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Central Electricity Authority

तापीय परियोजना नवीनीकरण एवं आधुनिकीकरण प्रभाग

Thermal Projects Renovation & Modernisation Division



R&M of Unit-6 (210 MW) of Kordi TPS of MAHAGENCO

Quarterly Review Report Renovation & Modernisation of Thermal Power Stations

Quarter: July - September, 2018

C O N T E N T S

Sl No.	Description	Page No.
	Highlights	01-02
1.0	Introduction	03
2.0	Objective of R&M programme	03
3.0	Objective of LE programme	03
4.0	R&M and LE programme from 7th Plan onwards till 12th Plan	03-04
5.0	LE/R&M Programme during (2017-22)	04
5.1	Achievement of LE/R&M Programme during the 2017-22 up to 30th September, 2018	05
5.2	Details of thermal units under shut down for R&M and LE works	05
5.3	Status of R&M activities under BRGF Scheme	05-06
6	Phasing Plan for FGD installation/ ESP upgradation in respect of new Environmental Norms	06-07
6.1	Summary of current status of Implementation of phasing plan for FGD installation	07-08
6.2	FGD-ESP Phasing Plan of Thermal Powers located in Delhi NCR	9--10
7	Flexible Operation of Thermal Power Stations	07
8.1	Coal Fired Generation Rehabilitation programme funded by World Bank	11-12
8.2	Indo-Japan co-operation for study on Efficiency and Environmental improvement of Coal fired stations	13-14
Annexure-1	Status of units where Life Extension/ Renovation & Modernisation works have been taken up for implementation during 2017-22	15-29
Annexure-2	Details of Thermal Power Units where the Life Extension (LE) Works have been completed during 2017-22	30
Annexure-3	Details of Thermal Power Units where the Renovation & Modernisation (R&M) Works have been completed during 2017-22	31
Annexure-4	Details of Thermal Power Units where the Renovation & Modernisation (R&M)/ LE (Life Extension) Works have been completed during 12th Plan	32-33
Annexure-5	Summary of implementation for phasing plan for FGD installation/ESP Upgradation	34
Annexure-6	Status installation of FGD	35

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 06 units of capacity of 887 MW have been completed upto 30-09-2018. At present, 3 coal based generating units with aggregate capacity of 410 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 conducted a study on O&M enhancement of existing unit no.-1 of DTPS, DVC. Final Report has been submitted at DVC in May 2018 by JCOAL. A diagnostic study for optimal environmental measures in Dadri TPS was carried out in February 2018 and report submitted in June 2018. SCR Pilot test at NTPC's Sipat TPS is being carried out to meet the NO_x level as per new environmental norms. Under Clean Coal Technology (CCT) Programme a study tour to Japan planned during current year from 24th October 2018 to 1st November 2018.

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.

A committee was constituted in CEA to find out the level of flexibilization required from thermal power stations and future roadmap for integration of 175 MW RES generation into Indian grid by 2022. Interim Report of the committee has been submitted in June 2018. It was found in the report that thermal units have to be operated at less than 30% load during the peak RES generation in the year 2021-22. Various measures have been suggested to improve the situation. A pilot test of 40% minimum load and 3% ramp up/ ramp down (i.e. 15 MW/ Min) has been successfully conducted in Dadri TPS and similar pilots are planned in other utilities.

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. I would also like to thank for timely submission of status of installation of FGD/ upgradations of ESP to comply with new environmental norms thus helping us to prepare & publish quarterly review report.

Dated: 29-11-2018



(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 upto 30-09-2018

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	04(820)	--	04(820)
2	R&M	--	02(67)	02(67)
	Total	04(820)	02(67)	6(887)

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. Further the implementation of measure to the thermal plants situated in NCR region for compliance of new environmental shall be complied by December 2019. 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. Flexible Operation of Thermal Power Stations

A committee has been constituted in CEA under the chairmanship of Chief Engineer (TPRM) to find out the level of flexibilization required from thermal power stations and future roadmap for integration of 175 MW RES generation capacity into Indian grid by 2022. The committee has come up with the findings of the quantum of flexibilization, minimum thermal load, and ramp rate required in its interim report in June 2018. A pilot test of 40% minimum load operation and 3% ramp up/ ramp down (i.e. 15 MW/ Min) has been successfully conducted in Dadri TPS of NTPC. The final report of the study is expected to release shortly.

6. 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 is planned during current year from 24th October, 2018 to 1st November, 2018. The participants from CEA, MoP, DVC, NTPC and State Utilities will visit 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. Final Report was 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 February, 2018 and debriefing meeting was held in June 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 30.09.2018 was 344718.61 MW of which thermal power plants contributed 221802.59 MW (64.34 %). The contribution of Coal, Gas and Diesel based thermal power plants of total installed capacity is 56.89 %, 7.21 % 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 30.09.2018

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(67)	02(410)	02(67)	04(477)
2018-19	02(410)	--	--	--	2(410)	--	02(410)
Total No. of units (MW)	04(820)	--	--	02(67)	04(820)	02(67)	06(887)
	04(820)		02(67)		06(887)		

5.1 Details Achievements of LE and R&M Programme during 2017-22 upto 30.09.2018.

	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	Kathalguri CCGT	3	--	33.5	NEEPCO	Central	20-07-2018
	Kathalguri CCGT	6	--	33.5	NEEPCO	Central	31-03-2018
Sub Total		4 (Units)		477.00			
2. 2018-19							
LE	Koradi TPS	6	25-08-2015	210	MAHAGENCO	State	16-07-2018(oil firing) 20-08-2018(coal firing)
	Obra TPS	12	01-10-2016	200	UPRVUNL	State	24-09-2018
R&M	--	--		--	---	--	--
Sub Total		02(unit)		410			
Total LE	04 (820)	State	04(unit)		820		
		Centre	--		--		
Total R&M	02 (67)	State	--		--		
		Centre	02(unit)		67		
Grand Total		06(units)		887.00			

Details of thermal power units where the R&M/ LE Works have been completed during 2017-22 up to 30.09.2018 are given at **Annexure 2& 3**.

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

The following 5 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.	Obra TPS	UPRVUNL	U.P.	13	200
Total					410

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 Croes
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	November 2018	Boiler: 97% work completed Turbine : 98% work completed Anticipated completion of Unit- 6 is in November 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.

Further, it has been decided that the target date for environmental compliance in respect of thermal plant located in NCR is December,2019. The progress report of installation of measures of 10 nos. thermal power plant situated in NCR region is given separately.

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	26330	53
2021	64268	174
2022	64055	178
Total	160092	414

ii) Year wise ESP Upgradation Plan

Year	Capacity (MW)	No. of Units
2018	500	1
2019	1300	2
2020	10405	27
2021	23495	97
2022	27725	93
Total	63425	220

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.

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

General Summary

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	53350	53350	51510	50510	43260	13540	0
2	State Sector	51885	49195	35980	5490	3630	0	0
3	Private Sector	61737	60117	42220	33720	19750	1820	1820
	Total*	166972	162662	129710	89720	66640	15360	1820

S.No.	Sector (No. of units)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	143	143	135	133	114	27	0
2	State Sector	164	153	114	16	13	0	0
3	Private Sector	134	129	80	62	35	3	3
	Total*	441	425	329	211	162	30	3

500 MW Critical Units**Units > 500 MW & located in areas either critically polluted or having population density > 400/km²**

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	29320	29320	29320	29320	24620	8120	0
2	State Sector	13980	13980	10680	1000	1000	0	0
3	Private Sector	13510	13510	8410	7370	3570	1320	1320
	Total*	56810	56810	48410	37690	29190	9440	1320

S.No.	Sector (No. of units)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	57	57	57	57	48	15	0
2	State Sector	25	25	20	2	2	0	0
3	Private Sector	22	22	14	12	6	2	2
	Total*	104	104	91	71	56	17	2

NCR Summary

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	3320	3320	3320	3320	3320	3320	0
2	State Sector	4770	3930	2300	0	0	0	0
3	Private Sector	4700	4700	4700	4700	3300	1320	1320
	Total*	12790	11950	10320	8020	6620	4640	1320

S.No.	Sector (No. of units)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	9	9	9	9	9	9	0
2	State Sector	17	13	6	0	0	0	0
3	Private Sector	7	7	7	7	5	2	2
	Total*	33	29	22	16	14	11	2

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

Sl. No.	Name of Thermal Power Station	Timeline for FGD	Current Status
1	Dadri (NCTPP), U.P Unit 1-4 (210X4 MW) NTPC	31.12.2019	FGD: Awarded on 26 Oct 18. Work in progress DE-Nox: Statutory limits being complied. ESP: Statutory limits being complied.
	Dadri (NCTPP), U.P Unit 5-6 (490X2 MW) NTPC	31.12.2019	FGD: Awarded on 01 Feb 18. Work in progress DE-Nox: Awarded on 29 June 18 for combustion modification ESP: Statutory limits being complied.
2	GHTP (Lehra Mohabbat), Punjab Unit 1-4(210X2 &250X2 MW) PSPCL	31.12.2019	FGD: Work order cum contract agreement for consultancy services for preparation of TS issued to M/s NTPC ESP: Matter being taken up with BHEL De-NOx: Matter being taken up with BHEL
3	Harduaganj, U.P Unit-8&9 (250X2 MW) UPRVNL	31.12.2019	FGD: NIT issued. ESP: Offer for Pre-award consultancy received from BHEL/GE. ESP upgradation planned in Dec-19
4	Indira Gandhi STPP, Haryana Unit 1-3 (500X3 MW) NTPC	31.12.2019	FGD: FGD package retendered on 18 Oct 2018 DE-NOx: Awarded on 29 Oct 2018 ESP: Statutory limits being complied.
5	Mahatma Gandhi TPP, Haryana Unit-1-2(660x2 MW) CLP	31.12.2019	FGD: FGD Installed and is Under Renovation ESP: Statutory limits being complied. DE-Nox: A third party has been engaged to control NOX emission through combustion optimisation technique.
6	Panipat TPS, Haryana Unit-6 (1X210 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: SPM values are within limits. De-NOx: Low NOx burner to be installed
	Panipat TPS, Haryana Unit-7-8 (2X250 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: SPM values are within limits. De-NOx: Low NOx burner to be installed
7	Rajiv Gandhi TPS, Hisar, Haryana Unit-1(600 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: NIT to be completed by April,19 De-NOx: Low NOx burner to be installed
	Rajiv Gandhi TPS, Hisar, Haryana Unit-2(600 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: All the ESP fields are in working order. Need to be certified by state govt. De-NOx: Low NOx burner to be installed
8	Yamunanagar (DCTPS), Haryana Unit-1(300 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: SPM are within the limits. Need to be certified by state govt. De-NOx: Low NOx burner to be installed
	Yamunanagar (DCTPS), Haryana Unit-2(300 MW) HPGCL	31.12.2019	FGD: Pre-bid activities to be completed by Nov,18 ESP: The revival of ESP fields of has been awarded to M/s GE Power India Ltd. De-NOx: Low NOx burner to be installed
9	Talwandi Sabo TPS, Mansa, Punjab Unit-1-3(660x3 MW) TSPL	31.12.2019	FGD: NIT issued on Jun'18. PPA issue pending with regulator. Bid award by Dec'18 ESP: SPM are within the limits. Need to be certified by state govt. De-NOx: NIT issued. PPA issue pending with regulator
10	Nabha Power Ltd, Rajpura, Punjab Unit-1-2(700x2 MW)	31.12.2019	FGD: NIT expected in Dec-18 ESP: Statutory limits being complied. Need to be certified by state govt.

	GMR		De-Nox: LoA to be issued by end of Nov.
11	GGSSSTP Ropar (4x210 MW) PSPCL	31/12/2019	FGD: Work order for feasibility study placed with NTPC ESP: Statutory limits being complied. Need to be certified by state govt.
	Total	12790 MW	

7.0 Flexible Operation of Thermal Power Stations

India's Intended Nationally Determined Contributions (INDCs) include a reduction in the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level, and to create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent. Generating power from renewable sources of energy is of cardinal importance if India is to meet its INDC targets. With the aim to ensure future security & reliability of power supply and stability of electricity grids while maximizing generation from renewables flexibilization of existing coal-fired power plants is an important measure.

A committee has been constituted in CEA to find out the level of flexibilization required from thermal power stations and future roadmap for integration of 175 MW RES generation into Indian grid by 2022. The committee has come up with the findings of the quantum of flexibilization, minimum thermal load, and ramp rate required in its interim report in June 2018. The final report is expected to release shortly.

8.1 “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.

8.1.1 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 was under shutdown from 20-07-2015 to 16-07-2018. LE work of unit#6 has been completed and unit synchronised on 16-07-2018 with oil & on 20-08-2018 with coal.

Status of Physical Progress

- i) **BTG Package:** Mahagenco issued that the Letter of Award to BHEL on May 31, 2013. The contract was signed on December 18, 2013. Overall 98.07% material has been supplied at site. Overall (physical progress) 96% 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 5 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 100% 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 87% 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 95% work completed. 99.67% of overall material has been supplied at site & 100% of the dismantling work has been completed. 92.85% installation & civil works completed. Design Engg. work is completed of Ash Handling Plant. 95.87% material supplied at site, erection work Ash Handling system for ESP "A&B pass" completed erection work of Ash Handling system for eco and APH hopper is in progress

Overall material supplied at site is 100% Installation & Civil works completed and commissioning is balance. Functional testing carried out, Simulation trials completed but Dump Test is 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	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	16-07-2018 (with oil) 20-08-2018 (Coal Firing)
4.	Trial Run or Reliability Run	20-05-2016	--
5.	P.G. Test	18-08-2016	--

The unit is synchronized on 16-07-2018 with oil firing and run for @35 minutes with load upto 30 MW. The unit is synchronized on 20-08-2018 with coal firing and run with average loading of 50-60 MW and reaching maximum of 89 MW with difficulties in mill availability due to coal flow problems due to wet coal. Unit resynchronised on 13-10-2018 and tripped on the same day. Unit again synchronized on 14-10-2018 at 23:29 hrs and tripped at 23:56 hrs on 14-10-2018. Unit finally synchronized on 15-10-2018.

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.

8.2 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 the year 2017 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. A study tour to Japan is also planned during the current year from 24th October 2018 to 1st November 2018.

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 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 and collected required data for the purpose of O&M Study from 11.12.2017 to 14.12.2017.

Interim Report of the Study was submitted by JCOAL on 15th Dec 2017. Final Report has been prepared and was submitted in May 2018.

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 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 February, 2018 and debriefing meeting was held in June 2018.

4th MoU to be signed between CEA and JCOAL is under process. The purpose of this MoU is to address issues and barriers in expediting sustainable, stable and low carbon thermal power development by means of studies, training program and knowledge-sharing activities, outcomes of which are to be conducive to overall power development in India as well as to expedite relevant policy implementation by the Government of India. Following activities to be carried out under 4th MoU:

- Update on the current and future policy trend in the Indian power sector.
- Consideration of the identified issues/barriers to find out those which could be addressed through mutual collaboration.
- Identification of issues to be addressed regarding both existing and upcoming facilities, and also operation and maintenance.
- Implementation of studies with priorities, but not limited to environmental technologies for coal fired power generation such as IGCC, IGFC.
- Flexibilization measures and biomass utilization are also of high priority.
Biomass study includes:
 - *Co firing of biomass pellets*
 - *Dedicated firing in Coal based plants*
 - *Dedicated biomass fired plants and*
 - *Waste to Energy Technologies*
- Study on Coal Washery and Coal GCV loss in power plant and its remedies
- Implementation of an annual workshop in India and CCT Training Programme in Japan
- Hold a joint meeting

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

STATE SECTOR LE Works

(as on 30.06.2018)

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. Unit- 12 is synchronized on 24-09-2018. (Runs nearly at 100 MW, ESP pass-B incomplete) Boiler: Work started from 15.02.17. Nearly 95% work completed. Turbine. Work started on 03.07.2017. Nearly 95% work completed. Generator: 100% work completed. ESP foundation completed, Pass-A-95%, Pass-B-50%. Ash Handling: Nearly 40% works completed (common for both unit-12 & unit-13) Switch Yard 400 kv CB- 100% work completed. Water treatment plant- 98% work completed. Coal Handling plant- nearly 50% work over.
2.	U.P.	Obra	13	1982	200	Date of commissioning given by M/s. BHEL is 31-12-2018. R&M works started from 17-05-2018. Unit is under s/d from 16-05-2018 Tentative synchronisation is 31-08-2019. Boiler: 40% work completed Turbine: Yet to start Generator: Yet to start. ESP: 30% (civil foundation only) work completed. Ash Handling: -- Switchyard 400 kv CB: yet to start WTP: 98% work completed CHP: 60% work completed
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	<u>ESP R&M</u> : 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. <u>Turbine & Boiler R&M</u> : Turbine & boiler R&M work of UTPS Unit#3 is dropped. <u>C&I Up-gradation</u> :- 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: - LOI issued to M/s Deccan Mechanical & Chemical Industries Pvt. Ltd., Pune on 29-05-2018 at the cost of Rs. 13.87 Crs.was cancelled. Tender re-invited for subject

						work, offers received and scrutiny is under progress.
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. <u>Boiler Back Pass Modification:</u> 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. <u>Ash slurry pump house:-</u> - LOI issued to M/s Deccan Mechanical & Chemical Industries Pvt. Ltd., Pune on 29-05-2018 at the cost of Rs. 13.87 Crs.was cancelled. Tender re-invited for subject work, offers received and scrutiny is under progress.
8.	Gujarat	Ukai	5	1985	200	<u>ESP R&M:</u> ESP retrofitting of Ukai unit-5 completed and unit lit up on 28-03-2017. PG test of ESP has been completed. <u>Turbine &Boiler R&M</u> It is decided to carry out turbine R&M of UTPS#5 only at present. Hence consultancy order for R&M of turbine & boiler and its auxiliaries considering heat rate (efficiency) improvement with ramping up/ down of the load and PG test of ESP is amended for consultancy of turbine R&M of UTPS Unit#5 only. Boiler R&M work of UTPS unit#5 is dropped at this stage. Ash slurry pump house:- - LOI issued to M/s Deccan Mechanical & Chemical Industries Pvt. Ltd., Pune on 29-05-2018 at the cost of Rs. 13.87 Crs.was cancelled. Tender re-invited for subject work, offers received and scrutiny is under progress.
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. 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 &2 completed and units lit up on 07-03-2017 and 08-04-2018 respectively. PG test of WTPS units#1&2 completed. <u>Turbine & Boiler R&M:</u> Turbine & boiler R&M work of WTPS Units#1&2 has been dropped. Meanwhile, GSECL has initiated feasibility study for replacement of WTPS 2x 210 MW
10.	Gujarat	Wanakbori	2	1983	210	

					Units by 1x800 MW Super Critical Units. Pending work of Unit-1&2, Bus coupler will be carried out in available shutdown.
11.	Gujarat	Wanakbori	3		210
					LE work completed and unit synchronised on 05-12-2017. ESP Retrofitting work Shutdown of WTPS Unit No. 3 is commenced from 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 and guaranteed parameters achieved. 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 and guaranteed parameters achieved.
11.	Maharashtra	Koradi	6	1982	210
					LE work completed and unit synchronised on 16-07-2018 with oil & 20-08-2018 with coal. 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: Mahagenco issued that the Letter of Award to BHEL on May 31, 2013. The contract was signed on December 18, 2013. Overall 98.07% material has been supplied at site. Overall (physical progress) 96% 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 5 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 100% 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 87% 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 95% work completed. 99.67% of overall material has been supplied at site & 100% of the dismantling work has been completed. 92.85% installation & civil works completed. Design Engg. work is completed of Ash Handling Plant. 95.87% material supplied at site, erection work Ash Handling system for ESP "A&B pass" completed erection work of Ash Handling system for eco and APH hopper is in progress Overall material supplied at site is 100% Installation & Civil works completed and commissioning is balance. Functional testing carried out, Simulation trials completed but Dump Test is 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. This unit is permanently decommissioned on 01-04-2017.
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	RLA/Feasibility study for EER&M not carried out.
19.	Maharashtra	Parli	5	1987	210	RLA/Feasibility study for EER&M not carried out.
20.	Maharashtra	Chandrapur	3	1983	210	RLA/Feasibility study for EER&M not carried out.
21.	Maharashtra	Chandrapur	4	1984	210	RLA/Feasibility study for EER&M not carried out.
22.	Maharashtra	Chandrapur	5	1983	500	Feasibility study for EER&M not carried out.
23.	Maharashtra	Chandrapur	6	1984	500	Feasibility study for EER&M not carried out.
24.	Maharashtra	Khaperkheda	1	1989	210	RLA/Feasibility study for EER&M not carried out.
25.	Maharashtra	Khaperkheda	2	1990	210	RLA/Feasibility study for EER&M not carried out.
26.	Bihar	Barauni	6	1983	110	Unit-6 is likely to be synchronized by the end of November 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	Estimated cost of L.E.of Unit# 1,2&3: 1090 Crs U# 1, 2 & 3: There are 3 packages (ESP, AHP & BTG). ESP (1,2,3) : LOA placed on M/s KCIN. Starting date is 22.03.17. (Schedule is 35 months from LOA). ESP (unit- 3): Mechanical erection work is in progress. ESP (unit- 1): Dismantling work under progress. AHP (1,2,3): LOA placed on M/s Indure. Starting date 26/07/2017. (schedule is 29 months from LOA) Unit#3 Dismantling work is completed. BTG (1,2,3): Initial bid evaluation is completed. (Schedule is 33 months from LOA). Technical bids are submitted on 03-01-2018. Initial bid evaluation is completed. However, Scope may be revised to include mill capacity upgrade and further evaluation may be done. Boiler & Auxiliary System: - DPR is ready. Initial bid evaluation is completed. However,

						because of change in scope in boiler area, total bid evaluation may be done again. BOP: - Clarifloculator:- Technical bids are submitted on 03-01-2018. Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again. ESP: U#3: Mechanical erection works is in progress. U#1: Dismantling work completed. Civil excavation work is in progress. AHP: U#3: Mechanical erection work is in progress. Electrical and Instrumentation: - Technical bids are submitted on 03-01-2018. <table border="1"><thead><tr><th colspan="3">Electrical</th></tr></thead><tbody><tr><td>1</td><td>GPR and 2 breaker Relay</td><td>Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.</td></tr></tbody></table> <table border="1"><thead><tr><th colspan="3">Instrumentation</th></tr></thead><tbody><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>Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.</td></tr><tr><td>4</td><td>Upgradation/ replacement of instrumentation system as per mechanical scope of work.</td><td>Initial bid evaluation is complete. However, because of change in scope in boiler area, total bid evaluation may be done again.</td></tr><tr><td>5</td><td>Incorporation of ATRS</td><td>Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.</td></tr></tbody></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 21 crore was made for ESP up to 30-06-2018. AHP- Payment Rs. 16.32 crore was made for AHP till 30-06-2018.	Electrical			1	GPR and 2 breaker Relay	Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.	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	Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.	4	Upgradation/ replacement of instrumentation system as per mechanical scope of work.	Initial bid evaluation is complete. However, because of change in scope in boiler area, total bid evaluation may be done again.	5	Incorporation of ATRS	Initial bid evaluation is completed. However, because of change in scope in boiler area, total bid evaluation may be done again.
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30.	W.Bengal	Kolaghat	5	1991	210	Estimated cost of LE of Unit#5&6 is 25 Crs. U# 4, 5 & 6 : Only 1 package for ESP ESP Package: L 1 bidder is selected. M/s Soil & Enviro Industries Pvt. Ltd. is																								

						successful bidder.
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. After finalization of DPR, KPCL will take decision on comprehensive R&M Works of unit 1&2 according to the recommendations of DPR. Further, proposal for implementation of environmental solutions is being prepared after visiting some of the power plants who have already installed FGD system. 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 30.09.2018 is 468.00 crs.
3.	U.P.	Anpara'B	5	1994	500	Boiler: Nearly 75% work completed. TG: Nearly 75% work completed. Electrical & Instrumentation: Nearly 75% work completed. BoP: Nearly 75% work completed. - The R&M work would be carried out in AOH and are likely to be completed by 31-03-2019. Utility decided to carry out Feasibility Study to meet the environmental norms.
4.	Punjab	Ropar	1	1984	210	Retired from 01-01-2018
5.	Punjab	Ropar	2	1985	210	
6.	Punjab	Ropar	5	1992	210	
7.	Punjab	Ropar	6	2001	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. Work New Replacement of steam & water analysis system have been installed & commissioned on unit 1-6. 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 design24 Sector APH on unit 1 & 2. But due to Punjab Govt. decision to permanently close unit 1& 2 of Ropar TPS, APH would be installed on unit 6 during next overhauling in 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 2019-20. Replacement of ESP controllers of stage 3 would be taken up in 2019-20.
8.	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
9.	Punjab	GH TPS (Leh. Moh.)	1	1997	210	
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. Energo Engineering Projects Ltd. (extended upto 18-10-2018 for main package & 11-02-2019 for optional package. Work being executed through M/s Elcon EPC Project, Gujarat. - Installation 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. <u>Proposal for additional capitalisation during the year 2017-22</u> - Replacement of existing BHEL make Procontrol P-13 SG-TG sysem of unit#5. - Renovation of static excitation and AVR system of 210 MW unit#3 & 4 by digital AVR system. - Strengthening and repair of RCC & steel structure of crusher house. Structure of DM plant, RCC of acid alkali tank, SDG tank and plow feeder at KSTPS. - Strengthening and repair of RCC framed structure of IDCT Cooling Tower of unit #6. - Conversion of Relay logic contrl system of CHO into PLC based system. - Purchase of 3 nos of bulldozer. - Supply, Design, installation, testing and commissioning of online energy accounting and management system of KSTPS.
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

18.	Chhattisgarh	Korba (West)	2	1984	210	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 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 and work is under progress. LOI issued to BHEL for Augmentation of DCS/ C&I System. Tender floated and offer received, Techno commercial scrutiny is under process for Fire protection system of Transformer & Cables Vault Galleries. M/s DCPL, Kolkata is engaged to carry out feasibility study for installation of FGD. Consultant M/s. NTPC, Noida is being engaged for preparation of DPR for installation of FGD. Other schemes approved by CSERC for financial year 2016-17 to 2020-21 are under tendering process.
19.	Chhattisgarh	Korba (West)	3	1985	210	
20.	Chhattisgarh	Korba (West)	4	1986	210	
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. Unit-2- The consultant have completed RLA/CA Studies in Aug 2016 and submitted the DPR in Jan 2017. Executing Agency will be finalised through open tendering process in due course of time. The R&M wor has been devided into 7 no of packages. 1. R&M of BTG along with associated electrical & C&I work 2. R&M of Air compressor 3. R&M of DM & EW system 4. R&M of Electrical 5. R&M of Fuel Oil system 6. R&M of Hydrogen generation plant 7. R&M of Ash Handling Plant. Earlier the comprehensive work was expected to be started from Dec. 2018 and completed by June 2020. However proposal for taking up of comprehensive R&M in Unit#1&2, the BoD of MPPGCL in its meeting of 12 th September 2018 has resolved to constitute a committee for analysis of proposal prior to proceed further. Accordingly necessary action is being taken up in the matter. M/s FICHTNER consulting Engineers (India) Ltd. appointed as consultant to carry out feasibility study and preparation of tender document for installation of FGD & other equipment in April 2018. Recommendation cum DPR submitted by consultant. Has been accepted by MPPGCL. Technical and commercial specification are are under preparation. NIT will be floated by the end of December, placement of order will be done by June 2019 and installation of FGD completed by September 2021-March 2022.
22.	M.P.	Sanjay Gandhi	2	1994	210	
23.	Maharashtra	Chandrapur	7	1997	500	RLA/Feasibility study for EER&M not carried out.
24.	Maharashtra	Khaperkheda	3	2000	210	RLA/Feasibility study for EER&M not carried out.
25.	Maharashtra	Khaperkheda	4	2001	210	RLA/Feasibility study for EER&M not carried out.
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

						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. Complete replacement of economizer coils assembly, LTSH supply tubes and straight tubes panels for super heater rear wall near economizer. Tender open on 03-11-2017. Price bid opened on 04-05-2018 and P.O. placed on Micro Spares, Chennai on 21-08-2018.Delivery period is within 60 days and erection will be done within 20 days from handing over of site. P O paced to BHEL for Retrofitting of condenser on 25-05-2018. Delivery period is within 8 months and erection will be done within 60 days from the date of handing over of site. Administrative approval for Distributed Digital Control Monitoring and Information System (DDCMIS)accorded on 29-12-2015. Technical specification was approved by Board of TANGEDCO on 30-04-2018. Open tender floated with due date 03-08-2018 at TTPS. Administrative approval for Augmentation of ESP is under process. Budgetary offers are under scrutiny. M/s. SEI Environmental India Pvt. Ltd. , Pune official came to TTPS on 04-09-2018 to discuss the Augmentation work of ESP of Unit#1. Based on the discussion, some technical parameters were requested tby the company and report sent to the firm on 28-09-2018 & 01-10-2018. 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. Purchase order issued to BHEL, Chennai on 25-05-2018 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-1, 2 &3 TPS. Material to be supplied. Delivery period is 8 months. Replacement of unit auxiliary transformer in unit 1 & 2- Administrative approval proposal is under process. Tender for Installation of 10 MLD Desalination Plant consultancy services floated and opened on 11-10-2017 (common to station)
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. 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.

					Approval for replacement of 2 nos Primary Air Fan motors with journal bearings by New motors with antifriction bearings in units 1,2 and 3 for tender specification accorded by on 07-04-2018. Tender opened on 06-06-2018. Evaluation is under process. Purchase order issued to BHEL, Chennai on 25-05-2018 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-1, 2 &3 TPS. Material to be supplied. Delivery period is 8 months. Replacement of unit auxiliary transformer in unit 1 & 2- Administrative approval proposal is under process. Strengthening of weak insulation of Boiler-To be carried out during 2018-19. Purchase order issued to BHEL, Chennai on 25-05-2018 for retrofitting of 210 MW, LMW surface condenser in any one of the unit-1, 2 &3 TPS. Material to be supplied. Delivery period is 8 months. 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. - Approval for replacement of 2 nos Primary Air Fan motors with journal bearings by New motors with antifriction bearings in units 1,2 and 3 for tender specification accorded by on 07-04-2018. Tender opened on 06-06-2018. Evaluation is under process. Administrative approval for Augmentation of ESP is under process. Budgetary offers are under scrutiny. Replacement of unit auxiliary transformer in unit 1 & 2- Administrative approval proposal is under process. - 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. Tender opened on 11-01-2018. Proposal for price bid opening was approved by BLTC, under process at TTPS. 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, tender specification approval accorded on 05-01-2018. Open tender floated and technical bid opened on 04-05-2018 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 Governor 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 tender for procurement of new vibration monitoring system is already floated & evaluation is under progress and expected to be completed in 2018-19. (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 tender for procurement of new vibration monitoring system is already floated & evaluation is under progress and expected to be completed in 2018-19. (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 (Feb./March 2019) as per the maintenance schedule of OEM. .
3		Kathalguri CCGT	GT-3	1995	33.50	R&M works completed on 20-07-2018. (a) Up gradation and replacement of old controllers MACTUS 620 sequencer and MEGA III analog Governor of M/s MHI make Gas Turbine unit# 3&4 by MEGAC V, Diasys Netmation System have already been completed in 12-11-2013. (b) Compressor Rotor Refurbishment (CRR) and comprehensive Rotor Inspection of MHI is completed on 20-07-2017. 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 2017.
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(Automatic Voltage Regulator): LOI for upgradation of AVR is placed on M/s.ABB. Upgradation of AVR to DVAR completed and commissioned on 26-09-2018. c) P.O. for upgradation of Vibration and Temperature monitoring System placed on 22-11-2018. Expected to be commissioned in FY 2018-19. d) The OEM, M/s. BHEL has been requested to study the Governor 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. Expected execution of the works by 2019-20.

6		Kathalguri CCGT	ST-2	1998	30.00	Upgradation of 3300-series, BENTLEY-NEVADA- make vibration system: P.O. for upgradation of Vibration and Temperature monitoring System placed on 22-11-2018. Expected to be commissioned in FY 2018-19. P.O. placed on 23-11-2018 for Upgradation of AVR (Automatic Voltage Regulator) to to DVAR. Expected to be commissioned in March 2019.
7		Kathalguri CCGT	ST-3	1998	30.00	a) Upgradation of 3300-series, BENTLEY-NEVADA- make vibration system: Tendering process is under progress. Expected to be completed in May/ June 2019. b) PO placed for upgradation of AVR on M/s.ABB. Upgradation of AVR (Automatic Voltage Regulator) to to DVAR is completed and commissioned on 11-08-2018.
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
3.	Koradi	6	210	MAHAGENCO	State Sector	20-08-2018
4.	Obra	12	200	UPRVUNL	State Sector	24-09-2018

Total (State) - 04 Units 820.00 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
1	Kathalguri CCGT	6	33.5	NEEPCO	Central	31-03-2018
2.	Kathalguri CCGT	3	33.5	NEEPCO	Central	20-07-2018

Total (Central) - 02 Unit 67.00 MW

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	WBPDCCL	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	WBPDCCL	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			

Annexure-5

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 CAPAICTY WHICH WOULD BE FGD NON COMPLAINT 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

Annexure-6

Status f Installation of FGD

Sr. No.	Developer	Name of Project	Sector	State	Region	NCR/Non-NCR	Unit No	Unit Capacity	DATE of COMMISSIONING (MM/DD/YYYY)	FGD Phasing Plan (DD/MM/YYYY)	FGD Status
1	NTPC	BARH II	Central	Bihar	ER	Non-NCR	4	660	20-11-13	30/09/2021	Awarded on 18 Sept 2018
2	NTPC	BARH II	Central	Bihar	ER	Non-NCR	5	660	04-03-15	31/03/2022	Awarded on 18 Sept 2018
3	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	1	210	31-03-92	31/12/2022	NIT issued on 28 Sept 2018
4	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	2	210	17-03-94	31/12/2022	NIT issued on 28 Sept 2018
5	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	3	210	24-03-95	31/12/2022	NIT issued on 28 Sept 2018
6	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	4	210	18-03-96	31/12/2022	NIT issued on 28 Sept 2018
7	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	5	500	31-03-07	31/12/2022	NIT issued on 28 Sept 2018
8	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	6	500	16-03-08	31/12/2022	NIT issued on 28 Sept 2018
9	NTPC	KAHALGAON T	Central	Bihar	ER	Non-NCR	7	500	31-07-09	31/12/2022	NIT issued on 28 Sept 2018
10	NTPC	NABI NAGAR T	Central	Bihar	ER	Non-NCR	1	250	20-03-16	31/12/2021	NIT issued on 30 June 2018
11	NTPC	NABI NAGAR T	Central	Bihar	ER	Non-NCR	2	250	04-04-17	31/12/2022	NIT issued on 30 June 2018
12	NTPC	MUZAFFARPUR	Central	Bihar	ER	Non-NCR	1	110	31-03-85	31-12-20	NIT issued on 28 Sept 2018
13	NTPC	MUZAFFARPUR	Central	Bihar	ER	Non-NCR	2	110	17-03-86	31-12-20	NIT issued on 28 Sept 2018
14	NTPC	MUZAFFARPUR	Central	Bihar	ER	Non-NCR	3	195	31-03-15	31/12/2022	NIT issued on 31 Aug 18
15	NTPC	MUZAFFARPUR	Central	Bihar	ER	Non-NCR	4	195	24-03-17	31/12/2022	NIT issued on 31 Aug 18
16	Adhunik	MAHADEV PRA	Private	Jharkha	ER	Non-NCR	1	270	19-11-12	30/06/2022	Complies with new Norms as per developer
17	Adhunik	MAHADEV PRA	Private	Jharkha	ER	Non-NCR	2	270	29-03-13	30/06/2022	Complies with new Norms as per developer
18	D.V.C	BOKARO 'A' TP	Central	Jharkha	ER	Non-NCR	1	500	22-03-16	30/06/2022	Award expected in Nov-18
19	D.V.C	CHANDRAPUR	Central	Jharkha	ER	Non-NCR	7	250	04-11-09	31/12/2022	Feasibility Study Under Progress
20	D.V.C	CHANDRAPUR	Central	Jharkha	ER	Non-NCR	8	250	31-03-10	31/12/2022	Feasibility Study Under Progress
21	D.V.C	KODARMA TPP	Central	Jharkha	ER	Non-NCR	1	500	20-07-11	31/12/2021	Award expected in Nov-18
22	D.V.C	KODARMA TPP	Central	Jharkha	ER	Non-NCR	2	500	15-02-13	31/12/2021	Award expected in Nov-18
23	TATA P	JOJOBBERA TPS	Private	Jharkha	ER	Non-NCR	2	120	02-01-01	31/12/2020	Feasibility under process
24	TATA P	JOJOBBERA TPS	Private	Jharkha	ER	Non-NCR	3	120	02-01-02	31/12/2020	Feasibility under process
25	TATA P	MAITHON RB T	Private	Jharkha	ER	Non-NCR	1	525	01-09-11	30/09/2021	NIT Issued
26	TATA P	MAITHON RB T	Private	Jharkha	ER	Non-NCR	2	525	24-07-12	30/06/2022	NIT Issued
27	Tenugh	TENUGHAT TP	State Se	Jharkha	ER	Non-NCR	1	210	14-04-94	31/12/2020	Feasibility Study Carried out. Preparation of DPR under process.
28	Tenugh	TENUGHAT TP	State Se	Jharkha	ER	Non-NCR	2	210	10-10-96	31/12/2020	Feasibility Study Carried out. Preparation of DPR under process.
29	GMR	KAMALANGA T	Private	Odisha	ER	Non-NCR	1	350	29-03-13	31/12/2021	Feasibility study carried out. PPA issues pending with regulator
30	GMR	KAMALANGA T	Private	Odisha	ER	Non-NCR	2	350	28-09-13	31/12/2021	Feasibility study carried out. PPA issues pending with regulator
31	GMR	KAMALANGA T	Private	Odisha	ER	Non-NCR	3	350	21-03-14	30/09/2021	Feasibility study carried out. PPA issues pending with regulator
32	Ind bara	IND BARATH TP	Private	Odisha	ER	Non-NCR	1	350	25-02-16	31/03/2022	Feasibility Study under process
33	JIPL	DERANG TPP	Private	Odisha	ER	Non-NCR	1	600	10-04-14	31/03/2021	Technical Bid evaluation
34	JIPL	DERANG TPP	Private	Odisha	ER	Non-NCR	2	600	24-01-15	31/03/2021	Technical Bid evaluation
35	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	1	500	19-02-95	31/12/2022	NIT issued on 28 Sept 2018
36	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	2	500	27-03-96	31/12/2022	NIT issued on 28 Sept 2018
37	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	3	500	21-02-03	31/12/2022	NIT issued on 28 Sept 2018
38	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	4	500	25-10-03	31/12/2022	NIT issued on 28 Sept 2018
39	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	5	500	13-05-04	31/12/2022	NIT issued on 28 Sept 2018
40	NTPC	TALCHER STPS	Central	Odisha	ER	Non-NCR	6	500	06-02-05	31/12/2022	NIT issued on 28 Sept 2018
41	OPGCL	IB VALLEY TPS	State Se	Odisha	ER	Non-NCR	1	210	02-06-94	30/09/2021	Tender specifications are under finalisation.
42	OPGCL	IB VALLEY TPS	State Se	Odisha	ER	Non-NCR	2	210	22-10-95	30/09/2021	Tender specifications are under finalisation.

43	Sterlite	STERLITE TPP	Private S	Odisha	ER	Non-NCR	2	600	29-12-10	31/03/2022	Feasibility Study under process
44	C.E.S.C	BUDGE BUDGE	Private S	West Be	ER	Non-NCR	1	250	16-09-97	31/12/2022	Feasibility under process
45	C.E.S.C	BUDGE BUDGE	Private S	West Be	ER	Non-NCR	2	250	06-03-99	31/12/2022	Feasibility under process
46	C.E.S.C	BUDGE BUDGE	Private S	West Be	ER	Non-NCR	3	250	29-09-09	31/12/2022	Feasibility under process
47	C.E.S.C	SOUTHERN RE	Private S	West Be	ER	Non-NCR	1	68	10-04-91	31/03/2022	Feasibility under process
48	C.E.S.C	SOUTHERN RE	Private S	West Be	ER	Non-NCR	2	68	12-08-90	31/12/2021	Feasibility under process
49	D.P.L.	D.P.L. TPS	State Se	West Be	ER	Non-NCR	6	110	03-07-85	31/03/2022	Feasibility under process
50	D.P.L.	D.P.L. TPS	State Se	West Be	ER	Non-NCR	7	300	24-11-07	30/06/2022	Feasibility under process
51	D.P.L.	D.P.L. TPS EXT	State Se	West Be	ER	Non-NCR	8	250	31-03-14	31/03/2022	Feasibility under process
52	D.V.C	DURGAPUR ST	Central S	West Be	ER	Non-NCR	1	500	29-07-11	30/06/2021	Award expected in Nov-18
53	D.V.C	DURGAPUR ST	Central S	West Be	ER	Non-NCR	2	500	23-03-12	30/06/2021	Award expected in Nov-18
54	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	1	210	01-03-96	31/12/2022	Feasibility Study Under Progress
55	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	2	210	24-03-97	31/12/2022	Feasibility Study Under Progress
56	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	3	210	25-03-98	31/12/2022	Feasibility Study Under Progress
57	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	4	210	12-10-04	31/12/2022	Feasibility Study Under Progress
58	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	5	250	01-10-07	31/12/2022	Feasibility Study Under Progress
59	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	6	250	31-03-07	31/12/2022	Feasibility Study Under Progress
60	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	7	500	30-09-10	30/09/2021	Award expected in Nov-18
61	D.V.C	MEJIA TPS	Central S	West Be	ER	Non-NCR	8	500	26-03-11	30/09/2021	Award expected in Nov-18
62	D.V.C	RAGHUNATHPI	Central S	West Be	ER	Non-NCR	1	600	24-08-14	31/03/2022	Award expected in Nov-18
63	D.V.C	RAGHUNATHPI	Central S	West Be	ER	Non-NCR	2	600	18-01-16	31/03/2022	Award expected in Nov-18
64	M/s Hal	HALDIA TPP	Private S	West Be	ER	Non-NCR	1	300	14-01-15	31/12/2022	Feasibility Study under process
65	M/s Hal	HALDIA TPP	Private S	West Be	ER	Non-NCR	2	300	16-02-15	31/12/2022	Feasibility Study under process
66	Bishaga	India Power TPP	Private S	West Be	ER	Non-NCR	1	150	07-06-17	0	Feasability study under progress
67	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	1	200	01-01-86	31/12/2022	NIT issued on 28 Sept 2018
68	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	2	200	24-12-86	31/12/2022	NIT issued on 28 Sept 2018
69	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	3	200	06-08-87	31/12/2022	NIT issued on 28 Sept 2018
70	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	4	500	25-09-92	31/12/2022	NIT issued on 28 Sept 2018
71	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	5	500	16-02-94	31/12/2022	NIT issued on 28 Sept 2018
72	NTPC	FARAKKA STPS	Central S	West Be	ER	Non-NCR	6	500	07-03-11	31/12/2022	NIT issued on 28 Sept 2018
73	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	1	210	16-01-93	30/06/2022	Tendring Process to be intitiated in October 2018
74	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	2	210	13-08-90	31/03/2021	Tendring Process to be intitiated in July 2020
75	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	3	210	16-12-85	30/09/2021	Tendring Process to be intitiated in July 2020
76	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	4	210	24-01-84	31/03/2022	Tendring Process to be intitiated in March 2021
77	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	5	210	28-12-93	30/06/2021	Tendring Process to be intitiated in March 2021
78	WBPDC	KOLAGHAT TP	State Se	West Be	ER	Non-NCR	6	210	17-03-91	31/12/2021	Tendring Process to be intitiated in March 2021
79	WBPDC	SAGARDIGHI T	State Se	West Be	ER	Non-NCR	1	300	20-07-08	31/12/2020	Tendring Process to be intitiated in July 2018
80	WBPDC	SAGARDIGHI T	State Se	West Be	ER	Non-NCR	2	300	21-12-07	31/03/2021	Tendring Process to be intitiated in July 2018
81	WBPDC	SAGARDIGHI T	State Se	West Be	ER	Non-NCR	3	500	14-12-15	31/03/2022	Feasibility Study completed. Preparation of tender specification in progress.
82	WBPDC	SAGARDIGHI T	State Se	West Be	ER	Non-NCR	4	500	15-12-16	31/03/2020	Feasibility Study completed. Preparation of tender specification in progress.
83	WBPDC	SANTALDIH TP	State Se	West Be	ER	Non-NCR	5	250	07-11-07	31/03/2021	Tendring Process to be intitiated in July 2019

84	WBPDCL	SANTALDIH TP	State Se	West Be	ER	Non-NCR	6	250	29-06-11	31/12/2021	Tendering Process to be initiated in July 2019
85	CHINA	MAHATMA GAN	Private S	Haryana	NR	NCR	1	660	12-01-12	31/12/2019	FGD Installed and is Under Renovation
86	CHINA	MAHATMA GAN	Private S	Haryana	NR	NCR	2	660	11-04-12	31/12/2019	FGD Installed and is Under Renovation
87	HGPCo	PANIPAT TPS	State Se	Haryana	NR	NCR	6	210	31-03-01	31/12/2019	Developer wants exemption
88	HGPCo	PANIPAT TPS	State Se	Haryana	NR	NCR	7	250	28-09-04	31/12/2019	Feasibility Study Under Progress
89	HGPCo	PANIPAT TPS	State Se	Haryana	NR	NCR	8	250	28-01-05	31/12/2019	Feasibility Study Under Progress
90	HGPCo	RAJIV GANDHI	State Se	Haryana	NR	NCR	1	600	31-03-10	31/12/2019	Feasibility Study Completed.
91	HGPCo	RAJIV GANDHI	State Se	Haryana	NR	NCR	2	600	01-10-10	31/12/2019	Feasibility Study Completed.
92	HGPCo	YAMUNA NAGA	State Se	Haryana	NR	NCR	1	300	01-11-07	31/12/2019	Feasibility Study Completed.
93	HGPCo	YAMUNA NAGA	State Se	Haryana	NR	NCR	2	300	29-03-08	31/12/2019	Feasibility Study Completed.
94	NTPC	INDIRA GANDHI	Central S	Haryana	NR	NCR	1	500	31-10-10	31/12/2019	Retendered on 18-10-2018
95	NTPC	INDIRA GANDHI	Central S	Haryana	NR	NCR	2	500	05-11-11	31/12/2019	Retendered on 18-10-2018
96	NTPC	INDIRA GANDHI	Central S	Haryana	NR	NCR	3	500	07-11-12	31/12/2019	Retendered on 18-10-2018
97	GVK Po	GOINDWAL SA	Private S	Punjab	NR	Non-NCR	1	270	14-02-16	30/04/2020	EOI was invited vide newspaper advrt. On 18.06.2018
98	GVK Po	GOINDWAL SA	Private S	Punjab	NR	Non-NCR	2	270	15-03-16	28/02/2020	EOI was invited vide newspaper advrt. On 18.06.2018
99	L&T Po	Nabha TPP (Raj	Private S	Punjab	NR	NCR	1	700	24-01-14	31/12/2019	NIT expected in Dec 18
100	L&T Po	Nabha TPP (Raj	Private S	Punjab	NR	NCR	2	700	06-07-14	31/12/2019	NIT expected in Dec 18
101	PSEB	GH TPS (LEH.M	State Se	Punjab	NR	NCR	1	210	29-12-97	31/12/2019	Work order cum contract agreement for consultancy services for preparation of TS issued to M/s NTPC
102	PSEB	GH TPS (LEH.M	State Se	Punjab	NR	NCR	2	210	16-10-98	31/12/2019	Work order cum contract agreement for consultancy services for preparation of TS issued to M/s NTPC
103	PSEB	GH TPS (LEH.M	State Se	Punjab	NR	NCR	3	250	03-01-08	31/12/2019	Work order cum contract agreement for consultancy services for preparation of TS issued to M/s NTPC
104	PSEB	GH TPS (LEH.M	State Se	Punjab	NR	NCR	4	250	31-07-08	31/12/2019	Work order cum contract agreement for consultancy services for preparation of TS issued to M/s NTPC
105	Talwandi	TALWANDI SAE	Private S	Punjab	NR	NCR	1	660	17-06-14	31/12/2019	Feasibility Study Carried Out. PPA issues pending with regulator
106	Talwandi	TALWANDI SAE	Private S	Punjab	NR	NCR	2	660	25-10-15	31/12/2019	Feasibility Study Carried Out. PPA issues pending with regulator
107	Talwandi	TALWANDI SAE	Private S	Punjab	NR	NCR	3	660	29-03-16	31/12/2019	Feasibility Study Carried Out. PPA issues pending with regulator
108	Adani P	KAWAI TPS	Private S	Rajasthan	NR	Non-NCR	1	660	28-05-13	31/08/2020	NIT to be issued soon.
109	Adani P	KAWAI TPS	Private S	Rajasthan	NR	Non-NCR	2	660	24-12-13	30/06/2020	NIT to be issued soon.
110	RRVUN	CHHABRA TPP	State Se	Rajasthan	NR	Non-NCR	1	250	30-10-09	31/12/2021	Tender Specification under process
111	RRVUN	CHHABRA TPP	State Se	Rajasthan	NR	Non-NCR	2	250	04-05-10	31/10/2021	Tender Specification under process
112	RRVUN	CHHABRA TPP	State Se	Rajasthan	NR	Non-NCR	3	250	14-09-13	31/08/2021	Tender Specification under process
113	RRVUN	CHHABRA TPP	State Se	Rajasthan	NR	Non-NCR	4	250	30-06-14	31/08/2021	Tender Specification under process
114	RRVUN	CHHABRA TPP	State Se	Rajasthan	NR	Non-NCR	5	660	04-04-17	30/04/2020	NIT under process
115	RRVUN	KALISINDH TPS	State Se	Rajasthan	NR	Non-NCR	1	600	02-05-14	30/06/2021	NIT under process
116	RRVUN	KALISINDH TPS	State Se	Rajasthan	NR	Non-NCR	2	600	06-06-15	30/04/2021	NIT under process

117	RRVUN	KOTA TPS	State Se	Rajastha	NR	Non-NCR	5	210	26-03-94	31/12/2022	Tender Specification under process
118	RRVUN	KOTA TPS	State Se	Rajastha	NR	Non-NCR	6	195	30-07-03	31/12/2022	Tender Specification under process
119	RRVUN	KOTA TPS	State Se	Rajastha	NR	Non-NCR	7	195	30-08-09	31/10/2022	Tender Specification under process
120	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	1	250	10-05-98	31/12/2022	Tender Specification under process
121	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	2	250	28-03-00	31/10/2022	Tender Specification under process
122	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	3	250	29-10-01	31/08/2022	Tender Specification under process
123	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	4	250	25-03-02	30/06/2022	Tender Specification under process
124	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	5	250	30-06-03	30/04/2022	Tender Specification under process
125	RRVUN	SURATGARH T	State Se	Rajastha	NR	Non-NCR	6	250	29-08-09	28/02/2022	Tender Specification under process
126	Lalitpur	LALITPUR TPS	Private S	Uttar Pa	NR	Non-NCR	2	660	08-01-16	28/02/2021	Petition was filed with UPERC for approval capital cost for installation of FGD and other associated systems. UPERC directed to approach CEA.
127	Lalitpur	LALITPUR TPS	Private S	Uttar Pa	NR	Non-NCR	3	660	01-04-16	31/10/2021	Petition was filed with UPERC for approval capital cost for installation of FGD and other associated systems. UPERC directed to approach CEA.
128	Lalitpur	LALITPUR TPS	Private S	Uttar Pa	NR	Non-NCR	1	660	26-03-16	31/12/2020	Petition was filed with UPERC for approval capital cost for installation of FGD and other associated systems. UPERC directed to approach CEA.
129	Lanko A	ANPARA C TPS	Private S	Uttar Pa	NR	Non-NCR	1	600	12-10-11	31/08/2022	Tender Specification made
130	Lanko A	ANPARA C TPS	Private S	Uttar Pa	NR	Non-NCR	2	600	18-01-12	30/06/2022	Tender Specification made
131	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	1	210	21-12-91	31/12/2019	Awarded on 26 Oct 18. Work in progress
132	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	2	210	18-12-92	31/12/2019	Awarded on 26 Oct 18. Work in progress
133	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	3	210	23-03-93	31/12/2019	Awarded on 26 Oct 18. Work in progress
134	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	4	210	24-03-94	31/12/2019	Awarded on 26 Oct 18. Work in progress
135	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	5	490	25-01-10	31/12/2019	Awarded on 01 Feb 18. Work in progress
136	NTPC	DADRI (NCTPP	Central S	Uttar Pa	NR	NCR	6	490	16-07-10	31/12/2019	Awarded on 01 Feb 18. Work in progress
137	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	1	500	31-03-88	28/02/2022	NIT issued on 28 Sept 2018
138	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	2	500	05-07-89	31/12/2021	NIT issued on 28 Sept 2018
139	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	3	500	31-01-05	30/10/2021	Awarded on 18 Sept 2018
140	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	4	500	24-09-05	30/04/2021	Awarded on 18 Sept 2018
141	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	5	500	25-05-12	28/02/2021	Awarded on 18 Sept 2018
142	NTPC	RIHAND STPS	Central S	Uttar Pa	NR	Non-NCR	6	500	17-10-13	31/12/2020	Awarded on 18 Sept 2018
143	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	1	200	14-02-82	31/12/2021	NIT issued on 28 Sept 2018
144	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	2	200	25-11-82	31/12/2021	NIT issued on 28 Sept 2018
145	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	3	200	28-03-83	31/08/2021	NIT issued on 28 Sept 2018
146	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	4	200	02-11-83	31/08/2021	NIT issued on 28 Sept 2018
147	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	5	200	26-02-84	30/04/2021	NIT issued on 28 Sept 2018
148	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	6	500	23-12-86	28/02/2021	NIT issued on 28 Sept 2018
149	NTPC	SINGRAULI ST	Central S	Uttar Pa	NR	Non-NCR	7	500	24-11-87	31/12/2020	NIT issued on 28 Sept 2018
150	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	1	210	21-11-88	31/12/2022	NIT issued on 28 Sept 2018
151	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	2	210	22-03-89	31/12/2022	NIT issued on 28 Sept 2018

152	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	3	210	27-01-99	31/10/2022	NIT issued on 28 Sept 2018
153	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	4	210	22-10-99	31/10/2022	NIT issued on 28 Sept 2018
154	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	5	210	28-09-06	30/04/2022	NIT issued on 28 Sept 2018
155	NTPC	UNCHAHAR TP	Central S	Uttar Pa	NR	Non-NCR	6	500	31-03-17	8-31-2020	Awarded on 17 Oct 2018
156	Prayagr	PRAYAGRAJ TP	Private S	Uttar Pa	NR	Non-NCR	1	660	25-12-16	30/04/2020	Feasibility Study is under process. Requested for FGD implementation date to be postponed by 5-6 years.
157	Prayagr	PRAYAGRAJ TP	Private S	Uttar Pa	NR	Non-NCR	2	660	06-09-15	30/06/2020	Feasibility Study is under process. Requested for FGD implementation date to be postponed by 5-6 years.
158	Prayagr	PRAYAGRAJ TP	Private S	Uttar Pa	NR	Non-NCR	3	660	22-05-17	29/02/2020	Feasibility Study under progress
159	Rosa P	ROSA TPP Ph-I	Private S	Uttar Pa	NR	Non-NCR	1	300	10-02-10	31/12/2021	Tendering Under Process
160	Rosa P	ROSA TPP Ph-I	Private S	Uttar Pa	NR	Non-NCR	2	300	26-06-10	31/12/2021	Tendering Under Process
161	Rosa P	ROSA TPP Ph-I	Private S	Uttar Pa	NR	Non-NCR	3	300	28-12-11	31/10/2021	Tendering Under Process
162	Rosa P	ROSA TPP Ph-I	Private S	Uttar Pa	NR	Non-NCR	4	300	28-03-12	31/10/2021	Tendering Under Process
163	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	1	210	24-03-86	31/10/2022	Feasibility study completed
164	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	2	210	28-02-87	31/08/2022	Feasibility study completed
165	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	3	210	12-03-88	30/06/2022	Feasibility study completed
166	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	4	500	19-07-93	30/04/2022	Feasibility study completed
167	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	5	500	04-07-94	28/02/2022	Feasibility study completed
168	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	6	500	08-06-15	30/06/2021	NIT issued in July-18
169	UPRVU	ANPARA TPS	State Se	Uttar Pa	NR	Non-NCR	7	500	06-03-16	30/04/2021	NIT issued in July-18
170	UPRVU	HARDUAGANJ	State Se	Uttar Pa	NR	NCR	8	250	27-09-11	31/12/2019	Feasibility study completed
171	UPRVU	HARDUAGANJ	State Se	Uttar Pa	NR	NCR	9	250	25-05-12	31/12/2019	Feasibility study completed
172	UPRVU	OBRA TPS	State Se	Uttar Pa	NR	Non-NCR	9	200	26-10-80	31/08/2022	Bid opening in Nov-18
173	UPRVU	OBRA TPS	State Se	Uttar Pa	NR	Non-NCR	10	200	14-01-79	31/10/2022	Bid opening in Nov-18
174	UPRVU	OBRA TPS	State Se	Uttar Pa	NR	Non-NCR	11	200	31-12-77	31/12/2022	Bid opening in Nov-18
175	UPRVU	OBRA TPS	State Se	Uttar Pa	NR	Non-NCR	12	200	28-03-81	30/06/2022	Bid opening in Nov-18
176	UPRVU	OBRA TPS	State Se	Uttar Pa	NR	Non-NCR	13	200	21-07-82	30/04/2022	Bid opening in Nov-18
177	UPRVU	PARICHHA TPS	State Se	Uttar Pa	NR	Non-NCR	3	210	29-03-06	30/04/2022	NIT to be floated shortly
178	UPRVU	PARICHHA TPS	State Se	Uttar Pa	NR	Non-NCR	4	210	28-12-06	30/04/2022	NIT to be floated shortly
179	UPRVU	PARICHHA TPS	State Se	Uttar Pa	NR	Non-NCR	5	250	24-05-12	28/02/2022	NIT to be floated shortly
180	UPRVU	PARICHHA TPS	State Se	Uttar Pa	NR	Non-NCR	6	250	11-03-13	31/12/2021	NIT to be floated shortly
181	APGEN	Dr. N.TATA RAQ	State Se	Andhra	SR	Non-NCR	7	500	08-10-09	31/12/2020	Feasibility studies are in progress through M/s BHEL.
182	APGEN	RAYALASEEMA	State Se	Andhra	SR	Non-NCR	1	210	31-03-94	31/12/2021	Complies with new Norms as per developer
183	APGEN	RAYALASEEMA	State Se	Andhra	SR	Non-NCR	2	210	25-02-95	30/09/2021	Complies with new Norms as per developer
184	APGEN	RAYALASEEMA	State Se	Andhra	SR	Non-NCR	3	210	25-01-07	30/09/2020	Complies with new Norms as per developer
185	APGEN	RAYALASEEMA	State Se	Andhra	SR	Non-NCR	4	210	20-11-07	30/06/2021	Complies with new Norms as per developer
186	APGEN	RAYALASEEMA	State Se	Andhra	SR	Non-NCR	5	210	31-12-10	30/06/2020	Complies with new Norms as per developer
187	APPDC	DAMODARAM S	State Se	Andhra	SR	Non-NCR	1	800	28-08-14	31/12/2020	Feasibility studies are in progress through M/s BHEL.
188	APPDC	DAMODARAM S	State Se	Andhra	SR	Non-NCR	2	800	17-03-15	31/12/2019	Feasibility studies are in progress through M/s BHEL.
189	HNPCL	VIZAG TPP	Private S	Andhra	SR	Non-NCR	1	520	27-12-15	31/12/2022	HNPCL had appointed a consultant who have submitted a feasibility report which is already forwarded to CEA.
190	HNPCL	VIZAG TPP	Private S	Andhra	SR	Non-NCR	2	520	30-03-16	31/12/2022	HNPCL had appointed a consultant who have submitted a feasibility report which is already forwarded to CEA.
191	NTPC	SIMHADRI	Central S	Andhra	SR	Non-NCR	1	500	22-02-02	31/03/2022	Award expected in Jan'19
192	NTPC	SIMHADRI	Central S	Andhra	SR	Non-NCR	2	500	24-08-02	30/06/2022	Award expected in Jan'19
193	NTPC	SIMHADRI	Central S	Andhra	SR	Non-NCR	3	500	29-03-11	30/09/2022	Award expected in Jan'19

194	NTPC	SIMHADRI	Central	Andhra	SR	Non-NCR	4	500	30-03-12	31/12/2022	Award expected in Jan'19
195	Sembcorp	Sembcorp Gaya	Private	Andhra	SR	Non-NCR	1	660	12-11-16	31/12/2021	Pilot plant trials under progress. Technology Finalization will be done in few months.
196	Sembcorp	Sembcorp Gaya	Private	Andhra	SR	Non-NCR	2	660	15-02-17	30/09/2021	Feasability study under progress
197	THERM	PAINAMPURAM	Private	Andhra	SR	Non-NCR	1	660	07-02-15	31/12/2021	Pilot plant trials under progress. Technology Finalization will be done in few months.
198	THERM	PAINAMPURAM	Private	Andhra	SR	Non-NCR	2	660	03-09-15	30/09/2021	Pilot plant trials under progress. Technology Finalization will be done in few months.
199	Adani Power	UDUPI TPP	Private	Karnataka	SR	Non-NCR	1	600	23-07-10	31/03/2022	Existing FGD to be dismantled and new FGD to be installed. NIT to be issued soon.
200	Adani Power	UDUPI TPP	Private	Karnataka	SR	Non-NCR	2	600	16-04-11	30/06/2022	Existing FGD to be dismantled and new FGD to be installed. NIT to be issued soon.
201	Jindal	TORANGALLU	Private	Karnataka	SR	Non-NCR	1	300	23-04-09	30/06/2022	Discussions with vendor is in progress
202	Jindal	TORANGALLU	Private	Karnataka	SR	Non-NCR	2	300	24-08-09	30/09/2022	Discussions with vendor is in progress
203	KPCL	BELLARY TPS	State	Karnataka	SR	Non-NCR	1	500	03-12-07	31/12/2020	Tender preparation is in process
204	KPCL	BELLARY TPS	State	Karnataka	SR	Non-NCR	2	500	23-03-12	30/06/2021	Tender preparation is in process
205	KPCL	BELLARY TPS	State	Karnataka	SR	Non-NCR	3	700	01-03-16	31/12/2021	Tender preparation is in process
206	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	1	210	29-03-85	31/03/2021	Tender preparation is under process.
207	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	2	210	02-03-86	30/06/2021	Tender preparation is under process.
208	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	3	210	30-03-91	30/09/2021	Tender preparation is under process.
209	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	4	210	29-09-94	31/12/2021	Tender preparation is under process.
210	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	5	210	31-01-99	31/03/2022	Tender preparation is under process.
211	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	6	210	22-07-99	30/06/2022	Tender preparation is under process.
212	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	7	210	11-12-02	30/09/2022	Tender preparation is under process.
213	KPCL	RAICHUR TPS	State	Karnataka	SR	Non-NCR	8	250	26-06-10	31/12/2022	Tender preparation is under process.
214	KPCL	YERMARUS TP	State	Karnataka	SR	Non-NCR	1	800	29-03-16	31/12/2021	Feasibility study under process
215	KPCL	YERMARUS TP	State	Karnataka	SR	Non-NCR	2	800	29-03-17	31/12/2022	Feasibility study under process
216	NTPC	KUDGI	Central	Karnataka	SR	Non-NCR	1	800	25-12-16	30/06/2022	Awarded on 31st July 18.
217	NTPC	KUDGI	Central	Karnataka	SR	Non-NCR	2	800	23-03-17	30/09/2022	Awarded on 31st July 18.
218	Coastal	MUTHIARA TPF	Private	Tamil N	SR	Non-NCR	1	600	02-12-14	30/09/2022	Feasibility Study Completed
219	Coastal	MUTHIARA TPF	Private	Tamil N	SR	Non-NCR	2	600	02-01-16	31/12/2022	Feasibility Study Completed
220	NEYVELI	NEYVELI (EXT	Central	Tamil N	SR	Non-NCR	1	210	21-10-02	30/06/2021	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.

221	NEYVE	NEYVELI (EXT	Central	Tamil N	SR	Non-NCR	2	210	22-07-03	31/12/2021	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
222	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	1	210	17-01-88	31/12/2021	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
223	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	2	210	06-02-87	30/09/2021	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
224	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	3	210	29-03-87	30/06/2021	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
225	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	4	210	30-03-91	31/03/2022	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
226	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	5	210	31-12-91	30/06/2022	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
227	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	6	210	30-10-92	30/09/2022	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
228	NEYVE	NEYVELI TPS-	Central	Tamil N	SR	Non-NCR	7	210	19-06-93	31/12/2022	Technical specification furnished by consultant under scrutiny. On firming up specification, tender will be floated.
229	NTEC L	VALLUR TPP	Central	Tamil N	SR	Non-NCR	1	500	28-03-12	31-12-21	NIT issued on 31 Aug 18
230	NTEC L	VALLUR TPP	Central	Tamil N	SR	Non-NCR	2	500	28-02-13	31-12-21	NIT issued on 31 Aug 18
231	NTEC L	VALLUR TPP	Central	Tamil N	SR	Non-NCR	3	500	28-02-14	31-12-21	NIT issued on 31 Aug 18
232	NLC + T	TUTICORIN (JV	Central	Tamil N	SR	Non-NCR	1	500	10-03-15	31/12/2021	Feasibility Study completed. Preparation of tender specification in progress.
233	NLC + T	TUTICORIN (JV	Central	Tamil N	SR	Non-NCR	2	500	09-07-15	30/06/2020	Feasibility Study completed. Preparation of tender specification in progress.
234	TAQA,	TAQA, Neyveli	Private	Tamil N	SR	Non-NCR	2	250	21-10-02	30/06/2020	Feasibility Study Under Progress
235	TANGE	NORTH CHENN	State Se	Tamil N	SR	Non-NCR	4	600	09-03-13	31/12/2019	Requested for FGD implementation date to be revised as 31.12.2021
236	TANGE	NORTH CHENN	State Se	Tamil N	SR	Non-NCR	5	600	13-09-13	30/09/2020	Requested for FGD implementation date to be revised as 30.09.2022
237	TANGE	NORTH CHENN	State Se	Tamil N	SR	Non-NCR	1	210	25-10-94	31/12/2022	Budgetary offer awaited from M/s. BHEL
238	TANGE	NORTH CHENN	State Se	Tamil N	SR	Non-NCR	2	210	27-03-95	30/06/2022	Budgetary offer awaited from M/s. BHEL
239	TANGE	NORTH CHENN	State Se	Tamil N	SR	Non-NCR	3	210	24-02-96	31/03/2022	Budgetary offer awaited from M/s. BHEL
240	NTPC	RAMAGUNDEM	Central	Telanga	SR	Non-NCR	1	200	27-10-83	31/03/2022	NIT issued on 28 Sept 2018

241	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	2	200	29-05-84	31/03/2022	NIT issued on 28 Sept 2018
242	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	3	200	13-12-84	30/06/2022	NIT issued on 28 Sept 2018
243	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	4	500	26-06-88	30/06/2022	NIT issued on 28 Sept 2018
244	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	5	500	26-03-89	30/09/2022	NIT issued on 28 Sept 2018
245	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	6	500	16-10-89	30/09/2022	NIT issued on 28 Sept 2018
246	NTPC	RAMAGUNDEM	Central S	Telanga	SR	Non-NCR	7	500	26-09-04	31/12/2022	NIT issued on 15 June 2018
247	Singare	SINGARENI TPI	State Se	Telanga	SR	Non-NCR	1	600	13-03-16	31/12/2019	Tender has been floated and technical evaluation of bids is under process.
248	Singare	SINGARENI TPI	State Se	Telanga	SR	Non-NCR	2	600	25-11-16	30/09/2019	Tender has been floated and technical evaluation of bids is under process.
249	TSGEN	KAKATIYA TPS	State Se	Telanga	SR	Non-NCR	1	500	27-05-10	31/03/2020	Feasibility Study Under Progress
250	TSGEN	KAKATIYA TPS	State Se	Telanga	SR	Non-NCR	2	600	31-12-15	30/06/2020	Feasibility Study Under Progress
251	TSGEN	KOTHAGUDEM	State Se	Telanga	SR	Non-NCR	11	500	26-06-11	30/09/2019	Feasibility Study Under Progress
252	Bharat	BALCO TPS	Private S	Chhatis	WR	Non-NCR	1	300	04-06-15	30/09/2021	Feasibility Study under progress.
253	Bharat	BALCO TPS	Private S	Chhatis	WR	Non-NCR	2	300	24-03-16	30/06/2021	Feasibility Study under progress.
254	CSEB	MARWA TPS	State Se	Chhatis	WR	Non-NCR	1	500	30-03-14	30/06/2021	Feasibility Study Carried out
255	CSEB	MARWA TPS	State Se	Chhatis	WR	Non-NCR	2	500	15-07-16	31/03/2021	Feasibility Study Carried out
256	CSPGC	DSPM TPS	State Se	Chhatis	WR	Non-NCR	1	250	30-03-07	30/06/2021	Feasibility Study Carried out
257	CSPGC	DSPM TPS	State Se	Chhatis	WR	Non-NCR	2	250	11-12-07	30/09/2021	Feasibility Study Carried out
258	CSPGC	KORBA-WEST	State Se	Chhatis	WR	Non-NCR	5	500	22-03-13	30/09/2021	Feasibility Study Carried out
259	DB Pow	BARADARHA T	Private S	Chhatis	WR	Non-NCR	1	600	23-02-14	30/06/2021	NIT issued
260	DB Pow	BARADARHA T	Private S	Chhatis	WR	Non-NCR	2	600	24-03-15	30/09/2020	NIT issued
261	GMR	RAIKHEDA TPP	Private S	Chhatis	WR	Non-NCR	1	685	24-02-15	30/06/2020	Feasibility study carried out. PPA issues pending with regulator
262	GMR	RAIKHEDA TPP	Private S	Chhatis	WR	Non-NCR	2	685	28-03-16	30/09/2020	Feasibility study carried out. PPA issues pending with regulator
263	KORBA	AVANTHA BHA	Private S	Chhatis	WR	Non-NCR	1	600	31-03-14	31/03/2022	Feasibility Study carried out. Tender specification prepared.
264	KSK Ma	AKALTARA TPS	Private S	Chhatis	WR	Non-NCR	1	600	13-08-13	30/06/2022	Feasibility Study under process
265	KSK Ma	AKALTARA TPS	Private S	Chhatis	WR	Non-NCR	2	600	22-08-14	31/03/2022	Feasibility Study under process
266	M/s Lar	PATHADI TPP	Private S	Chhatis	WR	Non-NCR	1	300	04-06-09	31/03/2021	Tender Specification made
267	M/s Lar	PATHADI TPP	Private S	Chhatis	WR	Non-NCR	2	300	25-03-10	31/03/2021	Tender Specification made
268	M/s O.F	POP JINDAL TPS	Private S	Chhatis	WR	Non-NCR	1	250	02-09-07	31/03/2022	Issuance of Bid document on Nov 2017
269	M/s O.F	POP JINDAL TPS	Private S	Chhatis	WR	Non-NCR	2	250	10-02-08	31/03/2022	Issuance of Bid document on Nov 2017
270	M/s O.F	POP JINDAL TPS	Private S	Chhatis	WR	Non-NCR	3	250	06-03-08	30/06/2022	Issuance of Bid document on Nov 2017
271	M/s O.F	POP JINDAL TPS	Private S	Chhatis	WR	Non-NCR	4	250	17-06-08	30/06/2022	Issuance of Bid document on Nov 2017
272	M/s O.F	TAMNAR TPP	Private S	Chhatis	WR	Non-NCR	1	600	10-03-14	31/03/2021	Issuance of Bid document on Nov 2017
273	M/s O.F	TAMNAR TPP	Private S	Chhatis	WR	Non-NCR	2	600	30-03-14	31/12/2021	Issuance of Bid document on Nov 2017
274	M/s O.F	TAMNAR TPP	Private S	Chhatis	WR	Non-NCR	3	600	07-01-15	31/03/2022	Issuance of Bid document on Nov 2017
275	M/s O.F	TAMNAR TPP	Private S	Chhatis	WR	Non-NCR	4	600	28-03-15	30/06/2022	Issuance of Bid document on Nov 2017
276	NTPC	KORBA STPS	Central S	Chhatis	WR	Non-NCR	1	200	28-02-83	31/12/2022	NIT issued on 06 Sep 18
277	NTPC	KORBA STPS	Central S	Chhatis	WR	Non-NCR	2	200	31-10-83	31/12/2022	NIT issued on 06 Sep 18
278	NTPC	KORBA STPS	Central S	Chhatis	WR	Non-NCR	3	200	17-03-84	31/12/2022	NIT issued on 06 Sep 18
279	NTPC	KORBA STPS	Central S	Chhatis	WR	Non-NCR	4	500	31-05-87	31/12/2022	NIT issued on 06 Sep 18
280	NTPC	KORBA STPS	Central S	Chhatis	WR	Non-NCR	5	500	25-03-88	31/12/2022	NIT issued on 06 Sep 18

281	NTPC	KORBA STPS	Central	Chhatis	WR	Non-NCR	6	500	26-02-89	31/12/2022	NIT issued on 06 Sep 18
282	NTPC	KORBA STPS	Central	Chhatis	WR	Non-NCR	7	500	25-11-10	31/12/2022	NIT issued on 06 Sep 18
283	NTPC	SIPAT STPS	Central	Chhatis	WR	Non-NCR	4	500	20-06-08	31/12/2021	NIT ISSUED ON 15.06.2018.
284	NTPC	SIPAT STPS	Central	Chhatis	WR	Non-NCR	5	500	01-01-09	31/12/2021	NIT ISSUED ON 15.06.2018.
285	NTPC	SIPAT STPS	Central	Chhatis	WR	Non-NCR	1	660	01-10-11	31/12/2022	NIT issued on 31 Aug 18
286	NTPC	SIPAT STPS	Central	Chhatis	WR	Non-NCR	2	660	25-05-12	31/12/2022	NIT issued on 31 Aug 18
287	NTPC	SIPAT STPS	Central	Chhatis	WR	Non-NCR	3	660	08-01-12	31/12/2021	NIT issued on 31 Aug 18
288	NTPC	BHILAI TPS	Central	Chhatis	WR	Non-NCR	1	250	20-04-08	31/12/2022	NIT issued on 28 Sept 2018
289	NTPC	BHILAI TPS	Central	Chhatis	WR	Non-NCR	2	250	12-07-09	31/12/2022	NIT issued on 28 Sept 2018
290	RKM P	UCHPINDA TPP	Private	Chhatis	WR	Non-NCR	1	360	28-10-15	31/03/2022	Technical discussion with various vendors is under progress.
291	RKM P	UCHPINDA TPP	Private	Chhatis	WR	Non-NCR	3	360	28-01-16	31/12/2021	Technical discussion with various vendors is under progress.
292	SKS P	Binjkote TPP	Private	Chhatis	WR	Non-NCR	1	300	25-04-17	30/09/2020	Feasability study under progress
293	TRN E	NAWAPARA TP	Private	Chhatis	WR	Non-NCR	2	300	18-04-17	30/09/2020	Already meeting the environmental norms.
294	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	1	330	04-08-09	31/12/2022	NIT is to be issued soon.
295	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	2	330	17-03-10	31/12/2022	NIT is to be issued soon.
296	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	3	330	02-08-10	30/09/2022	NIT is to be issued soon.
297	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	4	330	20-12-10	30/09/2022	NIT is to be issued soon.
298	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	5	660	26-12-10	30/06/2022	NIT is to be issued soon.
299	Adani P	MUNDRA TPS	Private	Gujarat	WR	Non-NCR	6	660	20-07-11	31/03/2022	NIT is to be issued soon.
300	Essar G	SALAYA TPP	Private	Gujarat	WR	Non-NCR	1	600	04-01-12	30/06/2021	Feasibility study under process
301	Essar G	SALAYA TPP	Private	Gujarat	WR	Non-NCR	2	600	15-06-12	31/03/2021	Feasibility study under process
302	GSECL	GANDHI NAGAI	State Se	Gujarat	WR	Non-NCR	3	210	20-03-90	31/12/2021	Feasibility Study Under Progress
303	GSECL	GANDHI NAGAI	State Se	Gujarat	WR	Non-NCR	4	210	20-07-91	31/12/2021	Feasibility Study Under Progress
304	GSECL	GANDHI NAGAI	State Se	Gujarat	WR	Non-NCR	5	210	17-03-98	31/12/2021	Feasibility Study Under Progress
305	GSECL	KUTCH LIG. TP	State Se	Gujarat	WR	Non-NCR	1	70	29-03-90	31/12/2021	Feasibility Study under progress.
306	GSECL	KUTCH LIG. TP	State Se	Gujarat	WR	Non-NCR	2	70	25-03-91	31/12/2021	Feasibility Study under progress.
307	GSECL	KUTCH LIG. TP	State Se	Gujarat	WR	Non-NCR	3	75	31-03-97	31/12/2021	Feasibility Study under progress.
308	GSECL	SIKKA REP. TP	State Se	Gujarat	WR	Non-NCR	3	250	29-03-15	31/01/2022	Bidding Under Progresse
309	GSECL	SIKKA REP. TP	State Se	Gujarat	WR	Non-NCR	4	250	25-09-15	31/01/2022	Bidding Under Progresse
310	GSECL	UKAI TPS	State Se	Gujarat	WR	Non-NCR	3	200	21-01-79	31/12/2021	Not Feasible as per Developer. Unit likely to be phased out.
311	GSECL	UKAI TPS	State Se	Gujarat	WR	Non-NCR	4	200	28-03-79	31/12/2021	Feasibility Study Under Progress
312	GSECL	UKAI TPS	State Se	Gujarat	WR	Non-NCR	5	210	30-01-85	31/12/2021	Feasibility Study Under Progress
313	GSECL	UKAI TPS	State Se	Gujarat	WR	Non-NCR	6	500	05-03-13	31/03/2022	e-tender for EPC floated & technical bid opening is scheduled on 29.05.2018.
314	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	1	210	23-03-82	31/12/2021	Feasibility Study Under Progress
315	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	2	210	15-01-83	31/12/2021	Feasibility Study Under Progress
316	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	3	210	15-03-84	31/12/2021	Feasibility Study Under Progress
317	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	4	210	09-03-86	31/12/2021	Feasibility Study Under Progress
318	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	5	210	23-09-86	31/12/2021	Feasibility Study Under Progress

319	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	6	210	18-11-87	31/12/2021	Feasibility Study Under Progress
320	GSECL	WANAKBORI T	State Se	Gujarat	WR	Non-NCR	7	210	31-12-98	31/12/2021	Feasibility Study Under Progress
321	Tata Po	MUNDRA UMTF	Private S	Gujarat	WR	Non-NCR	1	800	07-03-12	30/06/2020	Feasibility Study Carried Out
322	Tata Po	MUNDRA UMTF	Private S	Gujarat	WR	Non-NCR	2	800	30-07-12	31/03/2021	Feasibility Study Carried Out
323	Tata Po	MUNDRA UMTF	Private S	Gujarat	WR	Non-NCR	3	800	27-10-12	30/06/2021	Feasibility Study Carried Out
324	Tata Po	MUNDRA UMTF	Private S	Gujarat	WR	Non-NCR	4	800	21-01-13	31/03/2022	Feasibility Study Carried Out
325	Tata Po	MUNDRA UMTF	Private S	Gujarat	WR	Non-NCR	5	800	22-03-13	31/03/2022	Feasibility Study Carried Out
326	Torrent	SABARMATI	Private S	Gujarat	WR	Non-NCR	1	120	12-10-78	31/12/2022	Feasibility Study under process
327	Torrent	SABARMATI	Private S	Gujarat	WR	Non-NCR	2	121	31-12-84	31/12/2022	Feasibility Study under process
328	Torrent	SABARMATI	Private S	Gujarat	WR	Non-NCR	3	121	28-09-88	31/12/2022	Feasibility Study under process
329	ESSAR	MAHAN TPP	Private S	Madhya	WR	Non-NCR	1	600	24-02-13	31/12/2020	Feasibility study under process
330	Jaipraks	NIGRI TPP	Private S	Madhya	WR	Non-NCR	1	660	29-08-14	30/06/2020	Feasibility Study is under process. Requested for FGD implementation date to be postponed by 5-6 years.
331	Jaipraks	NIGRI TPP	Private S	Madhya	WR	Non-NCR	2	660	27-02-15	30/09/2020	Feasibility Study is under process. Requested for FGD implementation date to be postponed by 5-6 years.
332	Jhabua	SEIONI TPP	Private S	Madhya	WR	Non-NCR	1	600	22-03-16	31/03/2020	Feasibility Study under progress.
333	MB Pow	ANUPPUR TPP	Private S	Madhya	WR	Non-NCR	1	600	20-04-15	31/03/2022	Technical Bid under evaluation
334	MB Pow	ANUPPUR TPP	Private S	Madhya	WR	Non-NCR	2	600	30-03-16	30/06/2022	Technical Bid under evaluation
335	MPPGC	AMARKANTAK	State Se	Madhya	WR	Non-NCR	5	210	15-06-08	31/03/2021	Feasibility Study Under Progress
336	MPPGC	SANJAY GANDI	State Se	Madhya	WR	Non-NCR	1	210	26-03-93	31/03/2021	Feasibility Study Under Progress
337	MPPGC	SANJAY GANDI	State Se	Madhya	WR	Non-NCR	2	210	27-03-93	31/03/2021	Feasibility Study Under Progress
338	MPPGC	SANJAY GANDI	State Se	Madhya	WR	Non-NCR	3	210	28-02-99	30/06/2021	Feasibility Study Under Progress
339	MPPGC	SANJAY GANDI	State Se	Madhya	WR	Non-NCR	4	210	23-11-99	30/06/2021	Feasibility Study Under Progress
340	MPPGC	SANJAY GANDI	State Se	Madhya	WR	Non-NCR	5	500	18-06-07	31/03/2021	Feasibility Study Under Progress
341	MPPGC	SATPURA TPS	State Se	Madhya	WR	Non-NCR	10	250	22-03-13	31/03/2021	Feasibility Study Under Progress
342	MPPGC	SATPURA TPS	State Se	Madhya	WR	Non-NCR	11	250	25-12-13	31/03/2021	Feasibility Study Under Progress
343	MPPGC	SHRI SINGHAJI	State Se	Madhya	WR	Non-NCR	1	600	18-11-13	31/03/2021	NIT to be floated in May 2018
344	MPPGC	SHRI SINGHAJI	State Se	Madhya	WR	Non-NCR	2	600	15-10-14	31/03/2021	NIT to be floated in May 2018
345	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	1	210	10-10-87	31/12/2022	NIT issued on 28 Sept 2018
346	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	2	210	23-07-88	31/12/2022	NIT issued on 28 Sept 2018
347	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	3	210	03-02-89	31/12/2022	NIT issued on 28 Sept 2018
348	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	4	210	26-12-89	31/12/2022	NIT issued on 28 Sept 2018
349	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	5	210	31-03-90	31/12/2022	NIT issued on 28 Sept 2018
350	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	6	210	01-02-91	31/12/2022	NIT issued on 28 Sept 2018
351	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	7	500	03-03-99	30/06/2021	NIT issued on 28 Sept 2018
352	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	8	500	26-02-00	30/06/2021	NIT issued on 28 Sept 2018
353	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	9	500	27-07-06	30/09/2021	Awarded on 18 Sept 2018
354	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	10	500	08-03-07	30/09/2021	Awarded on 18 Sept 2018
355	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	11	500	14-06-12	31/12/2021	Awarded on 18 Sept 2018
356	NTPC	VINDHYACHAL	Central S	Madhya	WR	Non-NCR	12	500	22-03-13	31/12/2021	Awarded on 18 Sept 2018
357	Relianc	SASAN UMTTP	Private S	Madhya	WR	Non-NCR	1	660	30-05-13	30/09/2021	Tender Floated
358	Relianc	SASAN UMTTP	Private S	Madhya	WR	Non-NCR	2	660	18-12-13	30/06/2021	Tender Floated
359	Relianc	SASAN UMTTP	Private S	Madhya	WR	Non-NCR	3	660	21-05-14	31/03/2022	Tender Floated
360	Relianc	SASAN UMTTP	Private S	Madhya	WR	Non-NCR	4	660	25-03-14	31/03/2022	Tender Floated

361	Reliance	SASAN UMTTPP	Private	\$	Madhya	WR	Non-NCR	5	660	24-08-14	31/12/2021	Tender Floated
362	Reliance	SASAN UMTTPP	Private	\$	Madhya	WR	Non-NCR	6	660	19-03-15	30/09/2021	Tender Floated
363	Adani P	TIRORA TPS	Private	\$	Mahara	WR	Non-NCR	1	660	11-09-12	31/03/2022	NIT to be issued soon.
364	Adani P	TIRORA TPS	Private	\$	Mahara	WR	Non-NCR	2	660	25-03-13	31/12/2021	NIT to be issued soon.
365	Adani P	TIRORA TPS	Private	\$	Mahara	WR	Non-NCR	3	660	10-06-13	31/09/2021	NIT to be issued soon.
366	Adani P	TIRORA TPS	Private	\$	Mahara	WR	Non-NCR	4	660	23-03-14	31/06/2021	NIT to be issued soon.
367	Adani P	TIRORA TPS	Private	\$	Mahara	WR	Non-NCR	5	660	25-09-14	31/03/2021	NIT to be issued soon.
368	Dhariwal	DHARIWAL TPI	Private	\$	Mahara	WR	Non-NCR	1	300	03-11-13	31/03/2022	Feasibility Study under process
369	Dhariwal	DHARIWAL TPI	Private	\$	Mahara	WR	Non-NCR	2	300	28-05-14	31/03/2022	Feasibility Study under process
370	GMR er	EMCO WAROR	Private	\$	Mahara	WR	Non-NCR	1	300	07-02-13	31/03/2022	Feasibility Study Under Progress. Petition Pending with regulator
371	GMR er	EMCO WAROR	Private	\$	Mahara	WR	Non-NCR	2	300	27-08-13	31/03/2022	Feasibility Study Under Progress. Petition Pending with regulator
372	MAHAG	BHUSAWAL TP	State Se	\$	Mahara	WR	Non-NCR	3	210	18-09-82	31/03/2021	Feasibility Study Carried Out
373	MAHAG	BHUSAWAL TP	State Se	\$	Mahara	WR	Non-NCR	4	500	07-03-12	31/03/2021	Feasibility Study Carried Out
374	MAHAG	BHUSAWAL TP	State Se	\$	Mahara	WR	Non-NCR	5	500	30-03-12	31/03/2021	Feasibility Study Carried Out
375	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	3	210	03-05-85	31/03/2021	Feasibility Study Carried Out
376	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	4	210	08-03-86	31/03/2021	Feasibility Study Carried Out
377	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	5	500	22-03-91	31/03/2021	Feasibility Study Carried Out
378	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	6	500	11-03-92	31/03/2021	Feasibility Study Carried Out
379	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	7	500	01-10-97	31/03/2021	Feasibility Study Carried Out
380	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	8	500	29-03-15	31/03/2021	Feasibility Study Carried Out
381	MAHAG	CHANDRAPUR	State Se	\$	Mahara	WR	Non-NCR	9	500	21-03-16	31/03/2020	Feasibility Study Carried Out
382	MAHAG	KHAPARKHEDA	State Se	\$	Mahara	WR	Non-NCR	1	210	26-03-89	31/03/2021	Feasibility Study Carried Out
383	MAHAG	KHAPARKHEDA	State Se	\$	Mahara	WR	Non-NCR	2	210	08-01-90	31/03/2021	Feasibility Study Carried Out
384	MAHAG	KHAPARKHEDA	State Se	\$	Mahara	WR	Non-NCR	3	210	31-05-00	31/03/2021	Feasibility Study Carried Out
385	MAHAG	KHAPARKHEDA	State Se	\$	Mahara	WR	Non-NCR	4	210	07-01-01	31/03/2021	Feasibility Study Carried Out
386	MAHAG	KHAPARKHEDA	State Se	\$	Mahara	WR	Non-NCR	5	500	05-08-11	31/03/2021	Feasibility Study Carried Out
387	MAHAG	KORADI TPS	State Se	\$	Mahara	WR	Non-NCR	6	210	30-03-82	31/03/2021	Feasibility Study Carried Out
388	MAHAG	KORADI TPS	State Se	\$	Mahara	WR	Non-NCR	7	210	13-01-83	31/03/2021	Feasibility Study Carried Out
389	MAHAG	KORADI TPS	State Se	\$	Mahara	WR	Non-NCR	8	660	30-03-15	31/03/2021	Feasibility Study Carried Out
390	MAHAG	KORADI TPS	State Se	\$	Mahara	WR	Non-NCR	9	660	15-03-16	31/03/2021	Feasibility Study Carried Out
391	MAHAG	KORADI TPS	State Se	\$	Mahara	WR	Non-NCR	10	660	28-12-16	31/12/2020	Feasibility Study Carried Out
392	MAHAG	NASIK TPS	State Se	\$	Mahara	WR	Non-NCR	3	210	26-04-79	31/03/2021	Feasibility Study Carried Out
393	MAHAG	NASIK TPS	State Se	\$	Mahara	WR	Non-NCR	4	210	10-07-80	31/03/2021	Feasibility Study Carried Out
394	MAHAG	NASIK TPS	State Se	\$	Mahara	WR	Non-NCR	5	210	30-01-81	31/03/2021	Feasibility Study Carried Out
395	MAHAG	PARLI TPS	State Se	\$	Mahara	WR	Non-NCR	4	210	26-03-85	31/03/2021	Feasibility Study Carried Out
396	MAHAG	PARLI TPS	State Se	\$	Mahara	WR	Non-NCR	5	210	31-12-87	31/03/2021	Feasibility Study Carried Out
397	MAHAG	PARLI TPS	State Se	\$	Mahara	WR	Non-NCR	6	250	16-02-07	31/03/2021	Feasibility Study Carried Out
398	MAHAG	PARLI TPS	State Se	\$	Mahara	WR	Non-NCR	7	250	10-02-10	31/03/2021	Feasibility Study Carried Out
399	MAHAG	PARLI TPS	State Se	\$	Mahara	WR	Non-NCR	8	250	30-03-16	31/03/2021	Feasibility Study Carried Out
400	NTPC	MOUDA TPS	Central	\$	Mahara	WR	Non-NCR	1	500	19-04-12	31/12/2022	Awarded on 18 Sept 2018
401	NTPC	MOUDA TPS	Central	\$	Mahara	WR	Non-NCR	2	500	29-03-13	31/12/2022	Awarded on 18 Sept 2018
402	NTPC	MOUDA TPS	Central	\$	Mahara	WR	Non-NCR	3	660	28-03-16	31/12/2022	Awarded on 31st July 18.
403	NTPC	MOUDA TPS	Central	\$	Mahara	WR	Non-NCR	4	660	18-03-17	31/12/2020	Awarded on 31st July 18.
404	NTPC	SOLAPUR	Central	\$	Mahara	WR	Non-NCR	1	660	07-04-17	31/12/2020	Awarded on 31st July 18.
405	Ratan F	NASIK (P) TPS	Private	\$	Mahara	WR	Non-NCR	1	270	25-02-14	31/03/2021	Bids under Evaluation
406	Ratan F	NASIK (P) TPS	Private	\$	Mahara	WR	Non-NCR	2	270	15-02-17	31/03/2021	Feasability study under progress
407	Ratan F	NASIK (P) TPS	Private	\$	Mahara	WR	Non-NCR	3	270	14-04-17	31/12/2022	Feasability study under progress
408	Ratan F	NASIK (P) TPS	Private	\$	Mahara	WR	Non-NCR	4	270	19-05-17	31/12/2022	Feasability study under progress
409	Ratan F	NASIK (P) TPS	Private	\$	Mahara	WR	Non-NCR	5	270	30-05-17	31/12/2022	Feasability study under progress
410	TATA P	TROMBAY TPS	Private	\$	Mahara	WR	Non-NCR	5	500	25-01-84	31/03/2018	Sea water FGD is installed at Unit#5 and is already in operation to meet the SO2 emissions norms.

411	Vidarbha	BUTIBORI TPP	Private S	Maharas	WR	Non-NCR	1	300	17-08-12	30/06/2021	Reliance Power has floated the International Competitive Bidding for implementation of FGD and technical offers have been received which are under evaluation.
412	Vidarbha	BUTIBORI TPP	Private S	Maharas	WR	Non-NCR	2	300	19-03-13	31/03/2021	Reliance Power has floated the International Competitive Bidding for implementation of FGD and technical offers have been received which are under evaluation.
413	Wardha	WARDHA WAR	Private S	Maharas	WR	Non-NCR	1	135	05-06-10	30/09/2021	Feasibility Study under process
414	Wardha	WARDHA WAR	Private S	Maharas	WR	Non-NCR	2	135	10-10-10	30/09/2021	Feasibility Study under process
415	Wardha	WARDHA WAR	Private S	Maharas	WR	Non-NCR	3	135	21-01-11	31/12/2021	Feasibility Study under process
416	Wardha	WARDHA WAR	Private S	Maharas	WR	Non-NCR	4	135	30-04-11	31/12/2021	Feasibility Study under process
417	NTPC	KUDGI	Central S	Karnatak	SR	Non-NCR	3	800	12-03-18	31/12/2022	Awarded on 31st July 18.
418	NTPC	Lara STPP	Central S	Chhatisg	WR	Non-NCR	1	800	23-03-18		Price bid submitted on 25.06.2018.
419	NTPC	Meja STPP	Central S	Uttar Pa	NR	Non-NCR	1	660	30-03-18		FGD will award in LOT-1A of NTPC
420	APGENC	Rayalaseema TPP	State Sec	AP	SR	Non-NCR	6	600	12-03-18		Commitment yet to received
421	BSEB	Barauni TPS Extn.	State Sec	Bihar	ER	Non-NCR	8	250	11-01-18		Feasibility examining under process
422	BSEB	Barauni TPS Extn.	State Sec	Bihar	ER	Non-NCR	9	250	31-03-18		Feasibility examining under process
423	KSK Mah	Akaltara TPP (Nai)	Private S	Chhattisg	WR	Non-NCR	3	600	18-01-18		Feasibility study under progress
424	SKS Pow	Binjkote TPP	Private S	Chhattisg	WR	Non-NCR	2	300	28-03-18	30-09-20	Feasibility study under progress
425	RKM Pow	Uchpinda TPP	Private S	Chhattisg	WR	Non-NCR	3	360	12-09-17	31-03-22	Feasibility study under progress
426	Shirpur	Shirpur TPP	Private S	Maharas	WR	Non-NCR	1	150	28-09-17		Feasibility study under progress
427	India Po	India Power TPP	Private S	WB	ER	Non-NCR	2	150	31-12-17		Feasibility study under progress
428	PSEB	ROPAR TPS	State Sec	Punjab	NR	NCR	3	210	31-03-88	31/12/2019	Work order to hire M/s NTPC Ltd. as consultant issued
429	PSEB	ROPAR TPS	State Sec	Punjab	NR	NCR	4	210	29-01-89	31/12/2019	Work order to hire M/s NTPC Ltd. as consultant issued
430	PSEB	ROPAR TPS	State Sec	Punjab	NR	NCR	6	210	30-03-93	31/12/2019	Work order to hire M/s NTPC Ltd. as consultant issued
431	PSEB	ROPAR TPS	State Sec	Punjab	NR	NCR	5	210	29-03-92	31/12/2019	Work order to hire M/s NTPC Ltd. as consultant issued
432	NTPC	TANDA TPS	Central S	Uttar Par	NR	Non-NCR	1	110	21-03-88	31-12-20	Awarded on 02 Nov 2018
433	NTPC	TANDA TPS	Central S	Uttar Par	NR	Non-NCR	2	110	11-03-89	01-01-21	Awarded on 02 Nov 2018
434	NTPC	TANDA TPS	Central S	Uttar Par	NR	Non-NCR	3	110	28-03-90	02-01-21	NIT issued on 28 Sept 2018
435	NTPC	TANDA TPS	Central S	Uttar Par	NR	Non-NCR	4	110	20-02-98	03-01-21	NIT issued on 28 Sept 2018
436	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	1	60	17-12-67	31-12-21	NIT issued on 31 Aug 18
437	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	2	60	28-03-68	01-01-22	NIT issued on 31 Aug 18
438	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	3	60	11-07-68	02-01-22	NIT issued on 31 Aug 18
439	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	4	60	11-04-69	03-01-22	NIT issued on 31 Aug 18
440	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	5	110	24-03-82	04-01-22	NIT issued on 31 Aug 18
441	NTPC	TALCHER (OLD	Central S	Odisha	ER	Non-NCR	6	110	24-03-83	05-01-22	NIT issued on 31 Aug 18