



**TELANGANA STATE POWER GENERATION CORPORATION
LIMITED**
(A Govt. Of Telangana Undertaking)

CAPITAL INVESTMENT PLAN

Of

TSGENCO

For the Control Period

(FY: 2024-25 to 2028-29)

**BEFORE THE
TELANGANA STATE ELECTRICITY REGULATORY COMMISSION
AT HYDERABAD.**

O.P. of 2023

In the matter of:

Filing of Application for Capital Investment Plan for the 5th Control period (2024-29) under clause No.7 of TSERC Regulations 1 of 2019, Dt. 04.01.2019 for the electricity supplied by TSGENCO to Distribution Licensees.

Telangana State Power Generation Corporation Limited,

.....Applicant

And

Southern Power Distribution Company of Telangana Ltd., & 2 Others

.....Respondents.

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**BEFORE THE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION
#11-4-660, 5th Floor, Singareni Bhavan, Red Hills, Hyderabad – 500 004.**

**Capital Investment Plan
O.P.No. of 2023**

In the matter of:

Application for Capital Investment Plan for the FY 2024-25 to FY 2028-29 for the Existing and New Thermal & Hydel Stations of TSGENCO in accordance with the Clause 7 of TSERC Regulations 1 of 2019 for the 5th control period (FYs: 2024-29) under Section 62 of the Electricity Act'2003.

And in the matter of:

**Telangana State Power Generation Corporation Limited,
Vidyut Soudha, Hyderabad – 82. Applicant**

Vs

- 1. Southern Power Distribution Company of Telangana Ltd., Corporate office, 6-1-50, Mint Compound, Hyderabad – 500 063.**
- 2. Northern Power Distribution Company of Telangana Ltd., H.No.2-5-31/2, Corporate Office, Vidyut Bhavan, Nakkalagutta, Hanmakonda, Warangal – 506001**
- 3. ESCOMs of Karnataka state**
BESCOM, Bangalore Electricity Supply Company Limited, KR Circle, Bangalore-560001;
MESCOM, Mangalore Electricity Supply Company Limited, Paradigm Plaza, AB Shetty circle, Mangalore- 575004;
CESC, Chamundeshwari Electricity Supply Company limited, Hinkal, Mysore- 570017;
HESCOM, Hubli Electricity Supply Company Limited, Hubli-580025;
GESCOM, Gulbarga Electricity Supply Company Limited, Kalaburagi-585102.

..... Respondents.

**APPLICATION UNDER CLAUSE 7 OF TSERC REGULATIONS 1 OF 2019 FOR
CAPITAL INVESTMENT PLAN UNDER SECTION 62/64 OF THE ELECTRICITY
ACT'2003**

- 1. Telangana State Power Generation Corporation Limited (herein after referred to as “TSGENCO “ or as the “Applicant”) was established as a company registered under the**

Companies Act 2013, 19th May 2014 upon coming into force of the Andhra Pradesh Reorganization Act, 2014 with effect from 2nd June 2014.

2. TSERC Regulations 1 of 2019 specifies to file Capital Investment Plan for Generation Business. TSGENCO is filing Capital Investment Plan for its generation business for the 5th control period (FYs: 2024-29).
3. The entire energy availability (100%) of Thermal and Hydel stations of TSGENCO has been allocated to the TSDISCOMs except Priyadarshini Jurala HES (6X39MW).
4. In respect of Priyadarshini Jurala HES (6X39MW), as per the PPA the fixed charges and the energy generated being shared in the ratio of 50:50 between TSDISCOMs and ESCOMs of Karnataka state.

Scope of Application

5. This application is for the Capital Investment Plan for the FY 2024-25 to FY 2028-29 for the existing and new Thermal & Hydel stations of TSGENCO in accordance with the clause 7 of TSERC Regulations 1 of 2019 for the 5th control period (FYs: 2024-29) under Section 62 of the Electricity Act'2003.
6. This application is made in terms of the Telangana State Electricity Regulatory Commission (Terms & Conditions of Generation Tariff) Regulations, 2019.
7. The impact of the Ministry of Environment, Forest and Climate Change Notification dated. 31st December, 2021 is to be studied in detail and the expenditure involved will be submitted to the Hon'ble Commission separately.

8. Capital Investment Plan for Existing Thermal & Hydro Generating Stations:

The capital works proposed during the 5th Control Period (FYs: 2024-29) are enclosed as **Annexure-I&II.**

The summary of capital Investment Plan for existing Thermal & Hydro Generating Station is tabulated below.

(Rs. in Crores)

Sl. No	Name of the Station	Capacity (MW)	Additions FY:2024-25	Additions FY:2025-26	Additions FY:2026-27	Additions FY:2027-28	Additions FY:2028-29	Additions FYs:2024-29
1	KTPS-V	500	51.3	115.00	415.00	115.52	0	696.82

Sl. No	Name of the Station	Capacity (MW)	Additions FY:2024-25	Additions FY: 2025-26	Additions FY: 2026-27	Additions FY:2027-28	Additions FY: 2028-29	Additions FYs:2024-29
2	KTPS VI	500	6.5	115.00	415.00	115.52	0	652.02
3	RTS -B	62.5	20	32.63	0	0	0	52.63
4	KTPP -I	500	131.22	210.91	241.05	90.39	0	673.57
5	KTPP-II	600	144.6	253.10	289.25	108.47	0	795.42
6	KTPS-VII	800	445.03	220.19	2.96	3.010	51.58	722.77
7	NSHES	875.6	87.5	0	0	0	0	87.50
8	SLBHES	900	157.00	0	0	0	0	157.00
9	Small Hydel	54	7.3	0	0	0	0	7.3
10	Mini Hydel	9.16	0	0	0	0	0	0
11	Pochampad -II	9	1.0	0	0	0	0	1
12	PJHES	234	6.00	0	0	0	0	6.00
13	LJHES	240	14.5	0	0	0	0	14.5
14	PCHES	120	21.00	0	0	0	0	21.00
	Total	5404.26	1092.95	946.83	1363.26	432.91	51.58	3887.53

9. Capital Investment Plan for New Thermal Generating Stations:

The capital works proposed during the 5th Control Period (FYs: 2024-29) are enclosed as Annexure-III.

The summary of capital Investment Plan for New Thermal Generating Station is tabulated below.

(Rs. in Crores)

Sl. No	Name of the Station	Capacity (MW)	Additions FY:2024-25	Additions FY: 2025-26	Additions FY: 2026-27	Additions FY:2027-28	Additions FY: 2028-29	Additions FYs:2024-29
1	BTPS (4X270 MW)	1080	592.41	44.77	2.00	2.00	0	641.18
2	YTPS (5X800 MW)	4000	7596.97	1475.44	499.25	0	0	9571.66
	Total	5080	8189.38	1520.21	501.25	2.00	0	10212.84

10. Summary of Capital Investment Plan

The summary of Capital Investment Plan of existing and new Thermal & Hydro Generating Stations of TSGENCO for the 5th control period (FYs: 2024-29) is tabulated below:

(Rs. in crores)

Sl. No.	Name of the Station	Capacity (MW)	Additions FY:2024-25	Additions FY: 2025-26	Additions FY: 2026-27	Additions FY:2027-28	Additions FY: 2028-29	Additions FYs:2024-29
1	KTPS-V	500	51.3	115.00	415.00	115.52	0	696.82
2	KTPS VI	500	6.5	115.00	415.00	115.52	0	652.02
3	RTS -B	62.5	20	32.63	0	0	0	52.63
4	KTPP -I	500	131.22	210.91	241.05	90.39	0	673.57
5	KTPP-II	600	144.6	253.10	289.25	108.47	0	795.42
6	KTPS-VII	800	445.03	220.19	2.960	3.010	51.580	722.77
7	BTPS	1080	592.41	44.77	2.00	2.00	0.00	641.18
8	YTPS	4000	7596.97	1475.44	499.25	0	0	9571.66
9	NSHES	875.6	87.50	0	0	0	0	87.50
10	SLBHES	900	157.00	0	0	0	0	157.00
11	Small Hydel	54	7.3	0	0	0	0	7.3
12	Mini Hydel	9.16	0	0	0	0	0	0
13	Pochampad -II	9	1.0	0	0	0	0	1
14	PJHES	234	6.00	0	0	0	0	6.00
15	LJHES	240	14.5	0	0	0	0	14.5
16	PCHES	120	21.00	0	0	0	0	21.00
	IT Initiatives		30	0	0	0	0	30.00
	Total	10484.26	9811.58	2467.035	1365.26	434.91	51.58	14130.37

11. Reservation

Nothing in this application be construed as any admission or to prejudice any disputes, issues, dissensions or contentions of the TSGENCO and/or the State of Andhra Pradesh, whether raised hitherto or hereafter, on any matter arising out of the provisions of the A.P. Reorganization Act, 2014, or otherwise, including but not limited to issues relating to the supply of power from the TSGENCO generating stations to the Distribution Companies or the validity of the PPAs.

Nothing in this application be construed to limit or affect the provisional nature of any valuation of any asset or liability by or under any transfer scheme or otherwise, and provision may be made to give full consequential effect for any variation or upon any finalization of the same hereafter.

12. *Payment of Application Fee:*

The Applicant has submitted the **Bankers Cheque No. 106335, Dt. 31.03.2023, SBI, Vidyut Soudha Branch, Hyderabad for Rs.25000/-** (Rupees Twenty Five Thousand only) towards fee for Capital Investment Plan Petition.

13. *Main Prayer*

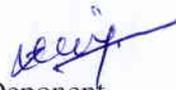
For the above reasons and for such other and/or further reasons and grounds as may be urged at the time of hearing, the Applicant prays that the Hon'ble Commission may be pleased to

- a. Accept and take on record the Application for Capital Investment Plan for the existing and new Thermal & Hydel Stations of TSGENCO for the 5th control period (FYs: 2024-29) as per the clause 7 of the TSERC (terms and conditions of Generation tariff) Regulations 1 of 2019; and
- b. Approve the Capital Investment Plan for the 5th control period (FY 2024-25 to FY 2028-29) for the existing and new Thermal and Hydel Stations of TSGENCO as proposed by the Applicant and/or as otherwise determined by the Hon'ble Commission in accordance with law and/or as the Hon'ble Commission considers fit in the facts and circumstances of the case.
- c. Condone any errors/ omissions / shortcomings and permit to add /change / modify/ alter this filing and make further submissions as may be required at a future date.


Signature of the applicant

Chief Engineer
Coal & Commercial
TSGENCO, V.S., Hyderabad-82

- a) I am the Chief Engineer, Coal & Commercial in Telangana State Power Generation Corporation Ltd., being a company in the business of generating electricity in state of Telangana. I am competent and duly authorized by Telangana State Power Generation Corporation Ltd., to affirm, swear, execute and file this affidavit in the present proceedings.
- b) I have read and understood the contents of the accompanying filing of proposals for Capital Investment Plan by Telangana State Power Generation Corporation Ltd., for the 5th control period (FYs: 2024-2029). The statements made in the paragraphs of the accompanying application now shown to me are true to the best of my Knowledge derived from the official records made available to me and are based on information and advice received which I believe to be true and correct.


Deponent
Chief Engineer
Coal & Commercial
TSGENCO, V.S., Hyderabad-82

Solemnly affirmed before me at Hyderabad
On this 18th April, 2023.


Superintending Engineer
(Coal & Commercial)
O/a. CE/Coal & Commercial
TSGENCO, V.S., Hyderabad-82.

VERIFICATION:

I, the above named Deponent solemnly affirm at Hyderabad on this ___ Day of April, 2023 that the contents of the above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed there from.


Deponent
Chief Engineer
Coal & Commercial
TSGENCO, V.S., Hyderabad-82

Annexure-A1
Summary of Capital Investment Plan (FY: 2024-29)

The summary of Capital Investment Plan of existing and new TSGENCO stations for the 5th control period (2024-29) is tabulated below.

(Rs. in Crores)

Sl. No.	Name of the Station	Capacity (MW)	Additions FY: 2024-25	Additions FY: 2025-26	Additions FY: 2026-27	Additions FY: 2027-28	Additions FY: 2028-29	Additions FYs: 2024-29
1	KTPS-V	500	51.3	115.00	415.00	115.52	0	696.82
2	KTPS VI	500	6.5	115.00	415.00	115.52	0	652.02
3	RTS -B	62.5	20	32.63	0	0	0	52.63
4	KTPP -I	500	131.22	210.91	241.05	90.39	0	673.57
5	KTPP-II	600	144.6	253.10	289.25	108.47	0	795.42
6	KTPS-VII	800	445.03	220.185	2.960	3.010	51.580	722.765
7	BTPS	1080	592.41	44.77	2.00	2.00	0.00	641.18
8	YTPS	4000	7596.97	1475.44	499.25	0	0	9571.66
9	NSHES	875.6	87.50	0	0	0	0	87.50
10	SLBHES	900	157.00	0	0	0	0	157.00
11	Small Hydel	54	7.3	0	0	0	0	7.3
12	Mini Hydel	9.16	0	0	0	0	0	0
13	Pochampad -II	9	1.0	0	0	0	0	1
14	PJHES	234	6.00	0	0	0	0	6.00
15	LJHES	240	14.5	0	0	0	0	14.5
16	PCHEs	120	21.00	0	0	0	0	21.00
	IT Initiatives		30	0	0	0	0	30.00
	Total	10484.26	9312.33	2467.035	1864.51	434.91	51.58	14130.37

ANNEXURE -I (a) (KTPS-V&VI)

CAPITAL INVESTMENT PLAN FOR THE 5TH CONTROL PERIOD (FY : 2024-29) IN RESPECT OF KTPS-V&VI										Rs. in Crs
S.No	Name of the work	Estimate Value (Rs in Crores)	Probable expenditure to be incurred upto & during 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	Total (FYs:2024-29)	Remarks
1	a) Renovation of LP bypass systems of Unit – IX & X (2X250 MW)	8.00	0.00	8.00	-	-	-	-	8.00	M/s. BHEL has expresses their inability to supply LPBP Plunger/Moving coil for EH Converter as per the letter from M/s. BHEL. (Enclosed)
	b). Up-gradation of VFD systems of Unit - IX & X (2X250 MW) 1. ID Fans 2. BFP - 10C	25.00	0.00	25.00	-	-	-	-	25.00	It is estimated that the VFD Systems (ID Fans & BFP-10C) of Unit-IX & X are going to be obsolete in few years as they are since inception. (Commissioned 25 years back).
	c). Modification of APH single sealing arrangement into double sealing arrangement for UNIT - X	11.8	0.00	11.80	-	-	-	-	11.80	For enhancement of APH performance
	Sub Total	44.80		44.80					44.80	
	a). Up-gradation of Rockwell automation make PLC system of Old CHP (PLC-V Processor) for Coal Handling Plant of KTPS-V&VI Stages (1 set). Note: Necessary Field cables shall be supplied.	1.5	0.00	1.50	-	-	-	-	1.50	

2	b). Up-gradation of Fire Detection and Alarm System (FDA) for Old CHP of KTPS-V&VI Stages along with Control Panel for smoke Detectors and IR Detectors (1 set). Note: New installation of smoke detectors and IR detectors shall be done at specified areas. Necessary Field cables shall be supplied.	10.00	0.00	10.00	-	-	-	-	10.00	Up-gradation/replacement includes dismantling of the existing system, erection, testing and commissioning.
	c). Up-gradation of Kirloskar make Wagon Tippler DC drives of rating 826 Amps (model: SRGP 440) with Latest Digital DC Drives (2 sets). Note: Necessary Switch gear and Field cables shall be supplied.	0.50	0.00	0.50	-	-	-	-	0.50	
	d). Replacements of Old Stacker relay logic with Latest PLC System for operation of Old Stacker in Coal Handling Plant of KTPS-V&VI Stages (1 set). Note: Necessary Field cables shall be supplied.	1.00	0.00	1.00	-	-	-	-	1.00	
	Sub Total	57.80	0.00	57.80					57.80	
	Capital works of Civil									
3	Raising of Additional Ash pond bund of KTPS-V&VI Stages from EL 115.50M to 121.0M	60.00			30	30			60	
4	FGD	1231.04		0.00	200.00	800.00	231.04	0.00	1231.04	
	Grand Total	1348.84		57.80	230.00	830.00	231.04	0.00	1348.84	

Not

i) M/s BHEL furnished technical field study report to comply with New Emission Norms by implementing Flue Gas De-sulphurisation (FGD), Selective Catalytic Reactor (SCR) and addition of Electro Static Precipitator (ESP) fields. (Estimated Cost as per DPR Report – Rs.1231.04 Crores including GST).

ii) The details of R&M expenditure would be communicated at a later date after carrying out the detailed RLA studies of all the three units.

iii) The Capital expenditure proposed against item 2 & 3 pertains to both the KTPS V & KTPS VI Stage. Hence the proposed expenditure is shared on prorata of capacity among the stations

Annexure-I(b)

RTS - B

R&M works Justification

The following remarks are herewith submitted regarding techno- Economical Feasibility and R&M Policy for ageing coal based thermal power plants as per the R&M with reference to the RTS-B Ramagundam.

1. The Unit installed capacity of RTS-B station, Ramagundam is 1x62.5 MW without Reheat cycle. The unit R&M works were carried out in the wings of Instrumentation and control Boiler ESP fields during the period from the 2006 to year 2014. Hence the above can be further used beyond the unit retirement schedule of 31.12.2029.
2. The designed heat rate of the RTS-B station Ramagundam is 2616 Kcal/KWH. The heat rate obtained during the month of October is 2936.42 Kcal/KWH. Hence the Heat rate deviation is around 12% and the values are within the limits for considering the R&M.
3. RTS-B Station, Ramagundam 1x62.5MW unit was commissioned on 17.10.1971 and has completed a service of 51 years. It has completed the running if 3,60,160 hrs to the end of October' 2022.
4. The integrity and reparability of civil structures in BTG and Balance of Plants is in healthy condition and life can be further utilized.
5. The ash pond available at RTS-B Station, Ramagundam is suffering of another Ten to fifteen years of unit life. The Dyke is sustainable and there is suffering feasibility of ash utilization.
6. The R&M works on the ESP field was carried during the year of 2018 and the new ESP was commissioned on 19.09.2018. The environment norms of the unit are well within the limits. There is no space constraint for the storage of ash in ponds. There is no proposal for the construction of the FGD unit.

7. The material/ works now proposed for carrying R&M works for the life extension of the unit beyond the scheduled De-Commissioning the RTS_B station, Ramagundam comes around 52.63 Cr including the spares list (Rs. 4Cr.) to be procured from NTPC, Talcher (List Enclosed). This cost of R&M/LE&U is not exceeding the 50% of the EPC cost of a new generating unit of indigenous origin (BHEL)

It is further to submit to that the RLA study of the Boiler is being carried out during the Overhaul of the unit for the year 2022-23. The report of the RLA study is to be received.

In this regard, the list of proposals for the procurement of material and services required for carrying out R&M work at RTS-B station for an approximate amount of Rs. 52.63 Crs.

RTS-B

Boiler		
S.No	Description of work	Amount in crores
1	Bank tubes replacement work and material	6.5
2	Economiser and other pressure parts	1.5
3	ID fan	
	i) Bearings	0.85
	ii) Scroll liners and impellers	2.0
4	FD fan bearings & spares	0.5
5	ESP spares	0.5
6	LRSB spares	0.3
7	TAH tube bundle	1.0
8	LAPH hot & cold baskets	0.5
	Valves & spares	0.5
10	CWP spares	2.0
11	River water pump spares	0.5
	Sub Total	16.65

Turbine		
S.No	Description of work	Amount in crores
1	Removal of damaged 17th stage buckets & other materials	1.5
2	Carrying out COH work	1.5
3	Turbine spares viz. MOP spares, valve stem, front pedestal spares, COH spares	2.5
4	BFP, CEP spares	0.5
5	Compressor spares	0.2
6	FDV-6 spares	0.15
7	HP heater 5 tube nest	0.5
8	HP heater 4 shell	0.5
9	Clarifier at DM plant	0.5
10	RFT tank	0.35
11	Fire fighting system	0.4
12	TWD nozzle block	0.2
	Sub Total	8.8

Mills		
S.No	Description of work	Amount in crores
1	Procurement of worm shaft and worm gear for Coal Mills (4 sets)	1.5
2	Procurement of vertical shaft for Coal Mills (4 nos)	0.12
3	Procurement of vertical shaft thrust and radial bearings (2 sets)	0.5
4	Procurement of PC Pipes and bends with ceramic lining	1.5
5	Procurement of Feeder spares	0.1
6	Procurement of materials required of preparation of journal assemblies	0.3
7	Procurement of materials to exhauster side and repair works	0.4
8	R&M Works of Coal mills	0.5
9	Exhauster bends and other piping with inner lining for 4 mills	1
10	Bowl assemblies shaft, worm wheels, exhauster assemblies	1.5
11	Complete journal assembly with journal spring for mills	1.5
12	Other material and works	0.5
Sub Total		9.42

Electrical		
S.No	Description of work	Amount in crores
1	7.5 MVA, 13.8/3.3 KV UAT repairs	0.18
2	DAVR system	
	Complete DAVR system retrofit	0.6
3	ABB DCS system	
	a)BRC 400 (Processor) cards	0.44
	b)Power supply modules	0.12
4	Generator , GT, UAT protection system	0.3
5	132 KV control and relay panel for Jammikunta feeder	0.1
6	1200 KW, 3.3 KV, 1000 RPM ID fan motor (indented)	0.75
7	New Opacity monitor system (Statutory for CFO)	0.15
8	RTU panel for SCADA	0.8
9	62.5 KVA DG set	0.8
10	500 HP, 3.3 KV Mill motor	0.3
11	Control and Instrumentation cables	0.2
12	Procurement of new MCC for slurry series panel	0.1
13	Online Effluent monitoring system	0.12
14	Procurement Transformer oil	0.25
15	Procurement of new control panel for Fly ash system and LT MCC	0.2
16	Procurement protection relays for HT motors	0.15
Sub Total		5.56

CAPM		
S.No	Description of work	Amount in crores
1	RCW pumps for fly ash (2 nos)	0.3
2	Spares for fly ash handling system	0.15
3	Ash water pumps	0.15
4	Inclined feed gate housings for bottom ash hopper	0.1
5	Spares for ash slurry pumps	0.15
6	Ash slurry knife edge gate valves	0.05
7	Different size valves for ash handling plant	0.1
8	250 NB MS ERW pipes for ash disposal lines 2KM	1.2
9	Works for coal and ash handling system	0.25
Sub Total		2.45
Coal handling System		
S.No	Description of work	Amount in crores
1	Material for coal handling system	0.25
2	D-155 dozer	2.0
3	D-155 dozer engine	0.5
Sub Total		2.75

Civil		
S.No	Description of work	Amount in crores
1	Providing alternate pipe line of 24" dia from Godavari pump house to raw water reservoir in B colony including providing 8" dia drinking water pipe line from candy filter to B colony and pump house.	3.0
Spares		
1	Procurement of spares of GE make Turbine required for RTS-B unit from NTPC, Talcher stores unit (list enclosed in Annexure) vide mail dated 16.12.2022	4.0
Grand Total		52.63

ANNEXURE - I(c) (KTPP)

CAPITAL INVESTMENT PLAN FOR THE 5TH CONTROL PERIOD (FYs : 2024-29) IN RESPECT OF KTPP, CHELPUR									
S.No	Name of the work	Estimate Value (Rs in Crores)	Probable expenditure to be incurred upto & during 2023-24	FY 2024-25	FY 2025- 26	FY 2026- 27	FY 2027- 28	FY 2028- 29	Total (FYs:2024 -29)
1	Taking up of raising of existing Ash pond bund including three wells from EL (+) 182.70 M to EL (+) 187.70 M.	35.00	0.00	35.00	-	-	-	-	35.00
2	Construction of proposed Multi Purpose function hall	3.00	0.00	3.00	-	-	-	-	3.00
3	Extension of Existing School Building	2.00	0.00	2.00	-	-	-	-	2.00
4	Construction of A Type (1No) & B type(2Nos) quarters	1.70	0.00	1.70	-	-	-	-	1.70
5	Preparation of play ground for various sports	0.50	0.00	0.50	-	-	-	-	0.50
6	Construction of 210mX10mX35m Space Frame Structure for storage of 1.50 Lakh MT coal near Emergency Reclaim Hopper of KTPP.	85.00	0.00	85.00	-	-	-	-	85.00
7	WFAHS Civil works- Balance Civil works of Wet Fly Ash Handling System for Kakatiya Thermal Power Project, Chelpur(V), Ghanpur(M) Mandal, Warangal (Dist.), T.S	1.20	0.00	1.20	-	-	-	-	1.20
8	Construction of Kakatiya Kalathoranam at the entrance approach road of KTPP.	1.00	0.00	1.00	-	-	-	-	1.00

9	Laying of BT pavement with DBM and SDBC along the Peripheral Road towards north side of Stage I reservoir in KTHP.	0.80	0.00	0.80	-	-	-	-	0.80
10	Laying of 25mm thick SDBC layer along the main road from R&B road to Service Building.	0.50	0.00	0.50	-	-	-	-	0.50
11	Supply, installation and commissioning of diesel operated self propelled articulating Boom lift for Switchyard and Lighting Maintenance works	0.50	0.00	0.50		-	-	-	0.50
12	Procurement of M/s ABB make 400KV SF6 circuit breaker set	2.00	0.00	2.00	-	-	-	-	2.00
13	Modification of Boiler Reheater rear tubes of KTHP(1X500MW)	2.00	0.00	2.00		-	-	-	2.00
14	Replacement of old Degasser System of Unit-I with new Degasser system consisting of 200M3 MSRL Tank, Degasser tower and blowers	1.20	0.00	1.20		-	-	-	1.20
15	Replacement or modification of complete Assembly of Clinker Grinders in Bottom Ash Handling system.	1.00	0.00	1.00					1.00
16	Replacement of Transport air Compressors (TAC)	2.00	0.00	2.00					2.00
17	Up-gradation of GE MAKE PLC at Ash Plant	0.20	0.00	0.20					0.20
18	Up-gradation of GE MAKE PLC at CPU Regeneration	0.20	0.00	0.20					0.20
19	Up-gradation of ABB MAKE PLC at PTP	0.50	0.00	0.50					0.50
20	Up-gradation of GE MAKE PLC at Compressor house	0.20	0.00	0.20					0.20

21	Up-gradation of SWAS System	0.50	0.00	0.50					0.50
22	Up-gradation of High temperature O2 analyzer System	0.25	0.00	0.25					0.25
23	Up-gradation of Vibration monitoring analysis system	0.40	0.00	0.40					0.40
24	Up-gradation of MAX DNA System	0.60	0.00	0.60					0.60
25	Proposal for wet fly ash handling system	1.00	0.00	1.00					1.00
26	FGD	1325.75	0.00	132.57	464.01	530.3	198.86	0	1325.74
	Total	1469.00	0.00	275.82	464.01	530.30	198.86	0.00	1468.99

Note:

- i The Capital Investment Proposals will be submitted separately for the Installation of Flue Gas Desulfurization (FGD) and Up-gradation of Electrostatic Precipitators(ESP) at KTHP-I&II is required as per CFO of KTHP Stage-I&II and MOEF&CC.
- ii The Capital expenditure proposed against item 1 to 11 pertains to both the KTHP I & KTHP-II. Hence the proposed expenditure is shared on pro-rata capacity among the stations

ANNEXURE-I(d) (KTPS-VII)

KTPS-VII Stage:Capital Expenditure to be incurred for the control Period FYs 2024-29)

Rs. in crs

S. No	Name of the work	2024-25	2025-26	2026-27	2027-28	2028-29	Total (FYs: 2024-29)	Remarks
1	KTPS-Stage VII(1x800MW)-Civil-SD-I-O&M-I-Construction of Main gate along with SPF Duty officer rooms at Durga temple	0.200	0.800	0.000	0.000	0.000	1.000	
2	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Formation and widening of main road along with dividers from Durga temple to Railway Under bridge	0.500	1.500	0.000	0.000	0.000	2.000	
3	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of Compound wall around FGD area	0.000	0.300	0.100	0.000	0.000	0.400	
4	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of KTPS Stage-VII Compound wall	1.000	1.000	1.000	1.000	0.000	4.000	
5	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-FGD System-Design, Engineering, supply of all materials, labour, execution & erection of complete civil, structural, architectural works for the complete Flue Gas Desulphurization (FGD) system(EPC).	10.000	0.000	0.000	0.000	0.000	10.000	
6	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Ash Slurry Pump House tank raising	0.530	0.000	0.000	0.000	0.000	0.530	
7	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification of the roof leakages on the roof of TG Building in Stage-VII/KTPS/Paloncha, Bhadradi Kothagudem Dist.	0.950	0.000	0.000	0.000	0.000	0.950	

8	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Providing fountain and lawn in front of Administration Building	0.150	0.000	0.000	0.000	0.000	0.150
9	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Construction of Tool rooms of size 14mx12mtrs at track hopper and wagon tippler complex I coal plant area of KTPS stage VII	0.360	0.000	0.000	0.000	0.000	0.360
10	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Rectification of damaged GCI sheet roofing, side cladding , broken window glasses and modification works in lift maintenance room in crusher house in coal plant area of KTPS stage VII	0.064	0.000	0.000	0.000	0.000	0.064
11	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Providing approaches, plinth protection and rectification of damaged DV sheds in CHP & AHP area of KTPS Stage-VII,Paloncha	0.200	0.000	0.000	0.000	0.000	0.200
12	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Grouting in the under ground tunnels of 14 UG and ERH in coal plant area of KTPS stage VII	0.053	0.000	0.000	0.000	0.000	0.053
13	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Rectification of Acid resistant tiles at dosing tanks in Ash water pump house and laying of concrete on Ash clarifier walk way slab, KTPS stage VII	0.035	0.000	0.000	0.000	0.000	0.035
14	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Rectification of Sprinkler pedestals at wagon tippler area in CHP of KTPS stage VII.	0.045	0.000	0.000	0.000	0.000	0.045
15	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Rectification of Track hopper table, MH1 beams and drain invert levels	0.074	0.000	0.000	0.000	0.000	0.074

16	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification and Erection of monorail beams at MH-I&II in track hopper area.	0.035	0.000	0.000	0.000	0.000	0.035
17	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Finishing of ventilation ducts and staircase openings in under ground tunnels in CHP area.	0.030	0.000	0.000	0.000	0.000	0.030
18	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of Grade slab at EL +0.00 m in TP09-KTPS Stage-VII, Paloncha.	0.169	0.000	0.000	0.000	0.000	0.169
19	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Extension of Rcc Approach road ,side drains and kerb wall in front of fuel oil unloading pump house of KTPS Stage-VII,Paloncha.	0.061	0.000	0.000	0.000	0.000	0.061
20	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Development of green belt in CHP area of KTPS Stage VII.	0.050	0.070	0.070	0.080	0.100	0.370
21	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of section stores for Boiler and CAM division near FOUPH area of KTPS Stage VII, paloncha.	0.900	0.000	0.000	0.000	0.000	0.900
22	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification of RCC main drain near TP-3', providing plinth protection and brick drain near TR-19 & TR -20 at Track hopper in Coal handling plant of KTPS Stage-VII,Paloncha.	0.050	0.000	0.000	0.000	0.000	0.050
23	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Laying of Rcc approach road from TP-04 to MH-1 in CHP area of KTPS Stage VII	0.000	0.150	0.000	0.000	0.000	0.150

24	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Contstruction of Rcc retaining wall at backside of Loco shed in CHP area of KTPS Stage VII.	0.000	0.250	0.000	0.000	0.000	0.250
25	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Demolishing of damaged existing grade slab and laying of new Rcc grade slab at Bulldozer shed in CHP area of KTPS Stage VII.	0.000	0.250	0.000	0.000	0.000	0.250
26	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Grouting works in 14 under ground tunnel in CHP area of KTPS Stage VII.	0.000	0.065	0.000	0.000	0.000	0.065
27	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Providing Toeguards in all TP's ,Crusher house and all MCC Building in CHP area of KTPS Stage VII.	0.000	0.080	0.000	0.000	0.000	0.080
28	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Arresting roof leakages TP's and Controls in CHP area of KTPS Stage VII	0.000	0.080	0.000	0.000	0.000	0.080
29	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Providing lift in TP-03 in CHP area of KTPS Stage VII	0.000	0.070	0.000	0.000	0.000	0.070
30	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Laying of Rcc approach road from MH-1 to Wagon tippler control room in CHP area of KTPS Stage VII	0.000	0.000	0.200	0.000	0.000	0.200
31	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Contstruction of maintenance sheds for electrical and mechanical works in CHP area of KTPS Stage VII.	0.000	0.000	0.200	0.000	0.000	0.200
32	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I- Construction of Vehicle parking sheds in CHP area of KTPS Stage VII.	0.000	0.000	0.070	0.000	0.000	0.070

33	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Grouting works in 4A/B under ground tunnel in CHP area of KTPS Stage VII.	0.000	0.000	0.070	0.000	0.000	0.070
34	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Providing of CC Paving, Brick work drain,Plantation and gravel filling around the Ash clarifier.	0.000	0.000	0.150	0.000	0.000	0.150
35	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification works of BT roads and Rcc approach roads in CHP area of KTPS Stage VII	0.000	0.000	0.150	0.000	0.000	0.150
36	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of cement storage shed in CHP area of KTPS Stage VII	0.000	0.000	0.000	0.150	0.000	0.150
37	TSGENCO-KTPS-Stage VII (1x800MW)-Civil-SD-II-O&M-I- Grouting below the stacker rails at damaged portion around rail base plates in SCR-I&II Coal handling plant area of KTPS Stage-VII,Paloncha.	0.000	0.000	0.000	0.050	0.000	0.050
38	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Contstruction of Rcc road from MH-1 to MCC-1 in CHP area of KTPS Stage VII.	0.000	0.000	0.000	0.500	0.000	0.500
39	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Contstruction of Rcc road from Transformer yard to Silos in CHP area of KTPS Stage VII.	0.000	0.000	0.000	0.080	0.000	0.080
40	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Construction of Rcc drains in various locations in CHP area of KTPS Stage VII.	0.000	0.000	0.000	0.020	0.000	0.020
41	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification and modification works TP-01,TP-02 and TP-03 in CHP area of KTPS Stage VII	0.000	0.000	0.000	0.000	0.100	0.100

42	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Arresting roof leakages in all TP's and Controls in CHP area of KTPS Stage VII	0.000	0.000	0.000	0.000	0.100	0.100
43	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Rectification of damaged flooring works in all buildings of CHP area of KTPS Stage VII.	0.000	0.000	0.000	0.000	0.100	0.100
44	KTPS-Stage VII(1x800MW)-Civil-SD-II-O&M-I-Providing of Rcc pavements and Rcc foundations in different areas in CHP of KTPS Stage VII.	0.000	0.000	0.000	0.000	0.100	0.100
45	KTPS-Stage VII(1x800MW)-Civil-SD-III-O&M-I-Providing material storage shelves with partitions including AC room in storage shed No.1 at (1X800MW) KTPS VII Stage Paloncha.	5.000	0.000	0.000	0.000	0.000	5.000
46	KTPS-Stage VII(1x800MW)-Civil-SD-III-O&M-I-Construction of shed over the Store office building of KTPS Stage-VII	0.150	0.000	0.000	0.000	0.000	0.150
47	KTPS-Stage VII(1x800MW)-Civil-SD-III-O&M-I-Providing Cement motor grouting to the Rip Rap (dry Stone pitching) for the embankment of Raw water Reservoir of KTPS Stage-VII	0.150	0.150	0.050	0.000	0.000	0.350
48	KTPS-Stage VII(1x800MW)-Civil-SD-III-O&M-I-Green belt development around Cooling Tower of KTPS Stage-VII	0.350	0.050	0.050	0.050	0.050	0.550
49	KTPS-V Stage-Construction of vocational training institute near TSGENCO Housing colony of KTPS-V&VI Stages/Paloncha	9.200	0.000	0.000	0.000	0.000	9.200
50	Installation of roof top solar PV Panels at KTPS-VII Stage, Paloncha	25.000	0.000	0.000	0.000	0.000	25.000

51	KTPS-VII stage (1x800MW) –Design, Soil investigation, Engineering, Construction of various types of Multi storied residential quarters including electrical works in full shape on EPC basis at Kothagudem Thermal Power Station I to IV stages, Paloncha, Bhadradi-Kothagudem Dist	314.400	209.600	0.000	0.000	0.000		524.000
52	TSGENCO-CETD-Dismantling of Qtr.No:BDE13 and BDE-14 and transporting the rubble to the dumpyard to utilize the area for Construction of Model rooms,CETD Campus.	0.050	0.000	0.000	0.000	0.000		0.050
53	TSGENCO-CETD-Construction of Model room, welding workshop room and 4 wheeler and 2 wheeler parking sheds,Turbine model rooms at CETD Campus.	0.814	0.000	0.000	0.000	0.000		0.814
54	TSGENCO-CETD-Removal of garbage heaps and levelling earthen heaps at CETD Campus area.	0.020	0.020	0.030	0.030	0.030		0.130
55	TSGENCO-CETD-Providing external and internal painting to the security room and main gate bell mouth wall ,CETD,Paloncha.	0.000	0.000	0.070	0.000	0.000		0.070
56	TSGENCO-CETD-Providing Internal painting to the Hostel building , CETD Campus,Paloncha.	0.000	0.000	0.000	0.150	0.000		0.150
57	TSGENCO-CETD-Providing Internal painting to the Administrative building, CETD Campus,Paloncha.	0.000	0.000	0.000	0.150	0.000		0.150
58	TSGENCO-CETD-Providing External painting to the Hostel building , CETD Campus,Paloncha.	0.000	0.000	0.000	0.000	0.250		0.250
59	TSGENCO-CETD-Providing External painting to the Administrative building , CETD Campus,Paloncha.	0.000	0.000	0.000	0.000	0.250		0.250

60	TSGENCO-CETD-Attending miscellaneous civil works, plumbing repairs and Sanitary repairs for Hostel building and Simulator building,CETD Campus,Paloncha.	0.250	0.250	0.250	0.250	0.250	1.250	
61	TSGENCO-KTPS -Stage VII-Civil-Other Civil Works in Town ship and other miscellaneous works.	0.250	0.500	0.500	0.500	0.250	2.000	
62	Name of the work:-KTPS VII Stage-Civil-O&M III– Ash Pond –Section-I-Repairs to pedestals of Ash disposal pipelines of KTPS VII Stage, Paloncha.	0.490	0.000	0.000	0.000	0.000	0.490	-
63	KTPS-VII Stage-Civil-O&M-III-Ashpond-Section-I-Raising of Northern ash pond-II from EL(+104.00M to EL(+109.00M including wells, barrels and Spillway at Paloncha, Bhadradi Kothagudem Dist.	40.500	0.000	0.000	0.000	0.000	40.500	-
64	KTPS-Civil-O&M.III-Ashpond-Section-I-Providing box culvert across Kodipunjula Vagu near R/way track to approach Northern ash	0.250	0.000	0.000	0.000	0.000	0.250	-
65	KTPS-Civil-O&M.III-Ashpond-Section-I-Providing arrangements for recycling water from Northern Ash pond-I and Northern ash	7.700	0.000	0.000	0.000	0.000	7.700	-
66	KTPS-O&M.III– Civil - Ash Pond -Section-I-Providing protection works to Kinnerasani	0.000	5.000	0.000	0.000	0.000	5.000	-
67	KTPS-VII Stage-Civil-O&M-III-Ashpond-Section-I-Raising of Northern ash pond-I from	0.000	0.000	0.000	0.000	50.000	50.000	-
	Sub TOTAL:	420.030	220.185	2.960	3.010	51.580	697.765	
	E&M Works							
68	FGD	20.000					20.000	Civil works are in progress and material supply is going on

69	Ash Water recovery system	5.000					5.000	as per the MOEF approval while issuing the consent for establishment certificate by
	Grand Total	445.030	220.185	2.960	3.010	51.580	722.765	

ANNEXURE - I(e) (BTPS)

CAPITAL INVESTMENT PLAN FOR THE 5TH CONTROL PERIOD (FYs : 2024-29) IN RESPECT OF BTPS,MANUGURU										Rs. in Crs.
S.No	Name of the work	Estimate Value (Rs in Crores)	Probable expenditure to be incurred upto & during 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	Total (FYs: 2024-29)	Remarks
CAPITAL INVESTMENT PLAN FOR THE 5TH CONTROL PERIOD (FY : 2024-29) IN RESPECT OF CIVIL CONSTRUCTION WORKS										
1	SIDE STREAM FILTERS to cooling water system of Stage-II	11	3.00	2.00	2.00	2.00	2.00	-	8.00	
2	BTPS-Construction of New Ash Pond with earthen embankment at BTPS, Manuguru, Bhadradi Kothagudem District	59.5	59.5	-	-	-	-	-	-	
3	BTPS (4x270MW) – Earth work in embankment, cutting for formation, construction of bridges and allied structures in connection with construction of railway siding and exchange yard for (4 x 270MW) BTPS, and other connected works Manuguru, Bhadradi Kothagudem Dist	129.57	60.00	69.57	-	-	-	-	69.57	
4	BTPS (4x270MW) – Earth work in formation (Cutting & Banking) and construction of Bridges for Railway siding and marshaling yard for (4 x 270MW) BTPS, Manuguru, Bhadradi Kothagudem Dist	40.67	18.00	22.67	-	-	-	-	22.67	
5	Manufacturing, supply, transportation and stacking of different types of Pre-stressed Concrete mono block BG 60kg sleepers for construction of Railway siding and marshalling yard for Bhadradi Thermal Power Station (4x270MW) at Manuguru, Bhadradi Kothagudem Dist	13.15	13.15	-	-	-	-	-	-	
6	TSGENCO - (4x270MW) BTPS Supply of Permanent way material, PSC Sleepers, Ballast & Linking of Track for construction of Railway siding and Marshalling yard for (4x270MW) BTPS, TSGENCO, Manuguru, Bhadradi Kothagudem District	34.65	18.00	16.65	-	-	-	-	16.65	

7	Procurement of rails for construction of Railway siding and Marshalling yard for(4x270MW) BTPS, TSGENCO, Manuguru, Bhadradi Kothagudem-District	34.50	34.50	-	-	-	-	-	0.00	
8	BTPS (4x270MW) – Design, Supply, Erection, testing and commissioning of Railway Electrification including modification to the existing 250KV AC 50hz, single phase over head equipment (OHE) , Switching post (SSP) and general electrical works for proposed private siding of BTPS of TSGENCO at Manuguru Railway station and CSP/MUGR in Dornakal Manuguru electrified brance line section in Secunderabad	18.72	-	18.72	-	-	-	-	18.72	
9	Providing consultancy services for Preparation of Detailed Project Report for feasibility of Railway Marshalling Yard with suitable Railway Track from Manuguru Railway Station for establishing (4X270 MW) Thermal Power Plant at Manuguru	1.50	1.50	-	-	-	-	-	0.00	
10	Providing Project management consultancy for Railway siding and marshalling yard for BTPS,Manuguru	23.00	10.00	13.00	-	-	-	-	13.00	
11	BTPS(4X270 MW)- Construction of residential hostel building for providing accommodation to SPF personnel at BTPS, Manuguru, Bhadradi Kothagudem District	10.00	10.00	-	-	-	-	-	-	
12	BTPS (4x270MW) - Construction of Hostel building (G+4 floors) at Bhadradi Thermal Power station, Manuguru, Bhadradi Kothagudem District	10.60	10.60	-	-	-	-	-	-	

13	(4x270MW) BTPS - Soil Investigation, Engineering, Design and Construction of Integrated Township with infrastructural works consisting of Independent and Multistoried residential quarters, Hospital building, School building, Club house, Guest House, Indoor Auditorium, Stores Complex, Security Gate with Security office Building, Storage shed etc., including site leveling and grading, roads & drains, compound wall around the township etc., on EPC basis at (4X270 MW) Bhadradi Thermal Power Station, Manuguru, Bhadradi Kothagudem District.	635.63	260.00	340.00	35.63	-	-	-	375.63	
14	Towards land scaping, green bel1, children play area, walking track and other civil development works which are essentially required for completion of township in full shape as per the requirement of TSGENCO including all leads and lifts.	9.98	4.00	5.98	-	-	-	-	5.98	
15	Towards street lighting system, 6.6KV/415V Sub-station including extending of main power supply from BTPS plant to Township and Diesel Generator for alternate power supplv etc., inclusive of all taxes	21.00	6.00	12.00	3.00	-	-	-	15.00	-
16	Miscellaneous Civil and Electrical works for residential & non-residentail buildings which are not covered in the scope of work and which are essentially required for completion of township in full shape as per the requirement of TSGENCO including all leads and lifts.	10.14	-	6.00	4.14	-	-	-	10.14	-
17	BTPS (4x270MW) - Providing Approach road along the Fencing of quarters area from existing Sambaigudem Village road to Farm lands on North side of Block-III, BTPS, Manuguru.	0.82	0.50	0.32					0.32	
	Sub Total	1064.43	508.75	506.91	44.77	2.00	2.00	0.00	555.68	
	BTPS ongoing Capital works (E&M)									
18	FGD			50.00					50.00	Engineering works are under progress.
	Erection & Commissioning works:									

19	Track hopper works			1					1	Module-8 Civil works under progress.
20	Wagon Tippler Works			2					2	Railway Track works are under progress.
21	Mandatory Spares for CHP & AHP			2.50					2.50	
22	Procurement of Spares			10.00					10.00	
	E&M Works other than EPC									
23	conveying system from the existing crusher			20					20	process.
	Sub Total			85.50					85.50	
	Grand Total			592.41	44.77	2.00	2.00	0.00	641.18	

Annexure (f)		
Proposed Capitalization Works for 5th control period(FY:2024-29)		
Sl.No.	Description of the Work	Amount in Crs.
SLBHES		
1	Replacement of existing GIS System	75.00
2	Procurement of 1No. Spare Generating Transformer (GT)	12.00
3	Repalcement of 400KV, Power cables of 5nos 400KV Feeders	50.00
4	Replacement & Modification of out dated equipments of all units	20.00
TOTAL:		157.00
NSHES		
1	Replacement & Modification of out dated equipments of Units-2,3, 4&5	15.00
2	Reconditioning of pestock Gates (8Nos)	2.00
3	SFC Bay, Providing of One additional 220KVBay for providing power supply to 20MW SFC ,including cost of SFC accessories	50.00
4	Replacement of existing governer for 7units (2 to 8)	15.00
TOTAL:		82.00
NSLCPH		
1	Replacement & Modification of out dated equipments of unit-2	1.00
2	Replacement of Governer at Unit-2	1.50
3	Replacement of excitation System of Both units	3.00
TOTAL:		5.50
PCHES		
1	Procurement of 40MVA,220/11KV Power Transformer at PCHES site as spare GT for all the Units	6.00
2	Procurement of 01 Set(06Nos) of Runner Blades along with Hexa bolts for 30MW Kaplan Turbine AT pches	15.00
TOTAL:		21.00
PJHES		
1	Up gradation of SCADA System	6.00
TOTAL:		6.00
LJHES		
1	Upgradation of carbon dust system for 6units	1.50
2	Software upgradation for all units (6 Units)	3.00
3	Modification of Shat Seal System for all Units	10.00
TOTAL:		14.50
Pochampad		
1	Replacement & Modification of out dated equipments of unit-4	1.00
2	Replacement of Cooling water System	0.50
TOTAL:		1.50
Singure		
1	Replacement of existing AVR with DAVR and installation of Auto sequencer and protection system etc., for Unit-I of SHES, Singure	4.00
2	Replacement of Governing system for SHES, Singure	2.00
TOTAL:		6.00
Nizam Sagar		
1	Procurement of New Generator Transformer	0.80
TOTAL:		0.80

Grand Total 294.30

IT INITIATIVES

The New Automation and IT initiatives proposed to be carried out during the next Control Period.

1. **Upgrading the ERP SAP software from ECC to S4 HANA:** The End of Support for the ECC system has been declared by 2027 and support to the connected data base i.e Oracle has already been expired in July' 2022. As such upgrading the ERP system and connected data base is essential to ensure Business continuity. The proposal is under circulation for the Board of Directors of TSGENCO.
2. The Servers and associated equipment's were procured ten years back and frequent troubles and failures are being experienced due to ageing of the equipment. As such, it is proposed to upgrade the Hardware i.e. Servers and Storage equipment suitable for the propose software upgrade.
3. Further, establishment of back up servers and storage equipment i.e DR (Disaster Recovery) with minimum hardware configuration is essential as backup in case of failure of DC (Data Center), to ensure business continuity and to avoid data loss.
4. The following are the proposed improvements in plant performance monitoring aspects so as to achieve internal efficiency and to meet regulatory requirements.
 - a. Automation of Capture of tentative running costs of thermal generating units on daily basis.
 - b. 25 point dash board for generation parameters of all thermal units.
 - c. Installation of IP cameras at all thermal plants in line pollution control Board guidelines.
5. The following It initiatives are also envisaged in the HR aspect of Organization functioning
 - a. Automation of Annual Appraisal reports.

- b. Automation of Leave sanction and Accounting process.
 - c. automation of various loans and Advances sanction and accounting process.
6. In the Finance module in ERP, payment gateway integration to Banks Aging Reports and development financial reports in S/4 HANA will be developed.
 7. In MM Module in ERP, new development of MDG implementation for materials, customers and suppliers.

The Approximate expenditure for Item No. (1) to (3), (6) and (7) will be Rs. 30 Crore. The expenditure for Item No. (4) will be met from R&M expenditure of respective plants and Item (5) will be an In-house development taken by the ERP team.