 25% completed. Unit Aux. Transformer (UAT) placed in position. FBT panel erection work is 40% completed. HT switchgear work 100% completed.

iii) BOP Package: Letter of Award (LOA) for Cooling Tower Plant Package, Ash Handling Plant package and Fire Detection, Protection & Inert Gas System Package are issued and contract is signed on 23.09.2016, 26.10.2016 & 05.11.2016 respectively. DM Plant & Pre-Treatment System Package has been cancelled. The need based work of DM Plant & Pre-Treatment System shall be carried out separately by O&M section. Under Cooling Tower Plant Package overall 70.47% work completed. 99% of overall material has been supplied at site & 85% of the dismantling work has been completed. 70% installation & civil works completed. Design Engg. work is in progress of Ash Handling Plant. 100% material supplied at site, Installation & Civil works completed and commissioning balance for Fire Detection, Protection & Inert Gas System Package.

Various Revised Milestones for R&M work at Unit-6, Koradi TPS are as under:

S.No.	Milestone	Target Date	Revised Target Date	Actual Date
1.	Zero date R&M Project	03-03-2014	--	03-03-2014
2.	Date of Shut Down for R&M	25-08-2015	--	20-07-2015
3.	Synchronization	20-04-2016	--	--
4.	Trial Run or Reliability Run	20-05-2016	--	--
5.	P.G. Test	18-08-2016	--	--

In view of synchronization, full speed rolling of the TG was carried out on 11.03.2018. Full speed of the turbine was achieved and Generator dynamic testing was completed. Synchronization could not be achieved as turbine tripped without any alarm/indication and with high horizontal shaft vibrations. After Inspection all TG Bearings and after carrying out necessary rectifications rolling activity was again taken up on 25.03.2018. However, TG speed could not be raised beyond 1450 rpm due to high shaft vibrations (@ 412 microns) and high pedestal vibration (@ 90 microns) at Bearing No.1. Internal inspection of HP rotor is carried out- HP rotor sent to BHEL-Haridwar for rectification and full speed balancing.

C) Panipat TPS (Unit-3&4, 2x110 MW)

The unit 3 & 4 of Panipat TPS was initially identified for R&M under World Bank Programme. A loan of 448.36 Crores was assigned under R&M of Unit 3&4, PTPS, Panipat. As per the final TAR of consultant R&M cost was 561.27 Crores which was not found financial viable due to high sensitivity of returns to Station Heat Rate and exceeding of estimated cost against available funds. Therefore, HPGCL requested World Bank for foreclosure of the Loan Agreement.

7.2 Japan-India Co-operation for Study on Efficiency and Environmental Improvement of Coal Fired Stations

A MOU between Central Electricity Authority and Japan Coal Energy Centre (JCOAL) for preliminary study of Efficiency and Environment improvement study in coal fired power plants was signed on 30.4.2010 to carryout necessary diagnostic activities in few coal-fired power plants pertaining to Energy Efficient Renovation & Modernisation works and suggest measures to overcome barriers for promoting R&M, measurement for environmental improvement of coal-fired power plants in India. Accordingly, generating units are selected from Ukai and Wanakbori TPS (GSECL), Ramagundem STPS (NTPC) and Vijaywada TPS (APGENCO) for pre – primary

studies. After Pre-Primary Studies, JCOAL finalized 3 units viz., Vijaywada TPS Unit-1 (210MW) of APGENCO, Wanakbori TPS Unit-1 (200 MW) of GSECL and Kahelgaon STPS Unit-2 (210 MW) of NTPC for full-fledged diagnosis. The final report had been submitted in December 2012.

The 2nd Phase MOU between CEA and JCOAL was signed on 11.06.2012 for carrying out detail diagnostic study for energy efficiency oriented R&M activities in three nos. of units. Durgapur TPS unit no.4 (210 MW LMZ Unit) of DVC and one unit each from Badarpur TPS and Unchahar TPS of NTPC were selected for studies during the 2nd phase. JCOAL team visited these stations during December, 2012. The final study report for energy efficiency oriented R&M activities was submitted on 15th April, 2013.

The 3rd Memorandum of Understanding (MoU) on India – Japan Cooperation for Project on Efficiency & Environment Improvement for Sustainable, Stable and Low Carbon Supply of Electricity was signed on 22nd January, 2016.

Under Clean Coal Technology (CCT) Programme a study tour to Japan has been organised during current year from 29th Nov, 2017 to 7th Dec, 2017. The participants from CEA, MoP, DVC, NTPC and State Utilities visited the latest USC power stations at Japan. The total 89 officers from MoP, CEA and different power utilities were participated in the study tour under CCT Training Programme.

Under CEA- JCOAL Co-operation a study on replacement of old units of Badarpur TPS by highly efficient super critical units of higher size has been carried out. JCOAL team has carried out three site surveys and investigations in the month of Nov, 2015, Jan, 2016 and in March, 2016. The report on the study has been submitted in June, 2016 by JCOAL.

JCOAL has also carried out feasibility study on replacement of Singrauli STPS Stg. I & II units (5x200 MW+2x200 MW) of NTPC between December, 2016 to March, 2017.

Unit-3 of Dadri TPS of NTPC was identified for implementation of full-fledged diagnosis study i.e. Residual Life Assessment (RLA) study. JCOAL team has conducted RLA/Diagnostic Study at Unit-3 Dadri TPS of NTPC from 30th November, 2015 to 10th of December, 2015. The report on RLA/CA study of Unit-3 of Dadri TPS has been submitted by JCOAL. The objective of the RLA Study is to identify the remaining life and the current condition of Unit -3, to constitute the base for formulation of the plan of R&M implementation that is tentatively scheduled in 2018.

One day workshop on " Project on Efficiency and Environmental Improvement for Sustainable, Stable and Low-carbon Supply of Electricity" was held on 11th Nov, 2016 and 10th Nov 2017 at New Delhi by CEA and JCOAL. Various stake holders from Central/State/Private in power sector participated in the workshop.

A Kick-off Meeting on Study on O&M enhancement of existing units of DSTPS, DVC under CEA-JCOAL Cooperation was held among NEDO, JCOAL, CEA and DVC on 13th October 2017 at Kolkata in order to share O&M and safety related best practices. The expert team from Japan also visited DSTPS, DVC for the purpose of O&M Study from 11.12.2017 to 14.12.2017.

Interim Report of Activities during the Site Study for O&M Study at Durgapur Steel Thermal Power Station has been submitted by JCOAL to CEA on 15th Dec 2017.

Mini-workshops were organized on 30-1-2018 at GSECL(Gujrat) and on 01-02-2018 at APGENCO (Andhra Pradesh) respectively for the year 2017-18 under CEA-JCOAL Cooperation for the project on Efficiency and Environment improvement of Coal Fired Power Stations in India.

Under CEA- JCOAL Co-operation a study is being carried out by JCOAL on adoption of available technologies to meet new environment standards and the economic viability of using such technologies in existing power plants. Combustion test of Indian Coal has been done at Japan. The Report of Combustion

test of Indian Coal has been submitted. SCR Pilot test at NTPC's Sipat TPS is being carried out to meet the NOx level in the flue gas as per new environmental norms. A diagnostic study for optimal environmental measures at Dadri TPS was conducted in January, 2018.

**Status of units where Life Extension/ Renovation & Modernisation works have been taken up
for implementation during 2017-22**

STATE SECTOR LE Works**(as on 31.03.2018)**

S.No.	State	Name of Station	Unit No.	Year of Comm.	Cap. (MW)	Status
1.	U.P.	Obra	12	1981	200	Unit is under s/d since 01-10-2016 for R&M works. LE Works started on 01.10.2016. Boiler: Work started from 15.02.7. Nearly 98% work completed. Turbine. Work started on 03.07.2017. Nearly 98% work completed. Generator: 95% work completed. ESP foundation completed, Pass-A-80%, Pass-B-5%. Ash Handling: Nearly 20% works completed (common for both unit-12 & unit-13) Switch Yard 400 kv CB- 95% work completed. Water treatment plant- 98% work completed. Coal Handling plant- nearly 50% work over. Date of commissioning given by M/s. BHEL is May, 2018.
2.	U.P.	Obra	13	1982	200	Date of commissioning given by M/s. BHEL is 31-12-2018. R&M works started from 06-03-2018. Approval from Head Quarter to get s/d for unit-13 is under consideration.
3.	U.P.	Anpara TPS	1	1986	210	LE works yet to be decided by the utility
4.	U.P.	Anpara TPS	2	1987	210	LE works yet to be decided by the utility
5.	U.P.	Anpara TPS	3	1988	210	LE works yet to be decided by the utility
6.	Gujarat	Ukai	3	1979	200	ESP R&M: ESP retrofitting of unit-3 has been completed and unit lit up on 26-04-2016. PG test has been carried out and guarantee parameter achieved. Turbine & Boiler R&M: Order for consultancy work R&M of turbine & boiler and auxiliaries considering heat rate (efficiency) improvement with ramping up/ down of the load and PG test of ESP is placed on STEAG, Noida on 30.03. 2016. After observing the satisfactory performance of Phase-I(Ukai-4) retrofitted unit, the R&M of Phase-II R&M of LMZ turbine will be implemented. C&I Up-gradation :- Order of awarded for C&I upgradation to BHEL on 18.06.2015. C&I upgradation of Unit-3 has been completed and unit lit up 26-04-2016. Ash slurry pump house: - Technical offers are under technical scrutiny. Boiler Back Pass Modification: Work at unit-3 started after observing performance of unit-4.
7.	Gujarat	Ukai	4	1979	200	Ukai TPS Unit -4 was taken under S/D on 07-12-2016 and synchronised on 17.05.2017 and

						COD achieved on 24.05.2017. PG test for retrofitted ESP, Boiler after modification and retrofitted Turbine was completed on 17-06-2017, 23-08-2017 and 02-11-2017 respectively. Guaranty parameters achieved. Boiler Back Pass Modification: Order awarded to BHEL for availability & efficiency improvement through modification in Boiler Back Pass and replacement of APH. Work completed and unit lit up on 04-05-2017. PG test carried out and guaranty parameter achieved. Ash slurry pump house:- Technical offers are under technical scrutiny.
8.	Gujarat	Ukai	5	1985	200	ESP R&M: ESP retrofitting of Ukai unit-5 completed and unit lit up on 28-03-2017. PG test of ESP is planned in April 2018. Turbine &Boiler R&M Order for consultancy work R&M of turbine & boiler and auxiliaries considering heat rate (efficiency) improvement with ramping up/ down of the load and PG test of ESP is placed on STEAG, Noida of Rs. 2.24 Crs. on 30.03. 2016. After observing the satisfactory performance of Phase-I(Ukai-4) retrofitted unit, the Phase-II R&M of LMZ turbine will be implemented. The consultancy services for turbine retrofitting and modification in Boiler Back Pass with achievement of revised emission norms for Ukai unit 3 & 5 is already awarded. Based on the feasibility report for implementation of FGD &PG test results of Ukai Unit No. 4, the implementation of R&M of proposed Units shall be decided. For implementation of DeNOx system, GSECL is awaiting the results of pilot projects of NTPC. Meanwhile, Ash slurry pump house:- Technical offers are under technical scrutiny.
9.	Gujarat	Wanakbori	1	1982	210	The consultancy services for turbine retrofitting and modification in Boiler Back Pass with achievement of revised emission norms for Wanakbori unit 1&2 is already awarded. Based on the feasibility report for implementation of FGD &PG test results of Ukai Unit No. 4, the implementation of R&M of proposed Units shall be decided. For implementation of DeNOx system, GSECL is awaiting the results of pilot projects of NTPC.
10.	Gujarat	Wanakbori	2	1983	210	Based on the feasibility report for implementation of FGD &PG test results of Ukai Unit No. 4, the implementation of R&M of proposed Units shall be decided. For implementation of DeNOx system, GSECL is awaiting the results of pilot projects of NTPC. ESP R&M: The order for retrofitting is issued to BHEL on 18.03.2016 and Zero date started from 14-01-2016. ESP retrofitting unit-1 completed and unit lit up on 07-03-2017. ESP Retrofitting work of unit-2started on 18-01-2018 and unit lit up on CD pass on 07-04-2018. The work of AB pass is under progress. Turbine&Boiler R&M: Order for consultancy work R&M of turbine & boiler and auxiliaries considering heat rate (efficiency) improvement

					with ramping up/ down of the load and PG test of ESP is placed on STEAG, Noida of Rs. 2.24 Crs. on 30.03. 2016. After observing the satisfactory performance of Phase-I(Ukai-4) retrofitted unit, the Phase-II R&M of LMZ turbine will be implemented. Approx. 93% material supplied. Meanwhile, GSECL has initiated feasibility study for replacement of WTPS 2x 210 MW Units by 1x800 MW Super Critical Units. Pending work of 1 No. of Unit-2, Bus coupler will be carried out in available shutdown.
11.	Gujarat	Wanakbori	3		210 ESP Retrofitting work Shutdown of WTPS Unit No. 3 is commenced form 25.07.2017. ESP retrofitting unit -3 completed and unit lit up on 27-11-2017. PG test is planned in April 2018. Turbine R&M:- Order awarded to M/s NASL Noida on 29-04-2015 and zero date started from 10.03.2015. Turbine R&M of Wankbori Unit -3 completed and unit lit up 27-11-2017 and 72 hrs. trial run on full load completed successfully on 5-12-2017. PG test carried out on 10-03-2018. Boiler Back Pass Modification: - Order awarded to M/s BHEL for availability & efficiency improvement through modification in Boiler back pass and replacement of APH. Boiler back pass modification and APH replacement work completed and unit lit up on 27-11.2017 and synchronized on 01.12.2017. PG test carried out on 09-03-2018.
11.	Maharashtra	Koradi	6	1982	210 The unit is being taken up by WB funded project. The total cost of the project including IDC is 636.93 crores. The unit is under shutdown since 25th August, 2015 and expected to be synchronized on 18-02-2018. BTG Package: Overall 89.61% work of BTG package completed. Approximately 96% of the material (on Amount basis) is supplied by BHEL at site & further supply is in progress. 100% civil work and 95% electrical work of new ESP Control Room building at new location are completed. Turbine Mill overhauling work is 60 % completed. Coal Mill erection of 4 out of 6 are completed. All 3 FD fan replaced. Erection of BFP is 100% completed. Turbine is on barring since dated 10-01-2018.Overhauling of CW/CEP pumps are 100% completed. Generator package electrical is 80% completed and GTR erection is 99% completed. Electrical Package: Mahagenco issued the Letter of Award to M/s ABB Ltd on March 19, 2012 and the final contract was signed on May 25, 2012. Later on the package price escalation issue was resolved & M/s ABB restarted the work at site from 07.10.2015. Overall 78.79% work of Electrical package completed. Approximately

						79.66 % of the material (on Amount basis) is supplied by M/s ABB at site & further supply is in progress. Breaker ON/OFF time test completed. Retrofitting of HT breakers completed. HT/LT Motors overhaul are 70% and 75% completed respectively. LT Motor Erection and Testing is 25% completed. Unit Aux. Transformer (UAT) placed in position. FBT panel erection work is 40% completed. HT switchgear work 100% completed. BOP Package: Letter of Award (LOA) for Cooling Tower Plant Package, Ash Handling Plant package and Fire Detection, Protection & Inert Gas System Package are issued and contract is signed on 23.09.2016, 26.10.2016 & 05.11.2016 respectively. DM Plant & Pre-Treatment System Package has been cancelled. The need based work of DM Plant & Pre-Treatment System shall be carried out separately by O&M section. Under Cooling Tower Plant Package overall 70.47% work completed. 99% of overall material has been supplied at site & 85% of the dismantling work has been completed. 70% installation & civil works completed. Design Engg. work is in progress of Ash Handling Plant. 100% material supplied at site, Installation & Civil works completed and commissioning balance for Fire Detection, Protection & Inert Gas System Package.
12.	Maharashtra	Koradi	7	1983	210	R&M/LE study not carried out
13.	Maharashtra	Bhusawal	2	1979	210	All studies Completed, Final DPR received from M/s Energo Engg Ltd has been approved by MSPGCL Board in May, 2016. Further, MSPGCL Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
14.	Maharashtra	Bhusawal	3	1982	210	RLA/ Feasibility study for EER&M has not been carried out.
15.	Maharashtra	Nashik	3	1979	210	DPR finalised, Govt. of Maharashtra has approved 20% equity. The unit-3 was to be taken up under KfW funded project. All studies completed, and DPR has been prepared. Also Tender documents have been prepared. But Nasik Unit-3 R&M project withheld and Nasik Unit -4 R&M shall be taken up on priority. Further, MSPGCL Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
16.	Maharashtra	Nashik	4	1980	210	All studies Completed, Final DPR is submitted by M/s Steag. Approval of DPR is in progress. Nasik Unit -4 R&M shall be taken up on priority. Further, MSPGCL Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
17.	Maharashtra	Nashik	5	1981	210	R&M/LE feasibility study completed. MSPGCL Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
18.	Maharashtra	Parli	4	1985	210	R&M/LE study not carried out. Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.

19.	Maharashtra	Parli	5	1987	210	R&M/LE study not carried out. Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
20.	Maharashtra	Chandrapur	3	1983	210	R&M/LE study not carried out. Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
21.	Maharashtra	Chandrapur	4	1984	210	R&M/LE study not carried out. Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
22.	Maharashtra	Chandrapur	5	1983	500	R&M/LE study not carried out. Board directed that no other R&M work shall be taken up without monitoring results of Koradi U-6.
23.	Maharashtra	Chandrapur	6	1984	500	R&M/LE study not carried out
24.	Maharashtra	Khaperkheda	1	1989	210	R&M/LE study not carried out
25.	Maharashtra	Khaperkheda	2	1990	210	R&M/LE study not carried out
26.	Bihar	Barauni	6	1983	110	Unit-6 is likely to be synchronized in April 2018. Boiler: 97% work completed, Turbine: 98% work completed PG Test for both units is pending.
27.	W.Bengal	Kolaghat	1	1990	210	DPR has been prepared and accepted. After successful completion of the unit-3 work the R&M works of the Unit -1&2 will be taken up.
28.	W.Bengal	Kolaghat	2	1985	210	DPR has been prepared and accepted. After successful completion of the unit No. 3 work the R&M works of the Unit No 1&2 will be taken up.
29.	W.Bengal	Kolaghat	3	1984	210	U# 1, 2 & 3: There are 3 packages (ESP, AHP & BTG). ESP(1,2,3) : Starting date is 22.03.17. (Schedule is 35 months from LOA). AHP(1,2,3): Starting date 26/07/2017. (schedule is 29 months from LOA) BTG (1,2,3): 33 months from LOA Boiler & Auxiliary System: - DPR is ready. Technical bids are submitted on 03-01-2018. Tendering under process. TG: Upgradation of existing Turbine modules along with up gradation of governing system from hydraulic to electro-hydraulic system with acceptance of turbine heat rate improvement, fulfillment of RGMO/FGMO operation to existing DCS.- Technical bids are submitted on 03-01-2018. Tendering under process. BOP: - Clarifloculator:- Technical bids are submitted on 03-01-2018. Tendering under process. Tendering under process for extension of 6.6 KV Bus to facilitate 2 nd dedicated power sources for ESP. ESP (unit- 3): LOA placed on M/s on KCIN dismantling work of ESP completed and 50%

						civil work completed. AHP:- LOA placed on M/s Indure. Pipe dismantling near vacuum pump is 60% completed -Dismantling of pipe of FAE tower is completed - Dismantling of clinker, grinder, vacuum pump, ESP fluidizing blower and ISH fluidizing blower for unit- 3 is completed – Dismantling of FA line from Ash vessel to silo is completed. -Bottom ash hopper refractory brick breaking is completed. - Wet structure over ESP Control room not removed but line & equipment dismantle complete. - Bottom ash hopper job will be started after getting plate. Electrical and Instrumentation: - Technical bids are submitted on 03-01-2018. <table><tr><th colspan="3">Electrical</th></tr><tr><td>1</td><td>Replacement of old GPR by new numerical system</td><td>Tendering under process</td></tr><tr><td>2</td><td>Replacement of electromagnetic relay of 6.6 KV & 450 V breakers by numerical relays</td><td>Tendering under process.</td></tr></table> <table><tr><th colspan="3">Instrumentation</th></tr><tr><td>1</td><td>ESP</td><td>Engg. going on. C&I : No material received at site and no erection has been started.</td></tr><tr><td>2</td><td>AHP</td><td>-do-</td></tr><tr><td>3</td><td>Governing System</td><td>Tendering under process.</td></tr><tr><td>4</td><td>Upgradation/ replacement of instrumentation system as per mechanical scope of work.</td><td>Tendering under process.</td></tr><tr><td>5</td><td>Incorporation of ATRS</td><td>Tendering under process.</td></tr></table> NOTE: Shutdown of ESP and AHP shall be matched. BTG package of Unit-1 and 2 shall be matched with respective ESP and AHP. BTG Package of unit-3 shall start last if situation permits. Total estimated cost of R & M / L E works is Rs. 1090 Crs for unit-1,2 & 3. Financial progress: ESP- Payment Rs 15.5 crore was made for ESP up to 31-03-2018. AHP- Payment Rs. 8.0 crore was made for AHP till 31-03-2018.	Electrical			1	Replacement of old GPR by new numerical system	Tendering under process	2	Replacement of electromagnetic relay of 6.6 KV & 450 V breakers by numerical relays	Tendering under process.	Instrumentation			1	ESP	Engg. going on. C&I : No material received at site and no erection has been started.	2	AHP	-do-	3	Governing System	Tendering under process.	4	Upgradation/ replacement of instrumentation system as per mechanical scope of work.	Tendering under process.	5	Incorporation of ATRS	Tendering under process.
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5	Incorporation of ATRS	Tendering under process.																															
30.	W.Bengal	Kolaghat	5	1991	210	U# 4, 5 & 6 : Only 1 package for ESP ESP Package: Single bid is received for ESP Package. Re-tendering is uploaded n 02-02-2018																											
31.	Karnataka	Raichur	1	1985	210	Boiler C&I works completed.																											

32.	Karnataka	Raichur	2	1986	210	DPR is being revised, duly incorporating additional works in the R&M/LE scope of work is put up for Head Office approval. Once the DPR is approved, same will be submitted to KERC for approval. Project cost is Rs. 1240.18 crores. However, all the efforts are being made to reduce the R&M expenditure to minimum considering essential works required for enhancing performance/ Heat Rate. KPCL has engaged a consultant to explore the technologies/ possibilities to meet the new environmental norms. Consultant has submitted feasibility reports/DPR. The same has been put up to HO. Further proposal for implementation of environmental solutions is being prepared after visiting some of the power plants who have already installed FGD system. After finalization of DPR KPCL will take decision on comprehensive R&M works of unit 1 & 2, according to the recommendations for DPR. FGD tender document preparation under progress.
33.	Karnataka	Raichur	3	1991	210	M/s Energo Engineers Projects limited., Gurgaon is appointed as consultant for conducting Feasibility studies, Preparation of DPR, Technical Specifications & Bid Document and assisting KPCL in selection of EPC contractor for R&M of 210 MW Coal fired TPS Unit-3, at RTPS. As a part of Comprehensive R&M of unit-3 consultant conducted Energy Audit during the month of Feb-17 & Condition assessment during the month of March-17, and carried out RLA studies of Boiler in month of June-2017. Awaiting for EA & RLA reports from the consultant. The reports will be submitted by the firm after completing some of the pending works of Energy Audit.
Sub Total State Sector (LE)			34		7570	

**STATE SECTOR
(R&M Programme)**

S.N.	State	Name of Station	Unit No.	Year of Comm.	Cap. (MW)	Status
1.	U.P.	Obra	7	1974	100	- Work is being executed by BHEL. - Zero date of the scheme is 04.12.2009. Unit was scheduled on 23 months from zero date i.e Nov 2011. The revised cost of R&M scheme for unit 7 is 144.11 crores. All mechanical works completed. Lightup of unit was withheld due to fire in 6.6 kV breaker in Nov., 2016. BHEL and Scheider experts are called to assess the extent of damage and submit list of required spares for revival of switchgear of the unit. Erection work has been completed. Boiler: 100% work completed (steam blowing done). Turbine: 100% work completed (Only rolling pending). Generator: 99% work completed (Only H₂ filling pending) BoP: 100% work completed (only mill-7A trial pending. Reserve supply required) Restoration of electrical supply in S/G room is under progress.
2.	U.P.	Anpara'B	4	1993	500	R&M works is being executed by BHEL & M/s MITSUI & Toshiba OEM, Japan. – Total cost of scheme is Rs. 691.97 cr. Total expenditure upto 31.12.2016 is 387.16 crs. Boiler: Nearly 70% work completed. TG: Nearly 70% work completed. Electrical & Instrumentation: Nearly 70% work completed. BoP: Nearly 70% work completed. - The R&M work would be carried out in AOH and are likely to be completed by September, 2018. Utility decided to carry out Feasibility Study to meet the environmental norms.
3.	U.P.	Anpara'B	5	1994	500	
4.	Punjab	Ropar	1	1984	210	Utility decided to do need based R&M at estimated expenditure of Rs. 55 Cr. NTPC prepared the DPR based on the previously conducted RLA/CA Study. Retrofitting of 125 Nos. and 34 nos. ACB's has been completed in unit-1 & 2. Replacement of six Nos. Boiler Feed Booster Pump with more efficient. Replacement of old & obsolete HP Heaters & APH completed in unit-1 & 2. Replacement of existing APH with modified design 24 Sector APH in unit-2 and replacement of complete Reheater assemblies of unit 1&2 have been completed. SF-6 breakers have been fitted & commissioned in 220kV switchyard. Steam & Water Analysis System (SWAS) of unit-1 to 6 has been retrofitted and commissioned. Erection and commissioning will be done during overhauling of unit-1 in February, 2018.
5.	Punjab	Ropar	2	1985	210	
6.	Punjab	Ropar	5	1992	210	RLA/CA Study already stands conducted. The consultant M/S NTPC had prepared the DPR on the basis of RLA/CA study & submitted it to GGSSTP, Rupnagar. Further GGSSTP has submitted the same to the erstwhile PSEB for approval of the major R&M/LE Works. Replacement of old and obsolete HP Heaters of unit 1&2 has been completed. Breakers have been fitted & commissioned in the 220KV Switch yard. New Replacement of steam & water analysis system have been installed & commissioned on unit 1,2,4,5 while retrofitting work has been carried on on Unit 3 & 6,
7.	Punjab	Ropar	6	2001	210	

						commissioning would be done when Units would be on load. All the requisitioned valves have been retrofitted & commissioned, while on unit-2, 90% of valves has been retrofitted. The electro Mechanical Vibratory Feeders at ERH in CHP has been installed & commissioned. Upgradation of wagon Trippler No.3 in coal handling plant of GGSSTP, magnetic separators on conveyors in CHP has been installed & commissioned. Material has been supplied by BHEL for the replacement of existing APH with modified design ²⁴ Sector APH on unit 5 & 6. But due to Punjab Govt. to permanently close unit 1& 2 of Ropar TPS, APH would be installed either unit 5 or 6 during 2018-19. Phase-II Migration of WDPF System to Ovation system on Unit-5 completed. Replacement of minimum oil circuit breakers (MOCBs) with vacuum circuit breakers of units 3,4,5 &6 would be carried out during the Year 2018-19. Replacement of Fire Detection & Annunciation system at various locations including cable galleries of Ropar TPS would be carried out in the year 2018-19. Replacement of ESP controllers of stage 3 would be taken up in 2018-19.
8.	Punjab	GH TPS (Leh. Moh.)	1	1997	210	
9.	Punjab	GH TPS (Leh. Moh.)	1	1997	210	NO R&M/LE activity has been planned. Proposal for availing consultancy service to meet the new environmental norms is under consideration of higher authorities of PSPCL
10.	Rajasthan	Kota	3	1988	210	Total 14 activities sanctioned for R&M. Estimated cost of R&M is Rs. 356.13 crores. Expenditure incurred till date is Rs.195 Cers. - 10 nos of works fully completed. - R&M work of CHP system is under progress. - Order placed to M/s. Enrtgo Engineering Projects Ltd. - Work of Vacuum pump is under progress, placed to M/s. Millenium Impex Pvt. Ltd. - 01 no. work of Air Compressor replacement has been dropped due to technical reasons. - E- Tender for VFD cancelled due to technical reasons.
11.	Rajasthan	Kota	4	1989	210	
12.	Rajasthan	Kota	5	1994	125	
13.	Rajasthan	Suratgarh TPS	1	1998	250	
14.	Rajasthan	Suratgarh TPS	2	2000	250	- Modification in ACW system of Unit 1& 2 has been completed on 28.01.2017.
15.	Rajasthan	Suratgarh TPS	3	2001	250	-Augmentation of DMCCW system of Unit 1 &2 completed in September, 2016
16.	Rajasthan	Suratgarh TPS	4	2002	250	-Blow down system for cooling Tower of Unit 2,3,4&5 completed in 2015. -Replacement of LR beam of ESO on Unit-1 is likely to be completed in financial year 2018-19, subject to shutdown of Unit -1 -NIT dropped & new NIT will be floated by H/Q for providing dense phase conveying system from existing intermediate silo system of ESP of unit 1,2,3,4,5& 6 . -SOx, NOx & CO Analyser for Unit 2,3 &4 has been completed on 15.02.2017 -Upgradation of HMI system of unit 2 completed on 06.09.2016. -PO Placed Upgradation of workshop .
17.	Chhattisgarh	Korba (West)	1	1983	210	CSPGCL has taken-up need based R&M for life extension on the basis of R&LA studies and also plan for compliance of new environmental norms. RLA studies done by M/s Evonik. Scope of work of Boiler, Turbine, Electrical Instrumentation, Civil and BOP is being finalised. The CSERC in its order dated 61-03-2016 has approved such scheme under
18.	Chhattisgarh	Korba (West)	2	1984	210	
19.	Chhattisgarh	Korba (West)	3	1985	210	
20.	Chhattisgarh	Korba (West)	4	1986	210	

						capital investment plan. Order placed on BHEL Noida for Augmentation, R&M and up-gradation of ESPs to maintain emission level limit below 50mg/Nm ³ . Tender floated for Augmentation of DCS/ C&I System. Fire protection system of Transformer & Cables Vault Galleries are under process. Other schemes approved by CSERC for financial year 2016-17 to 2020-21 are under tendering process.
21.	M.P.	Sanjay Gandhi	1	1993	210	Unit-1 –The consultant has completed RLA/CA Studies in Dec 2014 and submitted the DPR in March 2015.
22.	M.P.	Sanjay Gandhi	2	1994	210	Unit-2- The consultant have completed RLA/CA Studies in Aug 2016 and submitted the DPR in Jan 2017. Boiler: - A consultancy order has been placed on M/s Steag Energy Services(I) Pvt. Ltd., Noida for providing consultancy services to prepare bid documents, assistance in selection of executing agency & monitoring of implementation of R&M Works. The consultant has submitted draft tender specifications for R&M of BTG, Air compressor, DM & CW system, Electrical, fuel oil system, Hydrogen generation plant & Ash Handling Plant. The same were forwarded to all concerned for scrutiny. In this regard, several round of discussions held amongst all concerns to finalise specifications. Based on the discussion held on commercial part of BTG & APH specification, M/s. Steag has submitted revised draft specification & consultant also submitted draft PQR of other packages. These are being evaluated. TG:- M/s. Steag has submitted draft tender specifications. BOP :- The M/s Steag has submitted draft tender specifications. Electrical & C&I:- The M/s Steag team made site visit & discussions to freeze the detailed scope of work.
23.	Maharashtra	Chandrapur	7	1997	500	R&M works yet to be decided by the utility.
24.	Maharashtra	Khaperkheda	3	2000	210	R&M works yet to be decided by the utility.
25.	Maharashtra	Khaperkheda	4	2001	210	R&M works yet to be decided by the utility.
26.	Tamil Nadu	Tuticorin TPS	1	1978	210	1st and 2nd RLA already completed. Boiler: Strengthening of weak insulation of Boiler-To be carried out during 2018-19. T.G.: -Minor repair works such as attending cracks in the Strengthening of weak insulation of Boiler-To be carried out during 2017-18. All diaphragm in HP, IP & LP had been renewed & work completed during 2009-10. Electrical & C&I: - Existing 3 nos. single phase GT were replaced by new one during 2012-13. BOP: -Replacement of complete ESP internals. Modification of APH sealing system by double sealing completed during 2009-10. Tender opened on 03-11-2017 and evaluation is under process at TTPS for complete replacement of Economizer coil assembly, LTSH supply tubes and straight tubes panels for super heater Rear wall economizer. Administrative approval accorded on 07-04-2017 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-I, II & III at TPS. ESP: Administrative approval proposal is under scrutiny for augmentation of ESP. Revised estimates to be sent from TTPS. ESP work to be carried out in 2018-19. Tender for Installation of 10 MLD Desalination

						Plant consultancy services floated and opened on 11-10-2017 (common to station) Administrative approval accorded for Distributed Digital Control Monitoring and Information System (DDCMIS). A letter has been sent to CEA for its opinion to run the unit -1 for further 10 years. Reply from CEA is awaited. Administrative approval accorded for Replacement of 2 nos of Primary Air Fan motors with journals bearing by new motors with antifriction bearings in units I,II&III.
27.	Tamil Nadu	Tuticorin TPS	2	1980	210	Need based R&M works have been carried out in Boiler TG, C&I and BoP. Following works have been completed in unit-2. Boiler:- Replacement of reheater Rear pendant Assembly-work completed in 2007-08. Complete replacement of economizer coils assembly, LTSH supply tubes and straight tubes panels for super heater rear wall near economizer- work completed in 27.3.2017 Strengthening of weak insulation of Boiler-To be carried out during 2018-19. T.G:- All diaphragms in HPT,LPT,IPT had been renewed. All 3 rotors have been replaced with reconditioned spare rotors-during 2008. Electrical & C&I: Modernisation of DCS-work completed during 2008-09. Administrative approval accorded on 07-04-2017 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-I, II & III at TPS. BOP:-Refurbishment of complete bottom ash system-work completed in 2008-09. Modification of APH sealing system by Double sealing-work completed on 27.3.2017. Replacement of existing steam ejectors by Vacuum pumps-commissioned on 14.07.16. Consultancy awarded to M/s. Fitchner Consulting Engineer, Chennai on 12-02-2018 for Installation of 10 MLD Desalination Plant consultancy services. Administrative approval accorded on 07-04-2017 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-I, II & III at TPS.
28.	Tamil Nadu	Tuticorin TPS	3	1982	210	1st and 2nd RLA already completed. Boiler:- Replacement of Eco. Header-work completed in 2007-08. Replacement of water wall tubes in high heat zone (20M to 40M)-Work completed during 2013-14. Strengthening of weak insulation of Boiler completed during 2017-18. T.G:- IP Rotor, diaphragms, IP Nozzle segment, TG Bearing 5,6&7, HPT Control Valve 3&4 renewed during COH in 2011-12. Electrical & C&I:- Replacement of existing static AVR by DVR work completed during 2013. BOP:- Modification of APH by double sealing completed in 2013-14. -Administrative approval accorded on 07-04-2017 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-I, II & III at TPS. Replacement of existing steam ejectors by Vacuum pumps-programmed during 2017-18 - awarded to M/s. Fitchner Consulting Engineer, Chennai on 12-02-2018 for Installation of 10 MLD Desalination Plant consultancy services. -Administrative approval accorded on 07-04-2017 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-I, II & III at TPS. (common to station)
29.	Tamil Nadu	Tuticorin TPS	4	1992	210	Boiler: Replacement of Eco. Coil assembly works

						completed during COH 2014-15 T.G.- Minor repair works-completed during COH 2014-15 Electrical & C&I:- Generator Stator replaced with new, static AVR replaced by DVR, Upgrading of Hitachi DCS, R&M of man machine interface system during 2014-15. Replaced existing analog type static generation protection system by numerical type Gen. protection system during 2015-16. BOP:- Modification of APH sealing system by Double Sealing, Replacement of complete ESP internals for first two rows and controllers, renewal of flue gas duct from APH outlet to ESP inlet completed during COHof 2014-15. Administrative approval accorded on 29-05-2017 for Hot Re-heater Assembly in Unit IV Boiler. Consultancy awarded to M/s. Fitchner Consulting Engineer, Chennai on 12-02-2018 for Installation of 10 MLD Desalination Plant consultancy services. (common to station) -Tender open and technical evaluation under process for complete replacement of Hor Reheater Assembly in unit IV Boiler.
30.	Tamil Nadu	Tuticorin TPS	5	1991	210	Ist RLA completed. Boiler:- Replacement of Eco. Coil assembly works completed during 2016-17. T.G.:- During the Capital overhaul 2015-16 CRH strainer alone renewed. Electrical & C&I:- static AVR replaced by DVR, Provision of integrated energy management system during 2015-16. Upgradation of turbine control system completed during 2016-17. Administrative approval accorded on 19-05-2017 for replacement of existing outdated Pro-control systems in FSSS, SBC, APRDS, STC, SADC and scanner system by latest DCS in Unit-V. BOP:- Modification of APH sealing system by double sealing completed in 2015-16. Replacement of ESP field internals, high voltage transformer rectifiers, electronic control panel with latest technology completed in 2015-16 Renewal of flue gas duct from APH outlet to ESP inlet during 2015-16. Consultancy awarded to M/s. Fitchner Consulting Engineer, Chennai on 12-02-2018 for Installation of 10 MLD Desalination Plant consultancy services. (common to station) Administrative approval accorded on 19-05-2017. Tender specification approved on 05-01-2018. Open tender floated with due date on 13-03-2018. Due date has been extended.
Sub Total State Sector (R&M)				30	7135	
	Total State Sector (LE+R&M)			64	14705	

CENTRAL SECTOR R&M (Gas Based)

1	NEEPCO	Kathalguri CCGT	GT-1	1995	33.50	Gt#1 (a) Order for supply of M/s MHI make MEGAC V, Diasys Netmation System for Up gradation and replacement of old controller MACTUS 620 sequencer and MEGAC III analog Governer already placed with the OEM, M/s MHI, Japan on 26.03.2015. Work completed on 15-02-2017. (b) The new vibration monitoring system procured against unit-1 had to be installed in unit-4 due to available s/d and requirement of the unit. The process for tender for procurement of another new vibration monitoring system is under progress and expected to be completed by July 2018. (c) Order for Compressor Rotor Refurbishment (CRR) and Comprehensive Rotor Inspection (CRI) for unit#1 to unit #4 have already been placed with the OEM, M/s MHI, Japan on 28.05.2013 and unit is planned in 2019-20 as per the maintenance schedule of OEM.
2		Kathalguri CCGT	GT-2	1995	33.50	GT#2 : (a) Order for supply and commissioning of M/s MHI make MEGAC V, Diasys Netmation System for Up gradation and replacement of old controller MACTUS 620 sequencer and MEGAC III analog Governor already placed with the OEM, M/s MHI, Japan on 26.03.2015. The materials already received and commissioned on 31.07.2017. (b) The process of tender procurement of new vibration monitoring system is under progress and expected to be completed on or before July 2018. (c) Order for Compressor Rotor Refurbishment (CRR) and Comprehensive Rotor Inspection (CRI) for unit#1 to unit #4 have already been placed with the OEM, M/s MHI, Japan on 28.05.2013 and this unit is planned in 2018-19.
3		Kathalguri CCGT	GT-3	1995	33.50	Order for Compressor Rotor Refurbishment (CRR) and Comprehensive Rotor Inspection (CRI) for unit#1 to unit #4 have already been placed with the OEM, M/s MHI, Japan on 28.05.2013 and the rotor after CRR/CRI in Japan already reached the Plant site. The above works for GT 3 executed w.e.f. 19-06-2017 and completed on 20-07-2017. The order for procurement of new vibration monitoring system is already placed and installed in July 2017 along with major overhauling of Gas Turbine planned in July 2018.
4		Kathalguri CCGT	GT-6	1996	33.5	Upgradation and replacement of Mark IV control system M/s. BHEL make Gas Turbine Unit 6 with Mark Vie Control System has been completed on 31-03-2018
5		Kathalguri CCGT	ST-1	1998	30.00	a) Upgradation of Programmer/ EPROM writer for Procontrol-13 Control System: already completed. b) Upgradation of AVR: LOI for upgradation of AVR already placed with M/s.ABB and expected to be commissioned in 2018. c) Upgradation of 3300-series, BENTLEY-NEVADA- make vibration system: Offer to be obtained from the OEM. Expected to be completed 2018-19. d) Upgradation of 3300-series, BENTLEY-NEVADA- make temperature monitoring system: Offer to be obtained from the OEM. Expected to be completed 2018-19. The OEM, M/s. BHEL has been requested to study the system and submit a comprehensive offer for upgradation of the system. Got delayed as the new available system with the OEM, M/s. BHEL is not compatible for retrofitting into the existing system.
6		Kathalguri CCGT	ST-2	1998	30.00	Upgradation of 3300-series, BENTLEY-NEVADA- make vibration system: Offer to be obtained from the OEM. Expected to be completed in 2018-19.
7		Kathalguri CCGT	ST-3	1998	30.00	a) Upgradation of 3300-series, BENTLEY-NEVADA- make vibration system: Offer to be obtained from the OEM Expected to be completed in 2018-19 b) PO placed for upgradation of AVR already placed with M/s.ABB and expected to be commissioned in 1st Qtr. Of 2017-2018-19.
Total Central Sector- Gas (R&M)			7		224	
Total R&M/LE (State+ Centre)			70		14929	

Details of Thermal Power Units where the Life Extension (LE) Works have been Completed During 2017-22

Sl. No.	Name of the TPS	Unit No.	Capacity MW	Utility	State/Central Sector	Date of Synchronisation after LE Works
1.	Ukai	4	200	GSECL	State Sector	17-05-2017
2.	Wanakabori	3	210	GSECL	State Sector	27-11-2017

Total (State) - 02 Units 410.00 MW

Details of Thermal Power Units where the R&M Works have been Completed During 2017-22

Sl. No.	Name of the TPS	Unit No.	Capacity MW	Utility	State/Central Sector	Date of completion of R&M works
-	--	--	--	--	--	--

Details of Thermal Power Units where the Renovation & Modernisation (R&M)/Life Extension (LE) Works have been Completed During 12th Plan

Sl. No.	Name of the TPS	Unit No.	Capacity MW	Utility	State/Central Sector	Date of Synchronisation after LE Works
Units where Life Extension Works completed during 12 th Plan						
1.	Bathinda	3	110	PSPCL	State Sector	05.08.2012
2.	Kawas	GT-1A	106	NTPC	Central Sector	21.01.2013
3.	Parichha	2	110	UPRVUNL	State Sector	05.05.2013
4.	Muzafarpur	1	110	KBUNL	Joint venture of BSPGCL & NTPC	05.07.2013
5.	Kawas	GT-1B	106	NTPC	Central Sector	28.08. 2013
6.	Gandhar	GT – 3	131	NTPC	Central Sector	29.09. 2013
7.	Kawas	GT-2B	106	NTPC	Central Sector	05.03.2014
8.	Bathinda	4	110	PSPCL	State Sector	10.07. 2014
9.	Muzafarpur	2	110	KBUNL	Joint venture of BSPGCL & NTPC	30.09.2014
10.	Auraiya	GT-1	111.19	NTPC	Central Sector	22.06. 2014
11.	Gandhar	GT-1	131	NTPC	Central Sector	06.07.2014
12.	Kawas	GT-2A	106	NTPC	Central Sector	22.08.2014
13.	Auraiya	GT-2	111.19	NTPC	Central Sector	28.10.2014
14.	Auraiya	GT-3	111.19	NTPC	Central Sector	25.12.2014
15.	Auraiya	GT-4	111.19	NTPC	Central Sector	02.03.2014
16.	Harduaganj	7	110	UPRVUNL	State Sector	01.05. 2015
17.	Bandel	5	210	WBPDC	State Sector	21.09.2015
18.	Gandhar	GT-2	131	NTPC	Central Sector	15.04.2015
19.	Obra	10	200	UPRVUNL	State Sector	08.04.2016
20.	Barauni	7	110	BSPGCL	State Sector	03.08.2016
21.	Obra	11	200	UPRVUNL	State Sector	31.12.2016
Total State Sector		10 units	1380.00 MW			
Total Central Sector		11 units	1261.76 MW			
Total LE (Central +State)		21 units	2641.76 MW			
Units where Renovation & Modernisation Works completed during 12 th Plan						
1.	DPL	6	110	WBPDC	State Sector	07.05.2012
2.	Patratu	10	110	JSEB	State Sector	24.05.2012
3.	Anpara’A	1	210	UPRVUNL	State Sector	21.03.2013
4.	Anpara’A	2	210	UPRVUNL	State Sector	21.03.2013
5.	Anpara’A	3	210	UPRVUNL	State Sector	21.03.2013
6.	Tanda	2	110	NTPC	Central Sector	15.09.2012
7.	Kathalguri	GT-3	33.5	NTPC	Central Sector	31.03.2014
8.	Kathalguri	GT-4	33.5	NTPC	Central Sector	31.03.2014
9.	Kathalguri	GT-5	33.5	NTPC	Central Sector	31.03.2014
10.	Simhadri	1	500	NTPC	Central	31.03.2016
11.	Simhadri	2	500	NTPC	Central	31.03.2016
12.	Ramagundam	4	500	NTPC	Central	March, 2017
13.	Ramagundam	5	500	NTPC	Central	March, 2017
14.	Ramagundam	6	500	NTPC	Central	March, 2017

15.	Rihand STPS	1	500	NTPC	Central	March, 2017
16.	Rihand STPS	2	500	NTPC	Central	March, 2017
Total R&M State Sector		05 units	850.00 MW			
Total R&M Central Sector		11 units	3710.50 MW			
Total R&M (Central +State)		16 units	4560.50 MW			
Total (R&M+LE)		37 units	7202.26			

Summary of implementation for phasing plan for FGD installation/ESP Upgradation

Sl. No.	Description	Capacity (MW)	Units
1.	Total Capacity Considered	196667	650
2.	Capacity retired/identified for retirement	8967	82
3.	Capacity after Retirement (1-2)	187700	568
4.	Capacity already having FGD capable of meeting new Sox norms	6130	15
5.	Capacity with CFBC Boilers	5524	48
6.	Capacity taken for analysis (3-4-5)	176046	505
7.	FGD Implementation Plan		
a)	Capacity which claims to be Sox complaint	5115	23
b)	Balance Capacity (6-7 (a))	170931	482
c)	Capacity where FGD has been planned (Annexure-6)	161552	415
d)	Capacity where FGD implementation plan available	161402	414
e)	Capacity where FGD implementation plan not submitted by developer	150	1
f)	TOTAL CAPACITY WHICH WOULD BE FGD NON COMPLANT f (i) + f(ii)	9379	67
(i)	Capacity where FGD installation is being explored	690	7
(ii)	Capacity where FGD cannot be installed	8689	60
8.	ESP IMPLEMENTATION PLAN		
(i)	Capacity which is SPM non- complaint	72659	273
(ii)	Capacity which would be Sox non- complaint	6344	38
(iii)	Capacity FGD installation being Explored	390	4
(iv)	Balance Capacity (i-ii-iii) where ESP upgradation considered	65925	231
(v)	Capacity where ESP Implementation plan available	64525	222
(vi)	Capacity where ESP Implementation plan not submitted by developer	1400	9

FGD Planned

S. NO.	Developer	Name of Project	Sector	State	Region	Unit No	Total Capacity	DT-of COMMISSIONING (MM/DD/YYYY)	Age in years	Whether FGD Installed	Whether FGD space available (Y/N)	Whether FGD planned (Y/N)	FGD Phasing Plan for Implementation (DD/MM/YYYY)	Remarks
1	NTPC	BARH II	Central Sector	Bihar	ER	4	660	11/20/2013	4	N	Y	Y	30/09/2021	FGD POSSIBLE
2	NTPC	BARH II	Central Sector	Bihar	ER	5	660	3/4/2015	2	N	Y	Y	31/03/2022	FGD POSSIBLE
3	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	1	210	3/31/1992	25	N	Y	Y	31/12/2022	FGD POSSIBLE
4	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	2	210	3/17/1994	23	N	Y	Y	31/12/2022	FGD POSSIBLE
5	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	3	210	3/24/1995	22	N	Y	Y	12/31/2022	FGD POSSIBLE
6	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	4	210	3/18/1996	21	N	Y	Y	31/12/2022	FGD POSSIBLE
7	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	5	500	3/31/2007	10	N	Y	Y	31/12/2022	FGD POSSIBLE
8	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	6	500	3/16/2008	9	N	Y	Y	31/12/2022	FGD POSSIBLE
9	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	7	500	7/31/2009	8	N	Y	Y	31/12/2022	FGD POSSIBLE
10	NTPC	NABI NAGAR TPP	Central Sector	Bihar	ER	1	250	3/20/2016	1	N	Y	Y	31/12/2021	FGD POSSIBLE
11	NTPC	NABI NAGAR TPP	Central Sector	Bihar	ER	2	250	4/4/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
12	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	ER	3	195	3/31/2015	2	N	Y	Y	31/12/2022	FGD POSSIBLE
13	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	ER	4	195	3/24/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
14	Adhunik Power&Natural Resources Ltd	MAHADEV PRASAD STPP	Private Sector	Jharkhand	ER	1	270	11/19/2012	5	N	Y	Y	30/06/2022	FGD POSSIBLE
15	Adhunik Power&Natural Resources Ltd	MAHADEV PRASAD STPP	Private Sector	Jharkhand	ER	2	270	3/29/2013	4	N	Y	Y	30/06/2022	FGD POSSIBLE
16	D.V.C	BOKARO 'A' TPS	Central Sector	Jharkhand	ER	1	500	3/22/2016	1	N	Y	Y	30/06/2022	FGD POSSIBLE
17	D.V.C	CHANDRAPURA (DVC)	Central Sector	Jharkhand	ER	7	250	11/4/2009	8	N	Y	Y	31/12/2022	FGD POSSIBLE
18	D.V.C	CHANDRAPURA (DVC)	Central Sector	Jharkhand	ER	8	250	3/31/2010	7	N	Y	Y	31/12/2022	FGD POSSIBLE
19	D.V.C	KODARMA TPP	Central Sector	Jharkhand	ER	1	500	7/20/2011	6	N	Y	Y	31/12/2021	FGD POSSIBLE
20	D.V.C	KODARMA TPP	Central Sector	Jharkhand	ER	2	500	2/15/2013	4	N	Y	Y	31/12/2021	FGD POSSIBLE
21	TATA Power Co. MPL	MAITHON RB TPP	Private Sector	Jharkhand	ER	1	525	9/1/2011	6	N	Y	Y	30/09/2021	FGD POSSIBLE
22	TATA Power Co. MPL	MAITHON RB TPP	Private Sector	Jharkhand	ER	2	525	7/24/2012	5	N	Y	Y	30/06/2022	FGD POSSIBLE
23	Tenughat VN Ltd	TENUGHAT TPS	State Sector	Jharkhand	ER	1	210	4/14/1994	23	N	Y	Y	12/31/2020	FGD POSSIBLE
24	Tenughat VN Ltd	TENUGHAT TPS	State Sector	Jharkhand	ER	2	210	10/10/1996	21	N	Y	Y	31/12/2020	FGD POSSIBLE
25	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	1	350	3/29/2013	4	N	Y	Y	31/12/2021	FGD POSSIBLE
26	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	2	350	9/28/2013	4	N	Y	Y	31/12/2021	FGD POSSIBLE
27	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	3	350	3/21/2014	3	N	Y	Y	30/09/2021	FGD POSSIBLE
28	Ind barath	IND BARATH TPP	Private Sector	Odisha	ER	1	350	2/25/2016	1	N	Y	Y	31/03/2022	FGD POSSIBLE
29	JIPL	DERANG TPP	Private Sector	Odisha	ER	1	600	4/10/2014	3	N	Y	Y	31/03/2021	FGD POSSIBLE
30	JIPL	DERANG TPP	Private Sector	Odisha	ER	2	600	1/24/2015	2	N	Y	Y	31/03/2021	FGD POSSIBLE
31	NTPC	TALCHER STPS	Central Sector	Odisha	ER	1	500	2/19/1995	22	N	Y	Y	31/12/2022	FGD POSSIBLE
32	NTPC	TALCHER STPS	Central Sector	Odisha	ER	2	500	3/27/1996	21	N	Y	Y	31/12/2022	FGD POSSIBLE
33	NTPC	TALCHER STPS	Central Sector	Odisha	ER	3	500	2/21/2003	14	N	Y	Y	31/12/2022	FGD POSSIBLE
34	NTPC	TALCHER STPS	Central Sector	Odisha	ER	4	500	10/25/2003	14	N	Y	Y	31/12/2022	FGD POSSIBLE
35	NTPC	TALCHER STPS	Central Sector	Odisha	ER	5	500	5/13/2004	13	N	Y	Y	31/12/2022	FGD POSSIBLE

36	NTPC	TALCHER STPS	Central Sector	Odisha	ER	6	500	2/6/2005	12	N	Y	Y	31/12/2022	FGD POSSIBLE
37	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	ER	1	210	6/2/1994	23	N	Y	Y	30/09/2021	FGD POSSIBLE
38	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	ER	2	210	10/22/1995	22	N	Y	Y	30/09/2021	FGD POSSIBLE
39	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	ER	2	600	12/29/2010	6	N	Y	Y	31/03/2022	FGD POSSIBLE
40	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	1	250	9/16/1997	20	N	Y	Y	31/12/2022	FGD POSSIBLE
41	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	2	250	3/6/1999	18	N	Y	Y	31/12/2022	FGD POSSIBLE
42	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	3	250	9/29/2009	8	N	Y	Y	31/12/2022	FGD POSSIBLE
43	C.E.S.C. Pvt.	SOUTHERN REPL. TPS	Private Sector	West Bengal	ER	1	68	4/10/1991	26	N	Y	Y	31/03/2022	FGD POSSIBLE
44	C.E.S.C. Pvt.	SOUTHERN REPL. TPS	Private Sector	West Bengal	ER	2	68	8/12/1990	27	N	Y	Y	31/12/2021	FGD POSSIBLE
45	D.P.L.	D.P.L. TPS	State Sector	West Bengal	ER	6	110	7/3/1985	32	N	Y	Y	31/03/2022	FGD POSSIBLE
46	D.P.L.	D.P.L. TPS	State Sector	West Bengal	ER	7	300	11/24/2007	10	N	Y	Y	30/06/2022	FGD POSSIBLE
47	D.P.L.	D.P.L. TPS EXT.	State Sector	West Bengal	ER	8	250	3/31/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
48	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Bengal	ER	1	500	7/29/2011	6	N	Y	Y	30/06/2021	FGD POSSIBLE
49	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Bengal	ER	2	500	3/23/2012	5	N	Y	Y	30/06/2021	FGD POSSIBLE
50	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	1	210	3/1/1996	21	N	Y	Y	31/12/2022	FGD POSSIBLE
51	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	2	210	3/24/1997	20	N	Y	Y	31/12/2022	FGD POSSIBLE
52	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	3	210	3/25/1998	19	N	Y	Y	31/12/2022	FGD POSSIBLE
53	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	4	210	10/12/2004	13	N	Y	Y	31/12/2022	FGD POSSIBLE
54	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	5	250	10/1/2007	10	N	Y	Y	31/12/2022	FGD POSSIBLE
55	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	6	250	3/31/2007	10	N	Y	Y	31/12/2022	FGD POSSIBLE
56	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	7	500	9/30/2010	7	N	Y	Y	30/09/2021	FGD POSSIBLE
57	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	8	500	3/26/2011	6	N	Y	Y	30/09/2021	FGD POSSIBLE
58	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	ER	1	600	8/24/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
59	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	ER	2	600	1/18/2016	1	N	Y	Y	31/03/2022	FGD POSSIBLE
60	M/s Haldia Energy Limited	HALDIA TPP	Private Sector	West Bengal	ER	1	300	1/14/2015	2	N	Y	Y	31/12/2022	FGD POSSIBLE
61	M/s Haldia Energy Limited	HALDIA TPP	Private Sector	West Bengal	ER	2	300	2/16/2015	2	N	Y	Y	31/12/2022	FGD POSSIBLE
62	Bishagarh Power Co.	India Power TPP	Private Sector	West Bengal	ER	1	150	6/7/2017	0	N	Y	Y		FGD POSSIBLE
63	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	1	200	1/1/1986	31	N	Y	Y	31/12/2022	FGD POSSIBLE
64	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	2	200	12/24/1986	31	N	Y	Y	31/12/2022	FGD POSSIBLE
65	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	3	200	8/6/1987	30	N	Y	Y	31/12/2022	FGD POSSIBLE
66	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	4	500	9/25/1992	25	N	Y	Y	31/12/2022	FGD POSSIBLE
67	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	5	500	2/16/1994	23	N	Y	Y	31/12/2022	FGD POSSIBLE
68	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	6	500	3/7/2011	6	N	Y	Y	31/12/2022	FGD POSSIBLE
69	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	1	210	1/16/1993	24	N	Y	Y	30/06/2022	FGD POSSIBLE
70	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	2	210	8/13/1990	27	N	Y	Y	31/03/2021	FGD POSSIBLE
71	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	3	210	12/16/1985	32	N	Y	Y	30/09/2021	FGD POSSIBLE
72	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	4	210	1/24/1984	33	N	Y	Y	31/03/2022	FGD POSSIBLE
73	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	5	210	12/28/1993	24	N	Y	Y	30/06/2021	FGD POSSIBLE
74	WBPDC	KOLAGHAT TPS	State Sector	West Bengal	ER	6	210	3/17/1991	26	N	Y	Y	31/12/2021	FGD POSSIBLE
75	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	1	300	7/20/2008	9	N	Y	Y	31/12/2020	FGD POSSIBLE
76	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	2	300	12/21/2007	10	N	Y	Y	31/03/2021	FGD POSSIBLE
77	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	3	500	12/14/2015	2	N	Y	Y	31/03/2022	FGD POSSIBLE
78	WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	4	500	12/15/2016	1	N	Y	Y	31/03/2020	FGD POSSIBLE
79	WBPDC	SANTALDIH TPS	State Sector	West Bengal	ER	5	250	11/7/2007	10	N	Y	Y	31/03/2021	FGD POSSIBLE
80	WBPDC	SANTALDIH TPS	State Sector	West Bengal	ER	6	250	6/29/2011	6	N	Y	Y	31/12/2021	FGD POSSIBLE

81	CHINA LIGHT POWER	MAHATMA GANDHI TPS	Private Sector	Haryana	NR	1	660	1/12/2012	5	N	Y	Y	31/01/2019	FGD POSSIBLE
82	CHINA LIGHT POWER	MAHATMA GANDHI TPS	Private Sector	Haryana	NR	2	660	4/11/2012	5	N	Y	Y	31/01/2019	FGD POSSIBLE
83	HGPCorpn	PANIPAT TPS	State Sector	Haryana	NR	6	210	3/31/2001	16	N	Y	Y	30/04/2021	FGD POSSIBLE
84	HGPCorpn	PANIPAT TPS	State Sector	Haryana	NR	7	250	9/28/2004	13	N	Y	Y	28/02/2021	FGD POSSIBLE
85	HGPCorpn	PANIPAT TPS	State Sector	Haryana	NR	8	250	1/28/2005	12	N	Y	Y	31/12/2020	FGD POSSIBLE
86	HGPCorpn	RAJIV GANDHI TPS	State Sector	Haryana	NR	1	600	3/31/2010	7	N	Y	Y	30/04/2022	FGD POSSIBLE
87	HGPCorpn	RAJIV GANDHI TPS	State Sector	Haryana	NR	2	600	10/1/2010	7	N	Y	Y	28/02/2022	FGD POSSIBLE
88	HGPCorpn	YAMUNA NAGAR TPS	State Sector	Haryana	NR	1	300	11/1/2007	10	N	Y	Y	31/12/2021	FGD POSSIBLE
89	HGPCorpn	YAMUNA NAGAR TPS	State Sector	Haryana	NR	2	300	3/29/2008	9	N	Y	Y	31/10/2021	FGD POSSIBLE
90	NTPC	INDIRA GANDHI STPP	Central Sector	Haryana	NR	1	500	10/31/2010	7	N	Y	Y	31/10/2020	FGD POSSIBLE
91	NTPC	INDIRA GANDHI STPP	Central Sector	Haryana	NR	2	500	11/5/2011	6	N	Y	Y	30/04/2020	FGD POSSIBLE
92	NTPC	INDIRA GANDHI STPP	Central Sector	Haryana	NR	3	500	11/7/2012	5	N	Y	Y	28/02/2020	FGD POSSIBLE
93	GVK Power Ltd.	GOINDWAL SAHIB	Private Sector	Punjab	NR	1	270	2/14/2016	1	N	Y	Y	30/04/2020	FGD POSSIBLE
94	GVK Power Ltd.	GOINDWAL SAHIB	Private Sector	Punjab	NR	2	270	3/15/2016	1	N	Y	Y	28/02/2020	FGD POSSIBLE
95	L&T Power Development LTD(Nabha)	Nabha TPP (Rajpura TPP)	Private Sector	Punjab	NR	1	700	1/24/2014	3	N	Y	Y	30/04/2021	FGD POSSIBLE
96	L&T Power Development LTD(Nabha)	Nabha TPP (Rajpura TPP)	Private Sector	Punjab	NR	2	700	7/6/2014	3	N	Y	Y	28/02/2021	FGD POSSIBLE
97	PSEB	GH TPS (LEH.MOH.)	State Sector	Punjab	NR	1	210	12/29/1997	19	N	Y	Y	30/04/2022	FGD POSSIBLE
98	PSEB	GH TPS (LEH.MOH.)	State Sector	Punjab	NR	2	210	10/16/1998	19	N	Y	Y	30/04/2022	FGD POSSIBLE
99	PSEB	GH TPS (LEH.MOH.)	State Sector	Punjab	NR	3	250	1/3/2008	9	N	Y	Y	28/02/2022	FGD POSSIBLE
100	PSEB	GH TPS (LEH.MOH.)	State Sector	Punjab	NR	4	250	7/31/2008	9	N	Y	Y	28/02/2022	FGD POSSIBLE
101	Talwandi Sabo Power Limited	TALWANDI SABO TPP	Private Sector	Punjab	NR	1	660	6/17/2014	3	N	Y	Y	28/02/2021	FGD POSSIBLE
102	Talwandi Sabo Power Limited	TALWANDI SABO TPP	Private Sector	Punjab	NR	2	660	10/25/2015	2	N	Y	Y	31/12/2020	FGD POSSIBLE
103	Talwandi Sabo Power Limited	TALWANDI SABO TPP	Private Sector	Punjab	NR	3	660	3/29/2016	1	N	Y	Y	31/10/2020	FGD POSSIBLE
104	Adani Power Ltd.	KAWAI TPS	Private Sector	Rajasthan	NR	1	660	5/28/2013	4	N	Y	Y	31/08/2020	FGD POSSIBLE
105	Adani Power Ltd.	KAWAI TPS	Private Sector	Rajasthan	NR	2	660	12/24/2013	3	N	Y	Y	30/06/2020	FGD POSSIBLE
106	RRVUNL	CHHABRA TPP	State Sector	Rajasthan	NR	1	250	10/30/2009	8	N	Y	Y	31/12/2021	FGD POSSIBLE
107	RRVUNL	CHHABRA TPP	State Sector	Rajasthan	NR	2	250	5/4/2010	7	N	Y	Y	31/10/2021	FGD POSSIBLE
108	RRVUNL	CHHABRA TPP	State Sector	Rajasthan	NR	3	250	9/14/2013	4	N	Y	Y	31/08/2021	FGD POSSIBLE
109	RRVUNL	CHHABRA TPP	State Sector	Rajasthan	NR	4	250	6/30/2014	3	N	Y	Y	31/08/2021	FGD POSSIBLE
110	RRVUNL	CHHABRA TPP	State Sector	Rajasthan	NR	5	660	4/4/2017	0	N	Y	Y	30/04/2020	FGD POSSIBLE
111	RRVUNL	KALISINDH TPS	State Sector	Rajasthan	NR	1	600	5/2/2014	3	N	Y	Y	30/06/2021	FGD POSSIBLE
112	RRVUNL	KALISINDH TPS	State Sector	Rajasthan	NR	2	600	6/6/2015	2	N	Y	Y	30/04/2021	FGD POSSIBLE
113	RRVUNL	KOTA TPS	State Sector	Rajasthan	NR	5	210	3/26/1994	23	N	Y	Y	31/12/2022	FGD POSSIBLE
114	RRVUNL	KOTA TPS	State Sector	Rajasthan	NR	6	195	7/30/2003	14	N	Y	Y	31/12/2022	FGD POSSIBLE
115	RRVUNL	KOTA TPS	State Sector	Rajasthan	NR	7	195	8/30/2009	8	N	Y	Y	31/10/2022	FGD POSSIBLE
116	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	1	250	5/10/1998	19	N	Y	Y	31/12/2022	FGD POSSIBLE
117	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	2	250	3/28/2000	17	N	Y	Y	31/10/2022	FGD POSSIBLE
118	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	3	250	10/29/2001	16	N	Y	Y	31/08/2022	FGD POSSIBLE
119	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	4	250	3/25/2002	15	N	Y	Y	30/06/2022	FGD POSSIBLE

120	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	5	250	6/30/2003	14	N	Y	Y	30/04/2022	FGD POSSIBLE
121	RRVUNL	SURATGARH TPS	State Sector	Rajasthan	NR	6	250	8/29/2009	8	N	Y	Y	28/02/2022	FGD POSSIBLE
122	Lalitpur Power Gen. Co	LALITPUR TPS	Private Sector	Uttar Pradesh	NR	2	660	1/8/2016	1	N	Y	Y	28/02/2021	FGD POSSIBLE
123	Lalitpur Power Gen. Co	LALITPUR TPS	Private Sector	Uttar Pradesh	NR	3	660	4/1/2016	1	N	Y	Y	31/10/2021	FGD POSSIBLE
124	Lalitpur Power Gen. Co.	LALITPUR TPS	Private Sector	Uttar Pradesh	NR	1	660	3/26/2016	1	N	Y	Y	31/12/2020	FGD POSSIBLE
125	Lanko Anpara Pow Ltd	ANPARA C TPS	Private Sector	Uttar Pradesh	NR	1	600	10/12/2011	6	N	Y	Y	31/08/2022	FGD POSSIBLE
126	Lanko Anpara Pow Ltd	ANPARA C TPS	Private Sector	Uttar Pradesh	NR	2	600	1/18/2012	5	N	Y	Y	30/06/2022	FGD POSSIBLE
127	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	1	210	12/21/1991	26	N	Y	Y	31/12/2020	FGD POSSIBLE
128	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	2	210	12/18/1992	25	N	Y	Y	31/10/2020	FGD POSSIBLE
129	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	3	210	3/23/1993	24	N	Y	Y	31/08/2020	FGD POSSIBLE
130	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	4	210	3/24/1994	23	N	Y	Y	30/06/2020	FGD POSSIBLE
131	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	5	490	1/25/2010	7	N	Y	Y	30/04/2020	FGD POSSIBLE
132	NTPC	DADRI (NCTPP)	Central Sector	Uttar Pradesh	NR	6	490	7/16/2010	7	N	Y	Y	29/02/2020	FGD POSSIBLE
133	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	1	500	3/31/1988	29	N	Y	Y	28/02/2022	FGD POSSIBLE
134	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	2	500	7/5/1989	28	N	Y	Y	31/12/2021	FGD POSSIBLE
135	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	3	500	1/31/2005	12	N	Y	Y	31/10/2021	FGD POSSIBLE
136	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	4	500	9/24/2005	12	N	Y	Y	30/04/2021	FGD POSSIBLE
137	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	5	500	5/25/2012	5	N	Y	Y	28/02/2021	FGD POSSIBLE
138	NTPC	RIHAND STPS	Central Sector	Uttar Pradesh	NR	6	500	10/17/2013	4	N	Y	Y	31/12/2020	FGD POSSIBLE
139	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	1	200	2/14/1982	35	N	Y	Y	31/12/2021	FGD POSSIBLE
140	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	2	200	11/25/1982	35	N	Y	Y	31/12/2021	FGD POSSIBLE
141	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	3	200	3/28/1983	34	N	Y	Y	31/08/2021	FGD POSSIBLE
142	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	4	200	11/2/1983	34	N	Y	Y	31/08/2021	FGD POSSIBLE
143	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	5	200	2/26/1984	33	N	Y	Y	30/04/2021	FGD POSSIBLE
144	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	6	500	12/23/1986	31	N	Y	Y	28/02/2021	FGD POSSIBLE
145	NTPC	SINGRAULI STPS	Central Sector	Uttar Pradesh	NR	7	500	11/24/1987	30	N	Y	Y	31/12/2020	FGD POSSIBLE
146	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	1	210	11/21/1988	29	N	Y	Y	31/12/2022	FGD POSSIBLE
147	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	2	210	3/22/1989	28	N	Y	Y	31/12/2022	FGD POSSIBLE
148	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	3	210	1/27/1999	18	N	Y	Y	31/10/2022	FGD POSSIBLE
149	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	4	210	10/22/1999	18	N	Y	Y	31/10/2022	FGD POSSIBLE
150	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	5	210	9/28/2006	11	N	Y	Y	30/04/2022	FGD POSSIBLE
151	NTPC	UNCHAHAH TPS	Central Sector	Uttar Pradesh	NR	6	500	3/31/2017	0	N	Y	Y	31/08/2020	FGD POSSIBLE
152	Prayagraj Power Generation Company LTD.	PRAYAGRAJ TPP	Private Sector	Uttar Pradesh	NR	1	660	12/25/2016	0	N	Y	Y	30/04/2020	FGD POSSIBLE
153	Prayagraj Power Generation Company LTD.	PRAYAGRAJ TPP	Private Sector	Uttar Pradesh	NR	2	660	9/6/2015	2	N	Y	Y	30/06/2020	FGD POSSIBLE
154	Prayagraj Power Generation Company LTD.	PRAYAGRAJ TPP	Private Sector	Uttar Pradesh	NR	3	660	5/22/2017	0	N	Y	Y	29/02/2020	FGD POSSIBLE
155	Rosa Power Supply Co	ROSA TPP Ph-I	Private Sector	Uttar Pradesh	NR	1	300	2/10/2010	7	N	Y	Y	31/12/2021	FGD POSSIBLE
156	Rosa Power Supply Co	ROSA TPP Ph-I	Private Sector	Uttar Pradesh	NR	2	300	6/26/2010	7	N	Y	Y	31/12/2021	FGD POSSIBLE
157	Rosa Power Supply Co	ROSA TPP Ph-I	Private Sector	Uttar Pradesh	NR	3	300	12/28/2011	5	N	Y	Y	31/10/2021	FGD POSSIBLE

158	Rosa Power Supply Co	ROSA TPP Ph-I	Private Sector	Uttar Pradesh	NR	4	300	3/28/2012	5	N	Y	Y	31/10/2021	FGD POSSIBLE
159	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	1	210	3/24/1986	31	N	Y	Y	31/10/2022	FGD POSSIBLE
160	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	2	210	2/28/1987	30	N	Y	Y	31/08/2022	FGD POSSIBLE
161	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	3	210	3/12/1988	29	N	Y	Y	30/06/2022	FGD POSSIBLE
162	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	4	500	7/19/1993	24	N	Y	Y	30/04/2022	FGD POSSIBLE
163	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	5	500	7/4/1994	23	N	Y	Y	28/02/2022	FGD POSSIBLE
164	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	6	500	6/8/2015	2	N	Y	Y	30/06/2021	FGD POSSIBLE
165	UPRVUNL	ANPARA TPS	State Sector	Uttar Pradesh	NR	7	500	3/6/2016	1	N	Y	Y	30/04/2021	FGD POSSIBLE
166	UPRVUNL	HARDUAGANJ TPS	State Sector	Uttar Pradesh	NR	8	250	9/27/2011	6	N	Y	Y	31/12/2021	FGD POSSIBLE
167	UPRVUNL	HARDUAGANJ TPS	State Sector	Uttar Pradesh	NR	9	250	5/25/2012	5	N	Y	Y	31/10/2021	FGD POSSIBLE
168	UPRVUNL	OBRA TPS	State Sector	Uttar Pradesh	NR	9	200	10/26/1980	37	N	Y	Y	31/08/2022	FGD POSSIBLE
169	UPRVUNL	OBRA TPS	State Sector	Uttar Pradesh	NR	10	200	1/14/1979	38	N	Y	Y	31/10/2022	FGD POSSIBLE
170	UPRVUNL	OBRA TPS	State Sector	Uttar Pradesh	NR	11	200	12/31/1977	40	N	Y	Y	31/12/2022	FGD POSSIBLE
171	UPRVUNL	OBRA TPS	State Sector	Uttar Pradesh	NR	12	200	3/28/1981	36	N	Y	Y	30/06/2022	FGD POSSIBLE
172	UPRVUNL	OBRA TPS	State Sector	Uttar Pradesh	NR	13	200	7/21/1982	35	N	Y	Y	30/04/2022	FGD POSSIBLE
173	UPRVUNL	PARICHHHA TPS	State Sector	Uttar Pradesh	NR	3	210	3/29/2006	11	N	Y	Y	30/04/2022	FGD POSSIBLE
174	UPRVUNL	PARICHHHA TPS	State Sector	Uttar Pradesh	NR	4	210	12/28/2006	10	N	Y	Y	30/04/2022	FGD POSSIBLE
175	UPRVUNL	PARICHHHA TPS	State Sector	Uttar Pradesh	NR	5	250	5/24/2012	5	N	Y	Y	28/02/2022	FGD POSSIBLE
176	UPRVUNL	PARICHHHA TPS	State Sector	Uttar Pradesh	NR	6	250	3/11/2013	4	N	Y	Y	31/12/2021	FGD POSSIBLE
177	APGENCO	Dr. N.TATA RAO TPS	State Sector	Andhra Pradesh	SR	7	500	10/8/2009	8	N	Y	Y	31/12/2020	FGD POSSIBLE
178	APGENCO	RAYALASEEMA TPS	State Sector	Andhra Pradesh	SR	1	210	3/31/1994	23	N	Y	Y	31/12/2021	FGD POSSIBLE
179	APGENCO	RAYALASEEMA TPS	State Sector	Andhra Pradesh	SR	2	210	2/25/1995	22	N	Y	Y	30/09/2021	FGD POSSIBLE
180	APGENCO	RAYALASEEMA TPS	State Sector	Andhra Pradesh	SR	3	210	1/25/2007	10	N	Y	Y	30/09/2020	FGD POSSIBLE
181	APGENCO	RAYALASEEMA TPS	State Sector	Andhra Pradesh	SR	4	210	11/20/2007	10	N	Y	Y	30/06/2021	FGD POSSIBLE
182	APGENCO	RAYALASEEMA TPS	State Sector	Andhra Pradesh	SR	5	210	12/31/2010	6	N	Y	Y	30/06/2020	FGD POSSIBLE
183	APPDCL	DAMODARAM SANJEEVAIAH TPS	State Sector	Andhra Pradesh	SR	1	800	8/28/2014	3	N	Y	Y	31/12/2020	FGD POSSIBLE
184	APPDCL	DAMODARAM SANJEEVAIAH TPS	State Sector	Andhra Pradesh	SR	2	800	3/17/2015	2	N	Y	Y	31/12/2019	FGD POSSIBLE
185	HNPCL	VIZAG TPP	Private Sector	Andhra Pradesh	SR	1	520	12/27/2015	1.49	N	Y	Y	30/06/2020	FGD POSSIBLE
186	HNPCL	VIZAG TPP	Private Sector	Andhra Pradesh	SR	2	520	3/30/2016	1	N	Y	Y	30/09/2019	FGD POSSIBLE
187	NTPC	SIMHADRI	Central Sector	Andhra Pradesh	SR	1	500	2/22/2002	15	N	Y	Y	31/03/2022	FGD POSSIBLE
188	NTPC	SIMHADRI	Central Sector	Andhra Pradesh	SR	2	500	8/24/2002	15	N	Y	Y	30/06/2022	FGD POSSIBLE
189	NTPC	SIMHADRI	Central Sector	Andhra Pradesh	SR	3	500	3/29/2011	6	N	Y	Y	30/09/2022	FGD POSSIBLE
190	NTPC	SIMHADRI	Central Sector	Andhra Pradesh	SR	4	500	3/30/2012	5	N	Y	Y	31/12/2022	FGD POSSIBLE
191	Sembcorp Gayatri Pvt. Ltd.	Sembcorp Gayatri P.Ltd.	Private Sector	Andhra Pradesh	SR	1	660	11/12/2016	1	N	Y	Y	31/12/2021	FGD POSSIBLE
192	Sembcorp Gayatri Pvt. Ltd.	Sembcorp Gayatri P.Ltd.	Private Sector	Andhra Pradesh	SR	2	660	2/15/2017	0	N	Y	Y	30/09/2021	FGD POSSIBLE
193	THERMAL POWER TECH CORP.LTD	PAINAMPURAM TPP	Private Sector	Andhra Pradesh	SR	1	660	2/7/2015	2	N	Y	Y	31/12/2021	FGD POSSIBLE
194	THERMAL POWER TECH CORP.LTD	PAINAMPURAM TPP	Private Sector	Andhra Pradesh	SR	2	660	9/3/2015	2	N	Y	Y	30/09/2021	FGD POSSIBLE
195	Adani Power Ltd.	UDUPI TPP	Private Sector	Karnataka	SR	1	600	7/23/2010	7	N	Y	Y	31/03/2022	FGD POSSIBLE
196	Adani Power Ltd.	UDUPI TPP	Private Sector	Karnataka	SR	2	600	4/16/2011	6	N	Y	Y	30/06/2022	FGD POSSIBLE
197	Jindal (Pvt Co)	TORANGALLU TPS EXT	Private Sector	Karnataka	SR	1	300	4/23/2009	8	N	Y	Y	30/06/2022	FGD POSSIBLE
198	Jindal (Pvt Co)	TORANGALLU TPS EXT	Private Sector	Karnataka	SR	2	300	8/24/2009	8	N	Y	Y	30/09/2022	FGD POSSIBLE

199	KPCL	BELLARY TPS	State Sector	Karnataka	SR	1	500	12/3/2007	10	N	Y	Y	31/12/2020	FGD POSSIBLE
200	KPCL	BELLARY TPS	State Sector	Karnataka	SR	2	500	3/23/2012	5	N	Y	Y	30/06/2021	FGD POSSIBLE
201	KPCL	BELLARY TPS	State Sector	Karnataka	SR	3	700	3/1/2016	1	N	Y	Y	31/12/2021	FGD POSSIBLE
202	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	1	210	3/29/1985	32	N	Y	Y	31/03/2021	FGD POSSIBLE
203	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	2	210	3/2/1986	31	N	Y	Y	30/06/2021	FGD POSSIBLE
204	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	3	210	3/30/1991	26	N	Y	Y	30/09/2021	FGD POSSIBLE
205	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	4	210	9/29/1994	23	N	Y	Y	31/12/2021	FGD POSSIBLE
206	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	5	210	1/31/1999	18	N	Y	Y	31/03/2022	FGD POSSIBLE
207	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	6	210	7/22/1999	18	N	Y	Y	30/06/2022	FGD POSSIBLE
208	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	7	210	12/11/2002	15	N	Y	Y	30/09/2022	FGD POSSIBLE
209	KPCL	RAICHUR TPS	State Sector	Karnataka	SR	8	250	6/26/2010	7	N	Y	Y	31/12/2022	FGD POSSIBLE
210	KPCL	YERMARUS TPP	State Sector	Karnataka	SR	1	800	3/29/2016	1	N	Y	Y	31/12/2021	FGD POSSIBLE
211	KPCL	YERMARUS TPP	State Sector	Karnataka	SR	2	800	3/29/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
212	NTPC	KUDGI	Central Sector	Karnataka	SR	1	800	12/25/2016	0	N	Y	Y	30/06/2022	FGD POSSIBLE
213	NTPC	KUDGI	Central Sector	Karnataka	SR	2	800	3/23/2017	0	N	Y	Y	30/09/2022	FGD POSSIBLE
214	NTPC	KUDGI	Central Sector	Karnataka	SR	3	800	UC		N	Y	Y	31/12/2022	FGD POSSIBLE
215	Coastal Energen Pvt. Ltd.	MUTHIARA TPP	Private Sector	Tamil Nadu	SR	1	600	12/2/2014	3	N	Y	Y	30/09/2022	FGD POSSIBLE
216	Coastal Energen Pvt. Ltd.	MUTHIARA TPP	Private Sector	Tamil Nadu	SR	2	600	1/2/2016	1	N	Y	Y	31/12/2022	FGD POSSIBLE
217	NEYVELI LIGNITE	NEYVELI (EXT) TPS	Central Sector	Tamil Nadu	SR	1	210	10/21/2002	15	N	Y	Y	30/06/2021	FGD POSSIBLE
218	NEYVELI LIGNITE	NEYVELI (EXT) TPS	Central Sector	Tamil Nadu	SR	2	210	7/22/2003	14	N	Y	Y	31/12/2021	FGD POSSIBLE
219	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	1	210	1/17/1988	29	N	Y	Y	31/12/2021	FGD POSSIBLE
220	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	2	210	2/6/1987	30	N	Y	Y	30/09/2021	FGD POSSIBLE
221	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	3	210	3/29/1987	30	N	Y	Y	30/06/2021	FGD POSSIBLE
222	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	4	210	3/30/1991	26	N	Y	Y	31/03/2022	FGD POSSIBLE
223	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	5	210	12/31/1991	25	N	Y	Y	30/06/2022	FGD POSSIBLE
224	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	6	210	10/30/1992	25	N	Y	Y	30/09/2022	FGD POSSIBLE
225	NEYVELI LIGNITE	NEYVELI TPS- II	Central Sector	Tamil Nadu	SR	7	210	6/19/1993	24	N	Y	Y	31/12/2022	FGD POSSIBLE
226	NTEC LTD.	VALLUR TPP	Central Sector	Tamil Nadu	SR	1	500	3/28/2012	5	N	Y	Y	30/06/2022	FGD POSSIBLE
227	NTEC LTD.	VALLUR TPP	Central Sector	Tamil Nadu	SR	2	500	2/28/2013	4	N	Y	Y	30/09/2022	FGD POSSIBLE
228	NTEC LTD.	VALLUR TPP	Central Sector	Tamil Nadu	SR	3	500	2/28/2014	3	N	Y	Y	31/12/2022	FGD POSSIBLE
229	NLC + TANGED CO	TUTICORIN (JV) TPP	Central Sector	Tamil Nadu	SR	1	500	3/10/2015	2	N	Y	Y	31/12/2021	FGD POSSIBLE
230	NLC + TANGED CO	TUTICORIN (JV) TPP	Central Sector	Tamil Nadu	SR	2	500	7/9/2015	2	N	Y	Y	30/06/2020	FGD POSSIBLE
231	TAQA, Neyveli	TAQA, Neyveli	Private Sector	Tamil Nadu	SR	2	250	10/21/2002	15	N	Y	Y	30/06/2020	FGD POSSIBLE
232	TANGED CO	METTUR TPS Ext.	State Sector	Tamil Nadu	SR	1	600	10/11/2012	5	N	Y	Y	31/12/2020	FGD POSSIBLE
233	TANGED CO	NORTH CHENNAI Ext. TPS	State Sector	Tamil Nadu	SR	1	600	3/9/2013	4	N	Y	Y	31/12/2019	FGD POSSIBLE
234	TANGED CO	NORTH CHENNAI Ext. TPS	State Sector	Tamil Nadu	SR	2	600	9/13/2013	4	N	Y	Y	30/09/2020	FGD POSSIBLE
235	TANGED CO	NORTH CHENNAI TPS	State Sector	Tamil Nadu	SR	1	210	10/25/1994	23	N	Y	Y	31/12/2022	FGD POSSIBLE
236	TANGED CO	NORTH CHENNAI TPS	State Sector	Tamil Nadu	SR	2	210	3/27/1995	22	N	Y	Y	30/06/2022	FGD POSSIBLE
237	TANGED CO	NORTH CHENNAI TPS	State Sector	Tamil Nadu	SR	3	210	2/24/1996	21	N	Y	Y	31/03/2022	FGD POSSIBLE
238	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	1	200	10/27/1983	34	N	Y	Y	31/03/2022	FGD POSSIBLE
239	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	2	200	5/29/1984	33	N	Y	Y	31/03/2022	FGD POSSIBLE
240	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	3	200	12/13/1984	33	N	Y	Y	30/06/2022	FGD POSSIBLE
241	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	4	500	6/26/1988	29	N	Y	Y	30/06/2022	FGD POSSIBLE
242	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	5	500	3/26/1989	28	N	Y	Y	30/09/2022	FGD POSSIBLE

243	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	6	500	10/16/1989	28	N	Y	Y	30/09/2022	FGD POSSIBLE
244	NTPC	RAMAGUNDEM STPS	Central Sector	Telangana	SR	7	500	9/26/2004	13	N	Y	Y	31/12/2022	FGD POSSIBLE
245	Singareni Collieries Co. Ltd.	SINGARENI TPP	State Sector	Telangana	SR	1	600	3/13/2016	1	N	Y	Y	31/12/2019	FGD POSSIBLE
246	Singareni Collieries Co. Ltd.	SINGARENI TPP	State Sector	Telangana	SR	2	600	11/25/2016	1	N	Y	Y	30/09/2019	FGD POSSIBLE
247	TSGENC O	KAKATIYA TPS	State Sector	Telangana	SR	1	500	5/27/2010	7	N	Y	Y	31/03/2020	FGD POSSIBLE
248	TSGENC O	KAKATIYA TPS	State Sector	Telangana	SR	2	600	12/31/2015	1	N	Y	Y	30/06/2020	FGD POSSIBLE
249	TSGENC O	KOTHAGUDEM TPS (NEW)	State Sector	Telangana	SR	11	500	6/26/2011	6	N	Y	Y	30/09/2019	FGD POSSIBLE
250	Bharat Aluminium Co. Ltd.	BALCO TPS	Private Sector	Chhatisgarh	W R	1	300	6/4/2015	2	N	Y	Y	30/09/2021	FGD POSSIBLE
251	Bharat Aluminium Co. Ltd.	BALCO TPS	Private Sector	Chhatisgarh	W R	2	300	3/24/2016	1	N	Y	Y	30/06/2021	FGD POSSIBLE
252	CSEB	MARWA TPS	State Sector	Chhatisgarh	W R	1	500	3/30/2014	3	N	Y	Y	30/06/2021	FGD POSSIBLE
253	CSEB	MARWA TPS	State Sector	Chhatisgarh	W R	2	500	7/15/2016	1	N	Y	Y	31/03/2021	FGD POSSIBLE
254	CSPGCL	DSPM TPS	State Sector	Chhatisgarh	W R	1	250	3/30/2007	10	N	Y	Y	30/06/2021	FGD POSSIBLE
255	CSPGCL	DSPM TPS	State Sector	Chhatisgarh	W R	2	250	12/11/2007	10	N	Y	Y	30/09/2021	FGD POSSIBLE
256	CSPGCL	KORBA-WEST Exl. TPS	State Sector	Chhatisgarh	W R	5	500	3/22/2013	4	N	Y	Y	30/09/2021	FGD POSSIBLE
257	DB Power	BARADARHA TPS	Private Sector	Chhatisgarh	W R	1	600	2/23/2014	3	N	Y	Y	30/06/2021	FGD POSSIBLE
258	DB Power	BARADARHA TPS	Private Sector	Chhatisgarh	W R	2	600	3/24/2015	2	N	Y	Y	30/09/2020	FGD POSSIBLE
259	GMR	RAIKHEDA TPP	Private Sector	Chhatisgarh	W R	1	685	2/24/2015	2	N	Y	Y	30/06/2020	FGD POSSIBLE
260	GMR	RAIKHEDA TPP	Private Sector	Chhatisgarh	W R	2	685	3/28/2016	1	N	Y	Y	30/09/2020	FGD POSSIBLE
261	KORBA-WEST TPS Pvt Ltd	AVANTHA BHANDAR	Private Sector	Chhatisgarh	W R	1	600	3/31/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
262	KSK Mahanadi Power Co Ltd	AKALTARA TPS	Private Sector	Chhatisgarh	W R	1	600	8/13/2013	4	N	Y	Y	30/06/2022	FGD POSSIBLE
263	KSK Mahanadi Power Co Ltd	AKALTARA TPS	Private Sector	Chhatisgarh	W R	2	600	8/22/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
264	M/s Lanko Amarkanta k Ltd.	PATHADI TPP	Private Sector	Chhatisgarh	W R	1	300	6/4/2009	8	N	Y	Y	31/03/2021	FGD POSSIBLE
265	M/s Lanko Amarkanta k Ltd.	PATHADI TPP	Private Sector	Chhatisgarh	W R	2	300	3/25/2010	7	N	Y	Y	31/03/2021	FGD POSSIBLE
266	M/s O.P.Jindal	OP JINDAL TPS	Private Sector	Chhatisgarh	W R	1	250	9/2/2007	10	N	Y	Y	31/03/2022	FGD POSSIBLE
267	M/s O.P.Jindal	OP JINDAL TPS	Private Sector	Chhatisgarh	W R	2	250	2/10/2008	9	N	Y	Y	31/03/2022	FGD POSSIBLE
268	M/s O.P.Jindal	OP JINDAL TPS	Private Sector	Chhatisgarh	W R	3	250	3/6/2008	9	N	Y	Y	30/06/2022	FGD POSSIBLE
269	M/s O.P.Jindal	OP JINDAL TPS	Private Sector	Chhatisgarh	W R	4	250	6/17/2008	9	N	Y	Y	30/06/2022	FGD POSSIBLE
270	M/s O.P.Jindal	TAMNAR TPP	Private Sector	Chhatisgarh	W R	1	600	3/10/2014	3	N	Y	Y	31/03/2021	FGD POSSIBLE
271	M/s O.P.Jindal	TAMNAR TPP	Private Sector	Chhatisgarh	W R	2	600	3/30/2014	3	N	Y	Y	31/12/2021	FGD POSSIBLE
272	M/s O.P.Jindal	TAMNAR TPP	Private Sector	Chhatisgarh	W R	3	600	1/7/2015	2	N	Y	Y	31/03/2022	FGD POSSIBLE
273	M/s O.P.Jindal	TAMNAR TPP	Private Sector	Chhatisgarh	W R	4	600	3/28/2015	2	N	Y	Y	30/06/2022	FGD POSSIBLE
274	Maruti Power Limited	BANDAKHAR TPP	Private Sector	Chhatisgarh	W R	1	300	7/31/2015	2	N	Y	Y	31/03/2020	FGD POSSIBLE
275	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	1	200	2/28/1983	34	N	Y	Y	31/12/2022	FGD POSSIBLE
276	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	2	200	10/31/1983	34	N	Y	Y	12/31/2022	FGD POSSIBLE
277	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	3	200	3/17/1984	33	N	Y	Y	31/12/2022	FGD POSSIBLE
278	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	4	500	5/31/1987	30	N	Y	Y	31/12/2022	FGD POSSIBLE
279	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	5	500	3/25/1988	29	N	Y	Y	31/12/2022	FGD POSSIBLE
280	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	6	500	2/26/1989	28	N	Y	Y	31/12/2022	FGD POSSIBLE
281	NTPC	KORBA STPS	Central Sector	Chhatisgarh	W R	7	500	11/25/2010	7	N	Y	Y	31/12/2022	FGD POSSIBLE
282	NTPC	SIPAT STPS	Central Sector	Chhatisgarh	W R	4	500	6/20/2008	9	N	Y	Y	31/12/2021	FGD POSSIBLE
283	NTPC	SIPAT STPS	Central Sector	Chhatisgarh	W R	5	500	1/1/2009	8	N	Y	Y	31/12/2021	FGD POSSIBLE

284	NTPC	SIPAT STPS	Central Sector	Chhatisgarh	W R	1	660	10/1/2011	6	N	Y	Y	31/12/2022	FGD POSSIBLE
285	NTPC	SIPAT STPS	Central Sector	Chhatisgarh	W R	2	660	5/25/2012	5	N	Y	Y	31/12/2022	FGD POSSIBLE
286	NTPC	SIPAT STPS	Central Sector	Chhatisgarh	W R	3	660	1/8/2012	5	N	Y	Y	31/12/2021	FGD POSSIBLE
287	NTPC & Sail	BHILAI TPS	Central Sector	Chhatisgarh	W R	1	250	4/20/2008	9	N	Y	Y	31/12/2022	FGD POSSIBLE
288	NTPC & Sail	BHILAI TPS	Central Sector	Chhatisgarh	W R	2	250	7/12/2009	8	N	Y	Y	31/12/2022	FGD POSSIBLE
289	RKM Powergen Private Ltd.	UCHPINDA TPP	Private Sector	Chhatisgarh	W R	1	360	10/28/2015	2	N	Y	Y	31/03/2022	FGD POSSIBLE
290	RKM Powergen Private Ltd.	UCHPINDA TPP	Private Sector	Chhatisgarh	W R	3	360	1/28/2016	1	N	Y	Y	31/12/2021	FGD POSSIBLE
291	SKS Power Gen. (CG Ltd.)	Binjkote TPP	Private Sector	Chhatisgarh	W R	1	300	4/25/2017	0	N	Y	Y	30/09/2020	FGD POSSIBLE
292	TRN Energy Private Ltd.	NAWAPARA TPP	Private Sector	Chhatisgarh	W R	2	300	4/18/2017	0	N	Y	Y	30/09/2020	FGD POSSIBLE
293	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	1	330	8/4/2009	8	N	Y	Y	31/12/2022	FGD POSSIBLE
294	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	2	330	3/17/2010	7	N	Y	Y	31/12/2022	FGD POSSIBLE
295	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	3	330	8/2/2010	7	N	Y	Y	30/09/2022	FGD POSSIBLE
296	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	4	330	12/20/2010	7	N	Y	Y	30/09/2022	FGD POSSIBLE
297	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	5	660	12/26/2010	6	N	Y	Y	30/06/2022	FGD POSSIBLE
298	Adani Power Ltd.	MUNDRA TPS	Private Sector	Gujarat	W R	6	660	7/20/2011	6	N	Y	Y	31/03/2022	FGD POSSIBLE
299	Essar Gujarat	SALAYA TPP	Private Sector	Gujarat	W R	1	600	1/4/2012	5	N	Y	Y	30/06/2021	FGD POSSIBLE
300	Essar Gujarat	SALAYA TPP	Private Sector	Gujarat	W R	2	600	6/15/2012	5	N	Y	Y	31/03/2021	FGD POSSIBLE
301	GSECL	GANDHI NAGAR TPS	State Sector	Gujarat	W R	3	210	3/20/1990	27	N	Y	Y	31/12/2021	PARTIAL FGD
302	GSECL	GANDHI NAGAR TPS	State Sector	Gujarat	W R	4	210	7/20/1991	26	N	Y	Y	31/12/2021	PARTIAL FGD
303	GSECL	GANDHI NAGAR TPS	State Sector	Gujarat	W R	5	210	3/17/1998	19	N	Y	Y	31/12/2021	PARTIAL FGD
304	GSECL	KUTCH LIG. TPS	State Sector	Gujarat	W R	1	70	3/29/1990	27	N	Y	Y	31/12/2021	PARTIAL FGD
305	GSECL	KUTCH LIG. TPS	State Sector	Gujarat	W R	2	70	3/25/1991	26	N	Y	Y	31/12/2021	PARTIAL FGD
306	GSECL	KUTCH LIG. TPS	State Sector	Gujarat	W R	3	75	3/31/1997	20	N	Y	Y	31/12/2021	PARTIAL FGD
307	GSECL	SIKKA REP. TPS	State Sector	Gujarat	W R	3	250	3/29/2015	2	N	Y	Y	31/01/2022	FGD POSSIBLE
308	GSECL	SIKKA REP. TPS	State Sector	Gujarat	W R	4	250	9/25/2015	2	N	Y	Y	31/01/2022	FGD POSSIBLE
309	GSECL	UKAI TPS	State Sector	Gujarat	W R	3	200	1/21/1979	38	N	Y	Y	31/12/2021	PARTIAL FGD
310	GSECL	UKAI TPS	State Sector	Gujarat	W R	4	200	3/28/1979	38	N	Y	Y	31/12/2021	PARTIAL FGD
311	GSECL	UKAI TPS	State Sector	Gujarat	W R	5	210	1/30/1985	32	N	Y	Y	31/12/2021	PARTIAL FGD
312	GSECL	UKAI TPS	State Sector	Gujarat	W R	6	500	3/5/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE
313	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	1	210	3/23/1982	35	N	Y	Y	31/12/2021	PARTIAL FGD
314	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	2	210	1/15/1983	34	N	Y	Y	31/12/2021	PARTIAL FGD
315	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	3	210	3/15/1984	33	N	Y	Y	31/12/2021	PARTIAL FGD
316	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	4	210	3/9/1986	31	N	Y	Y	31/12/2021	PARTIAL FGD
317	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	5	210	9/23/1986	31	N	Y	Y	31/12/2021	PARTIAL FGD
318	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	6	210	11/18/1987	30	N	Y	Y	31/12/2021	PARTIAL FGD
319	GSECL	WANAKBORI TPS	State Sector	Gujarat	W R	7	210	12/31/1998	18	N	Y	Y	31/12/2021	PARTIAL FGD
320	Tata Power (CGPL)	MUNDRA UMTTP	Private Sector	Gujarat	W R	1	800	3/7/2012	5	N	Y	Y	30/06/2020	FGD POSSIBLE
321	Tata Power (CGPL)	MUNDRA UMTTP	Private Sector	Gujarat	W R	2	800	7/30/2012	5	N	Y	Y	31/03/2021	FGD POSSIBLE
322	Tata Power (CGPL)	MUNDRA UMTTP	Private Sector	Gujarat	W R	3	800	10/27/2012	5	N	Y	Y	30/06/2021	FGD POSSIBLE
323	Tata Power (CGPL)	MUNDRA UMTTP	Private Sector	Gujarat	W R	4	800	1/21/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE
324	Tata Power (CGPL)	MUNDRA UMTTP	Private Sector	Gujarat	W R	5	800	3/22/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE

325	Torrent Power Generation Ltd.,	SABARMATI	Private Sector	Gujarat	W R	1	120	10/12/1978	39	N	Y	Y	31/12/2022	PARTIAL FGD
326	Torrent Power Generation Ltd.,	SABARMATI	Private Sector	Gujarat	W R	2	121	12/31/1984	32	N	Y	Y	31/12/2022	PARTIAL FGD
327	Torrent Power Generation Ltd.,	SABARMATI	Private Sector	Gujarat	W R	3	121	9/28/1988	29	N	Y	Y	31/12/2022	PARTIAL FGD
328	ESSAR power	MAHAN TPP	Private Sector	Madhya Pradesh	W R	1	600	2/24/2013	4	N	Y	Y	31/12/2020	FGD POSSIBLE
329	Jaiprakash Power Venture Ltd	NIGRI TPP	Private Sector	Madhya Pradesh	W R	1	660	8/29/2014	3	N	Y	Y	30/06/2020	FGD POSSIBLE
330	Jaiprakash Power Venture Ltd	NIGRI TPP	Private Sector	Madhya Pradesh	W R	2	660	2/27/2015	2	N	Y	Y	30/09/2020	FGD POSSIBLE
331	Jhabua Power Ltd.	SEIONI TPP	Private Sector	Madhya Pradesh	W R	1	600	3/22/2016	1	N	Y	Y	31/03/2020	FGD POSSIBLE
332	MB Power	ANUPPUR TPP	Private Sector	Madhya Pradesh	W R	1	600	4/20/2015	2	N	Y	Y	31/03/2022	FGD POSSIBLE
333	MB Power	ANUPPUR TPP	Private Sector	Madhya Pradesh	W R	2	600	3/30/2016	1	N	Y	Y	30/06/2022	FGD POSSIBLE
334	MPPGCL	AMARKANTAK EXT TPS	State Sector	Madhya Pradesh	W R	5	210	6/15/2008	9	N	Y	Y	31/03/2021	PARTIAL FGD
335	MPPGCL	SANJAY GANDHI TPS	State Sector	Madhya Pradesh	W R	1	210	3/26/1993	24	N	Y	Y	31/03/2021	PARTIAL FGD
336	MPPGCL	SANJAY GANDHI TPS	State Sector	Madhya Pradesh	W R	2	210	3/27/1993	24	N	Y	Y	31/03/2021	PARTIAL FGD
337	MPPGCL	SANJAY GANDHI TPS	State Sector	Madhya Pradesh	W R	3	210	2/28/1999	18	N	Y	Y	30/06/2021	FGD POSSIBLE
338	MPPGCL	SANJAY GANDHI TPS	State Sector	Madhya Pradesh	W R	4	210	11/23/1999	18	N	Y	Y	30/06/2021	FGD POSSIBLE
339	MPPGCL	SANJAY GANDHI TPS	State Sector	Madhya Pradesh	W R	5	500	6/18/2007	10	N	Y	Y	31/03/2021	FGD POSSIBLE
340	MPPGCL	SATPURA TPS	State Sector	Madhya Pradesh	W R	10	250	3/22/2013	4	N	Y	Y	31/03/2021	FGD POSSIBLE
341	MPPGCL	SATPURA TPS	State Sector	Madhya Pradesh	W R	11	250	12/25/2013	3	N	Y	Y	31/03/2021	FGD POSSIBLE
342	MPPGCL	SHRI SINGHAJI TPP	State Sector	Madhya Pradesh	W R	1	600	11/18/2013	4	N	Y	Y	31/03/2021	FGD POSSIBLE
343	MPPGCL	SHRI SINGHAJI TPP	State Sector	Madhya Pradesh	W R	2	600	10/15/2014	3	N	Y	Y	31/03/2021	FGD POSSIBLE
344	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	1	210	10/10/1987	30	N	Y	Y	31/12/2022	FGD POSSIBLE
345	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	2	210	7/23/1988	29	N	Y	Y	31/12/2022	FGD POSSIBLE
346	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	3	210	2/3/1989	28	N	Y	Y	31/12/2022	FGD POSSIBLE
347	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	4	210	12/26/1989	28	N	Y	Y	31/12/2022	FGD POSSIBLE
348	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	5	210	3/31/1990	27	N	Y	Y	31/12/2022	FGD POSSIBLE
349	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	6	210	2/1/1991	26	N	Y	Y	31/12/2022	FGD POSSIBLE
350	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	7	500	3/3/1999	18	N	Y	Y	30/06/2021	FGD POSSIBLE
351	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	8	500	2/26/2000	17	N	Y	Y	30/06/2021	FGD POSSIBLE
352	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	9	500	7/27/2006	10.92	N	Y	Y	30/09/2021	FGD POSSIBLE
353	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	10	500	3/8/2007	10.30	N	Y	Y	30/09/2021	FGD POSSIBLE
354	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	11	500	6/14/2012	5.03	N	Y	Y	31/12/2021	FGD POSSIBLE
355	NTPC	VINDHYACHAL STPS	Central Sector	Madhya Pradesh	W R	12	500	3/22/2013	4.26	N	Y	Y	31/12/2021	FGD POSSIBLE
356	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	1	660	5/30/2013	4	N	Y	Y	30/09/2021	FGD POSSIBLE
357	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	2	660	12/18/2013	4	N	Y	Y	30/06/2021	FGD POSSIBLE
358	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	3	660	5/21/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
359	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	4	660	3/25/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
360	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	5	660	8/24/2014	3	N	Y	Y	31/12/2021	FGD POSSIBLE
361	Reliance Power Ltd	SASAN UMTTP	Private Sector	Madhya Pradesh	W R	6	660	3/19/2015	2	N	Y	Y	30/09/2021	FGD POSSIBLE
362	Adani Power Maharashtra Ltd	TIRORA TPS	Private Sector	Maharashtra	W R	1	660	9/11/2012	5	N	Y	Y	31/03/2022	FGD POSSIBLE
363	Adani Power Maharashtra Ltd	TIRORA TPS	Private Sector	Maharashtra	W R	2	660	3/25/2013	4	N	Y	Y	31/12/2021	FGD POSSIBLE
364	Adani Power Maharashtra Ltd	TIRORA TPS	Private Sector	Maharashtra	W R	3	660	6/10/2013	4	N	Y	Y	31/09/2021	FGD POSSIBLE

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365	Adani Power Maharashtra Ltd	TIRORA TPS	Private Sector	Maharashtra	W R	4	660	3/23/2014	3	N	Y	Y	31/06/2021	FGD POSSIBLE
366	Adani Power Maharashtra Ltd	TIRORA TPS	Private Sector	Maharashtra	W R	5	660	9/25/2014	3	N	Y	Y	31/03/2021	FGD POSSIBLE
367	Dhariwal Infrastructure	DHARIWAL TPP	Private Sector	Maharashtra	W R	1	300	11/3/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE
368	Dhariwal Infrastructure	DHARIWAL TPP	Private Sector	Maharashtra	W R	2	300	5/28/2014	3	N	Y	Y	31/03/2022	FGD POSSIBLE
369	GMR emco ENERGY Ltd	EMCO WARORA TPS	Private Sector	Maharashtra	W R	1	300	2/7/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE
370	GMR emco ENERGY Ltd	EMCO WARORA TPS	Private Sector	Maharashtra	W R	2	300	8/27/2013	4	N	Y	Y	31/03/2022	FGD POSSIBLE
371	MAHAGE NCO	BHUSAWAL TPS	State Sector	Maharashtra	W R	3	210	9/18/1982	35	N	Y	Y	31/03/2021	PARTIAL FGD
372	MAHAGE NCO	BHUSAWAL TPS	State Sector	Maharashtra	W R	4	500	3/7/2012	5	N	Y	Y	31/03/2021	PARTIAL FGD
373	MAHAGE NCO	BHUSAWAL TPS	State Sector	Maharashtra	W R	5	500	3/30/2012	5	N	Y	Y	31/03/2021	PARTIAL FGD
374	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	3	210	5/3/1985	32	N	Y	Y	31/03/2021	FGD POSSIBLE
375	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	4	210	3/8/1986	31	N	Y	Y	31/03/2021	FGD POSSIBLE
376	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	5	500	3/22/1991	26	N	Y	Y	31/03/2021	FGD POSSIBLE
377	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	6	500	3/11/1992	25	N	Y	Y	31/03/2021	FGD POSSIBLE
378	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	7	500	10/1/1997	20	N	Y	Y	31/03/2021	FGD POSSIBLE
379	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	8	500	3/29/2015	2	N	Y	Y	3/31/2021	FGD POSSIBLE
380	MAHAGE NCO	CHANDRAPUR STPS	State Sector	Maharashtra	W R	9	500	3/21/2016	1	N	Y	Y	31/03/2020	FGD POSSIBLE
381	MAHAGE NCO	KHAPARKHEDA TPS	State Sector	Maharashtra	W R	1	210	3/26/1989	28	N	Y	Y	31/03/2021	FGD POSSIBLE
382	MAHAGE NCO	KHAPARKHEDA TPS	State Sector	Maharashtra	W R	2	210	1/8/1990	27	N	Y	Y	31/03/2021	FGD POSSIBLE
383	MAHAGE NCO	KHAPARKHEDA TPS	State Sector	Maharashtra	W R	3	210	5/31/2000	17	N	Y	Y	31/03/2021	FGD POSSIBLE
384	MAHAGE NCO	KHAPARKHEDA TPS	State Sector	Maharashtra	W R	4	210	1/7/2001	16	N	Y	Y	31/03/2021	FGD POSSIBLE
385	MAHAGE NCO	KHAPARKHEDA TPS	State Sector	Maharashtra	W R	5	500	8/5/2011	6	N	Y	Y	31/03/2021	FGD POSSIBLE
386	MAHAGE NCO	KORADI TPS	State Sector	Maharashtra	W R	6	210	3/30/1982	35	N	Y	Y	31/03/2021	PARTIAL FGD
387	MAHAGE NCO	KORADI TPS	State Sector	Maharashtra	W R	7	210	1/13/1983	34	N	Y	Y	31/03/2021	PARTIAL FGD
388	MAHAGE NCO	KORADI TPS	State Sector	Maharashtra	W R	8	660	3/30/2015	2	N	Y	Y	31/03/2021	FGD POSSIBLE
389	MAHAGE NCO	KORADI TPS	State Sector	Maharashtra	W R	9	660	3/15/2016	1	N	Y	Y	31/03/2021	FGD POSSIBLE
390	MAHAGE NCO	KORADI TPS	State Sector	Maharashtra	W R	10	660	12/28/2016	0	N	Y	Y	31/12/2020	FGD POSSIBLE
391	MAHAGE NCO	NASIK TPS	State Sector	Maharashtra	W R	3	210	4/26/1979	38	N	Y	Y	31/03/2021	PARTIAL FGD
392	MAHAGE NCO	NASIK TPS	State Sector	Maharashtra	W R	4	210	7/10/1980	37	N	Y	Y	31/03/2021	PARTIAL FGD
393	MAHAGE NCO	NASIK TPS	State Sector	Maharashtra	W R	5	210	1/30/1981	36	N	Y	Y	31/03/2021	PARTIAL FGD
394	MAHAGE NCO	PARLI TPS	State Sector	Maharashtra	W R	4	210	3/26/1985	32	N	Y	Y	31/03/2021	PARTIAL FGD
395	MAHAGE NCO	PARLI TPS	State Sector	Maharashtra	W R	5	210	12/31/1987	29	N	Y	Y	31/03/2021	PARTIAL FGD
396	MAHAGE NCO	PARLI TPS	State Sector	Maharashtra	W R	6	250	2/16/2007	10	N	Y	Y	31/03/2021	PARTIAL FGD
397	MAHAGE NCO	PARLI TPS	State Sector	Maharashtra	W R	7	250	2/10/2010	7	N	Y	Y	31/03/2021	PARTIAL FGD
398	MAHAGE NCO	PARLI TPS	State Sector	Maharashtra	W R	8	250	3/30/2016	1	N	Y	Y	31/03/2021	PARTIAL FGD
399	NTPC	MOUDA TPS	Central Sector	Maharashtra	W R	1	500	4/19/2012	5	N	Y	Y	31/12/2022	FGD POSSIBLE
400	NTPC	MOUDA TPS	Central Sector	Maharashtra	W R	2	500	3/29/2013	4	N	Y	Y	31/12/2022	FGD POSSIBLE
401	NTPC	MOUDA TPS	Central Sector	Maharashtra	W R	3	660	3/28/2016	1	N	Y	Y	31/12/2022	FGD POSSIBLE
402	NTPC	MOUDA TPS	Central Sector	Maharashtra	W R	4	660	3/18/2017	0	N	Y	Y	31/12/2020	FGD POSSIBLE
403	NTPC	SOLAPUR	Central Sector	Maharashtra	W R	1	660	4/7/2017	0	N	Y	Y	31/12/2020	FGD POSSIBLE
404	Ratan Power	NASIK (P) TPS	Private Sector	Maharashtra	W R	1	270	2/25/2014	3	N	Y	Y	31/03/2021	PARTIAL FGD
405	Ratan Power	NASIK (P) TPS	Private Sector	Maharashtra	W R	2	270	2/15/2017	0	N	Y	Y	31/03/2021	PARTIAL FGD

406	Ratan Power	NASIK (P) TPS	Private Sector	Maharashtra	W R	3	270	4/14/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
407	Ratan Power	NASIK (P) TPS	Private Sector	Maharashtra	W R	4	270	5/19/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
408	Ratan Power	NASIK (P) TPS	Private Sector	Maharashtra	W R	5	270	5/30/2017	0	N	Y	Y	31/12/2022	FGD POSSIBLE
409	TATA Power Co.	TROMBAY TPS	Private Sector	Maharashtra	W R	5	500	1/25/1984	33	N	Y	Y	31/03/2018	FGD POSSIBLE
410	Vidarbha Industries Ltd	BUTIBORI TPP	Private Sector	Maharashtra	W R	1	300	8/17/2012	5	N	Y	Y	30/06/2021	FGD POSSIBLE
411	Vidarbha Industries Ltd	BUTIBORI TPP	Private Sector	Maharashtra	W R	2	300	3/19/2013	4	N	Y	Y	31/03/2021	FGD POSSIBLE
412	Wardha P C P L	WARDHA WARORA TPP	Private Sector	Maharashtra	W R	1	135	6/5/2010	7	N	Y	Y	30/09/2021	FGD POSSIBLE
413	Wardha P C P L	WARDHA WARORA TPP	Private Sector	Maharashtra	W R	2	135	10/10/2010	7	N	Y	Y	30/09/2021	FGD POSSIBLE
414	Wardha P C P L	WARDHA WARORA TPP	Private Sector	Maharashtra	W R	3	135	1/21/2011	6	N	Y	Y	31/12/2021	FGD POSSIBLE
415	Wardha P C P L	WARDHA WARORA TPP	Private Sector	Maharashtra	W R	4	135	4/30/2011	6	N	Y	Y	31/12/2021	FGD POSSIBLE

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