



Telangana State Electricity Regulatory Commission
5th Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul, Hyderabad 500 004

ORDER

ON

**True-up for 3rd control period for FY 2014-15 to FY 2018-19,
Determination of Capital Cost of New Stations,
Approval of Business Plan, Capital Investment Plan and
MYT for 4th control period for FY 2019-20 to FY 2023-24**

FOR

**Telangana State Power Generation Corporation Limited
(TSGenco)**

22.03.2022

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LIST OF ABBREVIATIONS

1 st Control Period	Comprising seven month period from 1.09.2008 to 31.03.2009
2 nd Control Period	Comprising five (5) years from FY 2009-10 to FY 2013-14
3 rd Control Period	Comprising five (5) years from FY 2014-15 to FY 2018-19
4 th Control Period	Comprising five (5) years from FY 2019-20 to FY 2023-24
A&G	Administrative and General
AFC	Annual Fixed Charges
ARR	Aggregate Revenue Requirement
ATEL	Appellate Tribunal for Electricity
BHEL	Bharat Heavy Electricals Limited
BoP	Balance of Plant
BTG	Boiler, Turbine and Generator
BTPS	Bhadradi Thermal Power Plant
CAG	Comptroller and Auditor General of India
CAGR	Compound Annual Growth Rate
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
COD	Commercial Operation Date
CPCB	Central Pollution Control Board
CPI	Consumer Price Index
CSR	Corporate Social Responsibility
CT	Current Transformer
DCS	Distributed Control System
Discom	Distribution Company
DMFT	District Mineral Foundation Trust
DPR	Detailed Project Report
E&M	Electrical and Mechanical
ECR	Energy Charge Rate
EDC	Expenditure During Construction
EPC	Engineering, Procurement and Construction
EPCA	Environment Pollution Control Authority
EPS	Electric Power Survey
ERP	Enterprise Resource Planning
ESCOM	Electricity Supply Company
ESP	Electrostatic Precipitator
FC	Financing Charges
FGD	Flue Gas Desulphurization
FI	Financial Institution
FY	Financial Year
GCV	Gross Calorific Value
GDP	Gross Domestic Product
Genco	Power Generating Company Limited
GFA	Gross Fixed Assets
Gol	Government of India
GoTS	Government of Telangana State
GST	Goods and Services Tax
GTO	Generation Tariff Order

IDC	Interest During Construction
IEX	Indian Energy Exchange
IoWC	Interest on Working Capital
IPPs	Independent Power Producers
IT	Information Technology
kcal	kilo calories
kg	Kilogram
KG	Krishan Godavari
KTPP	Kakatiya Thermal Power Plant
KTPS	Kothagudem Thermal Power Station
kWh	Kilo Watt hour
LJHES	Lower Jurala Hydro Electric Project
LOI	Letter of Intent
MAT	Minimum Alternative Tax
MCLR	Marginal Cost of Funds based Lending Rate
MDBFP	Motor-Driven Boiler Feed Pumps
MoEF&CC	Ministry of Environment, Forest & Climate Change
MoP	Ministry of Power
MoU	Memorandum of Understanding
MTPA	Million Tonnes Per Annum
MTR	Mid Term Review
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
NAPAF	Normative Annual Plant Availability Factor
NGT	National Green Tribunal
NMET	National Mineral Exploration Trust
NO _x	Nitrogen Oxides
NPC	National Productivity Council
NTI	Non-Tariff Income
NTPC	National Thermal Power Corporation Limited
O&M	Operations and Maintenance
O.P.	Original Petition
OEM	Original Equipment Manufacturer
PB	Pension Bond
PCHES	Pulichinthala Hydro Electric Project
PCKL	Power Company of Karnataka Limited
PFC	Power Finance Corporation
PLC	Programmable Logic Controller
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PRC	Pay Revision Commission
PSU	Public Sector Undertaking
R&M	Repairs & Maintenance
R&R	Rehabilitation & Resettlement
RBI	Reserve Bank of India
RCC	Reinforced Cement Concrete
REC	Rural Electrification Corporation

RoCE	Return on Capital Employed
RoE	Return on Equity
ROI	rate of interest
Rs.	Rupees
RST	Retail Supply Tariff
RTS	Ramagundam Thermal Station
SBI	State Bank of India
SCCL	Singareni Collieries Company Limited
SCR	Selective Catalytic Reduction
SERC	State Electricity Regulatory Commission
SHR	Station Heat Rate
SLDC	Stake Load Dispatch Centre
SO _x	Sulphur Oxides
SPM	Suspended Particulate Matter
TSERC	Telangana State Electricity Regulatory Commission
TSGenco	Telangana State Power Generation Corporation Limited
TSNPDCL	Northern Power Distribution Company of Telangana Limited
TSPCB	Telangana State Pollution Control Board
TSSPDCL	Southern Power Distribution Company of Telangana Limited
TSTPP	Telangana State Thermal Power Project
TSTransco	Transmission Corporation of Telangana Limited
VFD	Variable Frequency Drive
WACC	Weighted Average Cost of Capital
WPI	Wholesale Price Index
YTPS	Yadadri Thermal Power Station



TELANGANA STATE ELECTRICITY REGULATORY COMMISSION
5th Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul, Hyderabad 500 004

O. P. Nos. 5 and 6 of 2021

&

I. A. No. 1 of 2021

Dated 22.03.2022

Present

Sri T. Sriranga Rao, Chairman
Sri M. D. Manohar Raju, Member (Technical)
Sri Bandaru Krishnaiah, Member (Finance)

Between:

Telangana State Power Generation Corporation Limited ... Petitioner

And

Southern Power Distribution sCompany of Telangana Limited
Northern Power Distribution Company of Telangana Limited
Eastern Power Distribution Company of Andhra Pradesh Limited
Southern Power Distribution Company of Andhra Pradesh Limited
ESCOMs of Karnataka State ... Respondents

Telangana State Power Generation Corporation Limited filed the Petitions u/s 62 of the Electricity Act, 2003 and under the provisions of the “Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Company to a Distribution Licensee and Purchase of Electricity by Distribution Licensees” Regulation No.1 of 2008, adopted by Telangana State Electricity Regulatory Commission vide its ‘Adoption’ Regulation No.1 of 2014 and the “Terms and Conditions of Generation Tariff” Regulations No.1 of 2019 for approval of true-up for 3rd control period for FY 2014-15 to FY 2018-19, determination of Capital cost for new stations, approval of Business Plan, Capital Investment Plan, Aggregate Revenue Requirement (ARR) and Multi Year Tariff (MYT) for each Financial Year within 4th control period comprising five years from 01.04.2019 to 31.03.2024 (FY 2019-20 to FY 2023-24).

The Commission, in exercise of its powers under the Electricity Act, 2003, Regulation No.1 of 2008 adopted through its Regulation No.1 of 2014, Regulations No.1 of 2019, and after considering Petitioner's submissions, objections and suggestions of the stakeholders, responses of Petitioner to the same, issues raised during the Public Hearing and all other relevant material, passed the following:

COMMON ORDER

Chapter 1 Introduction

1.1 BACKGROUND

1.1.1 Telangana State Electricity Regulatory Commission (hereinafter referred to as 'TSERC' or 'Commission') was constituted by the Government of Telangana State (GoTS) in terms of the provisions of Schedule XII(C)(3) of the A.P. Reorganisation Act of 2014, read with Section 82 of the Electricity Act, 2003 (Act) vide G.O.Ms.No.3, Energy (Budget) Department, dated 26.07.2014.

1.1.2 This Commission having been established u/s 82(1) of the Act had notified TSERC (Adoption) Regulation No.1 of 2014 on 10.12.2014, accordingly all the subsisting Regulations and their amendments thereof shall continue to apply for the Telangana State including the (Terms and conditions for determination of tariff for supply of electricity by a generating company to a distribution licensee and purchase of electricity by distribution licensees) Regulation, 2008 (Regulation No.1 of 2008) and its subsequent amendments thereto. Subsequently, the Commission had notified TSERC (Terms and Conditions for Determination of Generation Tariff) Regulations No.1 of 2019 which came into force from the date of its publication in Telangana Gazette i.e., on 01.02.2019.

1.2 THE PETITIONER

1.2.1 Telangana State Power Generation Corporation Limited (hereinafter referred as 'TSGenco' or 'Petitioner') was incorporated on 19.05.2014 as a limited liability company under the Companies Act, 2013. The erstwhile State of Andhra Pradesh was bifurcated into residuary Andhra Pradesh State and the Telangana State w.e.f. 02.06.2014, being the appointed date in accordance with the Andhra Pradesh Reorganisation Act, 2014 (Central Act No.6 of 2014)

(hereinafter referred to as the “Reorganisation Act”). Pursuant to the Reorganisation Act, the then APGenco was demerged and the assets & liabilities pertaining to the generating stations in Telangana State were transferred to TSGenco in terms of the transfer scheme notified in G.O.Ms.No.29 dated 31.05.2014. The provisional valuation of assets and liabilities are based on the accounts as on 31.03.2014, pending finalisation of valuation of assets and liabilities as on 01.06.2014.

- 1.2.2 TSGenco commenced generation and supply of electricity to the distribution companies in Telangana, namely, Northern Power Distribution Company of Telangana Ltd. (hereinafter referred to as “TSNPDCL”) and Southern Power Distribution Company of Telangana Ltd. (herein after referred to as “TSSPDCL”) (combinedly referred to as ‘TSDiscoms’) and also to the distribution companies of Andhra Pradesh, namely, Eastern Power Distribution Company of Andhra Pradesh Limited (herein after referred to as “APEPDCL”) and Southern Power Distribution Company of Andhra Pradesh Limited (herein after referred to as “APSPDCL”) (combinedly referred to as ‘APDiscoms’). The supply to aforesaid distribution companies is in accordance with inter-State allocation of generation to the individual distribution licensees notified by the Government of the undivided State of Andhra Pradesh.
- 1.2.3 The energy generated from TSGenco thermal stations except KTHPP-II had been shared between TSDiscoms and APDiscoms in the ratio of 53.89 and 46.11 in terms of the G.O.Ms.No.20 dt: 08.05.2014 up to 10.06.2017 and sharing of power discontinued to APDiscoms w.e.f. 11.06.2017. After that the entire energy availability (100%) of TSGenco thermal stations has been allocated to the TSDiscoms. Entire energy availability from KTHPP-II as well as all Hydel stations have been allocated to TSDiscoms except Priyadarshini Jurala Hydel Project.
- 1.2.4 TSGenco supplies 50% of power generated from Priyadarshini Jurala Hydro Electric Scheme (PJHES) to Electric Supply Companies (ESCOMs) of Karnataka State and the fixed charges and the energy generated being shared in the ratio of 50:50 between TSDiscoms and ESCOMs of Karnataka State.

1.2.5 The erstwhile Andhra Pradesh Electricity Regulatory Commission (herein after referred to as “erstwhile APERC”) functioned as a Electricity Regulatory Commission for the States of Andhra Pradesh and Telangana, w.e.f. 02.06.2014 till 02.11.2014, had determined the tariff of the generating stations of erstwhile APGenco for the 2nd control period i.e., FY 2009-10 to FY 2013-14 vide its Order dated 31.05.2014 in O.P.No.15 of 2009.

1.3 POWER PURCHASE AGREEMENTS

1.3.1 The Power Purchase Agreements (PPAs) of generating stations in Telangana State entered with erstwhile Distribution companies were transferred to TSGenco vide G.O.Ms.No.29 dated 31.05.2014. Further, TSGenco entered into PPA with TSDiscoms for KTHP-II, KTHS-VII, BTPS and the existing stations which were commissioned between year 1956 and year 1998, after demerger of APGenco. The details of PPAs submitted by the TSGenco are given in the Table below:

Table 1: Details of Power Purchase Agreements submitted by TSGenco

Sl. No.	Name of station	Installed capacity (MW)	PPA Date	Valid Upto	Commissioning /COD of Units
1	KTHS-ABC	420 (3x60+2x120)	17.09.2019	31.03.2020	04.07.1966 to 10.01.1978
2	KTHS-V	500 (2x250)	17.09.2019	31.03.2024	31.03.1997 to 28.02.1998
3	KTHS-VI	1x500	22.12.2009	22.10.2036	23.10.2011
4	RTS-B	1x62.5	17.09.2019	31.03.2024	17.10.1971
5	KTHP-I	1x500	22.12.2009	13.09.2035	14.09.2010
6	KTHP-II	1x600	27.01.2016	23.03.2041	24.03.2016
Hydel					
7	Nagarjuna Sagar HES (Main powerhouse & left canal)	875.6 (1x110+ 7x100.8 & 2x30)	17.09.2019	31.03.2029	07.03.1978 to 27.09.1992
8	SLBHES	900 (6x150)	17.09.2019	31.03.2029	26.01.2001 to 04.09.2003
9	Small Hydel (Singur, Pochampad, Nizam Sagar & Palair HES)	54 (2x7.5+ 3x9+2x5 & 1x2)	17.09.2019	31.03.2029	07.03.1978 to 31.03.2000
10	Mini Hydel (Peddapalli HES)	9.16 (6x0.22+3x0.23 + 2x0.325+ 10x0.5+ 2x0.75)	17.09.2019	31.03.2029	31.03.1986 to 29.01.2004
11	Pochampad-II	9	22.12.2009	11.10.2045	12.10.2010
12	Priyadarshini Jurala HES	234 (6x39)	19.05.2014	03.08.2046	31.08.2008 to 04.08.2011
13	Lower Jurala HES	240 (6x40)	30.12.2010	30.09.2051	19.10.2015 to 01.10.2016

Sl. No.	Name of station	Installed capacity (MW)	PPA Date	Valid Upto	Commissioning /COD of Units
14	Pulichinthala HES	120 (4x30)	30.12.2010	07.09.2053	29.09.201 to 08.09.2018
New Stations					
15	KTPS-VII	1x800	19.03.2018	25.12.2043	26.12.2018
16	BTPS	4x270	17.09.2019	25 years from Station COD	I: 05.06.2020 II: 07.12.2020 Proposed III: Jan 2021 IV: Mar 2021
17	YTPS	5x800	11.03.2020	25 years from Station COD	I: Feb 2023 II: March 2023 III: April 2023 IV: May 2023 V: June 2023

1.3.2 On the petitions filed by TSDiscoms the Commission in its Order dated 06.08.2021 in O.P.Nos.15 to 19 of 2021 (Suo Moto) has accorded consent to the above mentioned PPAs subject to amendments in certain clauses and Articles of PPAs.

1.4 EARLIER ORDERS OF THE COMMISSION

1.4.1 TSGenco had filed a Petition before TSERC on 30.11.2016 for tariff determination in respect of generating stations vested with TSGenco after bifurcation of erstwhile APGenco and in respect of new generating stations in the Telangana State which achieved Commercial Operations (hereinafter referred to as “CoD”) in 3rd control period FYs 2014-2019. The Commission, in its Order dated 05.06.2017 in O.P.No.26 of 2016 approved the ARR and generation tariff for 3rd control period from 01.04.2014 to 31.03.2019 in accordance with the Regulation No.1 of 2008.

1.4.2 Subsequently, the Commission, vide Order dated 27.03.2018 in O.P.No.21 and 22 of 2017 for Retail Supply Tariff for FY 2018-19 approved Annual Fixed Charges of Rs.311.11 crore for KTPS-VII. Further, TSGenco had filed a Petition seeking amendment of the Order dated 05.06.2017 and for inclusion of Nagarjuna Sagar HES cost of Rs.839.92 crore in NSPH complex towards additional capitalization along with other prayers. The Commission, in its Order dated 03.01.2019 in I.A.No.33 of 2018 in O.P.No.26 of 2016 approved additional capitalization and revised the Fixed Cost per unit for Nagarjuna Sagar HES Complex for FY 2017-18 and FY 2018-19 of 3rd control period.

1.4.3 Further, TSGenco filed a Review Petition against the Order of the Commission dated in O.P.No.26 of 2016 under Section 94(1)(f) of the Electricity Act 2003 with following prayers:

- To allow O&M expenses for existing and new hydel stations as per CERC (Terms and Conditions of Tariff) Regulations, 2014 in parity with thermal stations;
- To allow depreciation rate as per MOP 1994 notification;
- To consider penalties released to the contractors Rs.114.47 crore and Rs.134.59 crore for KTPS-VI and KTPP-I respectively;
- To consider IDC, establishment charges and other expenditure as per filling of TSGenco;
- To consider accumulated depreciation for new stations, up to previous financial year instead of current financial year while computing RoCE; and
- To adopt operating norms of KTPP-II on par with Regulation No.1 of 2008.

1.4.4 The Commission in its Order dated 07.10.2021 has admitted the Review Petition and assigned R.P.No.2 of 2021 in O.P.No.26 of 2016 and finally disposed the review petition on 19.02.2022.

1.5 STATUTORY/REGULATORY PROVISIONS

1.5.1 Section 62 of the Electricity Act, 2003 stipulates that the Commission shall determine tariff for supply of electricity by a generating company to a distribution licensee. The Regulation No.1 of 2008 notified on 01.09.2008 and the Regulations No.1 of 2019, notified on 01.02.2019, stipulate the terms and conditions for such determination of tariff under Multi-Year-Tariff (MYT) framework for a control period of five (5) years for supply of electricity by a generating entity to a distribution licensee including the price at which electricity shall be procured from the generating entities or licensees or from other sources through agreements for purchase of power for distribution and supply within the State, 3rd control period covers five (5) years from FY 2014-15 to FY 2018-19 and 4th Control Period covers five (5) years from FY 2019-20 to FY 2023-24.

- 1.5.2 The Electricity Act, 2003 as well as the Regulation No.1 of 2008 mandates that a generating entity shall file application for the control period for its tariff determination by the Commission not less than one hundred and twenty (120) days before the commencement of the first year of the control period. Whereas as per Regulations No.1 of 2019 as is notified on 01.02.2019 it is specified that the filing of MYT petition shall be on or before 1st April, 2019.

1.6 PRESENT FILINGS

- 1.6.1 TSGenco filed Petitions on 03.02.2021 u/s 62 of the Electricity Act, 2003 and under the provisions of the “Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Company to a Distribution Licensee and Purchase of Electricity by Distribution Licensees” Regulation No.1 of 2008, adopted by the Commission vide its Regulation No.1 of 2014 and the “Terms and Conditions of Generation Tariff” Regulations No.1 of 2019 for approval of true-up for FY 2014-15 to FY 2018-19, determination of Capital cost for new stations, approval of Business Plan, Capital Investment Plan, ARR and MYT for each Financial Year within 4th control period comprising five years from 01.04.2019 to 31.03.2024 (FY 2019-20 to FY 2023-24).
- 1.6.2 As per Clause 7 of the Regulations No.1 of 2019, the TSGenco was required to submit Business Plan along with Capital Investment Plan for its Generation Business for 4th control period from FY 2019-20 to FY 2023-24 before filing of MYT Petition. However, the Commission noted that Business Plan and Capital Investment Plan were not filed by TSGenco. In the query raised by the Commission, TSGenco was asked to submit Business Plan and Capital Investment plan for entire 4th control period. In response, TSGenco submitted the Business Plan and Capital Investment Plan for 4th control period for FY 2019-20 to FY 2023-24.

Delay Condonation

- 1.6.3 As per Clause 3.8 of Regulations No.1 of 2019, TSGenco was required to file MYT Petition before 01.04.2019. However, TSGenco submitted MYT Petition on 03.02.2021. Therefore, there is delay of around twenty two (22) months in submission of MYT Petition. TSGenco has filed an Interlocutory Application (I.A.) for condonation on delay in filing MYT Petition. The TSGenco has

submitted the following reasons for delay in filing MYT Petition for determination of Capital cost for new stations and Generation Tariff for the existing as well as new station for the 4th control period:

- a) Delay in finalisation of Audited Annual Accounts for FY 2018-19;
- b) Coordinating with all the wings of the organization, compilation of voluminous information took times for preparation of Petitions for the True up and MYT;
- c) Employees Bifurcation: Consequent to the orders of One Man Committee under the Chairmanship of Hon'ble Justice Sri.Dharmadhikari dated 26.12.2019, new incumbents assumed charge in place of the existing Senior Officers which resulted certain delay in collection of data;
- d) COVID-19 outbreak: Due to spread of COVID-19 pandemic and nation-wide declaration of lockdown;
- e) Due to COVID-19 and difficulties faced by the Generating Companies in preparation and filing of Petitions, Hon'ble CERC granted extension for filling Petitions.

1.7 ADMISSION OF PETITIONS AND REGULATORY PROCESS

1.7.1 The Petitions for approval of true-up for 3rd control period for FY 2014-15 to FY 2018-19, MYT for 4th control period for FY 2019-20 to FY 2023-24 and I.A. were scrutinised and found to be generally in order as required under the TSERC (Conduct of Business) Regulations, 2015 (Regulation No.2 of 2015). The Commission admitted the filings and the same were taken on record by assigning the following Original Petition (O.P.) and Interlocutory Application (I.A.) numbers:

- O.P.No.5 of 2021: True-up for FY 2014-15 to FY 2018-19;
- O.P.No.6 of 2021: MYT for FY 2019-20 to FY 2023-24;
- I.A.No.1 of 2021: For condonation of delay in filing MYT Petition;

1.7.2 The Commission reviewed the I.A. submitted by TSGenco for delay condonation and has acceded to condone the delay in filing the MYT Petition for 4th control period for FY 2019-20 to FY 2023-24.

Public Notice

- 1.7.3 The Petitioner, as directed by the Commission, published for information of all stakeholders a notice in two (2) English, two (2) Telugu and one (1) Urdu daily newspapers on 04.02.2021. The filings have been made available by the Petitioner along with supporting material to the public at large. The filings and supporting material were also hosted on the websites of the Petitioner as well as the Commission.
- 1.7.4 It was initially notified in the public notice that objections/suggestions on the filings may be filed before the Commission by 25.02.2021. Subsequently, in consideration of the request from the stakeholder the Commission extended the timelines for receiving public objections/suggestions till 12.03.2021 and the same is published in the daily newspapers on 02.03.2021.

Response to the Public Notice

- 1.7.5 In response to the public notice, objections/suggestions were received from two (2) stakeholders. Further, during the extension time for objections/suggestions were received from another two (2) stakeholders. The list of stakeholders who submitted written objections/suggestions is enclosed at Annexure-II.
- 1.7.6 The Petitioner was directed to give the reply to the stakeholders in writing by 15.03.2021 by sending the same to the respective stakeholder with a copy to the Commission. The objections/suggestions received and the corresponding replies of the petitioner were also posted on the website of the Petitioner as well as the Commission.

Public Hearing

- 1.7.7 The Commission has conducted the virtual Public Hearing through video conference on 31.05.2021 in the attendance of the Petitioner, the Respondents and the other interested stakeholders. During the Public Hearing, the Petitioner made a brief submission on its filings and then the Commission heard the Respondents and other stakeholders desiring to be heard. At the end, the Petitioner responded on the issues raised by the objectors and on directions of the Commission filed a written submission regarding the same. During the Public Hearing the Commission also agreed to the stakeholder's request for submission of additional

objections/suggestions on the filings. The list of persons who presented their objections/suggestions in virtual Public Hearing through Video Conference held on 31.05.2021 is enclosed at Annexure-III.

1.8 DATAGAPS AND PETITIONER'S RESPONSES

- 1.8.1 During scrutiny, the filings of the Petitioner was found to be deficient in certain aspects and therefore, additional information was sought. The Commission has considered the original filings and additional information submitted by the Petitioner.



Chapter 2 Summary of Filings

2.1 TSGENCO'S SUBMISSIONS

2.1.1 TSGenco has made the following submissions in their original filings and the additional submissions:

- i) Truing up the Generation tariff for the existing stations in accordance with the clause 3.8 of TSERC Regulations 1 of 2019 and determination of capital cost & tariff in respect of KTPS-VII for 3rd control period (FY 2014-15 to FY 2018-19) under Section 62 of the Electricity Act, 2003;
- ii) Business Plan and Capital Investment plan for 4th control period from FY 2019-20 to FY 2023-24;
- iii) Determination of capital cost for new stations and Generation Tariff for the existing and new stations for 3rd control period (FY 2019-20 to FY 2023-24) under Section 62 of the Electricity Act, 2003 for the electricity supplied by TSGencoto Distribution Licensees.

The Summary of Submissions of TSGenco is detailed below:

2.2 TRUE UP FOR 3RD CONTROL PERIOD FOR FY 2014-15 TO FY 2018-19

2.2.1 The GFA addition claimed by TSGenco for true up for FY 2016-17 to FY 2018-19 of 3rd control period is as shown in the Table below:

Table 2: GFA claimed by TSGenco for FY 2016-17 to FY 2018-19 of 3rd control period

<i>Rs. in crore</i>						
Sl. No.	Name of the Station	GFA approved in GTO	Additions in FY 2016-17	Additions in FY 2017-18	Additions in FY 2018-19	Total Additions
Existing Stations						
1	KTPS-O&M	1287.64	6.26	5.62	21.85	33.73
2	KTPS-V	2129.31	5.33	1.02	23.39	29.74
3	KTPS-VI	2398.82	95.60	25.51	11.01	132.13
4	RTS-B	92.74	0.02	0.50	34.28	34.79
5	KTPP-I	2559.68	0.00	27.83	0.25	28.08
6	NSHES	1097.41	13.62	700.09	0.65	714.36
7	Srisailam	3376.06	0.00	0.00	0.00	0.00
8	Small Hydel	120.84	0.00	0.00	0.18	0.18
9	Mini Hydels	31.35	0.00	0.00	0.00	0.00
10	Pochampad-II	29.60	0.00	0.14	0.00	0.14
11	PJHES	688.91	0.00	0.88	2.12	3.00
New Stations						
12	KTPP-II	3039.35	6.42	314.97	45.09	3405.83
13	LJHES	1141.99	400.76	6.44	6.72	1555.90
14	PCHES	0.00	226.98	215.65	2.67	445.31
15	KTPS-VII	0.00	0.00	0.00	4605.02	4605.02

2.2.2 The revised fixed charges claimed by TSGenco for true up for 3rd control period from FY 2014-15 to FY 2018-19 is as shown in the Table below:

Table 3: Revised AFC claimed for 3rd control period from FY 2014-15 to FY 2018-19

Rs. in crore

Station	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Total
KTPS-O&M	554.32	570.03	593.06	577.45	638.25	2933.11
KTPS-V	260.63	268.21	277.20	276.55	324.73	1407.32
KTPS-VI	591.09	567.64	542.30	523.72	537.93	2762.69
RTS-B	43.56	48.66	51.62	51.76	62.51	258.12
KTPP-I	571.41	561.04	536.80	502.92	520.99	2693.16
KTPP-II	0.00	12.18	733.66	711.30	739.27	2196.41
NSHES	154.66	149.34	142.62	157.89	264.88	869.38
SLBHES	496.40	482.35	469.26	455.77	452.37	2356.14
Small Hydel	32.17	32.45	32.71	32.94	37.73	167.99
Mini Hydel	5.63	5.77	6.79	6.81	7.59	32.60
Pochampadu-II	7.85	7.71	7.69	7.45	8.24	38.94
PJHES	124.61	122.74	117.02	109.53	112.55	586.45
LJHES	0.00	105.38	227.10	274.00	273.85	880.33
PHES	0.00	0.00	19.63	44.65	75.76	140.05
Total	2842.33	2933.50	3757.46	3732.74	4056.65	17322.69
Additional interest on pension bonds	504.30	593.88	612.16	641.11	984.46	3335.91
Total	3346.63	3527.38	4369.62	4373.85	5041.11	20658.60
Water royalty	10.05	7.55	16.56	16.37	15.85	66.38
IT (SAP/FLM)				2.2	1.28	3.48
Total	3356.68	3534.93	4386.18	4392.42	5058.24	20728.46
KTPS-VII	0.00	0.00	0.00	0.00	287.97	287.97
Total	3356.68	3534.93	4386.18	4392.42	5346.21	21016.43
Income tax paid	23.42	14.64	34.12	29.96	-	102.14
Grand Total	3380.10	3549.57	4420.30	4422.38	5346.21	21118.57

The variation in revised fixed charges are mainly due the following:

- i. Variations in the rate of interest on loans;
- ii. Increase of employee cost for implementation of pay revision commitment (PRC-2018);
- iii. Phased out of KTPS (O&M) Units;
- iv. Incurred renovation & Modernization (R&M)/additional capital expenditure;
- v. Differed CoD of units and capitalized expenditure of KTPP-I, KTPS-VII, LJHES and PHES, etc.;
- vi. Actual interest on pension bonds over and above the schedule interest;
- vii. Incentives & secondary energy charges for generation beyond the target PLF for thermal generating stations and beyond the design energy for hydel generation stations claimed annually at the rates specified in the Regulation;
- viii. Income Tax paid by TSGenco during the FYs 2014-19 for an amount of Rs.102.14 crore is included;
- ix. Water royalty (charges & cess) of Rs 66.38 crore;
- x. IT (SAP/FLM) expenditure of Rs.3.48 crore;
- xi. Incentives & Secondary Energy charges;

- 2.2.3 The weighted average variable cost submitted by TSGenco for true up for 3rd control period from FY 2014-15 to FY 2018-19 is as shown in the Table below:

Table 4: Variable Cost claimed for 3rd control period from FY 2014-15 to FY 2018-19

<i>Rs./kWh</i>					
Station	FY 2014-15	FY 2015-16	FY 2015-16	FY 2017-18	FY 2018-19
KTPS-O&M	2.67	2.57	2.72	2.94	3.20
KTPS-V	2.19	2.21	2.32	2.66	2.82
KTPS-VI	3.39	2.89	2.93	3.04	3.13
RTS-B	2.63	3.03	3.15	2.96	2.94
KTPP-I	2.47	2.68	2.76	2.77	3.34
KTPP-II	NA	2.48	2.44	2.49	2.92
KTPS-VII	NA	NA	NA	NA	2.92

2.3 BUSINESS PLAN AND CAPITAL INVESTMENT PLAN FOR 4TH CONTROL PERIOD FROM FY 2019-20 TO FY 2023-24

- 2.3.1 TSGenco submitted Business Plan containing the financial statements such as Balance Sheet, Profit & Loss Statement and Cashflow Statement for each year of 4th control period from FY 2019-20 to FY 2023-24.
- 2.3.2 The summary of Capital Investment Plan submitted by TSGenco for MYT for 4th control period from FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 5: Summary of Capital Investment submitted by TSGenco for 4th control period

<i>Rs. in crore</i>								
Sl. No.	Name of the Station	Capacity (MW)	Addition FY 2019-20	Addition FY 2020-21	Addition FY 2021-22	Addition FY 2022-23	Addition FY 2023-24	Total addition
1	KTPS-O&M	420	1.96	0.00	0.00	0.00	0.00	1.96
2	KTPS-V	500	7.78	79.42	43.65	0.00	0.00	130.85
3	KTPS-VI	500	0.00	0.00	0.00	0.00	0.00	0.00
4	RTS-B	62.5	0.00	0.00	0.00	0.00	0.00	0.00
5	KTPP-I	500	0.00	0.00	0.00	0.00	0.00	0.00
6	KTPP-II	600	38.95	444.44	134.32	36.64	26.39	680.74
7	KTPS-VII	800	252.17	663.67	458.64	231.78	194.08	1800.34
8	BTPS	1080	6073.05	2749.99	1136.39	0.00	0.00	9959.43
9	YTPS	4000	0.00	0.00	0.00	24165.31	2900.08	27065.39
10	NSHES	875.6	0.00	0.00	0.00	0.00	0.00	0.00
11	SLBHES	900	0.00	0.00	0.00	0.00	0.00	0.00
12	Nizam Sagar	54	0.00	5.00	5.00	5.11	0.00	15.11
	Pochampad-I		0.00	0.00	0.00	0.00	0.00	0.00
13	Mini Hydels	9.16	0.00	9.3	4.55	3.24	0.00	17.09
14	PJHES	234	0.00	0.00	0.00	0.00	0.00	0.00
15	LJHES	240	5.02	50.67	28.15	17.87	18.7	120.41
16	PCHES	120	7.34	20.29	9.27	9.15	9.5	55.55
17	KTPS-VII	-	0.00	40.00	0.00	0.00	0.00	40.00
18	IT initiative	-	0.70	5.50	15.00	5.00	1.00	27.20

Sl. No.	Name of the Station	Capacity (MW)	Addition FY 2019-20	Addition FY 2020-21	Addition FY 2021-22	Addition FY 2022-23	Addition FY 2023-24	Total addition
	Total	6904.26	6386.27	4062.78	1819.97	24469.1	3148.75	39914.07

2.4 MYT FOR 4TH CONTROL PERIOD FROM FY 2019-20 TO FY 2023-24

2.4.1 The GFA addition claimed by TSGenco for MYT for FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 6: GFA claimed for 4th control period

Rs. in crore

Sl. No.	Name of the Station	GFA as on 01.04.2019	Additions 2019-20	Additions 2020-21	Additions 2021-22	Additions 2022-23	Additions 2023-24	Total additions
1	KTPS-O&M	773.20	0.00	0.00	0.00	0.00	0.00	0.00
2	KTPS-V	2159.05	7.78	79.42	0.00	0.00	0.00	87.2
3	KTPS-VI	2530.95	0.00	0.00	0.00	0.00	0.00	0.00
4	RTS-B	127.53	0.00	0.00	0.00	0.00	0.00	0.00
5	KTPP-I	2587.76	0.00	0.00	0.00	0.00	0.00	0.00
6	KTPP-II	3405.82	38.95	444.44	134.32	36.64	26.39	680.74
7	KTPS-VII	4605.02	252.17	663.67	458.64	231.78	194.08	1800.34
8	BTPS	0.00	6073.05	2749.99	1136.39	0.00	0.00	9959.43
9	NSHES	1948.75	0.00	0.00	0.00	0.00	0.00	0.00
8	SLBHES	3376.06	0.00	0.00	0.00	0.00	0.00	0.00
10	Small Hydel	121.02	0.00	0.00	0.00	0.00	0.00	0.00
11	Mini Hydels	31.35	0.00	0.00	0.00	0.00	0.00	0.00
12	Pochampad-II	29.74	0.00	0.00	0.00	0.00	0.00	0.00
13	PJHES	691.91	0.00	0.00	0.00	0.00	0.00	0.00
14	LJHES	1555.90	5.02	50.67	28.15	17.87	18.7	120.41
15	PCHES	445.30	7.34	20.29	9.27	9.15	9.50	55.55
16	IT(SAP/FLM) initiatives	0.00	0.70	5.50	15.00	5.00	1.00	27.20
	Total	24389.35	6384.31	4008.48	1766.77	295.44	248.67	12730.87

2.4.2 The AFC claimed by TSGenco for MYT for 4th control period from FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 7: AFC claimed for 4th control period from FY 2019-20 to FY 2023-24

Rs. in crore

Sl. No.	Name of the Station	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
1	KTPS-O&M	703.22	0.00	0.00	0.00	0.00	703.22
2	KTPS-V	422.96	417.27	427.11	420.91	326.91	2015.16
3	KTPS-VI	555.7	556.85	558.28	559.3	444.12	2674.25
4	RTS-B	121.75	125.01	128.53	132.17	135.16	642.62
5	KTPP-I	504.93	499.64	492.48	485.76	349.61	2332.42
6	KTPP-II	788.79	755.22	869.27	899.54	893.96	4206.78
7	KTPS-VII	1025.77	1040.34	1124.98	1226.68	1268.77	5686.54
8	BTPS	0.00	602.56	2201.16	2436.44	2389.89	7630.05
9	Nagarjuna Complex	363.19	361.68	360.47	359.58	359.02	1803.94

Sl. No.	Name of the Station	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
10	Srisaillam LBHES	472.61	469.69	467.02	464.62	462.5	2336.44
11	Small Hydel	50.16	51.83	53.53	55.14	56.83	267.49
12	Mini Hydels	10.09	10.28	10.5	10.73	10.99	52.59
13	Pochampad-II	11.19	11.36	11.54	11.75	10.82	56.66
14	Priyadharshini Jurala	146.92	144.95	143.09	141.35	139.72	716.03
15	Lower Jurala	281.86	274.97	279.28	276.46	270.91	1383.48
16	PCHEES	130.00	131.22	135.08	136.78	138.55	671.63
	Total	5589.13	5452.86	7262.33	7617.22	7257.75	33179.29
i	Additional Interest on pension bonds (Over and above schedule)	1080.07	1175.11	1281.34	1394.83	1517.03	6448.38
ii	Provisions	61.06	96.71	114.23	103.7	113.33	489.04
	Grand Total	6730.26	6724.69	8657.90	9115.75	8888.11	40116.71

- (a) All taxes, duties, cess, fee payable to Government on the generation and /or supply of electricity and/or auxiliary consumption shall be extra and payable at actuals;
- (b) Revolving Letter of Credit to be opened by the beneficiary for an amount of one (1) month's receivable and thereupon the applicable rebate be allowed;
- (c) Surcharge: The surcharge @ 1.25% per month for belated payment may be allowed;
- (d) Billing and payment of charges: Billing and payment charges shall be done on monthly basis;

2.4.3 The variable cost claimed by TSGenco for 4th control period from FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 8: Variable Cost claimed for 4th control period from FY 2019-20 to FY 2023-24

Station	Variable cost/Wt. Avg FCA (Rs./kWh)
KTPS-O&M	3.32
KTPS-V	2.76
KTPS-VI	2.73
RTS-B	3.04
KTPP-I	3.02
KTPP-II	2.90
KTPS-VII	2.55
BTPS	2.55

2.4.4 The Applicant prays for interim tariff to have a legal basis for the claim and recovery of fixed, variable and other costs and amounts pending final disposal of the application and determination of tariff and capital cost of new stations (KTPP-VII & BTPS) and to direct the Respondents/Discoms to pay to the Petitioner for 4th control period FY 2019-20 and FY 2020-21.

- The variable costs for the energy delivered by the Applicant to the Respondent Discoms for 01.04.2019 at the various rates set out in Annexure-7 of the Retail Supply Tariff Order dated 27.03.2018 for FY

2018-19 duly adjusted for actual gross calorific value of the fuel and the actual landed costs of fuel for each month;

- And variable costs for the energy delivered by the Applicant to the Respondent Discoms from 01.04.2020 at the various rates set out in Annexure-III(c) of the ARR proposal dated 25.11.2019 for FY 2020-21 submitted by TSGenco duly adjusted for actual gross calorific value of the fuel and the actual landed costs of fuel for each month;
- Provide generation incentives as eligible based on actual generation; and/or such other order as the Hon'ble Commission may consider fit and expedient in the facts and circumstances of the case;



Chapter 3

Issues Raised by Stakeholders, Responses of Petitioner and Commission's Views

3.1 OBJECTIONS/SUGGESTIONS MADE ON FILINGS

3.1.1 Four (4) stakeholders have submitted objections/suggestions on the Petitions for approval of True-up for 3rd control period from FY 2014-15 to FY 2018-19, Business Plan, Capital Investment Plan and MYT for 4th control period from FY 2019-20 to FY 2023-24. The Petitioner has filed replies on the objections/suggestions received from the stakeholders. The objections/suggestions including additional objections/suggestions submitted in pursuant to the Commission's directions during the Public Hearing have been considered by the Commission. For the sake of clarity, the objections/suggestions raised by the stakeholders and responses of the Petitioner have been consolidated and summarised issue-wise. The Commission has concluded all the objections/suggestions of the stakeholders made in writing as well as oral during public hearing and the responses to them by the Petitioner.

3.2 DEFICIENCY IN DATA/INFORMATION

Stakeholders' submissions

3.2.1 The Commission should direct TSGenco to submit performance parameters of all thermal stations of TSGenco for last 2-3 years in accordance with Regulations No.1 of 2019, which are necessary for technical and financial prudence check to determine generation tariff. In addition, the Balance Sheets of TSGenco are not available on the website. At least two years Balance Sheets are required to be made available for review. The Commission should direct TSGenco to provide data in excel sheets for calculating and making meaningful objections or suggestions.

3.2.2 The information on virtual public hearing through video conference to be held on 31.05.2021 was communicated on 29.05.2021. TSGenco sent replies to written submissions (dated 30.03.2021) on 29.05.2021, i.e., nearly after two months on the same day when date of public hearing was conveyed, which does not provide adequate time to the objectors to study and submit replies. Therefore, the Commission should direct the Petitioners and the Discoms to

send their replies to the submissions of objectors well in time, i.e., at least one week before scheduled public hearing.

- 3.2.3 ESCOMs of Karnataka take 50% of power from PJHEP (117 MW). Since, TSGenco has not sent true up and tariff Petition regarding PJHEP to the Power Company of Karnataka Limited (PCKL)/Karnataka ESCOMs, the Commission should direct them to send the copy of the Petitions to Karnataka ESCOMs/PCKL and allow Karnataka ESCOMs/PCKL to file objections within 15 days thereafter.

Petitioner's replies

- 3.2.4 The performance parameters of thermal power plants of TSGenco of last two (2) years for FY 2019-20 & FY 2020-21 in terms of norms of operation as per Clause 17 of Regulations No.1 of 2019 are submitted.
- 3.2.5 The Balance Sheet of two (2) years for TSGenco and Tariff filing in excel format have been submitted to the Commission and also made available on the website of TSGenco (www.tsgenco.co.in). Further, the Tariff filings for 4th control period from FY 2019-20 to FY 2023-24 in excel format have also been submitted.
- 3.2.6 TSGenco has submitted relevant information to the Commission as per Regulatory requirements. The detailed information relating to the expenditure incurred during 3rd control period is available in the Annual Accounts Report submitted to the Commission. The copy was also mailed to the stakeholders.

Commission's View

- 3.2.7 As per directions of the Commission, the petitioner has published a 'Public Notice' on 25.05.2021 notifying revised schedule of the public hearing as 31.05.2021. The Commission has noted the submissions of the stakeholders and TSGenco. The Commission has considered the data submitted by TSGenco in its Petition and the replies submitted to the Commission's queries for arriving at the ARR, Capitalisation and AFC as detailed in Chapter 4, 5 & 6. Further, the Commission is in receipt of objections/suggestions submitted by the Escoms of Karnataka on filings of TSGenco.

3.3 NON-PARTICIPATION OF PARTIES IN THE PROCEEDINGS

Stakeholders' submissions

- 3.3.1 The Commission should direct TSDiscoms to submit their counter as respondents and make the same accessible to the objectors by uploading the same on the website of the Commission. With powers of a Civil Court bestowed on it as per Law, the Commission can direct TSDiscoms to file their counters as respondents. Moreover, TSDiscoms need to address several issues like need for purchasing power from the TSGenco, overall situation of availability of power to the TSDiscoms under PPA in force and PPAs already signed, fluctuating demand for power in the Telangana State, whether there is surplus or deficit for energy, whether TSDiscoms have been purchasing additional power from the market to meet peak demand, whether they have been backing down surplus power and paying fixed charges, etc. As all said issues are linked with regulatory process and should be explained by TSDiscoms. Above all, the Discoms have an inherent obligation to protect their interests and interest of consumers through their effective participation in the regulatory process of the Commission.
- 3.3.2 During virtual public hearing dated 31.05.2021, TSDiscoms maintained silence, which shows TSDiscoms have no objections to the claims of TSGenco. As standard practice in the regulatory process TSDiscoms should file their objections/suggestions, and if they do not have any objections to the claims of TSGenco, at least they should have filed submitting that they have no objections. One of the fundamental requirements of the regulatory process and existence of the ERCs is to protect interests of the stakeholders, especially of the unorganised and vast multitude of consumers of power in the State. If agreements and transactions between TSDiscoms and other entities like TSGenco and developers of private power plants with whom the TSDiscoms enter into PPAs or agreements contain elements of manipulations and collusion, it might be detrimental to the interest of larger consumers. Therefore, the Commission should protect the interest of the consumers through the regulatory process.
- 3.3.3 In a court of law, if the respondents concerned do not respond to the Petition, the Court can draw adversarial inference and give its Order, and the

respondents suffer the consequences thereof. Issuance of public notice, calling for views, objections and suggestions in the Petitions concerned, is intended for the public at large, not for Petitioners and Respondents. Recently, when the Petition of APTransco for true-up came up for hearing before the Hon'ble APERC, considering the comment of the stakeholders, the Hon'ble APERC directed issuance of a notice to the Discoms to file their responses to the Petition and the Discoms agreed to be impleaded in the said Petition (Record of proceedings of APERC dated 24.03.2021 relating to OP No.46 of 2020 and I.A.No.1 of 2021 of APTransco).

Petitioner's replies

3.3.4 There is no reply from TSGenco.

Commission's View

3.3.5 The Commission issues notices to all the respondents, as directed by the Commission the petitioner published a public notice in daily newspapers inviting objections/suggestion from all interested stakeholders and public at large on TSGenco's Petitions and it is on the choice of individual stakeholder to submit objections/suggestions and it is the choice of individual stakeholder to submit objection/suggestions. The Commission cannot insist any stakeholder to submit objections/suggestions. However, TSDiscoms, as respondents, were expected not merely present but actively to participate in this process to ensure transparency. The Commission is of the view that the better participation in the public consultation process would increase effectiveness of Regulatory system.

3.4 NECESSITY FOR CAPACITY ADDITION AND POWER PURCHASE AGREEMENTS

Stakeholders' submissions

3.4.1 Currently, power sector is undergoing a lot of changes, and decisions regarding capacity addition need to include these dynamic parameters. The prevalent capacity addition plan followed in Telangana State does not account for the changes that have occurred in the last few years. If capacity addition continues in this way, without accounting for alternative RE generation and changes in load, the State's power sector will be burdened with long-term lock-ins and stranded assets.

- 3.4.2 The capacity additions considered are high cost and coal-based and will likely remain in the generation mix of the State for a long time, resulting in high costly base load surplus. In order to prevent stranded assets and sunk costs, a proper assessment of demand in the State should be carried out.
- 3.4.3 Capacity approved by the Commission in its Order dated 02.03.2020 in O.P.No.2 of 2019, need to be reviewed in light of changing scenario for demand in the Telangana State. The Commission in above referred Order considered BTPS, YTPS and first phase of 2x800 MW of Telangana State Thermal Power Project (TSTPP) of NTPC. While as per A.P. Reorganisation Act, 2014, TSTPP has to implement the total capacity of 4000 MW (5x800 MW) for the Telangana State. However, the balance capacity of 2400 MW of the project has not been included in the generation capacity for 4th control period. Even for the first phase of 1600 MW, it has not been made public whether revised PPA has been submitted to the Commission as directed by the Commission in its interim Order dated 30.07.2016 in O.P.No.10 of 2016. The basis for taking into account only 1300 MW instead of 1600 MW in the Order is not explained by the Commission. Since, no public hearing was held on the PPA of first phase, the Commission should conduct public hearing before approval of the PPA to get required clarity regarding remaining 3x800 MW. YTPS has not been included in the present Petition for tariff determination.
- 3.4.4 As per Order in O.P.No.2 of 2019, the generation capacity for 4th control period includes the entire capacities of BTPS and YTPS and total installed capacity available to TSDiscoms ranges from 19487.31 MW for the FY 2020-21 to 22893.73 MW for FY 2023-24. Since, ARR and tariff proposals for FY 2019-20, FY 2020-21 and FY 2021-22 have not been filed by the TSDiscoms, information regarding actual demand growth, requirement of power and need for addition of generation capacity, balance in power mix, whether there has been availability of surplus power or shortage for power, etc., are not in the public domain. TSGenco is seeking determination of capital costs of new projects and generation tariffs for old and new projects, without seeking approval for PPAs. It is the obligation of the TSDiscoms to substantiate and justify need for power from the projects of TSGenco as proposed in the

present Petition. The Commission should review the factual position of demand growth, availability of generation capacity, energy, surplus or deficit and then determine whether power from the new projects of TSGenco is required or not and after that approve PPA through public hearing process.

- 3.4.5 Clarity regarding availability of power from four new gas-based power projects i.e., share of 783 MW to TSDiscoms from Konaseema, GVK, Vemagiri and Gowthami projects should be provided. Also, the efforts being made by GoTS and GoAP to get supply of natural gas to these projects, in view of availability of natural gas in KG D6 basin should be clarified.
- 3.4.6 Capacity addition in 4th control period is not required. It may lead to imbalance in power mix and availability of unwarranted surplus power with resultant avoidable burdens on the consumers of power of the Discoms. Therefore, the Commission should direct TSDiscoms to submit information regarding demand growth, availability of power and generation capacity, surplus power, selling of the surplus power in the market backed down power and paying fixed charges, etc. and purchasing of additional power on short-term basis or through exchanges to meet peak deficit, if any. TSDiscoms to submit details regarding equilibrium to the extent possible between fluctuating demand curve and power mix, especially in view of addition of new generation capacities, including solar and wind power capacities, already made and proposed to be made, needs to be examined.
- 3.4.7 As per several reports i.e., Telangana's Power for All report, CEA's Broad Status Report, and TSERC's Order on annual fee and operating charges for SLDC for 4th control period, several coal-based plants are expected to come. These include both central capacity such as TSTPP, and state capacity such as BTPS and YTPS. Also, as per CEA report, KTPS-O&M was partially decommissioned by FY 2018-19. This leaves 420 MW of KTPS-O&M, as reflected in the current tariff filings. However, in SLDC Order generation from this capacity, and RTS-B is not claimed beyond FY 2019-20. It is not clear such treatment is due to retirement of these capacity owing to their advanced age or for some other reason. TSGenco's tariff filing for 4th control period from FY 2019-20 to FY 2023-24 only includes details on plants that have already

been commissioned and is operational. It does not include details about capacity in the pipeline or capacity likely to be retired in 4th control period.

- 3.4.8 TSGenco, in its presentation during the virtual public hearing, narrated various issues like consideration of power for all, consideration of capacity addition of 18430 MW under State sector by Ministry of Power, increasing demand from industrial sector, shortage for power due to bifurcation of the State (even after 7 years of bifurcation and contrary to the claims of the authorities concerned that surplus has been achieved earlier), retirement of 720 MW capacity of KTPS-O&M, power for lift irrigation schemes, EPS survey of CEA, etc. Such generalised narration does not give factual ground reality. TSDiscoms should file reply instead of TSGenco on issues of availability of power from various sources, fluctuation in demand and surplus power available.
- 3.4.9 TSGenco informed that, during 3rd control period, some of its thermal units were backed down to the tune of 5455.76 MU. TSGenco could not give total backing down capacities in the State, including central generating stations and the information relating to backing down during FY 2019-20 and FY 2020-21. In view of slump in the economy and prevalence of COVID-19 pandemic, it is widely reported that there has been substantial slump in demand for power in the Country and various States. The Commission should have directed TSDiscoms to submit such relevant information relating to the Telangana State and examine the same and make such information accessible to the stakeholders who requested for the same to enable them to study it and make further submissions. TSDiscoms continuing to defy regulatory requirements and directives, if any, of the Commission, to submit their proposals for ARR and tariff proposals within specified time limit, information relating to the above-mentioned issues, among others, continues to be shrouded in secrecy. Though TSDiscoms have not submitted their ARR and tariff proposals for FY 2019-20, FY 2020-21 and FY 2021-22 so far, the Commission has not taken up the same issue suo-motu as permitted by law. No information is made public to what extent revenue deficits, and losses, the TSDiscoms have got accumulated. If the TSDiscoms claim the same under true-up, same shall be burden on the consumers.

- 3.4.10 The terms and conditions of PPA is binding on the parties till its expiry. Revision of fixed charges and capital cost based on the submission of developer is not in line with standard regulatory practice.
- 3.4.11 TSGenco is seeking determination of capital cost and tariff of KTPS-VII for 3rd control period, without submitting PPA and related documents which are imperative for regulatory process. If the PPA was submitted, the Commission should make it public and hold public hearing on the same.
- 3.4.12 Further, TSGenco has submitted that PPAs have been submitted to the Commission. Without PPA, capital cost and tariffs cannot be determined. Clause 4.2.7 of Regulations No.1 of 2019 specify to file the application for determination of final tariff for new generating station within one hundred and eighty days (180) from the COD of generating unit. Clause 4.3.2 specify that where there is no power purchase agreement or arrangement, the supply of electricity by such generating entity to the Distribution Licensee after April 1, 2019, shall be in accordance with power purchase agreement or arrangement approved by the Commission. The petition for approval of such power purchase agreement or arrangement shall be filed by the Distribution Licensee with the Commission within three months from the date of notification of these Regulations.
- 3.4.13 The Regulation also specifies that the Commission shall, within one hundred and twenty (120) days from receipt of a complete Petition, and after considering all objections and suggestions received from the public, issue a Tariff Order accepting the Petition with such modifications or conditions as may be stipulated in that Order.
- 3.4.14 There are some deficiencies in the terms and conditions of the PPAs as well as applicable Regulations and the same shall be submitted during public hearing on PPAs scheduled on 30.06.2021.
- 3.4.15 TSDiscoms have the obligation to submit PPAs to the Commission for approval. They have to protect their interest and consumer's interest. TSGenco during the public hearing submitted that prior consent of the Commission is not required for approval of PPA. The Commission should

examine PPA thoroughly before approving capital cost and tariff to protect consumer interest.

- 3.4.16 In response to the issue of submitting PPAs and holding public hearings on PPA approval, TSGenco submitted that in O.P.Nos.14 to 25 of 2012 (Suo Moto) dated 11.08.2014, the Commission specified that Regulation does not specify the need for the Commission's consent for PPAs entered between Genco and Discom for them to become effective. TSGenco submitted that as the Tariff of TSGenco is determined and regulated by the Commission under Section 62 of Electricity Act, it can be stated that the Regulatory Consent to PPAs entered between TSGenco and TSDiscoms is not mandatory. The standard practice of the erstwhile APERC, other SERCs and CERC is to take PPAs for public hearing to protect the interest of consumers. No Regulation categorically and specifically maintains that consent of ERC to PPA is not mandatory.
- 3.4.17 The Commission should take up approval of PPAs between TSGenco and TSDiscoms for public hearing, preferably one by one, in time.
- 3.4.18 Further, the Commission should follow the public process for approval of PPAs of KTPS-VII and BTPS as public process was followed in the case of consent to PPA between TSDiscoms and Chhattisgarh State Discoms, Purchase of 1,000 MW of power on long term basis vide Order dated 31.03.2017 (O.P.No.93 of 2015), approval of PPA between NTPC and TSDiscoms on Telangana Super Thermal Power Project (Phase I) (2x800 MW) vide Order dated 30.07.2016 (O.P.No.10 of 2016) and approval of PPA between Singareni Collieries Company Ltd (SCCL) and TSDiscoms vide Order dated 19.06.2017 (O.P.No.9 of 2016).
- 3.4.19 Also, Section 86 (3) of the Electricity Act, 2003 emphasis on transparency for the State Commission while exercising its powers and discharging its functions. To ensure transparency, the information that is accessible to the Commission shall also be accessible to all the stakeholders including the public/consumers of electricity.

3.4.20 The Commission should direct TSGenco to make these PPAs publicly available and the Commission to conduct public hearing process on the same and prudence check of capital cost before approving it.

Petitioner's replies

3.4.21 TSGenco has planned capacity additions to the tune of over 6000 MW from conventional sources to ensure 24x7 quality, reliable and affordable power supply to all domestic, commercial, agriculture and industrial consumers in line with the policies of the Government of Telangana State. The BTPS and YTPS are part of such capacity addition plan.

3.4.22 Further, energy consumption is directly related to economic growth and GDP of the Country. TSGenco is committed to meet the demand of manufacturing sector, transportation, households need, State Government Schemes, etc., by generating qualitative power at competitive prices.

3.4.23 In the research reports published by Deloitte depicts annual power consumption increases of up to 3.2% between 2012 and 2040. In April 2021, there is a growth rate of 35% in demand in the Telangana State compared to previous year. The Generation capacity of BTPS and YTPS has been approved by the Commission in SLDC Order dated 02.03.2020 in O.P.No.2 of 2019.

3.4.24 Solar generation is available in the day time in a ramp up/ramp down pattern with variation on hour to hour and day to day basis, which is mostly uncertain. The generation from solar has to be absorbed and it has to be treated as must run. Hydel generation is dependent on vagaries of nature. The balancing has to be carried out only by varying conventional thermal generation by way of backing down/recall and hydel, if available. To meet the demand from upcoming irrigation schemes, industrial growth, and 24x7 power supplies in line with policies of the Government of Telangana State, the power from the new power plants i.e., BTPS and YTPS is essential.

3.4.25 Eight (8) units of KTPS-O&M have been phased out by 31.03.2020 which includes 300 MW during 3rd control period and 420 MW during FY 2019-20. The generation from 420 MW old KTPS-plant was considered for FY 2019-20.

For RTS-B, generation was considered for 4th control period from FY 2019-20 to FY 2023-24.

- 3.4.26 The Clause 4.2.3 of Regulations No.1 of 2019 specifies to file the application for determination of provisional tariff for new station 180 days prior to the anticipated COD of generating unit or Station. Accordingly, it is proposed to file the Capital cost, provisional tariff filing before 180 days prior to the anticipated COD of YTPS.
- 3.4.27 Based on the requirement of power to the Telangana State, TSGenco has taken up the new power projects and the TSDiscoms had entered into PPAs for providing 24x7 power to the industrial, agriculture and households.
- 3.4.28 TSGenco submitted PPAs of all thermal and hydel generating station of TSGenco to the Commission. Further Clause 4.3.1 of Regulations No.1 of 2019 specify that at any time prior to April 1, 2019, if there is an approved power purchase agreement or arrangement between a generating entity and a Distribution Licensee or has adopted the Tariff contained therein for supply of electricity from an existing generating unit/station, then the Tariff for supply of electricity by such generating entity to the Distribution Licensee shall be in accordance with the Tariff mentioned in such power purchase agreement or arrangement for such period as so approved or adopted by the Commission. PPA has been entered for BTPS station.
- 3.4.29 As regards deficiencies in the terms and conditions of PPAs, TSGenco submitted that PPAs have been entered considering the provisions of TSERC Regulations.

Commission's View

- 3.4.30 The Commission initiated the Suo-Moto proceeding for approval of PPAs entered between TSDiscoms and TSGenco and invited the objections/suggestions from the stakeholders and public at large. The Public Hearing in the subject matter was held through video conference on 30.06.2021. The Commission has issued Order in O.P.Nos.15 to 19 of 2021 on 06.08.2021 for approval of PPAs entered between TSDiscoms and TSGenco. The Commission views in the said order with regard to issue of necessity of capacity addition and other issues related to PPAs are as hereunder:

“The reliable power system operation requires constant balancing of supply and demand in accordance with prescribed operating criteria such as maintaining system voltages and frequency within acceptable limits. The thermal, hydro and renewable mix power development assume more significance to maintain the State Electricity Grid within IEGC prescribed limit of 49.85 Hz to 50.05 Hz. The Commission has observed that as per CEA reports, the peak power demand of the Telangana State has increased from 6755 MW in FY 2014-15 to 13,688 MW in FY 2020-21. During this period, the energy requirement has grown from 39,866 MU to 67,696 MU. Thus, the peak power demand and energy requirement have increased at Compound Annual Growth Rate (CAGR) of 12.49% and 12.60%, respectively, from FY 2014-15 till FY 2020-21.

The Commission has observed that in the 19th Electric Power Survey report (EPS) brought by CEA, it has been forecasted that the maximum demand (MW) and energy requirement (MU) for Telangana State to increase from 14,499 MW and 84,603 MU by FY 2021-22 to the level of 18,653 MW and 1,04,345 MU by FY 2026-27.

As per the EPS report, power demand for the Telangana State is forecasted to grow by 4.29% which is considerably lower than 12.49% actual growth in power demand for the past years. Increase in power demand in upcoming years is mainly due to the ambitious Lift Irrigation Projects being implemented in the Telangana State and GoTS policy of 24x7 uninterrupted power for all categories of supply including agriculture sector. The Commission while approving the Transmission Charges and SLDC Charges for the MYT Period from FY 2019-20 to FY 2023-24 in Orders dated 20.03.2020 and 02.03.2020 respectively, has considered the generation capacity of approximately 17,900 MW including open access generation (excluding renewable generation) for FY 2021-22, which is broadly sufficient to meet the present existing power demand and energy requirement. The energy not met and peaking deficit for the period since formation of Telangana State as per CEA report from FY 2014-15 to FY 2019-20 is as given below:

Table 9: The Energy not met and Peaking deficit for the period since formation of Telangana State

Sl. No.	Year	Energy Requirement	Energy Supplied	Energy not Supplied	in %	Peak Demand	Peak Met	Peak Demand not Met	in %
1	2014-15	43337	40644	2693	6.21%	7884	6755	1129	14.32%
2	2015-16	50254	49948	306	0.61%	6854	6849	5	0.07%
3	2016-17	53029	53017	12	0.02%	9187	9187	0	0.00%
4	2017-18	60318	60237	81	0.13%	10298	10284	14	0.14%
5	2018-19	66489	66427	62	0.09%	10815	10815	0	0.00%
6	2019-20	68306	68303	3	0.00%	13168	13168	0	0.00%
7	2020-21	67696	67696	0	0.00%	13595	13595	0	0.00%

Installed capacity in Telangana State for the period from the formation year of Telangana State i.e., from FY 2014-15 to FY 2019-20 as per CEA report is as given below:

Table 10: Installed capacity in Telangana State for the period from formation of Telangana State

Year	Ownership/ Sector	Thermal Mode wise breakup					Nuclear	Hydro	RES (MNRE)	Grand Total
		Thermal								
		Coal	Lignite	Gas	Diesel	Total				

Year	Ownership/ Sector	Thermal Mode wise breakup					Nuclear	Hydro	RES (MNRE)	Grand Total
		Thermal								
		Coal	Lignite	Gas	Diesel	Total				
2014-15	State	3606.59	0.00	0.00	0.00	3606.59	0.00	2012.54	0.00	5619.13
	Private	270.00	0.00	1697.75	19.83	1987.58	0.00	0.00	61.25	2048.83
	Central	1653.28	0.00	0.00	0.00	1653.28	148.62	0.00	0.00	1801.90
	Total	5529.87	0.00	1697.75	19.83	7247.45	148.62	2012.54	61.25	9469.86
2015-16	State	3606.59	0.00	0.00	0.00	3606.59	0.00	2012.54	0.00	5619.13
	Private	270.00	0.00	1697.75	19.83	1987.58	0.00	0.00	61.25	2048.83
	Central	1653.28	0.00	0.00	0.00	1653.28	148.62	0.00	0.00	1801.90
	Total	5529.87	0.00	1697.75	19.83	7247.45	148.62	2012.54	61.25	9469.86
2016-17	State	5082.50	0.00	0.00	0.00	5082.50	0.00	2449.93	40.22	7572.65
	Private	839.45	0.00	950.88	0.00	1790.33	0.00	0.00	3609.30	5399.63
	Central	1956.12	0.00	0.00	0.00	1956.12	148.73	0.00	10.00	2114.85
	Total	7878.07	0.00	950.88	0.00	8828.95	148.73	2449.93	3659.52	15087.13
2017-18	State	5082.50	0.00	0.00	0.00	5082.50	0.00	2449.93	40.22	7572.65
	Private	839.45	0.00	950.88	0.00	1790.33	0.00	0.00	3609.30	5399.63
	Central	1956.12	0.00	0.00	0.00	1956.12	148.73	0.00	10.00	2114.85
	Total	7878.07	149.27	950.88	0.00	8828.95	148.73	2449.93	3659.52	15087.13
2018-19	State	5582.50	0.00	0.00	0.00	5582.50	0.00	2479.93	41.22	8103.65
	Private	839.45	0.00	831.82	0.00	1671.27	0.00	0.00	3936.44	5607.71
	Central	1806.85	149.27	0.00	0.00	1956.12	148.73	0.00	10.00	2114.85
	Total	8228.80	149.27	831.82	0.00	9209.89	148.73	2479.93	3987.66	15826.21
2019-20	State	5162.50	0.00	0.00	0.00	5162.50	0.00	2479.93	41.22	7683.65
	Private	1389.45	0.00	831.82	0.00	2221.27	0.00	0.00	3973.60	6194.87
	Central	1806.85	179.92	0.00	0.00	1986.77	148.73	0.00	10.00	2145.50
	Total	8358.80	179.92	831.82	0.00	9370.54	148.73	2479.93	4024.82	16024.02
2020-21	State	5972.50	0.00	0.00	0.00	5972.50	0.00	2479.93	41.22	8493.65
	Private	1389.45	0.00	831.82	0.00	2221.27	0.00	0.00	4326.77	6548.04
	Central	1806.85	210.57	0.00	0.00	2017.42	148.73	0.00	10.00	2176.15
	Total	9168.80	210.57	831.82	0.00	10211.19	148.73	2479.93	4377.99	17217.84
2021-22 till Jun'21	State	5972.50	0.00	0.00	0.00	5972.50	0.00	2479.93	41.22	8493.65
	Private	1389.45	0.00	831.82	0.00	2221.27	0.00	0.00	4338.25	6559.52
	Central	1806.85	210.57	0.00	0.00	2017.42	148.73	0.00	10.00	2176.15
	Total	9168.80	210.57	831.82	0.00	10211.19	148.73	2479.93	4389.47	17229.32

This signifies that the Telangana State is predominantly a Thermal Power State with a good backing of Hydro power. Further, Telangana State is also a Renewable Rich State having installed capacity based on Renewable Energy Source more than 3000 MW (4,389.47 MW). Whereas, the RE capacity not only has low Plant Load Factor (PLF) or Capacity Utilization Factor (CUF) around 20%, but is also not available during electricity peak demand hours. The Solar power is not available during the peak demand hours and the wind is available only during the season [Apr-Sep months]. Thus, the RE power contributes lesser towards meeting the energy requirement during the peak load demand. On the other hand, during day-time it meets most of the agriculture demand and offset the second peak demand which is occurring during day-time between 8:00 hours and 9:00 hours.

Capacity Additions

As per TSDiscoms presentation during the Public Hearing held on 30.06.2021 in the matter of approval of PPAs between TSGenco and TSDiscoms, the total capacity addition in progress is 8,313 MW.

Retirement of Units

Further, Kothagudem Thermal Power Station (KTPS) ABC stations (KTPS-O&M) [4x60+2x120+2x120=720 MW] i.e., 8 thermal units with a total installed capacity of 720 MW has been closed on 31.03.2021. Further, TSDiscoms vide

Lr.No.CGM(IPC&RAC)/SE/RAC/F.NTPC&NLC/D.No.417/21, dated 7.07.2021 has informed that TSDiscoms have decided for relinquishing the TS Share from NTPC Ramagundam Super Thermal Power Station I&II [346.71 MW] and from NLC Thermal Power Station-I&II [182.20 MW], as the life of these stations have completed more than 25 years and the landed cost of the above projects are at higher side compared to procurement of energy by operating the State Generating Plants at higher PLF or from market purchases. In addition, in the National Electricity Plan (NEP) (Volume I) Generation, GoI, MoP, CEA January 2018, KTPS-V Unit 9&10 [2x250=500 MW] project has been listed in Projects considered for retirement in Telangana State as per new environmental norms (thermal station units without space for FGD installation and shall attain age of =>25 years on 1/1/2022) as on August,2017). In addition, as reported by the TSDiscoms the following are the details of expiry of existing PPAs before FY 2024-25.

Table 11: Details of expiry of existing PPAs before FY 2024-25

Sl. No.	Type	Generating Station/Source	Installed Capacity (MW)	TS Share	Type of Generator	PPA signed date	Expiry of PPA
1)	Long-Term	RTS-B	62.5	62.5	Thermal	17.09.2019	31.03.2024
2)	Long-Term	Talcher-II	2000	215	Thermal	13.08.2015	05.04.2023
3)	Long-Term	Sembcorp	1320	570	Thermal	18.02.2016	29.03.2024
4)	Medium-Term	PTC India Ltd.		550	Thermal	27.10.2018	30.09.2021

Spinning Reserve

The National Electricity Policy, 2005 stipulates a Spinning Reserve requirement of 5% to overcome energy and peaking shortages. Spinning reserve is used to balance the synchronous system both up and downwards. Hydropower supports the dynamic behaviour of the grid operation.

By considering ever growing peak demand & energy requirement, present installed capacity, capacity additions in progress, retirement of thermal units and 5% spinning reserve, there is dearth for additional power projects based on thermal, hydro and renewable mix to derive timely benefits. It is thus clear that an increase in generating capacity is essential in order to reduce the shortfall of electrical power and to meet the present and future agricultural power demand as well as other developmental activities in the Telangana State. Therefore, the Commission opines that the need for procurement of power by TSDiscoms from TSGenco Power Projects through the envisaged PPAs is justified. The power generated from Power Projects will help in bridging the gap between electrical power demand and availability for the Telangana State.”

3.5 CAPITAL COST OF EXISTING PLANTS

Stakeholders' submissions

- 3.5.1 The Petition reveals that TSGenco is going to spend Rs.680.74 crore, Rs.120.41 crore and Rs.55.55 crore for KTPS-II, Lower Jurala HES and

Pulichintala HES, respectively, during 4th control period from FY 2019-20 to FY 2023-24. As regards KTPS-II, proposed capital cost is 20% over and above the approved capital cost. TSGenco has not given any explanation for these expenditures.

Petitioner's replies

- 3.5.2 The Commission approved the capital cost as Rs.1542.78 crore for Lower Juarala HES and Rs.433.85 crore for Pulichintala HES in GTO dated 05.06.2017. The balance works of Lower Jurala HES and Pulichintala HES were under progress and the details for the same have been submitted to the Commission for approval.

Commission's View

- 3.5.3 The Commission in the GTO dated 05.06.2017 had approved the final capital cost as on COD of the project and the provisional additional capitalization up to cut-off date. The Commission has undertaken the prudence check of additional capital expenditure incurred in 2nd control period for FY 2014-15 to FY 2018-19 based on the justification furnished by TSGenco. After prudence check, the Commission has approved the additional capitalization as detailed in Chapters 4, 5 and 6.

3.6 CAPITAL COST OF NEW PLANTS

Stakeholders' submissions

- 3.6.1 TSGenco has proposed capital cost of Rs.5865 crore and Rs.9959.43 crore for KTPS-VII and BTPS, respectively, which works out to Rs.7.33 crore per MW and Rs.9.22 crore per MW for KTPS-VII and BTPS respectively.
- 3.6.2 The Commission in GTO dated 05.06.2017 determined capital cost as Rs.3470.62 crore for KTPP-II, which works out to Rs.5.78 crore per MW. In comparison with capital cost of KTPP-II, per MW capital cost of KTPS-VII is higher by 26.82% and BTPS is higher by 59.52%. TSGenco has not provided basis for such high capital cost. Therefore, the Commission should thoroughly scrutinize such high capital cost before approval.
- 3.6.3 The proper way to scrutinise claimed capital cost by TSGenco for new power plants is scrutiny of PPAs of these two plants. These PPAs have to be

approved in accordance with Clause 3.2 of TSERC (Terms and Conditions of Generation Tariff) Regulation, 2019 (Regulations No.1 of 2019).

- 3.6.4 Cost of BTG and BOP constitutes the most important part of the power plant's capital cost. There were a newspaper reports regarding problems in selecting BTG for BTPS plant. It was reported that machinery meant for a thermal plant in north India was redirected to BTPS plant by Bharat Heavy Electricals Limited (BHEL). In such circumstances the BTG supplied by BHEL may have to be treated as a second hand. The BTG machinery should have been obtained at a considerably lower price. However, an exorbitant capital cost of BTPS raises doubts on procurement of this machinery.
- 3.6.5 As regards land development cost, newspaper reports indicate that National Green Tribunal (NGT) intervened several times in issues related to land of BTPS. If coal transport and coal handling are taken up as separate activities apart from BOP package, the same needs to be subjected to prudent check.
- 3.6.6 The Commission should ensure that service provider/contractor for supply and erection of BTG and BOP is selected through a transparent process. Prudence check of BTG cost BOP cost, coal transport and coal handling should be taken up as separate activities apart from BOP package, land development cost, all other works/overheads taken up as a part of setting up the plants.
- 3.6.7 Interest During Construction (IDC) shall be limited to COD date only. Delay beyond COD should not be considered while allowing IDC. BTPS units were supposed to be in operation by FY 2016-17, following the strictures of the Central Government agencies for adopting sub-critical technology. Despite these strictures, COD of the first unit of BTPS is declared on 05.06.2020 and that of second unit on 07.12.2020. The fourth unit was expected to come on stream by March 2021. But there is no sign of COD of the third unit until now which was projected to be in January 2021, as mentioned in the present filing of TSGenco. These delays result in higher IDC.
- 3.6.8 BTPS has been partially commissioned in FY 2019-20, and generation from the same has been accounted for in 4th control period. However, as per CEA

report there is considerable delay in commissioning of BTPS stations. Also, there was a significant delay in commissioning of KTPS-VII.

- 3.6.9 Also, as per CEA report, the FGD for the station is also likely to be delayed as no agency has been finalized yet. Delays in FGD construction may further delay operations of the unit. Due to such delays, the impact of IDC on costs must be appropriately reported and scrutinised. IDC beyond the scheduled COD should not be allowed.
- 3.6.10 In this context, the Commission considered the Hon'ble ATE's Judgment in Appeal No.72 of 2010 in its Order dated 19.06.2017 in O.P.No.9 of 2016, which specify that the entire cost due to time over run has to be borne by generator if factors causing delay is attributable to the generating company.
- 3.6.11 Therefore, as the delay in execution of the plant was due to inefficiencies of the generator, all costs due to time over run has to be borne by TSGenco and same should not be passed on to TSDiscoms.
- 3.6.12 In accordance with Clause 7.19.1 of Regulations No.1 of 2019, the capital expenditure actually incurred after the COD and up to the cut-off date may be admitted by the Commission subject to prudent check. As in the present filing of TSGenco, COD of KTPS-VII is 26.12.2018 and cut-off date is two years from COD and Rs.884.50 crore has been projected to be spent on KTPS-VII during FY 2021-22, FY 2022-23 and FY 2023-24. As this expenditure is beyond the cut-off date, the same should not be allowed.
- 3.6.13 The capital cost BTPS and YTPS is around Rs.8 crore/MW and 9.2 crore/MW, which is on higher side.
- 3.6.14 TSGenco submitted the details of PPAs along with CODs. After declaration of CODs of various projects/units, TSGenco is still seeking determination of provisional tariff without seeking approval of PPAs. The Commission should disallow substantial expenditure while determining capital expenditure, after considering PPAs.

Petitioner's replies

- 3.6.15 For every thermal power project, the gestation period and capital cost vary from time to time because of several factors. The capital cost of KTPS-VII is inclusive of cost of installation of FGD. For BTPS, the project cost is inclusive

of construction of railway line and FGD and per MW cost of the projects may vary from project to project basis depending on the various factors involved during the execution of the works. The details of capital cost of these stations have been submitted to the Commission for approval. Also, TSGenco has submitted PPAs signed with Discoms to the Commission. Approval of PPA in accordance with Regulations No.1 of 2019, may be decided by the Commission.

- 3.6.16 As regards BTG cost, BHEL is a 'Maharathna' Central PSU; it has expertise in establishment of thermal power stations across the country and is sole manufacturer of BTG in the Govt. sector. TSGenco has entered into an MOU with BHEL for construction of KTPS-VII and BTPS on EPC basis (both BTG & BOP) including design, engineering, manufacture, supply, erection, testing and commissioning.
- 3.6.17 Further, KTPS-VII 800 MW super critical unit has been commissioned within the timeline prescribed by CERC. BOP works are also under the scope of BHEL. It follows transparent tendering process in selection of BOP contractors.
- 3.6.18 As regards land development cost, the MoEF&CC has granted environmental clearance for BTPS considering location, geography and the other aspects.
- 3.6.19 As regards IDC, all works of BTPS were suspended from 14.12.2015 to 30.03.2017 (15½ months) as per the Hon'ble National Green Tribunal (NGT) directions. The MoEF&CC, Govt of India, vide notification dated 07.12.2015 has revised the emission norms of thermal power plants. To comply with the new norms, additional works were necessitated and many of the drawings and plot plans were to be revised. The constructions work also was severely affected during rainy season from the year 2017 to 2020.
- 3.6.20 Further, the works of BTPS were adversely affected due to COVID-19 as lockdown was imposed by the Government. Upon resumption of the site works, the works could not progress at the required pace, due to acute shortage of man power as most of the available workers at site left and other available workers were unwilling to work due to COVID-19.

- 3.6.21 Despite the above hurdles, Unit-I & Unit-II of BTPS were commissioned on 05.06.2020 & 07.12.2020 respectively, Unit-III synchronized on 15.01.2021 and activities for COD are in progress. The boiler light up activities for Unit-IV are also in progress.
- 3.6.22 The 800 MW unit of KTPS-VII has been commissioned within the timeline specified by CERC.
- 3.6.23 As regards the capital expenditure from COD to cut-off date, an amount of Rs.4604.92 crore has been capitalized as on date of COD as against the total capital cost of Rs.6405.36 crore. The balance works of KTPS-VII are under progress as on date of COD and the details of balance capital expenditure already incurred after COD and to be incurred were submitted to the Commission for approval during 4th control period from FY 2019-20 to FY 2023-24.
- 3.6.24 As per Clause 4.3.2 of Regulations No.1 of 2019, Discoms shall file Petition for approval of PPA before the Commission. However, the PPAs of all the TSGenco thermal and Hydel Stations have been submitted to the Commission.

Commission's View

- 3.6.25 The Commission while determining the tariff, approved the capital cost for all new plants after due process of regulatory provisions and prudence check by taking consumer's best interest into consideration. The Commission has approved capital cost up to COD of the station and provisional additional capitalization in accordance with the provisions of Regulation No.1 of 2008 and Regulations No.1 of 2019 as applicable for the respective station as detailed in Chapter 4 and Chapter 6.

3.7 ADDITIONAL CAPITALIZATION

Stakeholders' submissions

- 3.7.1 For some of old plants i.e., KTPS-V, KTPP-II, LJHES and PCHES, TSGenco has claimed additional capitalization amounts under GFA. As TSGenco collects all such components in the monthly bills of TSDiscoms for different stations, claiming additional amounts under GFA for 4th control period from FY

2019-20 to FY 2023-24 is not appropriate. The Commission should not approve such claim.

- 3.7.2 TSGenco submitted that GFA for the balance 3rd control period (FY 2016-17 to FY 2018-19) has been projected based on actual Renovation and Modernisation (R&M) expenditure/additional capital expenditure as per the Audited Accounts. R&M should be based on cost-benefit analysis. Expenditures as per audited accounts, ipso facto, are not permissible mechanically or automatically; whether they are unavoidable and justifiable or no need to be examined. TSGenco should submit comments of CAG, along with details of expenditure and the procedure adopted for implementing R&M. The Commission should make available the same for objector and examine these in detail before approving R&M expenses.
- 3.7.3 TSGenco has submitted that the additional capitalization claimed towards undischarged liabilities and pending works are in the original scope of the projects. When permissible capital costs of the projects are not approved by the Commission, additional capitalization cannot be taken for granted. It should be within the limits of capital costs approved by the Commission.
- 3.7.4 Further, the Commission should approve the additional capitalization considering the Clauses No.4.2.7, 4.3.2, 4.5.1, 6.7, 7.10, 7.19.1 and 7.22.4 of Regulations No.1 of 2019 and perform financial prudence check.

Petitioner's replies

- 3.7.5 As per the Clause 7.19 of Regulations No.1 of 2019, the additional capitalization may be admitted by the Commission after prudence check. In GTO for 3rd control period dated 05.06.2017, the Commission provisionally approved the Capital cost of KTPP-II, Lower Jurala HES and PCHES stations and treated some of the works as work in progress. For KTPS-V, the R&M works has been carried out in accordance with Clause 7.21 of Regulations No.1 of 2019.
- 3.7.6 For NSHES, the Commission vide I.A No.33 of 2018 in O.P.No.26 of 2016 approved Rs.809.73 crore towards the additional capitalization of NSHES. For the new projects the capital cost has been considered as per the Clause 10.8 & 10.9 of Regulation No.1 of 2008.

- 3.7.7 The existing stations require R&M due to ageing in certain areas of the respective plants. There is need for capital investment to improve the generation and efficiency of the plant.

Commission's View

- 3.7.8 The Commission noted the submission of the stakeholders and TSGenco. The Commission has approved additional capitalization for 3rd control period from FY 2014-15 to FY 2018-19 after prudence check in accordance with provisions of Regulation No.1 of 2008. Additional capitalization has been approved till the cut-off period only as detailed in Chapter 4.

3.8 DECOMMISSIONING OF OLD PLANTS

Stakeholders' submissions

- 3.8.1 The 50% of 4462 MW of thermal capacity has completed 50 years and hydro energy is not reliable. Also, the State is not exploring ample wind energy resources, and, in any case, solar energy has not gained enough acceptance by the Discoms. Out of the 4462 MW thermal of TSGenco, 420 MW capacity (KTPS-ABC) is to be treated as vintage plants and consumers should not suffer excessive costs of Rs.3.32/kWh of these generating units.
- 3.8.2 As Regulations No.1 of 2019 allow these plants with a normative Annual Plant Availability Factor of 70%, SHR of 3000 kcal/kWh and auxiliary consumption of 10%, the Commission should direct TSGenco to submit month-wise Availability Factors for the last three years along with the SHRs. These data are essential for consumers to understand and give objections, if required. Also, variable cost of these station is Rs.3.32/kWh, which is higher than the total cost of power purchased from IEX.
- 3.8.3 As these plants commissioned between year 1966 and year 1978, therefore these plants as old as 50 years are not safe and economical to run.

Petitioner's replies

- 3.8.4 The total installed capacity of TSGenco as on 30.03.2021 is 3772.5 MW. Except RTS-B, which is of 62.5 MW, the balance capacity of thermal station i.e., 3710 MW. KTPS-V (500 MW) is of 23 years old and balance capacity of 3210 MW is below 12. This means, more than 85% of thermal installed capacity is embedded with new stations of TSGenco.

- 3.8.5 The renewable energy with latest development cannot be compared with the thermal plants commissioned 15 years back and completed a decade back.
- 3.8.6 In the research reports published by Deloitte on the future of Global Power Sector, mentioned that due to higher level of economic growth and anticipated increase in the quality of life over the next few years, developing countries will likely see a rapid increase in power demand. For instance, India is poised to see an increase of upto 3.2% in annual power consumption between year 2012 to year 2040.
- 3.8.7 Over the last few years, utilities have increasingly relied on renewable energy to generate power for two main reasons viz., Governments in several areas around the world have given incentives to promote the installation of these facilities to guarantee their power supply and to reduce the emission of polluting gases. At the same time, the improvement of renewable energy technologies and their associated monitoring & control processes are enabling more rapid adoption.
- 3.8.8 However, the energy from renewable sources can create midday jolts, on a windless or a cloudy day. In order to mitigate the uncertainty of the energy from renewable sources, thermal power plants are the most effective, reliable and viable source, for uninterrupted power supply.
- 3.8.9 Keeping demand in view, TSGenco is making massive capacity addition of another 4000 MW in district Damarcherla, by 2024 to meet the demand of the State.
- 3.8.10 As energy consumption is directly related to economic growth and GDP of a Country, TSGenco is committed to meet the demand of manufacturing sector, transportation, household needs, State Government schemes etc., by generating qualitative power at competitive prices.
- 3.8.11 All units of KTPS-O&M were commissioned by 1978; since then, stations are generating power to meet the requirement of the State. As per the directives of MoEF&CC, eight (8) unit of KTPS-O&M has been phased out w.e.f. 31.03.2020 (300 MW during 3rd control period and 420 MW during 4th control period). The generation from 420 MW KTPS-ABC was considered for FY 2019-20 only.

- 3.8.12 CERC (Terms and Conditions of Tariff) Regulations, 2019 specifies that gross SHR and auxiliary energy consumption for the unit capacity of less than 200 MW sets shall be dealt on case to case basis. Also, the normative availability has been relaxed for Bokaro TPS-75%, Chandrapur TPS-75%, and Durgapur TPS-74%.
- 3.8.13 The auxiliary energy consumption was allowed more than 10% in for Bokaro TPS-10.25%, Talcher TPS & Durgapur TPS-10.50%, Tanda TPS-12% (in 2014) & 11.5%. The SHR for Chandrapur TPS was allowed up to 3100 kcal/kWh (in 2014) & 3000 kcal/kWh (in 2019).
- 3.8.14 Similarly, KTPS-O&M which also belongs to the same time period, the operating norms were issued by the Commission. KTPS-O&M has been completely decommissioned on March 2020, as per MoEF&CC directives.
- 3.8.15 Month wise Availability Factor of KTPS-ABC for the last three years along with SHR was also submitted as requested by the stakeholder.

Commission's View

- 3.8.16 The Commission noted the submission of the stakeholders and TSGenco. The Commission has considered the status of these old plants while approving the performance parameters as per Regulations No.1 of 2019.

3.9 DELAY IN EXECUTION OF PROJECTS

Stakeholders' submissions

- 3.9.1 Delay in implementation of project leads to increase in capital cost and IDC. Therefore, the Commission should disallow impermissible expenditure and review the original time schedule, PPA and actual COD.
- 3.9.2 TSGenco has submitted that works of BTPS were suspended for 15 and a half months due to direction of National Green Tribunal. It shows implementation of the project, without getting prior permissions/clearances. TSGenco submitted other reason for delay as heavy rains, COVID-19 pandemic, and acute shortage for manpower. The delay in execution escalates capital cost and IDC which results in higher generation tariffs and impose additional burdens on consumers. The information submitted by TSGenco shows that capital costs of projects have been revised, re-revised repeatedly and will be revised again and again.

- 3.9.3 In additional information, TSGenco submitted Auditor's certificates for capitalisation of different projects without justification for delays in execution of the projects and escalation in capital costs and IDC. The certificate shows only expenditure and is as per the accounts of TSGenco. The relevant observations of the Comptroller and Auditor General of India (CAG), if any, needs to be examined in this regard.
- 3.9.4 TSGenco submitted that per MW cost of the projects may vary project to project depending on the various factors involved during execution of the works. Timely execution of projects is necessary to protect the interest of Discoms and consumers. Such terms are not available in the PPA. Objections/suggestions on such deficiencies of PPAs shall be raised during the public hearing on PPAs. Also, relevant clauses of Regulations No.1 of 2019 should be amended.

Petitioner's replies

- 3.9.5 The 800 MW Unit of KTPS-VII was commissioned within the timeline as per the CERC Regulations. TSGenco in its filings has claimed expenditure actually incurred and proposed to be incurred within the original scope.
- 3.9.6 The justification for delays in execution of the projects, escalation in capital costs and IDC have been furnished in the additional data and also available on website of TSGenco and the Commission.
- 3.9.7 TSGenco is making every effort to complete the projects as per the scheduled timeline.

Commission's View

- 3.9.8 The Commission approved the capital cost of new projects after prudence check of each item of capital expenditure and also examined the causes for delay. The Commission admitted the impact of delays in capital cost based on justification provided by TSGenco and wherever the justification was not satisfactory, the Commission followed the approach mentioned in Chapter 4 and 6 of this order, taking the best interests of consumers into consideration.

3.10 ADHERENCE TO REVISED ENVIRONMENTAL NORMS

Stakeholders' submissions

- 3.10.1 In additional information, TSGenco has referred MoEF&CC notification dated 07.12.2015. These norms mandate installation of FGD to remove SO₂ from emissions of thermal power plants. However, timeline of works for FGD is not explained, though notification of MoEF&CC was issued more than five years back and CODs of units of BTPS are already declared. The Petitioner has not specified such compliance for KTPS-VII and BTPS stations.
- 3.10.2 As KTPS-VII station has achieved COD in December 2018, and started generation from April 2019, but there was delay in FGD installation. As per CEA's Broad Status Report for October 2020, FGD installation was yet to begin for KTPS-VII and is also likely to be delayed for BTPS. The two units of BTPS have achieved COD last year and started operation, but there is no report regarding FGD status or compliance to the norms.
- 3.10.3 TSGenco should provide the environmental implications and socio-economic impact, detailed status, cost impact, and proposed timelines for FGD installation and any other measure of compliance with the revised environmental norms.

Petitioner's replies

- 3.10.4 TSGenco submitted that it will comply with revised environmental norms of 2015 for KTPS-VII and BTPS stations. The establishment of FGD for KTPS-VII and BTPS stations is in advanced stage of installation.
- 3.10.5 MoEF&CC vide Notification dated 31.03.2021 extended the timeline for compliance the limits based on location/area and a task force shall be constituted to categorise thermal power plants. FGD works will be carried out within the timeline specified by the MoEF&CC. The BTPS project cost has been revised due to implementation of GST by Government of India and new emission norms mandated by the MoEF&CC.

Commission's View

- 3.10.6 The reply furnished by TSGenco is in order. TSGenco has proposed capital expenditure for installation of FGD at KTPS-VII and BTPS stations to meet the revised environmental norms. The Commission has discussed its view on the

approval of FGD cost for compliance of the revised MoEF&CC norms in Chapter 5.

3.11 PERFORMANCE PARAMETERS FOR NEW PLANTS

Stakeholders' submissions

3.11.1 KTPS-VII was commissioned on 23.12.2018. On comparison with other stations, variable cost seems on higher side for an Availability Factor of 85% and SHR of a little less than 2300 kcal. Therefore, the Commission should direct TSGenco to submit Availability and SHRs for the last two years.

3.11.2 Two units of BTPS station have been commissioned in the year 2020 and other two are expected to be commissioned by the end of March 2021. The Commission should direct TSGenco to submit performance review details for these stations.

Petitioner's replies

3.11.3 KTPS-VII was commissioned on 26.12.2018. The actual Availability and SHR of KTPS-VII from COD to February 2021 are given in the Table below:

Table 12: Actual Availability and SHR of KTPS-VII from CoD to Feb'21

Financial Year	Availability (%)	Station Heat rate (kcal/kWh) (Actual)
2018-19	92.67	2213.52
2019-20	53.35*	2223.82
2020-21 (upto February, 2021)	94.30	2015.00

* The Availability for the FY 2019-20 is less due to Unit tripped on high turbine vibrations and converted to annual overhaul for the period 28.11.2019 to 28.03.2020.

3.11.4 Performance of BTPS units (up to February 2021) is given in the Table below:

Table 13: Performance of BTPS upto Feb'21

FY	Availability (%)	Station Heat Rate (Actual) (kcal/kwh)	Auxiliary Consumption (%)
2020-21	81.87	2487	9.82

Commission's View

3.11.5 The Commission is of view that information provided by TSGenco in its reply to the Commission's queries is sufficient. The Commission has approved the normative parameters and ECR calculation in line with Regulations No.1 of 2019.

3.12 OPERATION AND MAINTENANCE COST

Stakeholders' submissions

- 3.12.1 TSGenco has claimed O&M expense of Rs.877.03 crore for FY 2014-15 and Rs.1447.57 crore for FY 2018-19, i.e., an increase of 60.58% during 3rd control period without providing component wise breakup.
- 3.12.2 TSGenco has claimed year-wise increase in O&M charges for 4th control period from FY 2019-20 to FY 2023-24 totalling Rs.7560.89 crore, excluding KTPS-VII and BTPS. Employee cost of Rs.6005.62 crore works out to 79.43% of the proposed total O&M expenses, which excludes the impact of pay revision that would take place during 4th control period which would be claimed by TSGenco under true-up later.
- 3.12.3 The Commission has been allowing the financial impact of periodical wage revision for the employees of TSGenco and other power utilities of the State Government, irrespective of permissible norms of O&M expenses. While pay revision for its employees is being decided and the impact of pay revision is being borne by GoTS, the impact of pay revision for employees of the power utilities is being passed on to the consumers. The impact of pay revision on tariffs needs to be regulated while determining O&M expenses. In the case of private power projects, the O&M expenses, including pay and allowances of their employees, of those projects are being determined by the Commission as per applicable norms. The private power projects are not claiming the financial impact of revision of pay and allowances to their staff separately and the Commission also is determining O&M expenses, which is inclusive of the requirement of pay and allowances, with annual escalation. The claims for administrative costs, including pay and allowances of employees, by power utilities should be subjected to applicable norms to protect larger consumer interest.
- 3.12.4 The R&M expenditure of KTPS-at 5.37% and RTS-B at 7.27% of their respective GFA is on higher side. TSGenco to provide explanation for this.
- 3.12.5 The Commission should direct TSGenco to give year-wise break-up of all the components of O&M expenses and confine O&M expenses, including pay and allowances, within the normative values.

Petitioner's replies

- 3.12.6 O&M expenses claimed in the true-up Petition is in accordance with GTO of 3rd control period and I.A.No.33 of 2018. The pay revision commitment is allowed by the Commission in the GTO. The increase in O&M expense from Rs.877.03 crore in FY 2014-15 to Rs.1447.57 crore in FY 2018-19 is due to commissioning of new projects i.e., KTHP-II, Lower Jurala HES and Pulichintala HES and regular escalation allowed by the Commission during the five years period along with pay revision during FY 2018-19.
- 3.12.7 As regards O&M expenses of 4th control period from FY 2019-20 to FY 2023-24, TSGenco has computed O&M expenses in accordance with Clause 19 of Regulations No.1 of 2019. As per Regulation, any increase in employee cost on account of pay revision be considered separately by the Commission.
- 3.12.8 KTHP-O&M and RTS-B are old stations of more than 40 years. The R&M cost will be higher for old stations due to wear and tear of equipment. The O&M calculation consists of computation of R&M expenses based on average R&M expense and GFA of the 2nd control period from FY 2014-15 to FY 2018-19.

Commission's View

- 3.12.9 The Commission has noted the submission of the stakeholders and TSGenco. Due to absence of regulatory provision of true up in Regulation No.1 of 2008, the Commission has not carried out true up exercise of O&M expenses as detailed in the Chapter 4.
- 3.12.10 As regards O&M expenses for 4th control period from FY 2019-20 to FY 2023-24, the Commission has computed the O&M expenses in accordance with Clause 19 of Regulations No.1 of 2019. The Commission has approved the employee expenses considering the actual employee cost of last control period and CPI index. The Commission has considered impact of pay revision for FY 2018-19 in the computation of O&M expenses.
- 3.12.11 The Commission is of view that TSGenco, being a state-owned power generation company, has to implement pay revision from time to time as per the Government norms. Therefore, pay revision should be allowed on actual basis. However, the Commission has not considered the impact of PRC for 4th control period in the present Order. The Commission is of the view that the

same shall be claimed based on the actuals either during the Mid Term Review or during Trueing up at the end of 4th control period. The details of approval of O&M expenses have been discussed in the Chapter 6.

3.13 DEPRECIATION

Stakeholders' submissions

3.13.1 The Commission should consider rates of depreciation as per CERC Regulations, or as per the guideline of Ministry of Power, GoI, whichever are lesser.

Petitioner's replies

3.13.2 In the true up period, depreciation in true up Petition has been considered as approved by the Commission in GTO dated 05.06.2017 and Order in I.A.No.33 of 2018 dated 03.01.2019 (NSHES Complex) for existing stations except KTPS-(O&M). For KTPS-VII, TSGenco considered rate @ 5.28% as per CERC (Terms and Conditions of Tariff) Regulations, 2014.

3.13.3 As regards computation of depreciation for MYT Period, depreciation has been computed at 5.28% on capital cost of the project as per the Appendix I of the CERC (Terms and Conditions Tariff) Regulations, 2019.

3.13.4 Depreciation is computed at 5.28% on the capital cost of the respective stations which have not completed 12 years. In case, where stations have completed 12 years, the remaining depreciable value spread over equally over the balance useful life of the project.

Commission's View

3.13.5 Due to absence of regulatory provision of true up in Regulation No.1 of 2008, the Commission has not carried out true up exercise for depreciation for FY 2014-15 to FY 2018-19 as detailed in the Chapter 4.

3.13.6 As regards of MYT Period, the Commission has approved the depreciation in accordance with Clause 10 of the Regulations No.1 of 2019 considering the approved GFA for FY 2018-19 as detailed in the Chapter 6.

3.14 RATE OF INTEREST AND RETURN ON EQUITY

3.14.1 TSGenco has considered interest rate as 12.05% and RoE as 15.5% to 16.5% for calculating the fixed charges. Further, TSGenco in its true up

Petition for 3rd control period provided actual rates of interest, which shows that during FY 2018-19, out of 15 stations only 3 generation stations have shown rate of interest as 12.50% while interest rate of 7 stations is less than 10%. Also, interest rate has been continuously falling in the country. Therefore, the Commission should adopt interest rate of 10% considering the declining trend in interest rate.

- 3.14.2 As regards RoE, generally 2% margin is added to rate of interest to arrive at RoE to account risk taken by the investor. Therefore, the Commission may adopt RoE of 12%.
- 3.14.3 TSGenco has considered RoE of 16% for KTPS-VII because project has been constructed within the timeline. True up Petition mentioned that fixed charges of KTPS-VII were reduced due to delay in COD of the unit. Both are contradictory to each other. Therefore, the Commission should ascertain actual position.
- 3.14.4 Interest rates of 10.68% for all the generating plants of TSGenco is on higher side. For BTPS, new station, interest rate on term loans is 11.72%, which is very high. Even interest on working capital (IoWC) has been estimated as 12.05%. Hence, the Commission should examine these rates to reduce the costs.
- 3.14.5 Considering the trend of falling interest rate, there is no point to claim RoE of 15.5% on for old plants and RoE of 16% for KTPS-VII. Further, income tax paid by TSGenco also is allowed as pass-through, though it defies logic in the sense that income tax is to be paid on the profits earned by TSGenco. The Commission should re-examine the claimed rate of interest on term loan as well as rates for Interest on Working Capital.

Petitioner's replies

- 3.14.6 TSGenco has computed interest on loan considering weighted average rate of interest on actual loan portfolio of respective stations in accordance with TSERC Regulations.
- 3.14.7 As regards high interest rate, the rates claimed are provisional and subject to revision based on actual during true up. Based on the risk involved in the power sector due to failure of many Independent Power Producers (IPPs),

RBI has stringent guidelines for lending Capital Loans and Nationalized Banks are not willing to lend Capital Loans to power generators. Hence, TSGenco is relying on obtaining funds from Financial Institutions like PFC and REC and these institutions charge higher rate of interest.

3.14.8 Further, PFC and REC rated TSGenco as “A+” and Brick Work Ratings India Pvt. Ltd. (Credit Rating Agency) rated TSGenco as “BWR–A”, for the term loans /limits sanctioned. Based on the ratings, interest rates offered to TSGenco have been determined.

3.14.9 However, TSGenco negotiates with Banks and Financial Institutions at the time of proposals for loan to sanction loan at base rate/floor rate/MCLR of the lenders. Further, as and when there is a change in rate of interest in the market, TSGenco requests the lenders for reduction of rate of interest (ROI). On many occasions, TSGenco requests were considered. For instance,

- During demonetization, TSGenco requested the Banks & FI’s to reduce the ROI; PFC & REC have favourably considered and reduced the ROI.
- Banks have reduced the ROI during reset/review, at the request of TSGenco.

3.14.10 In GTO dated 05.06.2017, the rate of interests considered were ranging around 12.5%, based on actuals. TSGenco has passed on credits to Discoms from time to time. Further, in the MYT filings for 4th control period from 2019-20 to FY 2023-24, the interest rates are starting from 10.10%.

3.14.11 Higher rate of interests appears where there are Notional Loans and they claimed based on the Clause 12.5 of Regulations No.1 of 2019. Only for comparison purpose, the interest rates factored by TSGenco are lesser than that of WACC allowed by APERC in tariff determination of APGenco, for the same control period. However, the claims of TSGenco are in line with Regulations No.1 of 2019.

3.14.12 As regards claim of RoE, TSGenco has claimed RoE considering the rates specified in the Clause 11 of Regulations No.1 of 2019. Further, as per Clause 30 of CERC (Terms and Conditions of Tariff) Regulations, 2019, RoE to be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run-of river hydro

generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of river generating station with pondage.

3.14.13 Pre-tax RoE has been computed in the range from 18.78% to 19.99% based on the Minimum Alternate Tax (MAT) as 17.42% and base rate of RoE from 15.5% to 16.5% (the base of RoE for the thermal and run-of-river stations is considered as 15.5% and for hydel stations with pondage is 16.5%) in accordance with Regulations No.1 of 2019. For KTPS-VII, RoE of 16% has been considered as project has been constructed within the timeline and therefore, the additional return of 0.5% has been considered as per Clause 24 of CERC (Terms and Conditions of Tariff) Regulations, 2014, wherein the projects commissioned on or after 1st April, 2014, an additional return of 0.50% shall be allowed, if such projects are completed within the timeline. Timeline for 800 MW units are 52 months for green field projects and an interval of 6 months for each subsequent unit and 50 months for extension projects and subsequent units at an interval of 6 months each. Therefore, TSGenco has considered RoE of 16% for KTPS-VII in accordance with Clause 24 of CERC (Terms and Conditions of Tariff) Regulations, 2014 since the project has been completed within timeline i.e., 48 months.

3.14.14 RoE and Income Tax in true up have been claimed as per Regulation No.1 of 2008 and CERC 2014 Regulations.

Commission's View

3.14.15 The Commission has noted the submission of stakeholders and TSGenco. The Commission has considered the supporting documentary evidence submitted by TSGenco for interest on loan. The Commission has approved interest rate and RoE in accordance with Clause 11 and Clause 12 of the Regulations No.1 of 2019 as detailed in the Chapter 6.

3.15 SPARES EXPENDITURE

Stakeholders' submissions

3.15.1 BTPS (1080 MW) plant commissioned very recently; however, TSGenco has claimed spares expenditure of Rs.5.86 lakh per MW per year. Also, spares

expenditure for older plants is on lower side. TSGenco should re-confirm these estimates.

Petitioner's replies

- 3.15.2 As per Clause 13 of Regulations No.1 of 2019, IoWC includes maintenance spares as percentage of O&M expenses @20% and @15% for coal based generating stations and hydel generating stations, respectively.
- 3.15.3 The O&M expenses claimed for BTPS is Rs.1583.61 crore as per CERC Regulations. As per norms working capital required is Rs.316.72 crore. The amount of Rs.5.86 lakh per MW worked out is investment in spares for working capital. Accordingly, it cannot be treated as O&M cost claim towards spares. Further, in respect of old plant, the average investment in spares working capital is less due to less O&M charges in other stations as per Regulations.
- 3.15.4 The calculation of maintenance spares submitted to the Commission is in line with TSERC Regulation towards working capital norms for spares and there is no under or over estimation of the figures.

Commission's View

- 3.15.5 The Commission has noted the submission of the stakeholders and TSGenco. The Commission has computed working capital requirement and expenditure towards spares in accordance with the provisions of Regulations No.1 of 2019 as detailed in the Chapter 6.

3.16 PROVISIONS

Stakeholders' submissions

- 3.16.1 TSGenco has claimed Rs.489.04 crore towards provisions for 4th control period from FY 2019-20 to FY 2023-24 and included the same in proposed fixed charges. The Commission should not approve such claim.

Petitioner's replies

- 3.16.2 TSGenco submitted that as per Clause 19 of Regulations No.1 of 2019 the following provisions can be added separately to O&M expenses:
- i) Under Terminal Liabilities: Considering the Clause 19.12 of Regulations No.1 of 2019, TSGenco has proposed Rs.74.72 crore and Rs.31.44 crore towards leave encashment and medical reimbursement for pensioners, respectively, for 4th control period from FY 2019-20 to

FY 2023-24.

- ii) As per the Clause 19.6 of Regulations No.1 of 2019, the fee for determination of tariff Rs.3.02 crore has been claimed.
- iii) Proposed medical and other welfare expenditure of Rs.120.97 crore claimed separately and excluded from O&M expenses.
- iv) IT initiatives of Rs.27.2 crore towards provisions in A&G expenses.
- v) As per Clause 2.59 of Regulations No.1 of 2019 Water Charges & Water Cess of Rs.231.69 crore has been added separately to the fixed charges.

Commission's View

3.16.3 The Commission noted the submission of the stakeholders and TSGenco. The Commission has approved claim of TSGenco under provisions in accordance with provisions of Regulations No.1 of 2019 as detailed in the Chapter 6.

3.17 MEDICAL AND OTHER WELFARE EXPENDITURE

Stakeholders' submissions

3.17.1 TSGenco has proposed Rs.120.97 crore towards medical and other welfare expenditure for five years from FY 2019-20 to FY 2023-24. TSGenco should intimate the number of beneficiaries and expenditure in terms of Rs.per MW or preferably Rupees for one Million Units.

Petitioner's replies

3.17.2 The estimated medical and other welfare expenditure for FY 2019-20 to FY 2023-24 is for welfare of the employees working in thermal stations, hydel stations, headquarters of TSGenco and pensioners of TSGenco.

3.17.3 On per one Million Unit basis, medical and other welfare expenditure works out as Rs.10,084 per Million Unit considering actual generation of 23993 MU during FY 2019-20, and per unit as Rs.0.01/kWh.

Commission's View

3.17.4 The Commission has noted the submission of TSGenco. The Commission considered medical and other welfare expenses while computing O&M Expenses. Therefore, the Commission has not approved the same separately for 4th control period FY 2019-20 to FY 2023-24 as detailed in the Chapter 6.

3.18 ADDITIONAL PENSION LIABILITIES

Stakeholders' submissions

- 3.18.1 TSGenco has claimed Rs.6448.38 crore towards pension liabilities (over and above schedule of pension bonds) as a part of fixed charges. TSGenco is claiming actual pension liabilities over and above the scheduled interest of pension bonds. It is a standard practice that pension funds have to be maintained from the contributions of the management & employees and used appropriately to earn interest thereon. Since, the erstwhile APSEB used those funds for other purposes, without accounting for the same, as a part and parcel of the first transfer scheme, after revaluation of assets of all the power utilities of the then GoAP in the undivided Andhra Pradesh, the first APERC allowed the same to be collected from consumers and subsequent Commissions also have been following the same pattern. This kind of unjustifiable arrangement detrimental to larger consumer interest, if allowed repeatedly, will continue for many more years to come. The Commission should advise the Government of Telangana State to take over liabilities of pension bonds of its power utilities to settle the issue once for all, without continuing to impose such unjust burdens on consumers of power.

Petitioner's replies

- 3.18.2 The pension liability was vested with erstwhile APGenco at the time of bifurcation of the erstwhile APSEB in the year 1999. Erstwhile APGenco has issued bonds to Master Trust repayable over 30 years with floating rate of interest duly matching with actual pension commitment. The Additional pension liability was transferred to TSGenco vide G.O.Ms. No.29, dated 31.05.2014 (Transfer scheme notified by the erstwhile Govt. of AP) based on the provisions of AP Reorganization Act 2014.
- 3.18.3 At the time of filing Petition for determination of Generation Tariff for 3rd control period in the year 2016, the pensioners and family pensioners of combined APGenco drawing pension at the corporate office Hyderabad, paid by residual APGenco. Subsequently, these pensioners and family pensioners transferred to TSGenco as per geographical location of Hyderabad as AP Reorganisation Act 2014 and residual APGenco claimed reimbursement of Rs.233.90 crore from TSGenco. The Commission in GTO dated 05.06.2017,

has approved pension liability for FY 2014-15 to FY 2016-17 on actual basis and from FY 2017-18 to FY 2018-19 on estimated basis. Now TSGenco filed true up Petition for the additional pension liability based on the actual pension payment during the FY 2017-18 and FY 2018-19 along with reimbursement claim of residual APGenco for the period FY 2014-15 to FY 2016-17.

Commission's View

- 3.18.4 The Commission noted the submission of the stakeholders and TSGenco. In earlier Tariff Order dated 05.06.2017, the Commission has approved additional pension liability from FY 2014-15 to FY 2016-17 on actual basis and from FY 2017-18 to FY 2018-19 on estimated basis. Now, the Commission has gone through the submission of TSGenco in this regard and after prudence check approved the same as detailed in Chapter 6.
- 3.18.5 As regards the suggestion on taking over liabilities of pension bond by the Government of Telangana State, the request of the stakeholder that the Government of Telangana shall bear the additional burden be extracted and communicated to the Principal Secretary, Energy, GoTS for favourable consideration.

3.19 FIXED CHARGES

Stakeholders' submissions

- 3.19.1 TSGenco has claimed the fixed charges of Rs.19374.96 crore against Rs.20645.98 crore after adjustment of Rs.1271.02 crore from FY 2014-15 to FY 2018-19. In one of the annexures, fixed charges of Rs.1169.96 crore has been mentioned but this figure has not been mentioned either in the main Petition or in its Prayer. These figures raise doubts whether TSGenco has filed Petition for truing down or truing up. Therefore, TSGenco should clarify this. The standard practice is that the amount claimed under true-up should be mentioned in the main Petition itself. As annexures are intended to substantiate the points raised in the main Petition by giving break-up of details, etc. In the main Petition, TSGenco has not made any reference to Annexure regarding claimed true up amount.
- 3.19.2 During the virtual Public Hearing through video conference held on 31.05.2021, the power point presentation made by TSGenco showed net

claim under true-up as “-101.98 crore” for 3rd control period. If it is minus Rs.101.98 crore, it should be trued down. In the presentation also, TSGenco did not specify the amount it was seeking under true-up.

3.19.3 TSGenco submitted that fixed charges have been claimed considering availability factor, while Petition does not provide any information on performance of the TSGenco stations. Therefore, the Commission should direct TSGenco to provide information on performance of its stations during 3rd control period from FY 2014-15 to FY 2018-19.

3.19.4 In additional information submitted, TSGenco has claimed revised fixed charges as Rs.21118.15 crore for 3rd control period, excluding BTPS and considering the addition GFA of KTPS-VII as Rs.8085.83 crore from year 2016 to year 2019 without any basis and justification. TSGenco needs to clarify the following points by providing required information:

- i) TSGenco to give justification for claiming addition of GFA as Rs.8085.83 crore and revised fixed charges under true-up in spite of billing and collecting fixed charges from TSDiscoms on monthly basis.
- ii) For existing stations, TSGenco should give clarification for claiming additional capital expenditure after one year from the COD of the station.
- iii) Since, O&M expenses are covered under fixed charges approved by the Commission in GTO, true-up claims towards revised fixed charges for 3rd control period is not appropriate.
- iv) TSGenco to give details on backing down of its thermal capacity on the account of purchase of renewable energy during 3rd control period with year wise and plant wise details of fixed charges and variable charge claimed/paid for the same.

3.19.5 As per TSGenco, KTPS-VII has been commissioned within the timeline as per the CERC Regulations. Therefore, it has claimed expenditure actually incurred and proposed to be incurred within the original scope. The expenditure to be permissible should be within the scope of capital cost approved by the Commission. Claiming expenditure actually incurred and proposed to be incurred based on original scope cannot be taken for granted. Such claims may contain elements of impermissible arbitrariness. Moreover, fixed charges need to be worked out considering the capital expenditure, terms and conditions of PPAs approved by the Commission and depreciation

charges paid every year need to be deducted from capital cost to arrive year wise revised fixed charges.

- 3.19.6 TSGenco should submit details of backing down during 3rd control period based on directions of SLDC along with claimed fixed charges from TSDiscoms as per the provisions of PPA and variable charges for the actual generation.
- 3.19.7 Fixed charges proposed in the MYT Petition for 4th control period from FY 2019-20 to FY 2023-24 are about Rs.5.81 crore for per MW. It works out to an average of Rs.1.2 crore per year, which is on higher side. For instance, fixed cost proposed for RTS-B is Rs.10.28 crore in 5 years, roughly a little more than Rs.2.00 crore per year for a 62.5 MW plant commissioned in year 1971. Further, this plant has a high Fixed Cost with SHR of 3000 kcal/kWh and the availability factor of 75%. Also, energy cost of this plant ex-bus will be in excess of Rs.3/kWh. Therefore, the Commission should do necessary due diligence and direct TSGenco to explain the reasons for not de-commissioning this plant as enough number of alternative and economical options are available.
- 3.19.8 Fixed charges of the most recently commissioned plant viz., BTPS (COD in year 2020 and in January-March 2021) for year 2021 and 2022 onwards is projected as Rs.2200 crore per year, which is on higher side for a new plant. Expenditure of KTPS-VII, which commissioned during December 2018, has been projected as Rs.1.42 crore per MW. This figure is lower than the per MW cost of BTPS. The Commission should direct TSGenco to explain such a high expenditure and explain the need for such a high expenditure for a new plant with latest technology.
- 3.19.9 In its presentation, relating to truing up, TSGenco relied on Regulations No.1 of 2019, CERC (Terms and Conditions of Tariff) Regulations, 2019 and a letter dated 26.04.2021 of Ministry of Power, Government of India (that truing up should be carried out regularly and preferably every year). Regulations of CERC and directive of the Ministry of Power, Gol, conveyed through a letter are not binding on the Commission. Regulations cannot be applied with retrospective effect. TSERC Regulations No.1 of 2019 cannot be applied with

retrospective effect for 3rd control period. The Commission should not apply Regulations No.1 of 2019 with retrospective effect for 3rd control period. The Commission should re-examine Regulations No.1 of 2019 and take necessary action to amend as required.

Petitioner's replies

3.19.10 The Commission in GTO dated 05.06.2017, I.A.No.33/2018, and Retail Supply Tariff (RST) Order for FY 2018-19 has approved the fixed charges of Rs.19374.96 crore as detailed in the Petition. The revised fixed charges (True up) for existing station and new stations for 3rd control period is Rs.21118.57 crore as provided in the Table 5 of the Petition which is based on normative availability.

3.19.11 The charges to be claimed from TSDiscoms considering the actual availability/ capacity index is Rs.1169.04 crore as detailed in the Annexure-A9 in the volume-I of the Petition for thermal and hydel generating stations. The present Petition is filed before the Commission for approval of revised fixed charges based on normative operating parameters which is required to claim the differential fixed charges. Therefore, in the True-up Petition, TSGenco has claimed Rs.1169.04 crore which is the difference between fixed charges approved by the Commission and actual fixed charges.

3.19.12 Considering the actual availability of each station against the normative availability approved by the Commission, pro rata fixed charges have been arrived. The information of performance of TSGenco power stations have been submitted to the Commission and the same has been also mailed to the stakeholder.

3.19.13 Further, total GFA addition for the new generating stations and existing generating stations is Rs.5665.75 crore which includes Rs.4605.02 crore for KTPS-VII. The details of GFA addition for FY 2014-15 to FY 2018-19 are as under:

- i) For new generating stations:
 - KTPS-VII: Rs.4605.02 crore.
 - Lower Jurala HES: Rs.13.12 crore.
 - Pulichintala: Rs.71.46 crore.
- ii) For existing generating stations: Rs.976.15 crore.

- 3.19.14 As regards the claim of additional capital expenditure after one year of COD, additional capitalization claimed towards the undischarged liabilities and pending works are within the original scope of the works. As regards the additional capitalization of existing generating stations, the works were carried out due to ageing and wear & tear of the equipment and for adopting latest technology for efficient operation of the units.
- 3.19.15 As regards the fixed charges of KTPS-VII, the details of capital cost, DPR and other relevant details have been submitted to the Commission for prudence check. The fixed charges will be claimed based on the approved cost. The accumulated depreciation has been deducted from the capital cost for computation of net assets, interest on working capital and fixed charges.
- 3.19.16 Backing down of the units is under the purview of SLDC as per the grid demand. TSGenco has claimed fixed charges from TSDiscoms as per the provisions of PPA and variable charges as per PPA for the actual generation.
- 3.19.17 As regards computation of fixed charges for 4th control period from FY 2019-20 to FY 2023-24, the major components of fixed charges i.e., Depreciation, Interest on loan and return on equity are sunk costs. Once the project envisaged is completed, these costs become un-controllable.
- 3.19.18 Further, the above costs used to be on higher side in the initial years. As post formation of Telangana State, TSGenco has commissioned KTPP-II, LSHES, PCHES, KTPP-VII and BTPS-3 units; it has resulted in higher Fixed Cost component. Whereas for old station KTPS-V & VI, KTPP-I and Hydel stations, the fixed cost is only Rs.71 lakh/MW.
- 3.19.19 In addition, as per the Transfer Scheme of APSEB and tripartite agreement, TSGenco is vested with the Pension liability of erstwhile APSEB (Andhra Pradesh State Electricity Board). Accordingly, TSGenco's claim includes the Pension liability of TSTransco, TSGenco and TSDiscoms.
- 3.19.20 Irrespective of the size, a thermal power station has to maintain all the auxiliaries which are required for generation of power and also the man-power to maintain the plant. Hence, it may not be appropriate to compare the per MW cost of RTS-B with a plant of higher capacity.

3.19.21 Further, the operating parameters of RTS-B are as determined by the Commission, which are in line with stations in peer group. As regards high variable charges of RTS-B, it pertains to normative weighted average for FY 2019-20. As per Clause 6.7.3 and Clause 6.9 of Regulations No.1 of 2019, TSGenco has passed on the savings in variable charges to TSDiscoms for FY 2019-20, consequently the actual variable charge is about Rs.2.81/kWh.

3.19.22 Fixed charges of a station depend mostly on the GFA of the station i.e., capital cost of the project:

- KTPS-VII commissioned in December 2018 had a lower capital cost in comparison with BTPS, three of the units of 270 MW each were commissioned in June 2020, December 2020 and March 2021.
- BTPS is a Green Field project whereas for KTPS-VII, no fresh acquisition of land was required and certain facilities for construction of the project were readily available, which resulted in reduced capital cost.
- BTPS's capital cost is within the CERC's benchmark per MW hard cost with December 2011 indices as base, as specified vide Order dated 04.06.2012 and escalated there on as it is a Green Field project. In addition, the benchmark hard cost of CERC does not include expenditure towards MGR, Railway siding, unloading equipment at jetty, rolling stock, locomotive, transmission line till tie point, etc.
- Further, the capital cost of KTPS-VII & BTPS include cost towards FGD which is mandatory as per MoEF&CC directives/guidelines. Provisions of Regulation allow this cost in addition to the existing/approved capital costs.
- Thus, it is not prudent to compare the capital costs or cost per MW of BTPS (1080 MW) with KTPS-VII (800 MW). However, capital costs of both the projects are within the norms.
- Over the period, fixed charges will reduce on account of reduction in interest on loan, as evident in case of KTPP-I & RTS-B and RoE will also decrease as net fixed assets decrease year on year due to depreciation.

3.19.23 The fixed charges proposed in the MYT Petition for 4th control period from FY 2019-20 to FY 2023-24 is in accordance with Regulations No.1 of 2019 and CERC (Terms and Conditions of Tariff) Regulations, 2019.

Commission's View

3.19.24 In the absence of Regulatory provisions for truing-up for 3rd control period from FY 2014-15 to FY 2018-19, the Commission has not carried out truing up exercise of fixed charges for FY 2014-15 to FY 2018-19 as detailed in Chapter 4. However, the Commission has approved the GFA addition for the

abovementioned years, which is considered for arriving at the Annual Fixed Charge (AFC) for FY 2019-20 to FY 2023-24. The Commission has allowed certain prudent expenses incurred by TSGenco in FY 2014-15 to FY 2018-19 viz., water charges/cess, income tax, etc., to be recovered by TSGenco as detailed in Chapter 4. As regards fixed charges for 4th control period from FY 2019-20 to FY 2023-24, the Commission has approved AFC for 4th control period from FY 2019-20 to FY 2023-24 in accordance with the provisions of the Regulations No.1 of 2019 as detailed in Chapter 6.

3.20 COAL PRICE

Stakeholders' submissions

- 3.20.1 Coal price of Rs.357/MT and Rs.364/MT for FY 2018-19 and FY 2019-20 are respectively towards other charges claimed by supplier for forest land adjustment charges, sampling charges, engine shunting charges, fuel surcharge, and pre-weigh bin charges. The Commission should examine whether such charges are permissible and payable as per terms and conditions of the Fuel Supply Agreements.

Petitioner's replies

- 3.20.2 TSGenco has claimed forest land adjustment charges, sampling charges, engine shunting charges, fuel surcharge, and pre-weigh bin charges as per the terms and conditions of Fuel Supply Agreement and the same is part of the fuel cost.

Commission's View

- 3.20.3 The Commission has gone through the supporting documents provided by the TSGenco for computation of variable charges and has been approved variable charges after prudence check as per the Regulations No.1 of 2019.

3.21 VARIABLE COST

Stakeholders' submissions

- 3.21.1 Variable Cost directly impacts consumer tariff. However, the present Petition has not specified the impact of 4.2 MTPA coal sanctioned by the Ministry of Coal for BTPS in February 2018, impact of fuel transportation cost, and other related parameters on the Variable Cost of the plant.

- 3.21.2 TSGenco has submitted that station-wise Variable Cost is considered for computation of working capital. The details of Variable Cost submitted by TSGenco is not in line with the Variable Cost available in the TSDiscom's ARR and Tariff Proposal filings for FY 2018-19. The Variable Cost claimed by TSGenco is much higher than that shown by TSDiscoms in their ARR filings.
- 3.21.3 KTPP-I was commissioned in the year 2010 and has high Variable Cost of Rs.3.02/kWh. KTPS-V which commissioned around same time, has Variable Cost of Rs.2.76/kWh. Further, variable cost of RTS-B, and KTPP-I are Rs.3.04/kWh, and Rs.3.01/kWh, respectively, for 4th control period from FY 2019-20 to FY 2023-24, which are on higher side. The variable charge of KTPS-V is on higher side. Therefore, the Commission should examine Variable Cost thoroughly. Further, there are some plants running for more than 50 years. Such plants are not safe and economical to run.
- 3.21.4 The Commission should examine financial prudence of these stations and direct TSGenco to submit Availability Factor, SHR and auxiliary consumption for last three financial year for these stations and undertake prudence check of Variable Cost before approval.

Petitioner's replies

- 3.21.5 The Variable Cost has been claimed as per the terms & conditions of PPA and the Regulations.
- 3.21.6 For computation of working capital, the yearly weighted average variable cost has been considered from FY 2014-15 to FY 2018-19. The variable cost specified in ARR of TSDiscoms is provisional while TSGenco has claimed the actual variable cost after fuel cost adjustments.
- 3.21.7 As regards the difference in variable cost of KTPP-I and KTPS-V, KTPS-V was commissioned in the year 1997 and 1998, whereas KTPP-I was commissioned in year 2010. Therefore, the comparison between both stations considering technology, period, location etc., is not appropriate.
- 3.21.8 However, factors which cause the difference in the variable charges are as under:

- Operating parameters of both the stations are as under:

Table 14: Operating parameters of KTPS-V and KTPP-I

Parameter	KTPS-V	KTPP-I
Station Heat Rate (kcal/kWh)	2500	2450
Auxiliary Consumption	9%	7.5%

- KTPS-V designed for use of lower grade coal (GCV form 3000 kcal/kWh to 3500 kcal/kWh) whereas KTPP-I designed for (GCV-4400 kcal/kWh).
- The basic price of G10 and G11 grade coal procured from SCCL for utilization at KTPP station is Rs.2610 as against KTPS-V G13 and G14 grade coal price of Rs.1590. For a marginal variation in quality of coal by 26% (GCV 3400 kcal to 4300 kcal), the basic price becomes higher by 64% which is major factor for higher variable cost of KTPP in comparison of variable cost KTPS-V. Further, the coal cost includes statutory payments towards royalty (14%), GST (5%), DMFT (30% of royalty), NMET (2% of royalty) etc., approximately 25% of basic price.
- The Specific Coal Consumption per unit of energy sent out at KTPS-V is 0.90 kg/kWh as against KTPP-I is 0.59 kg/kWh.

3.21.9 The variable charge of Rs.3.04 per unit for RTS-B is pertaining to normative weighted average for FY 2019-20. As per Clause 6.7.3 and Clause 6.9 Regulations No.1 of 2019, TSGenco has passed on the savings in variable charges to TSDiscoms for FY 2019-20, consequently the actual variable charge is about Rs.2.81/kWh.

Commission's View

3.21.10 The Commission has approved the Energy Charge Rate (ECR)/ variable charge for TSGenco stations for 4th control period from FY 2019-20 to FY 2023-24 in accordance with the provisions of the Regulations No.1 of 2019 as detailed in Chapter 6. The Commission has determined variable cost of BTSPS based on the details provided by TSGenco for KTPS-V station as both stations are identical to each other.

Chapter 4

Analysis and Conclusion on True-up for 3rd control period from FY 2014-15 to FY 2018-19

4.1 REGULATORY PROVISIONS

4.1.1 Annual fixed charges of a thermal generating station or of a hydro generating station, as the case may be, shall consist of recovery of the following:

- i) Return on Capital Employed (RoCE);
- ii) Depreciation;
- iii) O&M Expenses;
- iv) Income tax as per actuals.

4.1.2 TSGenco has submitted Petition for Truing up of generation tariff for the existing stations in accordance with the clause 3.8 of Regulations No.1 of 2019 and determination of capital cost & tariff in respect of KTPS-VII for FY 2014-15 to FY 2018-19.

4.1.3 Regulations No.1 of 2019 has provision to submit the True up Petition along with MYT Petition. The relevant provisions are as under:

“3.8 Petitions to be filed during the 2nd control period-

The Petitions to be filed in the 2nd control period under these Regulations are as under:-

3.7.1 Multi-Year Tariff Petition shall be filed by April 1 2019, comprising:

- (a) *Truing-up for FY 2014-18 to be carried out under the Andhra Pradesh Regulation 1 of 2008- Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Entity to a Distribution Licensee and Purchase of Electricity by Distribution Licensees or CERC Regulations as relevant.*
- (b) *Provisional Truing-up for FY 2018-19 to be carried out under the Andhra Pradesh Regulation 1 of 2008- Terms and Conditions for Determination of Tariff for Supply of Electricity by a Generating Entity to a Distribution Licensee and Purchase of Electricity By Distribution Licensees or CERC Regulations as relevant.*

... ..”

4.1.4 Clause 3.8 of Regulations No.1 of 2019 specifies that true up shall be carried out under Regulation No.1 of 2008. However, Regulation No.1 of 2008 does not have any provisions for truing up. Therefore, due to absence of regulatory provisions for truing up in Regulation No.1 of 2008, the Commission has determined only the capital cost and Capitalisation for new stations and has approved additional capitalization for existing stations as per the regulatory provisions available in the Regulation No.1 of 2008. The GFA values

approved by the Commission for FY 2014-15 to FY 2018-19 have been considered for determination of ARR and tariff for 4th control period from FY 2019-20 to FY 2023-24 as per Regulations No.1 of 2019.

4.2 ADDITIONAL CAPITALIZATION CLAIMED FOR EXISTING STATIONS

4.2.1 The additional capitalization claimed by TSGenco for existing stations for FY 2016-17 to FY 2018-19 of 3rd control period is as shown in the Table below:

Table 15: Additional capitalization claimed for existing stations for FY 2016-17 to FY 2018-19

Rs. in crore

Sl. No.	Name of the Station	GFA approved in GTO	Additions in FY 2016-17	Additions in FY 2017-18	Additions in FY 2018-19	Total additions
1	KTPS-O&M	1287.64	6.26	5.62	21.85	33.73
2	KTPS-V	2129.31	5.33	1.02	23.39	29.74
3	KTPS-VI	2398.82	95.60	25.51	11.01	132.13
4	RTS-B	92.74	0.02	0.50	34.28	34.79
5	KTPP-I	2559.68	0.00	27.83	0.25	28.08
6	NSHES	1097.41	13.62	700.09	0.65	714.36
7	Srisailam	3376.06	0.00	0.00	0.00	0.00
8	Small Hydel	120.84	0.00	0.00	0.18	0.18
9	Mini Hydels	31.35	0.00	0.00	0.00	0.00
10	Pochampad -II	29.60	0.00	0.14	0.00	0.14
11	PJHES	688.91	0.00	0.88	2.12	3.00
	Total	13812.36	120.83	761.59	93.73	976.15

4.2.2 The Commission has scrutinized the Petition and has observed that TSGenco has submitted GFA addition for existing and new stations without any details of the addition claimed for FY 2015-16 to FY 2018-19. Hence, the Commission asked Petitioner to submit scheme wise and item wise capitalisation with detailed justification. In response, TSGenco has submitted financial year wise and item wise additional capitalization details with justification, which are presented as under:

Thermal Generating Stations

4.2.3 TSGenco has claimed Rs.68.52 crore under R&M activity for FY 2016-17 to FY 2018-19, which includes Rs.34.79 crore for RTS-B station and Rs.33.73 crore for KTPS-O&M station.

RTS-B Station

4.2.4 TSGenco submitted that it has commissioned new Electrostatic Precipitator (ESP) at RTS-B station on 19.09.2018 to comply with the statutory obligation for obtaining necessary clearance from Telangana State Pollution Control Board (TSPCB) for further running of the plant. TSGenco incurred the cost of Rs.34.19 crore for the same. TSGenco submitted the details of expenditure with justifications as under:

- As old ESP of RTS-B was erected in year 1971 and the Suspended Particulate Matter (SPM) levels were beyond the TSPCB standards. Therefore, to maintain the SPM levels within the TSPCB standards, new ESP has been commissioned. Scope of work included design, manufacture, supply, civil works, erection, testing and commissioning of ESP with ID fan, ID fan motor and VFD.
- TSPCB Zonal Laboratory, Warangal collected the stack emission samples on 12.12.2018 and submitted the report on 18.12.2018. The values before commissioning of new ESP and after commissioning of new ESP as submitted by TSGenco are as under:

Table 16: Details of Stack Emission for RTS-B before and after commissioning of new ESP

Parameters	SPM	SO ₂	NOx
Standards (mg/Nm ³)	100	600	600
FY 2016-17	207	139	83
FY 2017-18	139	144	182
As per TSPCB dt:18.12.2018	92	480	139
FY 2018-19	63	286	194

- The stack emission levels are measured by third party M/s Care Labs, Hyderabad, which is recognized by MoEF&CC, Govt. of India. As per the test reports of M/s Care Labs, the stack emission of RTS-B station for the period from October 2018 to March 2019 is as under:

Table 17: Details of Stack Emission of RTS-B for the period from Oct'18 to Mar'19

Month	Value (mg/Nm ³)		
	SPM	SO ₂	NOx
October 18	144	286	175
November 18	108	210	122
December 18	63	115	84
January 19	76	126	95
February 19	83	118	80
March 19	79	124	51

Table 18: Details of works with justification submitted by TSGenco for RTS-B

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2016-17		
1	0.02	Commissioned 4x16.5 TR water cooled packaged air

Sl. No.	Amount (Rs.crore)	Description of Work
		conditioners with all electrical accessories for main control room at RTS-B. Control of DCS system require good air conditioning system to keep temperature within specified limits (22° C) for proper functioning. The performance & life of DCS cards has been increased and avoided unit trippings by malfunctioning of DCS cards.
FY 2017-18		
2	0.50	Supply of spares for R&MJ of 62.5 MW TG set of RTS-B: It is a protection device equipped to avoid damage to turbine.
FY 2018-19		
3	34.19	New ESP along with ID fan, ID fan motor and VFD for RTS-B.
4	0.03	Fabrication of water wall tubes S-Panel and water wall bends at soot blowers: After replacement of water wall S-Panel and Soot blower bends unit was running continuously for 177 days and 270 days i.e., the performance of the boiler was improved and the rate of trippings due to Soot blower bends also came down to the lowest.
5	0.05	Purchase of one Squirrel Cage Induction Motor for Godavari Pump House in RTS-B: After replacement of induction motor, the body temperature & vibrations of the motor are reduced, and repairs requirement are reduced. The pump discharge flow has been increased and unit reservoir level is maintaining.
Total	34.79	

KTPS-O&M Station

4.2.5 KTPS-O&M comprises total 8 units, out of which units-1,2,3,4,5 and 7 are identified for phasing out by CEA. Therefore, only few works like replacement of air heater blocks and condensed tubes were carried out, which are vital to run the units in safe and systematic manner till retirement. The details of R&M work for KTPS-O&M for FY 2016-17 to FY 2018-19 are as under:

Table 19: Details of works with justification submitted by TSGenco for KTPS-O&M

Sl. No.	Amount (Rs.crore)	Description of work
1	27.47	Civil works like rising of northern ash pond, construction of 2 nd floor of DAV School, which are common & essential to KTPS-V and VI and newly constructed KTPS-VII.
2	6.25	Replacement of Air Heater blocks & Condensed Tubes were carried out which are vital to run the units in safe & systematic manner till retirement.
Total	33.73	

4.2.6 The cost benefit analysis submitted by TSGenco is as under:

Table 20: Details of works with justification submitted by TSGenco for KTPS-O&M

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2016-17		
1	0.02	KTPS-B-R&M-Design, Manufacturing, Supply, Erection/Installation, Testing & Commissioning of 11 kV bus ducts: Earlier the excitation transformer was connected to the generator bus duct through 11 kV grade cable. Unit was tripping on stator earth fault due to failure of such cable. Therefore, to reduce the unit outages and the loss of generation, bus duct was erected between the main bus and excitation transformer.
2	0.98	KTPS-B R&M-Design, Manufacturing, Supply, Erection/Installation, Testing & Commissioning of 11 kV bus ducts.
3	0.85	Design, Manufacturing, Testing (as per IBR) & Supply of Primary Super Heater (PSH) coil assemblies in Unit-4 of KTPS-O&M.
4	1.76	Complete dismantling, Erection and commissioning of Air Heater Blocks in Unit-5 of KTPS-B Station: The furnace was running with positive draft. It was unsafe and this may endanger the life of the persons working in the vicinity of the boiler. Therefore, the damaged TAPH in Unit-5 was replaced.
5	2.65	<p>KTPS-B-Design, Manufacture, dismantling/relocating of existing and complete erection and commissioning of 4 sets of WARMAN make Ash slurry pumps along with motors and switch gear panels: As existing ash pond level is not sufficient for disposal of ash, ash pond level was raised from EL +92.00 M to EL +99.00 M. The old slurry disposal pumps head is not sufficient to dispose the ash into ash pond with increased height. Therefore, the old pumps were replaced with new pumps with high head.</p> <p>KTPS-B-R&M-Supply of Cu-Ni tubes for turbine condenser: Before replacement of condenser tubes condenser vacuum was very low as most of the condenser tubes were bypassed due to frequent condenser tube failures. Consequently unit-5 trippings were increased on low vacuum which results in loss of generation.</p> <p>During the condenser tube leak DM water mixed with raw water, thereby contaminated DM water caused boiler tube failures. Under the above circumstances, condenser tubes were procured and were replaced during capital overhaul in the year 2016-17.</p>
FY 2017-18		
6	5.52	Formation of northern ash pond-II up to EL +92.00 M including well and barrel at Paloncha and raising of Northern Ash Pond-II up to EL+99.00 M including well and spillway at Paloncha: As the capacity of Northern Ash Pond-I was exhausted, Northern Ash pond-II constructed for disposal of ash generated from units-I to VIII of KTPS-O&M. Dry Fly ash system is provided for units I to VIII to dispose all the Fly ash generated from all the units in dry form. But due to lack of demand, only some quantity of dry ash is being disposed off to ash pond in slurry form. Therefore, ash pond-II is constructed. As the level

Sl. No.	Amount (Rs.crore)	Description of Work
		is not sufficient for disposal of ash, Northern ash pond-II level was raised from EL +92.00 M to EL +99.00 M.
7	0.10	Passenger Lift for Guest House of KTPS(O&M): The Guest House is renovated due to ageing and the same guest house and other amenities can be utilized for KTPS complex.
FY 2018-19		
8	1.12	Construction of Compound wall around the abandon railway track land opposite to Navabharat temple at Paloncha: The land about Acs.400.26 gts of railway track from Ch.0.00 KM to 10.80 KM was abandoned due to commissioning of the Gajulagudem by-pass line at Regalla Mandal and about Acs 37.36 gts of railway track from Ch.10.80 KM to 12.30 KM (New Ch.2/20KM to Ch.3/70Km) is being utilized for transportation of coal to KTPS Complex. Out of the Acs 400.26 gts abandoned portion of railway track, about Acs 47.05 gts of land is situated opposite to Navabharat temple and very nearer to Kothagudem- Bhadrachalam main road and it was provided with barbed wire fencing. The miscreants are making many attempts to encroach the above land as the land is far away from KTPS complex and it is very difficult to safeguard the said land without compound wall. Hence, compound wall was constructed to protect the land.
9	18.73	Raising of Northern Ash Pond-I up to EL+110.00 M including well and barrel at Paloncha: The ash being discharging into northern ash pond-II up to level of EL+99.00M cater up to September 2016 only. Therefore, Northern Ash Pond-I was raised from EL (+)105 M to EL (+)110 M for disposal of ash from KTPS-I to IV & VII /Paloncha.
10	1.99	Construction of Second floor of DAV school building at IM colony KTPS-O&M: The existing DAV school building at KTPS-O&M have two floors (G+1) with 42 class rooms and two staff rooms. Due to increasing strength of school, the existing classrooms are not sufficient to run all the classes from LKG to X class.
Total	33.73	

KTPS-V

4.2.7 TSGenco has submitted year wise and item wise details of capital expenditure for KTPS-V as under:

Table 21: Details of works with justification submitted by TSGenco for KTPS-V

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2016-17		
1	0.03	Squirrel cage Induction motor for the crest gates of Kinnerasani dam was installed for smooth operation.
2	0.63	Installation of battery banks as performance of existing battery bank was not up to mark. In order to avoid any untoward incident due to battery bank which cater the DC Supply for control and protection of various 6.6 kV HT switchgear panels, DC emergency lighting and mainly for standby supply to very

Sl. No.	Amount (Rs.crore)	Description of Work
		critical motors in the case of Grid failure or station dark out.
3	3.57	Boiler of KTPS-VI is controlled circulation type and having 3 nos. Of Boiler circulating water pumps of M/s Torshima Pump MFG Co. Limited, OSAKA/JAPAN. If any one of pump has problem, then the unit stop functioning. Therefore, procured one spare boiler circulating pump without pump casing of M/s Torshima Pump MFG Co. Limited.
4	1.05	(a) Station Transformer has been in service for last 18 years and no mandatory spares are available to meet emergency requirement. The Station Transformer spare coil of one limb is used in station Transformer to step down the voltage level from 220 kV to 6.9 kV and this voltage is required for unit HT loads. (b) Spare limb is essentially required for replacement as and when fault occurred in winding of station Transformer and to minimize the forced outage of the station Transformer in both the units-9 & 10 of KTPS-V & VI. The spares of the material are required for uninterrupted operation and to avoid generation loss.
5	0.05	Transformer, 250 kVA, 11 kV/440 V, 3-ph, 50 Hz
FY 2017-18		
6	0.12	Passengers lift along with associated equipment was procured for service building of KTPS-V for providing continuous passenger lift services to shift, maintenance and various office staff.
7	0.90	(a) 2 nos. of BHEL make ID fan motors are installed KTPS-VI. These motors are double fed variable frequency drive synchronous motors and each motor is equipped with 1 No.of VFD and 2 Nos of Dry type cast resin transformers with vector group Ddo and Dynll.(b) It is essential to maintain one spare dry type transformer to avoid loss of generation due to break down of transformer (c)The 3200 kVA, 11/2.3 kV, DYN11 Dry type cast resin Transformer for VFD, shall be in POOL and can be used for both KTPP and KTPS-VI wherever it is necessary.
FY 2018-19		
8	3.34	(a) MDBFP motor is used during initial start-up of the Unit, without MDBFP it is not possible to start the unit in cold condition. (b) Further it acts as a standby to the TDBFP's and can be taken into service during breakdown/ Maintenance/repair of any of the TDBFP. (c) It is essential to maintain one spare MDBFP's motor to avoid loss of generation during breakdown of the motor.
9	0.52	The Spares for IP Turbine are critical and essential. These items are not readily available in the market and takes longer period for manufacturing and supply.
10	19.54	The serving AB ash pond up to EL (+)115 M was exhausted by September 2016. Hence, additional ash Pond Bund was raised for storage of ash generated from KTPS-V&VI / Paloncha for uninterrupted power generation of 1000 MW.

Sl. No.	Amount (Rs.crore)	Description of Work
		Estimated life extension of the asset: The Additional ash Pond was charged in June 2017 and will serve up to May 2021.
Total	29.74	

KTPS-VI

4.2.8 TSGenco has submitted year wise and item wise details of capital expenditure for KTPS-VI as under:

Table 22: Details of works with justification submitted by TSGenco for KTPS-VI

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2016-17		
1	89.14	CHP Augmentation
2	64.66	BOP Civil
FY 2017-18		
3	0.03	For Hydraulic jacks as these required for capital overhaul and other overhaul works of main turbine.
4	25.48	BOP E&M
FY 2018-19		
5	0.10	For lifts in TG building, as availability of the lifts in TG building will result in attending emergencies in time, thereby avoiding equipment failures unit trippings and major losses.
6	0.51	(a) For implementation of ERP and to enable to provide better IT services, main work station/auto CAD center and offices of IT division was provided at 0.0 M floor of service building of KTPS-VI. (b) TSGenco purchased 4 sheds from M/s BGRESL namely BGR site office shed of size (35 Mx12.4 M), main store office shed of size (21 Mx7 M), cement store shed of size (45 Mx12 M), and electrical store shed of size (45 Mx15 M).
7	0.08	CHP Augmentation
8	7.71	CHP Augmentation
9	2.18	BOP E&M
10	0.44	11 kV Supply Extension for colony
Total	132.13	

KTPP-I Station

4.2.9 TSGenco has submitted year wise and item wise details of capital expenditure for KTPP as under:

Table 23: Details of works with justification submitted by TSGenco for KTPP-I

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2017-18		
1	16.11	Capital Spares
2	2.28	Capital Spares
3	1.26	Motor, 11 kV, 2650 kW, 1494RPM, FRM:1LA7904-4

Sl. No.	Amount (Rs.crore)	Description of Work
4	0.96	Pump, Vacuum, Elmo 2BE1353 OBY 4
5	0.84	Transformer, CST RSN, 3200 kVA, 11/2.3 kV, DDO
6	0.72	Pump, KH69CF, WKM 80/1+3
7	5.63	Other Civil Works
FY 2018-19		
8	0.25	Laying of PLC Cables, erection of field instruments and 33 kV isolators at Kaleshwaram and Kataram pump houses: (a) For smooth operation of pumps and to minimize the man power, PLC is required which reduces the O&M expenses of pump house. (b) Water CC charges are paid for the installed capacity on per annum basis and installation of flow transmitters reduces 50% of the total cost per annum for the water royalty/cess charges. (c) More over for taking of LC on 33 kV feeder become difficulty from NPDCL authorities as it is only the feeder from Kataram to the other villages for both agricultural and domestic loads. (d) In order to avoid this and for the redundancy of the maintenance isolator for safe working on 33 KV feeder was erected. (e) Construction of Compound wall: To protect the acquired land by TSGenco.
Total	28.08	

Hydel Generating Stations

4.2.10 TSGenco has submitted additional capitalization for NSHES, Mini Hydel and PJHES. The detailed submissions are as under:

NSHES

4.2.11 TSGenco has submitted year wise and item wise details of capital expenditure for NSHES as under:

Table 24: Details of works with justification submitted by TSGenco for NSHES

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2016-17		
1	1.22	Commissioning of 7 sets advanced numerical protection relay panels along with disturbance recorder (DR) evaluation units and recommended spares for generator, generator transformer and UAT protection schemes for units 2-8 of Nagarjuna Sagar.
2	8.97	Commissioning of 7 sets of Digital Voltage Regulator (DVR) based Static Excitation Equipment (SEE) for 7 nos. pumped storage power Generating units (7x100.8 MW pump-turbine/generator-motor sets) at Nagarjuna Sagar.
3	0.62	Commissioning of draw out type 415V Air Circuit Breakers in place of existing old M/s L&T make Air circuit breakers at

Sl. No.	Amount (Rs.crore)	Description of Work
		Nagarjuna Sagar: The old breakers have served for more than 30 years. As the existing breakers have become obsolete due to long service and the spares for the breakers are also not available in the market due to update of technology.
4	2.61	(a) Commissioning of 220 KV Centre Break Triple Pole isolators and Double Break Triple Pole isolators at NSHES. (b) Purchase of 2 nos. of 245KV SF6 breakers for NSHES. (c) Purchase of 220 KV SF6 gas filled Current Transformers with silicon composite insulator, 132KV & 220 Capacitive Voltage Transformers to NSHES.
FY 2017-18		
5	700.09	Nagarjuna Sagar Tail Pond Dam
FY 2018-19		
6	0.29	As a part of R&M major overhaul works of generator, turbine and their auxiliaries for unit-I (30MW) including replacement of governor at Nagarjuna Sagar Left Canal Power House.
7	0.16	As a part of R&M of Nagarjuna Sagar Left canal Power House, the expenditure incurred for the Commissioning of MAXDNA based EHGC panel of Unit-1 at NSLCPH.
8	0.21	As a part of R&M of Nagarjuna Sagar Power House, the expenditure incurred for 220 kV and 132 kV Zinc Oxide Surge Arrestors to Nagarjuna Sagar Hydro Electric Scheme.
Total	714.36	

Small Hydel and Pochampad-II Station

4.2.12 TSGenco has submitted details of capital expenditure for Small Hydel and Pochampad-II stations as under:

Table 25: Details of works with justification submitted by TSGenco for Small Hydel & Pochampad-II

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2017-18		
1	0.15	Pochampad- Purchased Remote Control Terminal Unit (RTU) along with the interface cabinet, relays, transducers, switches etc., and necessary spares to provide the online data from the interstate Transmission lines to the TSSLDC. As per Clause 4.6.2 of the Indian Electricity Grid code (IEGC), reliable and efficient speech and data communication system shall be provided to facilitate necessary communication and data exchange supervision/control of the grid by the RLDC, under normal and abnormal conditions. All users, STUs and CTU shall provide systems to telemeter power system parameter such as flow, voltage and status of switches/transformer taps etc.
FY 2018-19		
2	0.17	Singur HES- Purchased 1 no. of 13 passenger lift of capacity (884 kgs) with V3F drive and ARD Automatic Rescue Device (ARD) etc., including spares and dismantling and buy back of old /existing lift for Singur Power House. As lift is very essential for transportation of material and staff for the five

Sl. No.	Amount (Rs.crore)	Description of Work
		floors i.e., Turbine floor, HMC Floor, Battery bank floor, MCR floor and Service Bay floor for carrying out daily O&M works and unit overhaul works. The existed lift was commissioned during commissioning of the units and was frequently undergoing repairs due to its ageing and normal wear and tear.
Total	0.32	

Priyadarshini Jurala Station:

4.2.13 TSGenco has submitted year wise and item wise details of capital expenditure for Priyadarshini Jurala Station as under:

Table 26: Detail of works with justification submitted by TSGenco for PJHES

Sl. No.	Amount (Rs.crore)	Description of Work
FY 2017-18		
1	0.77	Erection and testing of bulb type turbine
2	0.004	Illumination System
3	0.007	Construction of security room in colony
4	0.007	Construction of cycle shed in power house
5	0.08	Power house miscellaneous works
FY 2018-19		
6	0.41	School building first floor
7	0.43	Power house miscellaneous works
8	1.27	Hydel power generation plant
Total	3.01	

4.3 CAPITALISATION CLAIMED FOR NEW STATIONS

4.3.1 TSGenco has submitted the details of capitalisation for new stations viz., KTHP-II, KTHPS-VII, LJHES and PCHES in the Petition. The capitalisation submitted by TSGenco is summarised in the table below:

Table 27: Capitalisation proposed by TSGenco for New Stations

Rs. in crore

Sl. No.	Name of the Station	Additions FY 2015-16	Additions FY 2016-17	Additions FY 2017-18	Additions FY 2018-19	Total
1	KTHP-II	3039.35	6.42	314.97	45.09	3405.83
2	LJHES	1141.99	400.76	6.44	6.72	1555.90
3	PCHES	0.00	226.98	215.65	2.67	445.31
4	KTHPS-VII	0.00	0.00	0.00	4605.02	4605.02

Commission's View

Existing Stations:

4.3.2 The Commission in its GTO dated 05.06.2017 had approved additional capitalization for existing generation stations of TSGenco up to FY 2015-16.

Further, the Commission in its Order dated 03.01.2019 in I.A.No.33 of 2018 had approved additional capitalization of Rs.809.73 crore for Nagarjuna Sagar HES Complex. In the present Petition, TSGenco has claimed additional capitalization for FY 2014-15 to FY 2018-19. It is noted that the Petitioner has claimed the additional capitalization for existing generation stations for FY 2014-15 and FY 2015-16 as approved in the GTO dated 05.06.2017.

4.3.3 Clause 10.9 of Regulation No.1 of 2008 allows the Commission to approve additional capitalization for the works that are necessary for efficient and successful operation of the generating station, but not included in the original project cost. The relevant provisions of the Regulation are as under:

“10.9 Capital cost of the project shall be inclusive of, and shown separately with supporting evidence the expenditure if any, likely to be capitalised within the original scope of work after the date of commercial operation, and no separate claim for any additional capitalization shall be entertained. Subject to prudence check Capital Expenditure of the following nature actually incurred after the cut-off date may be admitted by the Commission.

- i. Deferred liabilities relating towards works/services within the original scope of work;*
- ii. Liabilities to meet award of arbitration or for compliance of the order or decree of the Court;*
- iii. On account of change in law;*
- iv. Any additional works/services that became necessary for efficient and successful operation of the generating station, but not included in the original project cost; and*
- iv. Deferred works relating to ash pond or ash handling system in the original scope of work;”*

4.3.4 The Commission allowed additional capitalization for existing stations considering the provisions of Regulation No.1 of 2008 and prudence check of item wise additional capitalization claimed by TSGenco. The Commission asked the Petitioner to submit details of station wise decapitalisation for the period from FY 2014-15 to FY 2018-19. In response, TSGenco submitted the details of decapitalised asset for Nagarjuna Complex, Srirsailam LB, Priyadarshini Jurala, Mini Hydel Stations and KTPP-I for FY 2014-15 to FY 2018-19 as shown below.

Table 28: De-Capitalisation of assets submitted by TSGenco

	<i>Rs. in crore</i>					
Stations	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
KTPP-I	-	16.48	-	-	-	-

Stations	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
KTPS-VI	-	-	-	-	-	57.12
NSHES	0.20	0.02	0.38	-	-	-
SLBHES	3.02	-	0.35	-	-	-
PJHEP	-	-	0.20	0.61	-	-
MHS	-	-	-	-	0.11	-
Head Quarters					0.02	
Total	3.22	16.50	0.93	0.61	0.12	57.12

- 4.3.5 While approving the additional capitalization for existing stations for FY 2014-15 and FY 2015-16, the Commission has considered the additional capitalization approved in the GTO dated 05.06.2017 and has deducted the decapitalised asset as submitted by the Petitioner. The additional capitalization claimed by the Petitioner and approved by the Commission for FY 2014-15 and FY 2015-16 are shown in the Table below:

Table 29: Additional capitalization approved for FY 2014-15 and FY 2015-16

Rs. in crore

Station	FY 2014-15			FY 2015-16		
	GTO	Petition	Approved	GTO	Petition	Approved
Thermal						
KTPS-O&M	48.13	48.13	48.13	51.84	51.84	51.84
KTPS-V	6.21	6.21	6.21	1.80	1.80	1.80
KTPS-VI	9.79	9.79	9.79	0.51	0.51	0.51
RTS-B	20.12	20.12	20.12	6.65	6.65	6.65
KTPP-I	18.45	18.45	18.45	11.27	11.27	-5.21
Hydel						
Nagarjuna Complex	1.48	1.48	1.28	0.00	0.00	-0.02
Srisaillam LB	-2.97	-2.97	-2.97	3.37	3.37	3.37
Small Hydel	0.25	0.25	0.25	0.00	0.00	0.00
Mini Hydel	0.04	0.04	0.04	0.00	0.00	0.00
Pochampad-II	0.00	0.00	0.00	0.00	0.00	0.00
Priyadarshini Jurala	0.62	0.62	0.62	1.18	1.18	1.18

- 4.3.6 The Commission noted that TSGenco has claimed some of additional capitalization for FY 2016-17 to FY 2018-19 which are related to expenses for Repair & Maintenance (R&M) spares and for civil & other works other than the generating station. Therefore, the Commission sought the justification for the same. The Commission has considered the submission made by TSGenco vide its response to the Commission's queries while approving the additional capitalization. The Commission has not allowed such additional capitalization claimed by TSGenco on account of spares and works incurred other than the ones on the generating station. However, the Commission has approved

additional capitalization for ash pond, electrostatic precipitator, renovation and modernisation of stations, R&M, etc., which are necessary for efficient and successful operation of the generating stations.

4.3.7 In addition, the Commission has gone through the submission of TSGenco on capitalisation of Nagarjuna Sagar Tail Pond Dam in FY 2017-18. The Commission approves the additional capitalization of Rs.809.73 crore as per the Auditor's Certificate submitted by TSGenco. The Commission has also observed that this additional capitalization is in line with its Order in I.A.No.33 of 2018 in O.P.No.26 of 2016 dated 03.01.2019.

4.3.8 Additional capitalization claimed by the Petitioner for FY 2016-17 to FY 2018-19 and approved by the Commission considering Clause 10.9 of Regulation No.1 of 2008, after prudence check are summarised in the Table below:

Table 30: Additional capitalization approved for FY 2016-17 to FY 2018-19

Rs. in crore

Station	FY 2016-17			FY 2017-18			FY 2018-19		
	GTO	As Filed	Approved	GTO	As Filed	Approved	GTO	As Filed	Approved
Thermal									
KTPS-O&M	0.00	6.26	5.39	0.00	5.62	5.52	0.00	21.85	18.73
KTPS-V	0.00	5.33	0.63	0.00	1.02	0.00	0.00	23.39	19.54
KTPS-VI	0.00	95.60	95.60	0.00	25.51	25.48	0.00	11.01	10.58
RTS-B	0.00	0.02	0.02	0.00	0.50	0.00	0.00	34.28	34.28
KTPP-I	0.00	0.00	0.00	0.00	27.83	5.63	0.00	0.25	0.00
Hydel									
Nagarjuna Complex	0.00	13.62	13.25	809.73	809.73	809.73	0.00	0.65	0.65
Srisaïlam LB	0.00	0.00	-0.35	0.00	0.00	0.00	0.00	0.00	0.00
Small Hydel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
Mini Hydel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.11
Pochampad II	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00
Priyadarshini Jurala	0.00	0.00	-0.20	0.00	0.88	0.25	0.00	2.12	1.71

New Stations:

4.3.9 The Commission had provisionally approved capital cost and additional capitalization for new generating stations in the GTO dated 05.06.2017. The capital cost approved by the Commission for new stations are as under:

Table 31: Capital Cost approved in GTO dated 05.06.2017

Rs. in crore

Stations	Capital Cost on Year of COD	Capital Cost till Cut-off date	Total Capital Cost
KTPP-II	3229.78	240.84	3470.62
Lower Jurala	1332.59	210.19	1542.78
Pulichintala	228.21	205.64	433.85

- 4.3.10 TSGenco has filed a Review Petition (RP) numbered as RP No.2 of 2021 seeking review, among others, of the IDC and EDC approved for the above stations. The Commission vide its Order dated 19.02.2022 disposed of the said RP wherein the review sought on the IDC and EDC approved for the above stations was not allowed.
- 4.3.11 However, the capital cost was approved for new stations in the GTO on provisional basis, the Commission has revisited the capital cost of new stations in accordance with the principles laid out in the GTO for approval of IDC and EDC and has accordingly approved the final capital cost in this Order. For this, the Commission has scrutinised the submissions of the Petitioner and has approved the capital cost for new stations based on prudence check and principles laid out in the GTO on approval of provisional capital cost.
- 4.3.12 Further, in Retail Supply Tariff Order for FY 2018-19 dated 27.03.2018, the Commission had approved Annual Fixed Charges of Rs.311.11 crore of KTPS-VII station based on the information submitted by TSGenco. However, the capital cost of KTPS-VII was not approved in the said Order. Therefore, the Commission has determined the capital cost of KTPS-VII station in this Order.
- 4.3.13 Also, while approving the capital cost, the revenue from sale of infirm power has to be subtracted in accordance with Clause 10.12 of Regulation No.1 of 2008, which is as under:
- “10.12 **Sale of Infirm Power:** Any revenue (other than the recovery of fuel cost) earned by the generating company from sale of infirm power, shall be taken as reduction in capital cost and shall not be treated as revenue.”*
- 4.3.14 The Commission noted that TSGenco has already subtracted the revenue from sale of infirm power while submitting the capital cost for new stations.
- 4.3.15 The Commission's has exercised following prudence check while approving the capital cost for new stations:
- The Commission checked capital cost specified in the PPA and original actual cost recorded in the annual accounts.
 - The revenue from the sale of infirm power already reduced from capital cost as submitted by TSGenco in its submissions.

- The penalties levied by the TSGenco to the contractors reduced from capital cost.
- The Commission has not allowed any gain or loss on the account of variation of foreign exchange rate in accordance with Clause 10.10 of the Regulation No.1 of 2008.

4.3.16 The capital cost admitted by the Commission in GTO dated 05.06.2017, claimed by the Petitioner and approved by the Commission for KTPP-II are summarised in the Table below:

Table 32: Capital Cost approved for KTPP-II station

Rs. in crore

Particulars	Approved in GTO	Claimed	Approved	Basis of approved cost
BTG Package	1522.99	1529.10	1527.09	Liquidated damages included in the claimed cost is not allowed
BOP Including Civil works on EPC basis	701.32	795.76	795.76	Claimed cost is towards the original scope of works and hence allowed
Back Charges to M/s Tecpro_Civil & E&M				
Conveyor from pit head mine	CWIP	105.00	105.00	Claimed cost is towards the original scope of works and hence allowed
Other Civil works (Quarters, Development charges, etc)	31.61	183.20	183.20	Claimed cost is towards the original scope of works and hence allowed
Spares	48.75	60.11	42.66	The amount of spares upto cut-off date is allowed as spares are not allowable after cut-off date in accordance with the Regulations
Establishment & Consultancy	72.00	93.87	79.00	Limited to the approved amount in the GTO
Operator Training	7.00			
Start-Up fuel				
Contingencies & Overheads	4.28	9.00	9.00	Claimed cost is towards the original scope of works and hence allowed
Raw Water Pipeline	207.00	207.00	207.00	Claimed cost is towards the original scope of works and hence allowed
Railway track for Coal handling	Nil	9.16	9.16	Claimed cost is towards the original scope of works and hence allowed

Particulars	Approved in GTO	Claimed	Approved	Basis of approved cost
Additional Coal Handling plant including Track Hopper	186.00	86.68	86.68	Claimed cost is towards the original scope of works and hence allowed
Balance works of Additional Coal Handling plant		131.31	131.31	
IDC & FC	680.00	944.88	755.90	Approved as 80% of claimed amount in line with the principle adopted in GTO
Wet ash Handling system	9.67	9.67	9.67	Claimed cost is towards the original scope of works and hence allowed
Cost of Land towards Ash Pond and R&R Package	Capital work in progress	91.00	91.00	Claimed cost is towards the original scope of works and hence allowed
Cost towards further raising of ash pond & construction of new ash pond at Kothapally(V) for KTHPP-I & II		52.60	52.60	Claimed cost is towards the original scope of works and hence allowed
Rotor Assembly 600MW Gen THDF 115/67	0.00	35.40	35.40	Claimed cost is allowed as the same is considered to be prudent
Rotor Repair and replacement Cost	0.00	4.45	4.45	Claimed cost is allowed as the same is considered to be prudent
Total project cost	3470.62	4348.19	4124.88	

4.3.17 The capital cost admitted by the Commission in GTO dated 05.06.2017, claimed by the Petitioner and approved by the Commission for LJHES are summarised in the Table below:

Table 33: Capital Cost approved for LJHES

Rs. in crore

Particulars	Approved in GTO	Claimed	Approved	Basis of approved cost
E&M Works	474.70	499.31	474.67	Impact of FERV included in the claimed cost is not allowed in line with the principle adopted in GTO
Civil Works	568.83	699.23	699.23	Claimed cost is towards the original scope of works and hence allowed
Establishment	66.77	67.45	66.77	Limited to the approved amount in the GTO
IDC	432.48	672.62	493.60	IDC allowed upto the

				condoned period of delay in GTO
Total	1542.78	1938.61	1734.27	

4.3.18 The capital cost admitted by the Commission in GTO dated 05.06.2017, claimed by the Petitioner and approved by the Commission for PCHES is summarised in the Table below:

Table 34: Capital Cost approved for PCHES

Rs. in crore

Particulars	Admitted in GTO	Claimed	Approved	Basis of approved cost
Major civil works	157.17	213.34	192.83	Claimed cost is towards the original scope of works and hence allowed but limited to the revised cost estimates as submitted by TSGenco
Other civil costs				
Land and buildings				
Plant and equipment	204.74	215.58	204.74	Liquidated damages included in the claimed cost is disallowed
Establishment	27.68	27.68	27.68	Claimed cost is towards the original scope of works and hence allowed
IDC	44.26	44.26	44.26	Claimed cost is the same as approved in the GTO and hence allowed
Total	433.85	500.86	469.51	

4.3.19 The capital cost claimed by the Petitioner and provisionally approved by the Commission for KTPS-VII is summarised in the Table below:

Table 35: Capital Cost approved for KTPS-VII

Rs. in crore

Particulars	Cost claimed by TSGenco as per revised DPR	Approved	Basis of approved cost
EPC Contract (BTG+BOP)			
Supply and erection of equipment and mandatory spares including additional ESP field including all kind of Taxes/Duties	2984.55	2982.41	Claimed cost is within the revised cost estimates. Liquidated damages included in the claimed cost is disallowed
Civil works under EPC Contract	913.86	913.86	Claimed cost is within the revised cost estimates and hence allowed

Particulars	Cost claimed by TSGenco as per revised DPR	Approved	Basis of approved cost
FGD Contract			
Supply and Erection Flue Gas Desulphurisation Plant (FGD)	268.08	0.00	Cost towards FGD not considered at this stage as the works are still under progress.
Civil works of FGD	51.92	0.00	
Additional works under EPC towards changes in start-up power scheme, LILO system and Bus reactor in switchyard	10.3	10.30	Claimed cost is within the revised cost estimates and hence allowed.
Consultancy Services	12	12.00	Claimed cost is within the revised cost estimates and hence allowed
E&M works other than EPC including Contingency	151.27	151.27	Claimed cost is within the revised cost estimates and hence allowed
EDC Cost	300.50	131.20	EDC cost is limited to the actual cost incurred.
IDC and Financing Cost	856.42	822.35	IDC corresponding to FGD not considered in this Order
Civil works under TSGenco scope	831.45	831.45	Claimed cost is within the revised cost estimates and hence allowed.
CSR development charges	25.00	25.00	Claimed cost is within the revised cost estimates and hence allowed.
Less: Revenue from sale of infirm power			
Total Project Cost	6405.35	5879.84	

4.3.20 Station wise approved capital cost has been summarised in the Table below:

Table 36: Capital Cost approved for new stations

Rs. in crore

Stations	Total
KTPP-II	4124.88
Lower Jurala	1734.27
Pulichintala	469.51
KTPS-VII	5879.84

Capitalisation and Additional capitalization

4.3.21 The Commission has gone through the submission of the Petitioner on additional capitalization for new stations in the subsequent years after their COD. The Commission has approved the capital cost for new stations as shown in the table above. The Commission sought justification for claiming any additional capitalization after cut-off date for new stations. From the response of TSGenco, it is noted that additional capitalization has been claimed after cut-off date for new stations for works which are covered in original scope of work of DPR. Therefore, the Commission has allowed such additional capitalization after cut-off date for new stations. The Commission has considered capitalisation phasing of the approved capital cost for new stations in proportion to the phasing of capitalisation as per Auditor certificates in its additional submission and the phasing of additional capitalization as submitted by TSGenco for FY 2014-15 to FY 2019-20 in its Petition. The capitalisation approved by the Commission for the new stations are summarised in the Table below:

Table 37: Capitalisation approved for new stations

Rs. in crore

Station	Capitalisation as on COD	Capitalisation				
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
KTPP-II	3043.24		3043.24	6.42	314.00	45.08
KTPS-VII	4602.78					4602.87
Lower Jurala	1182.26		1182.26	422.82	6.04	6.48
Pulichintala	229.74			229.74	121.51	82.59

Petitioner's submissions on Depreciation, O&M Expenses, RoCE, IT, Other Expenditure, Variable Cost, AFC and Other submissions

4.4 DEPRECIATION

4.4.1 TSGenco submitted that it has considered depreciation as per Generation Tariff Order dated 05.06.2017 in O.P.No.26 of 2016 and Order dated 03.01.2019 in I.A.No 33 of 2018 for existing stations except KTPS-O&M. For KTPS-VII, TSGenco has computed depreciation at 5.28% as per CERC (Terms and Conditions of Tariff) Regulations, 2014. TSGenco submitted that the depreciation on the additional capitalization for FY 2016-17 to FY 2018-19 will be claimed in the subsequent control period for the balance life of the project after approval of the proposed capital cost by the Commission.

- 4.4.2 As regards KTPS-O&M, the balance depreciable value has been spread over 2nd and 3rd control periods due to phasing out of all of its Units by 31.03.2020.
- 4.4.3 TSGenco has claimed depreciation of Rs.621.63 crore, Rs.639.12 crore, Rs.844.47 crore, Rs.869.01 crore, and Rs.949.10 crore for FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, respectively. Further, it has claimed depreciation of Rs.63.95 crore for KTPS-VII in FY 2018-19.

4.5 OPERATION AND MAINTENANCE EXPENSES

- 4.5.1 TSGenco has submitted O&M expenses as approved by the Commission in Generation Tariff Order dated 05.06.2017 except for New Hydel Stations viz., Lower Jurala and Pulichintala HES. The O&M expenses of Lower Jurala and Pulichintala HES have been computed as per Regulation No.1 of 2008.
- 4.5.2 TSGenco has submitted that increase of employee cost on account of Pay Revision (PRC) for the FY 2018-19 has been arrived considering 20% increase in O&M expenses. Enhancement of employee cost is 40% which translates to 20% increase in O&M expenses.
- 4.5.3 TSGenco has submitted that the O&M expenses of KTPS-VII has been computed in accordance with CERC (Terms and Conditions of Tariff) Regulations, 2014 and 40% increased towards PRC.
- 4.5.4 O&M expenses claimed by TSGenco is Rs.877.03 crore, Rs.941.13 crore, Rs.1124.63 crore, Rs.1168.27 crore and Rs.1503.26 crore for FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, respectively.

4.6 RETURN ON CAPITAL EMPLOYED (RoCE):

- 4.6.1 TSGenco has computed the RoCE by considering the following:
- i. Debt-Equity ratio of 70:30 in accordance with Clause 10.13 of Regulation No.1 of 2008;
 - ii. Considering station wise weighted average rate of interest on loan and weighted average variable cost for the respective financial year of the control period;
 - iii. Return on Equity (RoE) of 15.5% on 30% Net Fixed Asset;
 - iv. Consider RoE of 16% for KTPS-VII as it has been constructed within the time line. Therefore, additional RoE of 0.5% considered as per CERC Regulations, 2014;
 - v. Station wise Working Capital computed in accordance with Clause 12.4 of Regulation No.1 of 2008.

4.6.2 TSGenco has claimed RoCE of Rs.1343.67 crore, Rs.1353.25 crore, Rs.1788.36 crore, Rs.1695.46 crore and Rs.168.33 crore for FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, respectively.

4.7 INCOME TAX

4.7.1 TSGenco submitted that Income tax paid has to be allowed on actual basis as additional pass-through as per Clause 12.5 of Regulation No.1 of 2008. The Income tax paid by TSGenco during FY 2014-15 to FY 2018-19 is Rs.102.14 crore.

4.8 OTHER EXPENDITURE

4.8.1 TSGenco has claimed the following under other expenditure:

- i. The actual liability on pension over and above the schedule interest on pension bond of Rs.3335.91 crore;
- ii. Water Charges and Water Cess is Rs.66.38 crore;
- iii. IT (SAP/FLM) expenditure of Rs 3.48 crore.

4.9 VARIABLE COST

4.9.1 TSGenco has claimed the variable cost for energy supplied from the thermal generating station in accordance with the provisions specified in Clause 13.1 of the Regulation No.1 of 2008. TSGenco has submitted the station wise weighted average variable cost for 3rd control period as shown below:

Table 38: Weighted Average Variable Cost claimed by TSGenco for 3rd control period

Station	Rs./kWh				
	FY 2014-15	FY 2015-16	FY 2015-16	FY 2017-18	FY 2018-19
KTPS-O&M	2.67	2.57	2.72	2.94	3.20
KTPS-V	2.19	2.21	2.32	2.66	2.82
KTPS-VI	3.39	2.89	2.93	3.04	3.13
RTS-B	2.63	3.03	3.15	2.96	2.94
KTPP-I	2.47	2.68	2.76	2.77	3.34
KTPP-II	NA	2.48	2.44	2.49	2.92
KTPS-VII	NA	NA	NA	NA	2.92

4.10 ANNUAL FIXED CHARGES (AFC)

4.10.1 TSGenco submitted that the fixed charges pertaining to existing and new stations were provisionally approved by the Commission for an amount of Rs.20645.98 crore. However, TSGenco has claimed the fixed charges of Rs.19374.96 crore for 3rd control period from FY 2014-15 to FY 2018-19 after adjustments of Rs.1271.02 crore towards the following:

- i) The stations which have been achieved below normative value of Availability/Capacity index. The adjustments towards non availability of Rs.563.26 crore.
- ii) The reduced rate of interest on loans during the FY 2017-18 and FY 2018-19 of Rs.360.40 crore.
- iii) The actual liability on pension bonds less than the approved value for the FY 2017-18 of Rs.27.88 crore.
- iv) Rs.193.32 crore due to differed COD of units of PCHES and KTPS-VII.
- v) Phasing out of KTPS-O&M units of Rs.126.16 crore.

Note: The adjustment of Fixed Charges of KTPS-O&M during 3rd control period FY 2014-19 duly taking into the consideration of phasing out of the units (Unit-III (60 MW) on 20.05.2017, Unit-VI (120 MW) on 03.01.2019 and Unit-VIII (120 MW) on 14.02.2019.

4.10.2 TSGenco has claimed revised fixed charges for existing and new stations for FY 2014-15 to FY 2018-19 based on normative availability. The revised fixed charges for true up for 3rd control period from FY 2014-15 to FY 2018-19 for existing and new stations including KTPS-VII have been computed in accordance with Regulation No.1 of 2008, CERC (Terms and Conditions of Tariff) Regulations, 2014, Generation Tariff Order (GTO) and I.A No.33 of 2018.

4.10.3 The Petitioner submitted that the variation in revised fixed charges is mainly due to the variations in the rate of interest on loans, increase of employee cost for implementation of pay revision commitment (PRC)-2018, phased out of KTPS-O&M units, incurred R&M/additional capital expenditure, difference in COD of units and capitalized expenditure of KTPP-II, KTPS-VII, Lower Jurala HES and Pulichintala HES.

4.10.4 TSGenco has considered following key points for computation of Revised fixed charges for FY 2014-15 and FY 2015-16:

Existing Stations

- i) GFA approved by the Commission based on the approved R&M expenditure for the FY 2014-15 and FY 2015-16.
- ii) GFA for the balance years of 3rd control period i.e., from FY 2016-17 to FY 2018-19 has been projected based on actual R&M expenditure/ additional capital expenditure as per the audited accounts.
- iii) GFA for KTPP-II, Lower Jurala HES, Pulichinthala HES and NSHES Including Tail Pond Dam have been determined provisionally on proposed capital cost by the Commission. Further, the capitalized expenditure on the above stations is based on actual during 3rd control period as per the audited accounts.

New stations

- i) KTPS-VII has been constructed at Paloncha (v), Bhadradi Kothagudem district. The capitalized expenditure of Rs.4604.92 crore as on COD on 26.12.2018 has been considered as GFA for FY 2018-19.

Table 39: Revised AFC claimed by TSGenco for 3rd control period

Rs. in crore

Station	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2014-19
KTPS-O&M	554.32	570.03	593.06	577.45	638.25	2933.11
KTPS-V	260.63	268.21	277.20	276.55	324.73	1407.32
KTPS-VI	591.09	567.64	542.30	523.72	537.93	2762.69
RTSB	43.56	48.66	51.62	51.76	62.51	258.12
KTPP-I	571.41	561.04	536.80	502.92	520.99	2693.16
KTPP-II	0.00	12.18	733.66	711.30	739.27	2196.41
NSHES	154.66	149.34	142.62	157.89	264.88	869.38
SLBHES	496.40	482.35	469.26	455.77	452.37	2356.14
Small Hydel	32.17	32.45	32.71	32.94	37.73	167.99
Mini Hydel	5.63	5.77	6.79	6.81	7.59	32.60
Pochampadu-II	7.85	7.71	7.69	7.45	8.24	38.94
PJHES	124.61	122.74	117.02	109.53	112.55	586.45
LJHES	0.00	105.38	227.10	274.00	273.85	880.33
PCHEs	0.00	0.00	19.63	44.65	75.76	140.05
Total	2842.33	2933.50	3757.46	3732.74	4056.65	17322.69
Additional interest on pension bonds	504.30	593.88	612.16	641.11	984.46	3335.91
Total	3346.63	3527.38	4369.62	4373.85	5041.11	20658.60
Water royalty	10.05	7.55	16.56	16.37	15.85	66.38
IT (SAP/FLM)	0.00	0.00	0.00	2.20	1.28	3.48
Total	3356.68	3534.93	4386.18	4392.42	5058.24	20728.46
KTPS-VII	0.00	0.00	0.00	0.00	287.97	287.97
Total	3356.68	3534.93	4386.18	4392.42	5346.21	21016.43
Income tax paid	23.42	14.64	34.12	29.96	0.00	102.14
Grand Total	3380.1	3549.57	4420.3	4422.38	5346.21	21118.57

4.11 OTHER SUBMISSIONS

4.11.1 **Determination of capital cost and tariff for KTPS-VII:** The Petitioner submitted that for KTPS-VII, it has proposed fixed charges of Rs.287.97 crore from COD of the Station, i.e., 26.12.2018 as against the claim of fixed charges of Rs.164.05 crore as per Order dated 27.03.18 in O.P.No.21 and 22 of 2017 for Retail Supply Tariff for FY 2018-19.

4.11.2 **Incentives & Secondary Energy charges:** The Petitioner submitted that the incentives for generation beyond the Target Plant Load Factor (PLF) for thermal generating stations and the secondary energy charges for generation beyond the design energy for hydel generating stations claimed annually at the rates specified in the Regulation.

4.11.3 TSGenco submitted that it has filed a Review Petition dated 19.08.2017 against the Order of the Commission dated 05.06.2017 in O.P.No.26 of 2016 and the appropriate orders/directions are due from the Commission in this regard. TSGenco further submitted that the true-up Petition has been filed without considering the variations submitted in the Review Petition. The differential fixed charges, if any, will be claimed after finalizing the Review Petition by the Commission.

Commission’s View

4.11.4 As discussed earlier, the Commission has only approved the additional capitalization for the existing stations and capital cost and capitalization for new stations as per the relevant provisions of Regulation No.1 of 2008. Due to unavailability of provisions for true-up of the components of AFC in Regulation No.1 of 2008, the Commission has not undertaken truing up of AFC for TSGenco for 3rd control period from FY 2014-15 to FY 2018-19.

4.11.5 The clause 12.6 of the Regulation No.1 of 2008 specifies that any other expenditure incurred and not covered in the items of AFC will be considered only on specific approval of the Commission. In view of this, the Commission has considered few of the other charges claimed by TSGenco after prudence check as discussed below:

- i) **Additional Pension Liability:** TSGenco has claimed Rs.3335.91 crore towards Additional Pension Liability for FY 2014-15 to FY 2018-19 against Rs.2901.02 provisionally approved by the Commission in the GTO Order dated 05.06.17. The Commission, vide its preliminary queries, asked the Petitioner to submit the reconciliation of the values as per the Audited Accounts. Petitioner, in its response has submitted the revised values for actual Pension Liabilities based on the Audited Accounts. Therefore, the Commission has approved the Additional Pension Liabilities based on prudence check of the Audited Accounts. The Additional Pension Liabilities approved over and above schedule (Bond Schedule) pension payment is summarised below:

Table 40: Additional Pension Liabilities approved

Rs. in crore

Particulars	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Total
Additional	450.29	591.24	607.22	636.14	973.27	3258.17

Pension Liabilities						
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- ii) Hence, the total Additional Pension Liabilities of Rs.3258.17 crore is hereby approved against Rs.2901.02 provisionally approved by the Commission in the GTO Order. Since, amount of Rs.2901.02 is already recovered by TSGenco, the Commission therefore approves recovery of differential amount of Rs.357.15 crore to be claimed by the Petitioner from its Beneficiaries.
- iii) **Income Tax:** Income tax as per actuals it is allowable as per the clause 12.5 of the Regulation No.1 of 2008. After prudence check based on Audited Accounts, the Commission allows the actual Income Tax of Rs.102.14 crore for FY 2014-15 to FY 2018-19 to be claimed by the Petitioner from its Beneficiaries.
- iv) **Water charges and Water Cess:** Based on scrutiny of the Audited Accounts, the Commission allows the recovery of actual water charges and cess of Rs.66.38 crore for FY 2014-15 to FY 2018-19 as per the claim of the Petitioner from its Beneficiaries.
- v) **IT (SAP/FLM) expenditure:** The Commission is of the view that IT expenditure is part of capital expenditure and it shall not be permitted to be claimed as separate one-time expenses. Therefore, these expenses are not allowed to be separately recovered as a part of AFC.
- vi) **Impact of pay revision in FY 2018-19:** The Commission observed that TSGenco has sought the impact of pay revision in FY 2018-19. In GTO dated 05.06.2017, the Commission had the considered impact of pay revision in 2014 while computing O&M expenses. It is also noted that TSGenco had not proposed impact of pay revision for FY 2018-19 in its earlier filings for FY 2014-15 to FY 2018-19 against which GTO dated 05.06.2017 was issued.
- vii) Since the Commission is not undertaking true-up for 3rd control period and the pay revision impact was considered while determining fixed charges for 3rd control period vide GTO dated 05.06.2017, the Commission has not approved impact of pay revision in FY 2018-19 as a separate expense. However, the Commission has considered the

increased O&M expenses on account of pay revision of FY 2018-19 while projecting the O&M expenses for 4th control period from FY 2019-20 to FY 2023-24, which is discussed in detail in the subsequent Chapters of this Order.

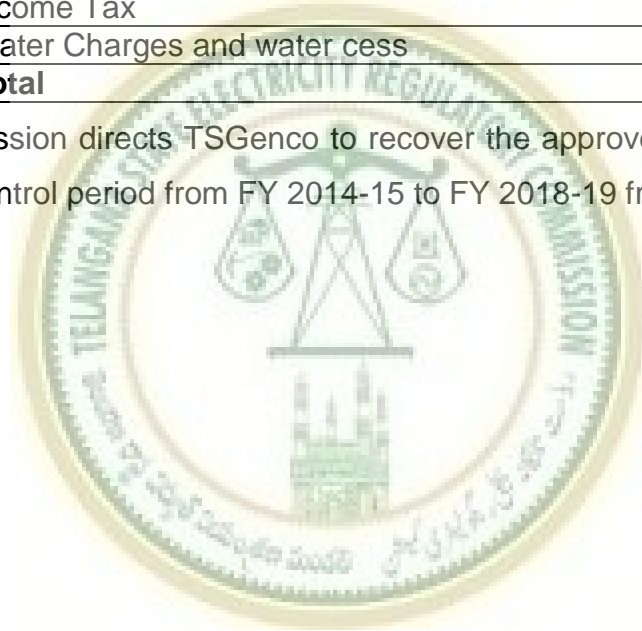
4.12 SUMMARY OF TRUE-UP APPROVED FOR 3RD CONTROL PERIOD FROM FY 2014-15 TO FY 2018-19

4.12.1 In light of the above discussion, the Commission approves the following on account of true-up for 3rd control period from FY 2014-15 to FY 2018-19:

Table 41: Summary of True-Up approved for 3rd control period

Sl. No.	Particulars	Approved
1	Differential amount towards Additional pension liabilities	357.15
2	Income Tax	102.14
3	Water Charges and water cess	66.38
	Total	525.67

4.12.1 The Commission directs TSGenco to recover the approved amounts on true-up for 3rd control period from FY 2014-15 to FY 2018-19 from its beneficiaries.



Chapter 5

Analysis and Conclusion on Capital Investment PLAN for 4th control period from FY 2019-20 to FY 2023-24

5.1 REGULATORY PROVISIONS

- 5.1.1 Clause 7 of the Regulations No.1 of 2019 stipulates the filing of Business Plan along with Capital Investment Plan for Generation Business for a duration covering at least the entire 4th control period from FY 2019-20 to FY 2023-24.
- 5.1.2 After scrutiny of the Petitions, it was noted that Business Plan and Capital Investment Plan were not submitted by TSGenco along with MYT Petition. Therefore, the Commission asked TSGenco to submit Business Plan and Capital Investment Plan as per Regulations No.1 of 2019. In response, TSGenco submitted the same as part of its additional submission.
- 5.1.3 TSGenco's submissions and the Commission's analysis on the Business Plan and Capital Investment Plan for 4th control period from FY 2019-20 to FY 2023-24 are detailed in the following paragraphs.

5.2 Business Plan

Petitioner's submission

- 5.2.1 TSGenco submitted Business Plan containing the financial statements such as Balance Sheet, Profit & Loss Statement and Cashflow Statement for each year of 4th control period from FY 2019-20 to FY 2023-24.

Commission's View

- 5.2.2 Clause 7.2 of Regulations No.1 of 2019 specifies the items a Business Plan as under:

"7.2 The Business Plan shall cover details such as Generation Planning and forecasts, Capex Investment Plan, future performance targets, proposed efficiency improvement measures, Compliance status of Environmental norms, Saving in operating costs. The Business Plan shall also include, financial statements such as balance sheet, profit and loss statement and cashflow statement for the control period duration, any other new measures to be initiated for the Generation Business i.e., automation, IT initiatives etc."

- 5.2.3 The Commission observed that the Business Plan submitted by TSGenco contains only financial statements such as Balance Sheet, Profit & Loss Statement and Cashflow Statement for 4th control period from FY 2019-20 to FY 2023-24. TSGenco has not submitted Generation Planning and forecasts,

future performance targets, proposed efficiency improvement measures, Compliance status of Environmental norms, Saving in operating costs, etc.

- 5.2.4 Therefore, the Commission is of the view that the Business Plan submitted by TSGenco is not complete considering the Clause 7.2. of Regulations No.1 of 2019. However, the Commission has noted the submissions made by TSGenco in its Business Plan.

5.3 Capital Investment Plan

Petitioner's submission

- 5.3.1 The Petitioner submitted that the Capital Investment Plan for 4th control period from FY 2019-20 to FY 2023-24 has been prepared in accordance with Regulations No.1 of 2019.

Capital Investment for Existing Thermal Generating Stations:

- 5.3.2 TSGenco has submitted Capital Investment for existing thermal generating stations under the following heads:

- i) Installation of Flue-gas desulfurization (FGD) System;
- ii) Renovation and Modernisation;
- iii) Civil Works.

Installation of FGD System for Thermal Generating Stations:

- 5.3.3 TSGenco submitted that the Ministry of Environment, Forest and Climate Change (MoEF&CC) vide Gazette Notification dated 07.12.2015 (published in the official Gazette of India on 08.12.2015) has notified Environment (Protection) Amendment Rules, 2015. The standards for the specific water consumption and maximum SPM have been made more stringent under these Rules. Also, standards for maximum limit for SO_x, NO_x and Mercury emissions by the thermal power plant have been introduced. Further, all existing Cooling Tower (CT) based plants need to reduce specific water consumption up to maximum of 3.5 m³/MWh within a period of two (2) years from the date of publication of the above notification.

- 5.3.4 In this regard, the following decisions were taken in the first meeting with CEA dated 21.10.2016:

- i) CEA identified 3730 MW capacity of thermal plants for retirement and the committee has decided to exclude these Plants/Units from phasing plan for implementation of revised environmental norms. Therefore, KTPS-O&M and RTS-B stations are eligible to exclude from phasing

plan and the remaining units are included for phasing plan to meet the new environmental norms.

- ii) The Central Pollution Control Board (CPCB) as per directions under Section 5 of Environment (Protection) Act, 1986 regarding compliance of emission limit notified vide Notification No.S.O.3305(E) dated: 07.12.2015, has fixed timelines to implement the counter pollution measures and cautioned that for failing which action will be taken under appropriate provisions of the Environment (Protection) Act, 1986. The timelines issued by CPCB are as follows:

Table 42: Timelines to implement the counter pollution measures issued by CPCB

Name of the project	Unit No.	Installed Capacity (MW)	Timelines for installation of equipment to limit Pollutants in Emissions		
			SPM	SO _x	NO _x
KTPS-V	9	250	31.12.2020	31.12.2020	31.12.2020
	10	250	31.12.2020	31.12.2020	31.12.2020
KTPS-VI	11	500	30.09.2019	30.09.2019	30.09.2019
KTPP	1	500	31.03.2020	31.03.2020	31.12.2022
	2	600	31.03.2020	30.06.2020	31.12.2022

- iii) BHEL was appointed for carrying out the comprehensive feasibility study and preparing the DPR for finalization of appropriate technology and nature of pollution control devices required for reduction of SO_x, NO_x and SPM for each Units of KTPS-V & VI (Units-9,10 & 11) and KTPP-I & II (Units-1 & 2).
- iv) BHEL submitted the DPR on 31.01.2020 with an approximate cost for installation of pollution control equipment as Rs.1325.75 crore for KTPP-I & II and Rs.1231 crore for KTPS-V & VI.
- v) In the DPR submitted by BHEL, the obligatory information such as incremental value of variable cost was not mentioned which is essential for approaching the Commission.
- vi) To meet the timelines and expedite the process, an enquiry dated 06.04.2020 was issued to NTPC on nomination basis for preparation of comprehensive DPR. However, due to COVID-19 pandemic situation, NTPC could not submit the offer in stipulated time, and the due date was extended to 05.06.2020.
- vii) It requires a minimum of six (6) to (8) months for preparation of DPR and placing orders. Later for supply, erection and commissioning another thirty (30) months will be required.
- 5.3.5 In view of the above, TSGenco submitted that, the Capital Investment Plan for installation of FGD will be submitted to the Commission after finalization of DPR, Project cost, etc.

Renovation and Modernisation

- 5.3.6 TSGenco has proposed investment of Rs.7.78 crore and Rs.79.42 crore in FY 2019-20 and FY 2020-21, respectively, toward Renovation and Modernisation for KTPS-V under the following heads:
- i) Renovation and Modernisation of 2 nos. of Air Preheaters of Unit-9 of KTPS-V;
 - ii) Renovation and Modernisation of I&C system.
- 5.3.7 KTPS-V has two units namely Unit-9 and Unit-10 with total capacity of 500 MW. Each boiler of KTPS-V is equipped with 2 nos. LJUNGSTORM Regenerative Air Preheaters. These Air Preheaters absorb waste heat from flue gas and transfer this heat to incoming cold air by means of continuously rotating heat transfer elements of specially formed metal sheets with the primary objective of increasing the thermal efficiency of the process.
- 5.3.8 The energy audit conducted by National Productivity Council (NPC) in August-September 2018 has identified and reported the underperformance of Air Preheaters at KTPS-V. NPC in its report stated that the existing air leakage across Air Preheater of Unit-9 is 87% and Unit-10 is 60% which are higher compared to the design value of 8%. Due to higher air ingress in both units, ID fans, PA fans, FD fans and Mills are being run at higher capacities drawing more power; thus, resulting in increased auxiliary power consumption. The annual overhaul of Unit-10 was carried out during FY 2018-19 and identified the air leaks in the both Air Preheaters were arrested by replacing the damaged seals. The damaged heating elements (Baskets) were also replaced with new one for effective heat transfer.
- 5.3.9 Therefore, to improve the performance of Air Preheaters of Unit-9, it is proposed for modification of the existing single sealing (12 Sectors) Air Preheater with double sealing arrangement (24 Sectors) during the Capital Overhaul scheduled in FY 2020-21.
- 5.3.10 As regards of Renovation and Modernisation of I&C system, TSGenco has proposed following:
- Replacement of existing pro-controls DCS, ISKAMATIC, MMI system with Valmet DNA (DDCMIS) system;
 - Replacement of SWAS with latest systems;
 - Upgradation of control systems for ash handling plant,

- DM Plant, Clarifier, Chlorination plant water system, CW pump house, Compressor house and filed instruments.

Civil Work

5.3.11 TSGenco has proposed investment towards civil work under the following heads:

- i) For KTPS-O&M: Ash Pond raising of northern ash pond-II up to EL (+)99 M:
- ii) For KTPS-V & VI: Raising of AB pond bunds.

5.3.12 For KTPS-O&M, the serving northern ash pond-I up to EL (+)94 M was exhausted by January 2015. Hence, northern ash pond-II was raised up to height of (+)99 M for discharge of ash generated from KTPS-I to IV /Paloncha for uninterrupted power generation. Further, the bunds of ash pond were raised for 3 M i.e., up to EL (+) 102 M, to increase the life of pond under supplemental items.

- Estimated life extension of the asset: The ash pond served for two years after charging.
- Schedule of completion & milestones: Work completed on 30.08.2017 and the bill amount paid during FY 2019-20.
- Expenditure incurred: Rs.1.96 crore.

5.3.13 As regards of KTPS-V & VI, TSGenco submitted that it will raise AB pond bunds from ch: 0 m to 2900 M, Intermediate bund (1200 M) and cross bund (900 M) from EL (+)115.50 M to EL (+)120.50 M at Bhadradri Kothagudem for an amount of Rs.43.65 crore in FY 2021-22.

5.3.14 The balance capacity of serving additional ash pond of KTPS-V and VI/ Paloncha will cater up to September 2020. To deposit ash generated from KTPS-V and VI/Paloncha, raising of AB ash pond is required for uninterrupted power generation of 1000 MW.

- i) Estimated life extension of the asset: The ash pond shall serve for three years after charging.
- ii) Schedule of completion & milestones: 15 months from the date of commencement of work, i.e., 20.07.2020.
- iii) Milestone
 - At the end of 3rd month - 15%
 - At the end of 6th month - 40%
 - At the end of 9th month - 65%
 - At the end of 12th month - 85%
 - At the end of 15th month - 100%

Capital Investment for Existing Hydro Generating Stations

5.3.15 TSGenco has proposed capital investment for two no. of existing hydro generating stations, i.e., Pochampad hydro station and Nizamsagar hydro stations.

5.3.16 TSGenco has proposed capital investment of Rs.17.09 crore during FY 2020-21 to FY 2022-23 for Renovation and Modernisation of Pochampad hydro station. The proposed work includes replacement and modification of outdated equipment of stage-I (Unit-1, 2 and 3) of Pochampad hydro station. Reasons for taking up Renovation and Modernisation activities are as follows:

- i) The stage-I units are in service for the last 31 years without any major overhauls. It is first system in erstwhile APGenco with microprocessor sequencer control system of obsolete technology of 1988.
- ii) Number of failures of I/O cards in the Pro-control system has increased due to long usage and the availability of spares has been scarce.
- iii) Spares for the existing equipment are not available due to obsolescence of those systems and OEM suppliers are not manufacturing the same.
- iv) The micro-processor control system requires replacement with updated technology to maintain availability factor.
- v) Improvement in technology during the last 10-20 years has made certain equipment obsolete resulting in non-availability of spare parts.

5.3.17 TSGenco has proposed capital investment of Rs.15.105 crore during FY 2020-21 to FY 2022-23 for Renovation and Modernisation of Nizamsagar Hydel Power Station and work shall be completed in thirty months (30) from the date of issue of Letter of Intent (LOI). The LOI was issued on 27.09.2019. TSGenco has submitted the following justification for taking up this investment:

- i) As the Nizamsagar Hydel Power Station is located just below the head sluices of the Nizamsagar Dam. The discharge from the reservoir, through turbines is let out to the Irrigation Canal. The drawals from the reservoir varies from 730 to 3600 cusecs. The turbines are of 7050 BHP capacity discharging about 1200 cusecs each at 60 feet head. The turbines are of Kaplan type designed to utilize a variable head of 30 to 65 feet, obtained from the reservoir.
- ii) The units were commissioned more than 60 years back. Due to the long service, many of the parts are subjected to wear and tear. Further, many of the core equipment parts like wicket gates, runners, BF valves, etc. have eroded.
- iii) Hence, the conventional mechanical governing and excitation equipment at Nizamsagar Power House have found to be un-reliable

and it is unable to meet the system requirement for operation in the expanded grid network. Therefore, vital equipment like protection, governing and excitation systems, etc. need to be replaced as per the latest technology to meet the requirements.

Capital Investment for New Thermal Generating Stations:

5.3.18 TSGenco submitted that apart from operation & maintenance of the power plants, it has undertaken the execution of the ongoing and new power projects scheduled under capacity addition programme. The Telangana State requires substantial addition to its power generating capacity to meet power demand of its rapidly growing industrial, agricultural and other sectors. For this, the following projects have been undertaken:

- i) Kothagudem Thermal Power Station (KTPS)-VII (1x800 MW);
- ii) Bhadradi Thermal Power Station (BTPS) (4x270 MW);
- iii) Yadadri Thermal Power Station (YTPS) (5x800 MW).

Capital Works for KTPP-II (1x600 MW):

5.3.19 TSGenco has proposed the revised year wise capital expenditure for KTPP-II in its additional submission to the Commission as under:

Table 43: Summary of Capital Expenditure for KTPP-II

Rs. in crore

Particulars	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
BTG Package	0.00	81.45	11.04	0.00	0.00
BOP Including Civil works on EPC basis	0.00	0.68	0.00	0.00	0.00
Back Charges to M/s Tecpro_ Civil & E&M	2.60	0.04	0.00	0.00	0.00
Conveyor from pit head mine	0.00	0.00	105.00	0.00	0.00
Other Civil works (Quarters, Development charges, etc)	0.02	88.69	52.40	3.60	0.00
Spares	10.94	0.00	6.51	0.00	0.00
Establishment & Consultancy	1.03	1.63	2.28	0.00	0.00
Operator Training					
Start-Up fuel					
Contingencies & Overheads	0.51	1.21	0.25	0.00	0.00
Raw Water Pipeline	0.00	0.00	32.79	0.00	0.00
Railway track for Coal handling	0.00	7.91	1.25	0.00	0.00
Additional Coal Handling plant including Track Hopper	0.00	50.87	2.01	0.00	0.00
Balance works of Additional Coal Handling plant	0.00	73.64	57.67	0.00	0.00
IDC & FC	0.00	0.00	0.00	0.00	0.00
Wet ash Handling system	0.00	0.00	9.67	0.00	0.00
Cost of Land towards Ash Pond and R&R Package	0.00	0.00	27.30	31.80	21.40
Cost towards further raising	19.02	0.00	15.13	10.00	8.19

Particulars	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
of ash pond & construction of new ash pond at Kothapally(V) for KTPP-I & II					
Rotor Assembly 600MW Gen THDF 115/67	0.00	0.00	0.00	0.00	0.00
Rotor Repair and replacement Cost	0.00	0.00	0.00	0.00	0.00
Total	34.12	306.11	323.32	45.40	29.59

Capital Works for KTPS-VII (1x800 MW):

5.3.20 The capital expenditure incurred up to COD 26.12.2018 is Rs.4604.92 crore and the capital expenditure incurred from COD to 31.03.2019 is Rs.0.09 crore for KTPS-VII.

5.3.21 The year wise proposed capital expenditure for KTPS-VII for 4th control period FY 2019-20 to FY 2023-24 as tabulated below:

Table 44: Summary of Capital Expenditure for KTPS-VII

Rs. in crore

Sl. No.	Description	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
1.	E&M works under EPC	0.00	115.77	16.25	0.00	0.00
2.	Civil works under EPC	39.05	17.90	1.41	0.00	0.00
3.	Flue Gas Desulphurization (FGD)	0.00	150.00	115.00	55.00	0.00
4.	Additional works under EPC towards changes in start-up power scheme, LILO system Bus reactor in switchyard	5.16	5.14	0.00	0.00	0.00
5.	Consultancy Services	0.62	1.75	2.50	1.37	0.00
6.	E&M works other than EPC	3.21	50.00	50.00	10.27	0.00
7.	EDC cost	2.74	100.00	66.56	0.00	0.00
8.	IDC and Financing cost	0.00	10.00	16.07	8.00	0.00
9.	Consultancy services for DPR for Railway siding & Marshalling yard	0.00	0.47	0.00	0.00	0.00
10.	Dismantling of quarters for main plant, Peripheral compound wall & BT road at Kanakadurga temple, RCC Paving in CHP, UCB Interiors, Belt	0.00	46.10	5.75	4.12	4.31

Sl. No.	Description	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
	conveyor for ICHP, compound wall and other miscellaneous works					
11.	Railway siding and Marshalling yard	0.00	46.84	0.00	0.00	0.00
12.	Construction of Ash water recovery pump house	0.00	14.16	0.00	0.00	0.00
13.	Other Plant Roads & Culverts		0.25	0.70		
14.	Laying of approach roads at Raw water pump house and Burgampahad pump house	0.00	2.50	7.00	0.83	0.00
15.	Township and landscaping, STP for colony, internal roads, drains, water tanks, hostel block etc.	0.00	78.27	150.00	150.00	150.00
16.	Vocational training institute	0.00	1.20	8.00	0.00	0.00
17.	Establishing training institute under KTPS-VII	0.00	4.00	11.00	0.00	0.00
18.	Simulator building cum training institute	0.00	4.22	0.18	0.00	0.00
19.	CSR Policy	3.03	13.08	6.12	0.00	0.00
20.	Training institute CETD		2.02	2.10	2.19	2.28
21.	Supply and erection of equipment and mandatory spares including additional ESP field including all kind of Taxes/Duties	134.23	0.00	0.00	0.00	0.00
22.	Civil works under TSGenco scope	64.13	0.00	0.00	0.00	0.00
23.	Other civil works	0.00	0.00	0.00	0.00	37.49
Total		252.17	663.67	458.64	231.78	194.08

Other Civil Works:

5.3.22 The details of other civil work to be completed in FY 2020-21 are as under:

- Name of the work: Ash Pond raising of Northern ash pond-II from EL (+) 104 M to EL (+)109 M with cost of Rs.40 crore.
- Scope & Justification: The balance life of present serving northern ash pond-I is up to June 2021.To deposit ash generated from KTPS-VII , rising of northern ash pond-II is required for uninterrupted power generation.
- Estimated life extension of the asset: The ash pond will serve for two years after charging.

- Schedule of completion & milestones: Work is to be taken up.

Capital Works for BTPS (4x270 MW):

5.3.23 The COD of Unit-I and Unit-II of BTPS were achieved on 05.06.2020 and 07.12.2020, respectively. The CODs of Unit-III & IV are scheduled to be completed by March 2021. The capital expenditure incurred up to FY 2019-20 is Rs.6073.05 crore.

Table 45: Summary of Capital Expenditure for BTPS

Rs. in crore

Sl. No.	Description	Expenditure Incurred		Proposed Expenditure		Balance
		up to FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	
	Electrical & Mech. System (BHEL)	2,302.57	640.36	324.12	59.55	383.67
2	Civil System (BHEL)	1,015.56	179.36	253.00	76.27	329.27
3	Common works E&M other than BHEL	0.76	1.45	13.09	79.70	92.79
4	Common works Civil other than BHEL	94.30	87.44	609.72	417.42	1,027.14
5	Consultancy services	3.72	0.308	2.120	4.98	6.99
6	C&I/Pre project works	0.89	0.095			
7	CSR	2.61	3.41	12.00	11.98	23.98
8	Land	0.00	0.58	75.00	24.00	99.42
9	Erec. &Comm. (BHEL)	153.34	89.57	251.26	58	308.92
10	New Norms (FGD, SCR & ESP addition)	0.00	95.79	206.03	378.18	584.21
11	Bus Reactor and CTs &CVTs	0.61	8.028	3.91	0.00	3.91
12	Back charges to BHEL	8.63	4.16	9.85	0.00	9.85
13	EDC	167.45	167.33	333.55		333.55
14	IDC	566.87	477.86	656.34	26.23	682.57
	Total	4,317.30	1,755.74	2,749.99	1,136.39	3,886.28

Capital Works for YTPS (5x800 MW):

5.3.24 As regards of YTPS, TSGenco submitted that the need for setting up of the proposed 5x800 MW YTPS is fully justified to meet the present and future agricultural power demand as well as other developmental activities in the state, COD of Unit-I to Unit-V are scheduled to be completed by June 2023. The capital expenditure incurred up to FY 2019-20 is Rs.7091.72 crore.

Table 46: Summary of Capital Expenditure for YTPS

Rs. in crore

Sl. No.	Description	Expenditure incurred	Proposed expenditure				
			Up to FY2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
1	E&M System	4,710.40	2,274.48	2,945.45	2,945.45	1,262.34	1,262.34
2	Civil system	740.41	594.22	1,555.22	1,555.22	666.52	666.52
3	E&M (Non-EPC)	3.13	0.17	83.53	83.53	35.80	35.80
4	Civil (Non-EPC)	34.19	20.55	772.94	772.94	331.26	331.26
5	Other Consultancy	0.29	0.03	0.89	0.89	0.38	0.38

Sl. No.	Description	Expenditure incurred	Proposed expenditure				
			Up to FY2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
6	Contingency works Civil	2.4	0.92	69.08	69.08	29.61	29.61
7	CSR development charges	7.55	0.00	39.31	39.31	16.85	16.85
8	Project Consultancy	4.57	4.12	9.96	9.96	4.27	4.27
9	Land	484.40	0.00	126.21	126.21	54.09	54.09
10	EDC (Expenditure during construction)	172.74	61.60	197.24	197.24	84.53	84.53
11	IDC (Interest During Construction)	931.30	583.77	967.02	967.02	414.44	414.44
	Total	7,091.72	3,539.86	6,766.86	6,766.86	2,900.08	2,900.08

Capital Investment for New Hydel Stations:

5.3.25 TSGenco has proposed capital investment for Lower Jurala and Priyadarshini Jurala Hydel stations.

5.3.26 **Capital Expenditure for LJHES:** Lower Jurala Hydro Electric Project is planned to exploit the residual power potential of river Krishna between Priyadarshini Jurala and Srisaillam Hydro Electric Projects. For this purpose, a diversion weir has been proposed across River Krishna at 7.9 km downstream of existing Priyadarshini Jurala Dam. This diversion weir lifts the river waters and diverts them to a power channel on the left bank of river which leads the diverted flows to an Integrated Intake cum Power House structure for generation of power. The installed capacity of power house is 6x40 MW and it would generate 534.43 MU in a 90% dependable year.

- The COD of LJHES has been achieved on 01.10.2016.
- The capital expenditure incurred up to 31.03.2019 is Rs.1815.23 crore.
- The total capital expenditure proposed to be incurred for 4th control period from FY 2019-20 to FY 2023-24 is Rs.121.405 crore.
- However, the same was revised to Rs.117.42 crore as per the additional submission made by TSGenco in its reply to the Commission's queries.

Table 47: Summary of Capital Expenditure for LJHES

Particulars	Project cost	Rs. in crore					
		upto 31.03.2019	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
E&M Works	499.34	482.66	0.99	5.67	3.15	2.865	2.7
Civil works	697.91	592.54	4.03	45	25	15.00	16
IDC	699.84	672.605	0.00	0.00	0.00	0.00	0.00
Establishment	72.05	67.425	-	-	-	-	-

Particulars	Project cost upto 31.03.2019	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
charges						
Total	1969.14	1815.23	5.02	50.67	28.15	17.865

5.3.27 **Capital Expenditure for PCHES:** The Government of AP constructed dam at Pulichintala village with a storage capacity of 40 TMC as a balancing reservoir for regulating the water releases for timely nursery and transplantation under Krishna delta. By utilizing the discharge to Krishna delta and surpluses from Nagarjuna Sagar dam, it is envisaged to install four (4) units of 30 MW capacity under Pulichintala Hydro Electric Scheme on left flank of proposed dam across Krishna River. This Project is 90 KM down steam of Nagarjunasagar Dam across Krishna River and 83 KM up stream of Prakasham Barrage at Vijayawada.

- The COD of PCHES has been achieved on 01.10.2016.
- The capital expenditure incurred up to 31.03.2019 is Rs.507.95 crore.
- The total capital expenditure proposed to be incurred for 4th control period from FY 2019-20 to FY 2023-24 is Rs.55.55 crore.

Table 48: Summary of Capital Expenditure for PCHES

Rs. in crore

Description	Project cost upto 31.03.2019	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
E&M Works	220.10	212.46	3.09	1.50	1.21	0.85
Civil works	169.87	148.95	1.08	13.985	2.56	1.65
IDC	82.82	82.82	0.00	0.00	0.00	0.00
Establishment charges	0.00	0.00	0.00	0.00	0.00	0.00
Others	90.7	63.72	3.18	4.80	5.50	7.00
Total	563.49	507.95	7.35	20.285	9.27	9.15

IT (SAP/FLM) Initiatives:

5.3.28 IT initiatives proposed by TSGenco are part of digital transformation and rapid advancement in technology in present scenario, implementation of new modules & support, upgradation of latest technology to meet TSGenco's process requirements for 4th control period from FY 2019-20 to FY 2023-24. IT initiatives proposed by TSGenco are as under:

Table 49: Summary of Capital Expenditure for IT Initiatives

Sl. No.	IT Initiatives	Description	Expenditure (Rs.crore)	Justification/Remarks
FY2019-20				
1	Implementation of Biometric and Integration with HCM module	Implementation of Biometric and Integration with HCM module at plants	0.70	Implementation of biometric at Head Quarters and Plants and its integration with HCM module is almost completed
FY2020-21				

Sl. No.	IT Initiatives	Description	Expenditure (Rs.crore)	Justification/Remarks
2	Implementation of open text, Single sign on, Business plan and consolidation module	The consulting services of SAP for Implementation of new modules open text (OT), Business Plan (BPC)& consolidation and single sign on (SSO) and support for implemented modules for new enhancements and developments to meet TSGenco Requirements (BIBO, MII, SRM, FLM, GRC, FMS, MM, PM, PI, SD, QM, PS, HCM & PAYROLL, EP, Basis, WPB, LSO, Technical & FICO)	1.00	As a part of IT initiatives, digital transformation and rapid advancement in technology in present scenario, implementation of new modules and support is required to meet TSGenco process requirements.
3	Video conferencing system	Establishment of Video conference system for TSGenco (Headquarters and Locations)	1.50	As a part of IT initiatives, digital transformation and rapid advancement in technology in present scenario, up gradation of latest technology is essential.
4	CCTV Monitoring system	Establishment of Hydel and thermal plants and Headquarters for security and monitoring	3.00	Establishment of CCTV System at Hydel & thermal plants and Head Quarters is required for Security and Monitoring of the activities at plants.
FY2021-22				
5	Availing cloud services for Data center and disaster recovery centre	Availing of cloud or collocation of servers for hosting TSGenco Applications	5.00	Availing of cloud or collocation of services is required for hosting of TSGenco applications such as FLM, GRC, FMS, PM, MM, PI, HCM & Payroll, FICO, WPB, LSO, Web mails, SRM, BI/BO(Dashboards), while upgrading to S/4 HANA technology.
6	Migration to SAP S/4 HANA	The migration of existing ERP system to S/4 HANA system and procurement licenses	10.00	The old technology is becoming obsolete and needs upgradation to latest technology. As such, to meet the rapid advancement in technology in present scenario, the migration to SAP S/4 HANA is necessary.
FY2022-23				
7	Up gradation of computers and peripherals	Up gradation of old and obsolete hardware desktops, Laptops, Printers etc. up	3.00	The existing old and obsolete Computers and Peripherals and Network & Security are required to be

Sl. No.	IT Initiatives	Description	Expenditure (Rs.crore)	Justification/Remarks
		gradation of network and security		upgraded to the new technology and systems for effective work output and meeting new security standards as a support for the old system software is discontinued by the OEMs.
8	Process automation	Integration of IT(ERP) &OT(Plant)	1.00	As a part of IT initiatives, digital transformation and rapid advancement in technology in present scenario, the integration of IT(ERP) with OT(Plant) is necessary (Licensing cost is involved).
9	Security Audit	Security Audit of TSGenco applications, network devices and servers	1.00	Security Audit is to be conducted periodically to avoid security threats to TSGenco data.
FY2023-24				
10	ISO Certification	ISO 27001 Certification to TSGenco Systems	1.00	The ISO Certification is essential to maintain the security requirements for the exiting TSGenco systems
	Total		27.20	

Summary of Capital Investment Plan:

5.3.29 The summary of Capital Investment Plan submitted by TSGenco is as under:

Table 50: Capital Investment Plan claimed for 4th control period

Rs. in crore

Sl. No.	Name of the Station	Capacity MW	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
1	KTPS-O&M	420	1.96	0.00	0.00	0.00	0.00	1.96
2	KTPS-V	500	7.78	79.42	43.65	0.00	0.00	130.85
3	KTPS-VI	500	0.00	0.00	0.00	0.00	0.00	0.00
4	RTS-B	62.5	0.00	0.00	0.00	0.00	0.00	0.00
5	KTPP-I	500	0.00	0.00	0.00	0.00	0.00	0.00
6	KTPP-II	600	34.12	306.11	323.32	45.40	29.59	738.54
7	KTPS-VII	800	252.17	703.67	458.64	231.78	194.08	1840.34
8	BTPS	1080	6073.05	2749.99	1136.39	0.00	0.00	9959.42
9	YTPS	4000	0.00	0.00	0.00	24165.31	2900.08	27065.39
10	NSHES	875.6	0.00	0.00	0.00	0.00	0.00	0.00
11	SLBHES	900	0.00	0.00	0.00	0.00	0.00	0.00
12	Pochampad-II	9	0.00	0.00	0.00	0.00	0.00	0.00
13	Mini Hydel	9.16	0.00	0.00	0.00	0.00	0.00	0.00
14	PJHES	234	0.00	0.00	0.00	0.00	0.00	0.00
15	LJHES	240	4.46	50.67	28.15	17.87	16.27	117.42
16	PCHES	120	7.34	20.29	9.27	9.15	9.50	55.55
17	Small Hydel	54	0.00	14.30	9.55	8.35	0.00	32.20
18	IT initiative	-	0.70	5.50	15.00	5.00	1.00	27.20
	Total	10904.26	6381.58	3929.95	2023.97	24482.86	3150.52	39968.88

Commission's View

5.3.30 Clause 3.10.3 of the Regulations No.1 of 2019 stipulates that the Capital Investment Plan shall show, separately, ongoing projects that will spill over the control period and new projects that will commence in the control period but may be completed within or beyond it. TSGenco submitted the details of spill over of ongoing works from the previous control period to the current control period.

5.3.31 Clause 7(b) of the Regulations No.1 of 2019 stipulates that the Capital Investment Plan shall include the following details:

- Purpose of investment;
- Broad technical specifications of the proposed investment and supporting details;
- Capital structure;
- Capitalisation schedule with milestones for completion;
- Financing plan with sources of investment;
- Physical targets;
- Cost-benefit analysis;
- Prioritisation of proposed investments, etc.

5.3.32 TSGenco submitted item wise, year wise and station wise details of proposed capital investment, purpose of investment, broad technical specifications of the proposed investment with supporting documents, benefits of the proposed investment, etc. TSGenco proposed the additional capitalization for 4th control period from FY 2019-20 to FY 2023-24 under Clause 7.19.1 of the Regulations No.1 of 2019.

5.3.33 Clause 7.19 of the Regulations No.1 of 2019 stipulates as under:

“7.19 Additional capitalization

7.19.1 *The capital expenditure actually incurred or projected to be incurred, on the following counts within the Original Scope Of Work, after the COD and up to the Cut-Off Date, may be admitted by the Commission subject to Prudence Check. Any additional capitalization after COD needs prior approval of the Commission:-*

... ..

7.19.2 *The details of works included in the Original Scope of Work along with estimates of expenditure, liabilities recognised to be payable at a future date and the works deferred for execution shall be submitted along with the petition for determination of final tariff after COD of the Generating Unit/Station.”*

- 5.3.34 Regulations No.1 of 2019 defines cut-off date as 31st March of the year ending after two years of the year of start of commercial operation of a project. In case a project is declared to be under commercial operation in the last quarter of a year, cut-off date shall mean 31st March of the year ending after three years of the year of start of such commercial operation.
- 5.3.35 The capital investment and the additional capitalization claimed by TSGenco is beyond the original scope of work for the expenses proposed to be invested for the old stations. However, capital investment and the additional capitalization claimed for new generating stations is within the original scope of work. The Commission, considering the clauses of the Regulations No.1 of 2019, quoted above has approved the additional capitalization of expenses to be incurred for efficient and successful operation of the old plants. For new plants, the Commission has approved proposed additional capitalization which is within the original scope of the project, but incurred on a later date to save IDC.
- 5.3.36 The Commission has discussed capital cost and capitalisation schedule of BTPS in detail in the subsequent Chapter of this Order. However, it is to be noted that the Commission has approved the capitalisation of BTPS only from the CoD of the Station as against the submission of TSGenco. Hence, the capitalisation approved for BTPS is from FY 2020-21 against the capitalisation submitted by TSGenco for FY 2019-20. The Commission noted that TSGenco submitted the capital investment for YTPS (new station) in the Capital Investment Plan; however, TSGenco has not sought determination of capital cost & tariff for YTPS in the Petition. Therefore, the Commission has not considered the approval of capital cost for YTPS while approving the investment plan for FY 2019-20 to FY 2023-24. **The Commission directs TSGenco to submit the proposal for determination of capital cost and Tariff for YTPS before its CoD as per the Regulations No.1 of 2019.**
- 5.3.37 In view of the above, the Commission's approval of the Capital Investment Plan and Capitalisation Plan for 4th control period from FY 2019-20 to FY 2023-24 is summarised below.

Table 51: Capital Investment Plan approved for 4th control period

Rs. in crore

Station wise GFA	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	Total
Thermal						
KTPS-O&M	1.96	0.00	0.00	0.00	0.00	1.96
KTPS-V	7.78	79.42	43.65	0.00	0.00	130.85
KTPS-VI	-57.12	0.00	0.00	0.00	0.00	-57.12
KTPS-VII	249.43	403.67	276.01	193.78	194.08	1316.97
RTS-B	0.00	0.00	0.00	0.00	0.00	0.00
KTPP-I	0.00	0.00	0.00	0.00	0.00	0.00
KTPP-II	22.15	304.49	314.51	45.40	29.59	716.14
BTPS	0.00	7952.74	738.68	0.00	0.00	8691.42
Hydel						
Nagarjuna Complex	0.00	0.00	0.00	0.00	0.00	0.00
Srisaillam LB	0.00	0.00	0.00	0.00	0.00	0.00
Small Hydel	0.00	14.30	9.55	8.35	0.00	32.20
Mini Hydel	0.00	0.00	0.00	0.00	0.00	0.00
Pochampad II	0.00	0.00	0.00	0.00	0.00	0.00
Priyadarshini Jurala	0.00	0.00	0.00	0.00	0.00	0.00
Lower Jurala	4.43	50.39	27.99	17.72	16.14	116.67
Pulichintala	4.71	13.03	5.95	5.87	6.10	35.66
Total	233.34	8818.03	1416.35	271.13	245.91	10984.75

FGD System

5.3.38 MoEF&CC vide its notification dated 07.12.2015 has revised the SO₂ emission norm from 600 mg/Nm³ to 200 mg/Nm³. TSGenco has proposed the capital investment towards FGD system for KTPS-VII & BTPS for complying with the revised emission norm under Clause 7.191(e) and 7.191(l) of the Regulations No.1 of 2019.

5.3.39 In accordance with Clause 7.19.1 of the Regulations No.1 of 2019, the capital investment claimed for FGD system is allowable as the same is within the original scope of work. However, the Commission deems it appropriate to decide on the issue of whether the power of relaxation can be invoked in the instant case or not. The details of timelines given by CPCB are as under:

Table 52: The details of time lines given by CPCB

Name of the project	Unit No.	Installed Capacity (MW)	Timelines for installation of equipment to limit Pollutants in Emissions		
			SPM	SO _x	NO _x
KTPS-V	9	250	31.12.2020	31.12.2020	31.12.2020
	10	250	31.12.2020	31.12.2020	31.12.2020
KTPS-VI	11	500	30.09.2019	30.09.2019	30.09.2019

KTPP	1	500	31.03.2020	31.03.2020	31.12.2022
	2	600	31.03.2020	30.06.2020	31.12.2022

5.3.40 As the target date for complying with SO₂ emission norm was deferred by the competent authority and such uniform dispensation was given across the country, the Commission deems it a fit case to exercise the power of relaxation of Clause 7.19.1 regarding the criteria for allowing additional capitalization. Clause 7.19.1(l) provides for capital expenditure for complying with statutory norms for Environment in accordance with the appropriate notifications of MoEF&CC. Therefore, the capital investment for FGD system is allowable under Clause 7.19.1(l) of the Regulations No.1 of 2019.

5.3.41 The Commission understands that TSGenco is in the process of awarding the works of procurement and installation of FGD system through competitive process. The Commission expects such competitive procurement to yield the most economical prices aligned to market trends. The Commission shall carry out the prudence check of the cost of FGD system in true-up for the relevant year after commissioning of the same.



Chapter 6

Analysis and Conclusion on MYT for FY 2019-20 to FY 2023-24

6.1 REGULATORY PROVISIONS

6.1.1 TSGenco has two types of power plants, viz., hydel generating stations and thermal generating stations. The tariff for sale of electricity from a thermal generating station shall comprise of two parts viz, Annual Fixed Charges (AFC) and Energy Charges (for recovery of primary and secondary fuel cost) whereas tariff for sale of electricity form hydel generating station shall comprise only AFC. TSGenco submitted the tariff proposals for FY 2019-20 to FY 2023-24 in its MYT Petition. TSGenco's submissions and Commission's analysis on MYT for 4th control period from FY 2019-20 to FY 2023-24 is detailed in the following paragraphs.

6.2 ANNUAL FIXED CHARGES (AFC)

6.2.1 The AFC shall comprise the following elements:

- i) Depreciation;
- ii) Interest and Finance Charges on Loan;
- iii) Interest on Working Capital;
- iv) O&M Expenses;
- v) Return on Equity; minus
- vi) Non-Tariff Income

6.3 CAPITAL COST FOR BHADRADRI THERMAL POWER STATION (BTPS)

Background of the Project

6.3.1 BTPS station (4x270 MW) has been constructed in Bhadradri Kothagundem district. Unit-I and Unit-II have achieved COD on 05.06.2020 and 07.12.2020, respectively. The COD of Unit-III and Unit-IV are scheduled to be completed by March 2021. TSGenco in its MYT Petition submitted that the total capital cost of BTPS is Rs.9959.43 crore of which Rs.6073.05 crore has been incurred till FY 2019-20.

6.3.2 The Commission scrutinised the submissions of TSGenco and directed it to submit scheme-wise capex details, reason for time and cost over-run, details of undischarged liabilities with proper justification, etc. In response, TSGenco submitted the details as under.

6.3.3 The package wise capital cost claimed by the TSGenco for BTPS station is given in the Table below:

Table 53: Capital Cost for BTPS submitted by TSGenco

Rs. in crore

Sl. No.	Break Down	Cost as per DPR	Revised cost as per admin. approval	Capitalisation up to COD	FY 2020-21	FY 2021-22
1	Electrical & Mech. System (BHEL)	3546.60	3326.60	2942.93	324.12	59.55
2	Civil System (BHEL)	1476.03	1524.19	1194.92	253.00	76.27
3	Common works E&M other than BHEL	95.00	95.00	2.21	13.09	79.70
4	Common works Civil other than BHEL	1167.12	1208.88	181.74	609.72	417.42
5	Consultancy services	12.00	12.00	4.03	2.12	4.98
6	C&I/Pre project works	0.00	0.00	0.98	0.00	0.00
7	CSR	0.00	30.00	6.02	12.00	11.98
8	Land	0.00	100.00	0.58	75.00	24.42
9	Erec. & Comm. (BHEL)	551.83	551.83	242.91	251.26	57.66
10	New Norms (FGD, SCR & ESP addition)	680.00	680.00	95.79	206.03	378.18
11	Bus Reactor and CTs & CVTs	12.55	12.55	8.64	3.91	0.00
12	Back charges to BHEL		22.64	12.79	9.85	0.00
13	EDC	203.00	668.33	334.78	333.55	
14	IDC	792.85	1727.30	1044.73	656.34	26.23
15	Total	8536.98	9959.32	6073.04	2749.99	1136.39

Reason of Delay in Project:

- TSGenco submitted that due to National Green Tribunal directions, all works of BTPS were suspended from 14.12.2015 to 30.03.2017 (15½ months) for Environmental Clearance.
- The excavated pits were flooded with rain water and the reinforced steel structures were submerged in the water during the hold period which necessitated testing by third party to check strength of the steel. These activities took times of around 5 months in remobilization of agencies men, machineries and materials to site by the EPC contractor.
- The MoEF&CC vide notification S.O.3305(E) dated 07.12.2015 has revised the emission control norms for thermal power plants. To comply with the new norms, additional works were necessitated and drawings and plot plans were revised as specified in the Environmental Clearance by MoEF&CC.
- Due to monsoon, the works were affected severely during rainy seasons from the year 2017 to 2020 as the BTPS Manuguru area is prone to heavy rains.
- The works were adversely affected due to Covid-19 as lockdown was imposed by the Government.

Reasons for Cost Over Run:

- TSGenco submitted that EPC cost was revised from Rs.5044.00 crore to Rs.5195.82 crore due to implementation of the GST by the Government of India which resulted in an increase of Rs.151.82 crore.
- While granting environmental clearance, MoEF&CC mandated to implement new emission norms. As per revised norms, TSGenco placed LOI of Rs.680.00 crore to BHEL on 12.06.2018.
- Additional requirement for electrical equipment (CT&CVTs and bus reactor) of Rs.12.55 crore.
- Due to delay in project completion, IDC was revised from Rs.892.53 crore to Rs.1727.30 crore, i.e., an increase of Rs 834.77 crore.
- Non-EPC civil works increased to Rs.1167.12 crore from Rs.870.5 crore resulted an increase of Rs.296.62 crore.
- Increase in start-up fuel cost from Rs.10.80 crore to Rs.255.00 crore, i.e., an increase of Rs.244.20 crore.
- Establishment cost as Rs.123.33 crore.

Table 54: Details of Cost Over Run for BTPS

Sl. No.	Reasons	Amount (crore)
1	GST	151.82
2	MoEF&CC norms	680.00
3	Additional electrical equipment	12.55
4	IDC	834.77
5	Non-EPC Civil works	468.36
6	Start-up fuel cost	244.20*
7	Establishment cost	123.33

* wrongly submitted as Rs.214.20 crore by TSGenco in its table

- 6.3.4 TSGenco, in its subsequent additional information submitted the revised administrative approval for the capital cost of Rs.10515.84 crore.

Prudence check of the Capital Cost by the Commission:

- 6.3.5 Clause 7.10 to 7.12 of the Regulations No.1 of 2019 specify as under:

“

c) Computation of Capital Cost

- 7.10 *The capital cost admitted by the Commission after Prudence Check shall form the basis for determination of tariff.*

Provided that Prudence Check may include scrutiny of the reasonableness of the capital expenditure, financing plan including the choice and manner of funding, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff.

- 7.11 *Capital cost for a capital investment Project shall include:*

- 7.11.1 *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project as admitted by the Commission after prudence check.*

- 7.11.2 *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed.*
- 7.11.3 *The interest during construction and financing charges, on the loans as admitted by the Commission after Prudence Check in accordance with clause 7.21 & 7.22 of this Regulation.*
- 7.11.4 *Capitalised initial spares subject to the ceiling rates specified in clause 7.12 this Regulation.*
- 7.11.5 *Additional capitalization determined under this Regulation clause 7.14*
- 7.11.6 *Any gain or loss on account of foreign exchange rate variation pertaining to the loan amount availed up to COD, as admitted by the Commission after Prudence Check.*
- 7.11.7 *Adjustment of revenue on account of sale of Infirm Power by Generating Station in excess of fuel cost prior to the COD as specified under this Regulation at clause 8 of this Regulation.*
- 7.11.8 *Increase in cost in contract packages subject to Prudence Check and approved by the Commission.*
Provided that in case the actual capital cost is lower than the approved capital cost, the actual capital cost, subject to Prudence Check and in accordance with the conditions and methodology specified herein for the capital cost of New Generating Unit/Station, shall be considered for determination of tariff of the Generating Entity
Provided that any gain or loss on account of foreign exchange rate variation pertaining to the loan amount availed up to COD shall be adjusted only against the debt component of the capital cost:
Provided further that the capital cost of the assets forming part of the Project but not put to use or not in use, shall be excluded from the capital cost:
Provided also that the Generating Entity shall submit documentary evidence in support of its claim of assets being put to use:
Provided also that any capital expenditure incurred based on the specific requirement of a Generating Entity shall be substantiated with necessary documentary evidence of such request and undertaking received.
- 7.12 *The actual capital expenditure as on COD for the Original Scope of Work based on audited accounts of the Generating Entity or Project, as the case may be, shall be considered subject to Prudence Check by the Commission.”*

- 6.3.6 For determination of the capital cost, the Commission is undertaking prudence check. The Hon'ble ATE in its Judgment dated 27.04.2011 in Appeal No.72 of 2010 in Para 7.2 of its Judgment has explained the scope of prudence check as under:

“The capital cost has to be determined on the basis of actual expenditure incurred on completion of the project subject to prudence check by the State Commission. The dictionary meanings of the word ‘prudent’ are “sensible and careful when you make judgments and decisions and avoiding unnecessary risk”. The prudence check of the capital cost has to be looked into considering whether the Appellant has been careful in its judgments and decisions while executing the project or has been careful and vigilant in executing the project.”

- 6.3.7 Thus, the scope of prudence check is to examine that whether the Petitioner has been careful and vigilant in taking the decisions while executing the project and prudence checking is distinct from according sanction to expenditure. The prudence check of capital cost of the project has been undertaken in the light of the original estimates, the revised estimates approved by Board, provisional capital cost admitted in the PPA, justification submitted by the TSGenco, reasons for increase in cost as compared to estimated cost, reasons for delay in project and process of awarding various contracts.
- 6.3.8 The Commission noted that although some of the Units at BTPS had achieved COD at the time of submission of Petition, subsequently all the Units had achieved COD. However, as the final capital cost has to be determined based on audited capital cost and prudence check of the same, as per Clause 5.2 of the Regulations No.1 of 2019, the Commission currently approves the provisional capital cost of the project, which later be approved on the actual basis. As regards the new capital expenditure for new environmental norms (FGD, SCR & ESP addition), the same is not available in the DPR. However, as discussed above these are essential as per MoEF&CC’s revised norms but at this stage the Commission does not approve any cost. TSGenco shall carry out the work and the cost towards the same shall be approved after prudence check during MTR.
- 6.3.9 The Commission, in this Order has provisionally approved the capital cost of BTPS. The Commission will analyse the reasons for delay in project and reasons for cost overrun in details when TSGenco will submit the complete details of project cost after project COD is achieved.
- 6.3.10 The approved capital cost and the capitalisation for FY 2020-21 and FY 2021-22 is summarised below. The cost approved is provisional as the last unit of the Station is yet to be commissioned. **The Commission directs TSGenco**

to submit the proposal for final capital cost and revised tariff for BTPS after commissioning of the final unit.

Table 55: Capital Cost provisionally approved for BTPS

Rs. in crore

Sl. No.	Break Down	Total Capital Cost Approved	Approved as on COD	Approved for FY 2020-21	Approved for FY 2021-22
1	Electrical & Mechanical. System (BHEL)	3147.33	2784.33	306.65	56.34
2	Civil System (BHEL)	1393.59	1092.53	231.32	69.73
3	Common Works E&M other than BHEL	95.00	2.21	13.09	79.70
4	Common Works Civil other than BHEL	1208.88	181.74	609.72	417.42
5	Consultancy services	11.13	4.03	2.12	4.98
6	C&I/Pre project works	0.00	0.00	0.00	0.00
7	CSR	30.00	6.02	12.00	11.98
8	Land	100.00	0.58	75.00	24.42
9	Erection & Commissioning (BHEL)	482.45	212.37	219.67	50.41
10	New Norms (FGD, SCR & ESP addition)	0.00	0.00	0.00	0.00
11	Bus Reactor and CTs & CVTs	12.55	8.64	3.91	0.00
12	Back charges to BHEL	0.00	0.00	0.00	0.00
13	EDC	650.16	325.68	324.48	0.00
14	IDC	1560.35	943.75	592.90	23.69
15	Total	8691.43	5561.87	2390.87	738.68

6.4 CAPITALISATION FOR 4TH CONTROL PERIOD

Petitioner's submission

6.4.1 TSGenco submitted the details of GFA for existing and new stations for 4th control period from FY 2019-20 to FY 2023-24 as below:

Table 56: GFA claimed by TSGenco for 4th control period

Rs. in crore

Sl. No.	Name of the Station	GFA as on 01.04.2019	Additions 2019-20	Additions 2020-21	Additions 2021-22	Additions 2022-23	Additions 2023-24	Total additions
1	KTPS-O&M	773.20	0.00	0.00	0.00	0.00	0.00	0.00
2	KTPS-V	2159.05	7.78	79.42	0.00	0.00	0.00	87.2
3	KTPS-VI	2530.95	0.00	0.00	0.00	0.00	0.00	0.00
4	RTS-B	127.53	0.00	0.00	0.00	0.00	0.00	0.00
5	KTPP-I	2587.76	0.00	0.00	0.00	0.00	0.00	0.00
6	KTPP-II	3405.83	38.95	444.44	134.32	36.64	26.39	680.74
7	KTPS-VII	4605.02	252.17	663.67	458.64	231.78	194.08	1800.34
8	BTPS	0.00	6073.05	2749.99	1136.39	0.00	0.00	9959.43
9	NSHES	1948.75	0.00	0.00	0.00	0.00	0.00	0.00
8	SLBHES	3376.06	0.00	0.00	0.00	0.00	0.00	0.00
10	Small Hydel	121.02	0.00	0.00	0.00	0.00	0.00	0.00
11	Mini Hydels	31.35	0.00	0.00	0.00	0.00	0.00	0.00
12	Pochampad-II	29.74	0.00	0.00	0.00	0.00	0.00	0.00
13	PJHES	691.91	0.00	0.00	0.00	0.00	0.00	0.00

Sl. No.	Name of the Station	GFA as on 01.04.2019	Additions 2019-20	Additions 2020-21	Additions 2021-22	Additions 2022-23	Additions 2023-24	Total additions
14	LJHES	1555.90	5.02	50.67	28.15	17.87	18.7	120.41
15	PCHES	445.31	7.34	20.29	9.27	9.15	9.50	55.55
	Total	24389.36	6384.31	4008.48	1766.77	295.43	248.67	12730.87

Commission's View

6.4.2 The Commission has approved the Capital Investment Plan for FY 2019-20 to FY 2023-24 as detailed in Chapter 5 of this Order. However, in accordance with Clause 7.19.4 of the Regulations No.1 of 2019, the additional capitalization has not been considered for tariff computations and the same shall be considered during Mid-Term Review or tariff determination for the next control period, as the case may be.

6.4.3 The Commission has approved the capitalisation for determination of Tariff for new plants like PCHES, KTPS-VII and BTPS till their cut-off date as it falls within 4th control period from FY 2019-20 to FY 2023-24.

Table 57: Additional capitalization approved for Tariff Determination

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	7.78	0.00	79.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-VI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-VII	252.17	249.43	663.67	403.67	458.64	0.00	231.78	0.00	194.08	0.00
RTS-B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPP-I	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPP-II	38.95	0.00	444.44	0.00	134.32	0.00	36.64	0.00	26.39	0.00
BTPS	0.00	0.00	6073.05	0.00	2749.99	2390.87	1136.39	738.68	0.00	0.00
Hydel										
Nagarjuna Complex	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Srisailem LB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Small Hydel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mini Hydel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pochampad II	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Priyadarshini Jurala	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Jurala	5.02	0.00	50.67	0.00	28.15	0.00	17.87	0.00	18.70	0.00
Pulichintala	7.34	4.71	20.29	0.00	9.27	0.00	9.15	0.00	9.50	0.00

6.4.4 The Opening GFA approved by the Commission for FY 2019-20 to FY 2023-24 is summarised in the table below:

Table 58: Opening GFA approved for tariff determination

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	773.20	776.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	2159.05	2149.48	2166.83	2149.48	2246.25	2149.48	2246.25	2149.48	2246.25	2149.48
KTPS-VI	2530.95	2530.48	2530.95	2530.48	2530.95	2530.48	2530.95	2530.48	2530.95	2530.48

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
KTPS-VII	4605.02	4602.87	4857.19	4852.30	5520.86	5255.97	5979.50	5255.97	6211.28	5255.97
RTS-B	127.53	127.04	127.53	127.04	127.53	127.04	127.53	127.04	127.53	127.04
KTPP-I	2587.76	2548.83	2587.76	2548.83	2587.76	2548.83	2587.76	2548.83	2587.76	2548.83
KTPP-II	3405.83	3408.75	3444.78	3408.75	3889.22	3408.75	4023.54	3408.75	4060.17	3408.75
BTPS	0.00	0.00	6073.05	5561.87	8823.04	7952.74	9959.43	8691.42	9959.43	8691.42
Hydel										
Nagarjuna Complex	1948.75	1920.80	1948.75	1920.80	1948.75	1920.80	1948.75	1920.80	1948.75	1920.80
Srisailem LB	3376.06	3375.71	3376.06	3375.71	3376.06	3375.71	3376.06	3375.71	3376.06	3375.71
Small Hydel	121.02	120.54	121.02	120.54	121.02	120.54	121.02	120.54	121.02	120.54
Mini Hydel	31.35	31.23	31.35	31.23	31.35	31.23	31.35	31.23	31.35	31.23
Pochampad II	29.74	29.74	29.74	29.74	29.74	29.74	29.74	29.74	29.74	29.74
Priyadarshini Jurala	691.91	690.68	691.91	690.68	691.91	690.68	691.91	690.68	691.91	690.68
Lower Jurala	1555.90	1617.59	1560.92	1617.59	1611.59	1617.59	1639.74	1617.59	1657.61	1617.59
Pulichintala	445.31	433.85	452.65	438.56	472.94	438.56	482.21	438.56	491.36	438.56

6.5 DEPRECIATION

Petitioner's submission

- 6.5.1 TSGenco submitted that it has computed depreciation considering rate of depreciation at 5.28% on capital cost of the project for generating station completed 12 years, and the remaining depreciable value has been equally spread over the remaining useful life of the station.
- 6.5.2 TSGenco has claimed the depreciation of Rs.1129.40 crore, Rs.1198.55 crore, Rs.1609.36 crore, Rs.1702.64 crore and Rs.1407.92 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

Commission's View

- 6.5.3 The Commission has approved station wise depreciation in accordance with Clause 10 of the Regulations No.1 of 2019 considering the station wise approved GFA on true up for FY 2018-19 and the actual depreciation for FY 2019-20 as submitted by TSGenco after performing prudence check. In accordance with Clause 7.19.4 of the Regulations No.1 of 2019, the additional capitalization for existing generating units (other than units that came up in the previous control period from FY 2014-15 to FY 2018-19) has not been considered for tariff computations and the same shall be considered during Mid-Term Review or tariff determination for the next control period, as the case may be.
- 6.5.4 The depreciation claimed by TSGenco and approved by the Commission is summarised in the Table below:

Table 59: Depreciation approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	64.18	51.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	86.67	32.82	86.67	32.82	86.67	32.82	86.67	32.82	0.00	32.82
KTPS-VI	133.63	127.32	133.63	127.32	133.63	127.32	133.63	127.32	30.43	127.32
KTPS-VII	243.14	247.04	256.46	264.10	291.50	274.65	315.72	274.65	327.96	274.65
RTS-B	12.05	10.11	12.05	10.11	12.05	10.11	12.05	10.11	12.05	10.11
KTPP-I	136.63	125.13	136.63	125.13	136.63	125.13	136.63	125.13	17.31	54.02
KTPP-II	179.83	178.75	181.88	178.75	205.35	178.75	212.44	178.75	214.38	178.75
BTPS	0.00	0.00	117.31	200.74	465.86	434.87	525.86	454.17	525.86	454.17
Hydel										
Nagarjuna Complex	65.11	87.97	65.11	87.97	65.11	87.97	65.11	87.97	65.11	87.97
Srisaillam LB	60.20	86.43	60.20	86.43	60.20	86.43	60.20	86.43	60.20	86.43
Small Hydel	3.10	3.36	3.10	3.36	3.10	3.36	3.10	3.36	3.10	3.36
Mini Hydel	1.09	0.90	1.09	0.90	1.09	0.90	1.09	0.90	1.09	0.90
Pochampad II	1.57	1.56	1.57	1.56	1.57	1.56	1.57	1.56	0.44	0.43
Priyadarshini Jurala	36.53	32.75	36.53	32.75	36.53	32.75	36.53	32.75	36.53	32.75
Lower Jurala	82.15	72.09	82.42	72.09	85.09	72.09	86.58	72.09	87.52	72.09
Pulichintala	23.51	19.43	23.90	19.54	24.97	19.54	25.46	19.54	25.94	19.54

6.5.5 The variation in depreciation claimed by TSGenco and approved by the Commission is majorly on account of the variations in GFA base.

6.6 INTEREST AND FINANCE CHARGES ON LOAN

Petitioner's submission

6.6.1 TSGenco submitted that it has claimed the interest on loan of Rs.1119.24 crore, Rs.1301.57 crore, Rs.1822.01 crore, Rs.1635.85 crore and Rs.1473.25 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

6.6.2 TSGenco has considered the interest rate as the weighted average rate of interest for actual loan portfolio of respective station.

Commission's View

6.6.3 TSGenco, in its MYT Petition, submitted station wise interest on loan and balance loan amount without any justification and documentary support. The Commission directed TSGenco to submit documentary support for station wise claimed interest rate and balance loan amount. In response, TSGenco submitted letter from financial institution/bank of which loans were availed. In addition, TSGenco also submitted the summary of station-wise actual values of loan opening, closing and interest paid for the previous control period from

FY 2014-15 to FY 2018-19. The Commission has observed that some of the values proposed in the Petition are not as per the actuals.

6.6.4 The Commission has approved the interest and finance charges on loan in accordance Clause 12 of the Regulations No.1 of 2019 and considering the submission of TSGenco and the prudence check made by the Commission. The station wise opening loan balance for FY 2019-20 has been calculated by considering 70% of the GFA approved by the Commission and subtracting the accumulated depreciation as calculated by the Commission for FY 2019-20. The approved depreciation has been considered as the normative loan repayment for the year. The station wise weighted average interest rate of the actual loan portfolio has been considered as the rate of interest. The interest on loan has been calculated on the normative average loan balance for the year by applying the weighted average rate of interest. TSGenco has not claimed any finance charges for 4th control period from FY 2019-20 to FY 2023-24.

6.6.5 Interest rate claimed by TSGenco and approved by the Commission is summarised in the Table below:

Table 60: Rate of Interest approved for 4th control period

Stations	Petition	Approved
Thermal		
KTPS-O&M	10.68%	9.95%
KTPS-V	10.68%	9.95%
KTPS-VI	10.68%	10.04%
KTPS-VII	10.69%	10.26%
RTS-B	10.20%	9.94%
KTPP-I	10.44%	10.03%
KTPP-II	10.60%	9.95%
BTPS	11.72%	11.72%
Hydel		
Nagarjuna Complex	10.68%	9.95%
Srisaïlam LB	12.50%	10.15%
Small Hydel	12.50%	12.50%
Mini Hydel	12.50%	12.50%
Pochampad II	10.10%	10.10%
Priyadarshini Jurala	10.68%	9.95%
Lower Jurala	10.68%	9.98%
Pulichintala	11.20%	10.56%

6.6.6 The interest and finance charges claimed by TSGenco and approved by the Commission is as summarised in the Table below:

Table 61: Interest and Finance Charges approved for 4th control period
Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-VI	71.76	67.32	49.20	54.53	27.03	41.74	6.07	28.96	0.00	16.17
KTPS-VII	424.34	320.53	432.96	317.76	479.29	304.61	434.69	276.42	387.86	248.23
RTS-B	3.54	2.00	2.31	0.99	1.08	0.25	0.00	0.00	0.00	0.00
KTPP-I	46.57	63.25	30.23	50.70	16.80	38.14	3.36	25.59	0.00	16.60
KTPP-II	228.90	177.98	251.19	160.21	217.48	142.43	184.73	124.65	164.93	106.87
BTPS	0.00	0.00	222.42	377.89	794.97	784.14	748.72	769.01	689.27	715.79
Hydel										
Nagarjuna Complex	58.60	44.93	51.65	36.18	44.70	27.42	37.74	18.67	30.79	9.92
Srisaïlam LB	103.72	93.79	96.20	85.02	88.67	76.24	81.15	67.47	73.62	58.69
Small Hydel	1.00	0.98	0.46	0.56	0.08	0.18	0.00	0.00	0.00	0.00
Mini Hydel	0.58	0.29	0.44	0.17	0.31	0.06	0.17	0.00	0.03	0.00
Pochampad II	1.27	0.94	1.11	0.78	0.95	0.63	0.79	0.47	0.64	0.37
Priyadarshini Jurala	29.98	21.46	26.08	18.20	22.18	14.94	18.27	11.68	14.37	8.42
Lower Jurala	115.82	86.59	107.95	79.39	100.20	72.19	93.94	64.99	87.68	57.80
Pulichintala	31.42	27.58	29.36	25.70	28.27	23.64	26.20	21.57	24.07	19.51

6.6.7 The variation in interest and finance charges claimed by TSGenco and approved by the Commission is on account of the variations in loan balances and the interest rates.

6.7 INTEREST ON WORKING CAPITAL (IoWC)

Petitioner's submission

6.7.1 TSGenco has claimed IoWC of Rs.378.71 crore, Rs.360.65 crore, Rs.448.55 crore, Rs.458.48 crore and Rs.454.82 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

6.7.2 TSGenco has computed station wise working capital in accordance with Regulations No.1 of 2019. It considered maintenance spare as 20% and 15% of O&M expenditure for thermal and hydro generating station respectively.

6.7.3 The rate of interest on working capital has been considered as SBI MCLR rate as on 1.04.2019 plus 350 basis point based on CERC (Terms and Conditions of Tariff) Regulations, 2019.

Commission's View

6.7.4 The Commission observed that TSGenco has considered working capital requirement as per the provisions of Regulations No.1 of 2019, however, it has considered rate of interest as per the provisions of CERC (Terms and

Conditions of Tariff) Regulations, 2019. The Commission does not find merit in considering rate of interest for working capital as per CERC Regulations.

6.7.5 The Commission has approved IoWC in accordance with Clause 13 of the Regulations No.1 of 2019. In accordance with Clause 7.19.4 of the Regulations No.1 of 2019, the additional capitalization has not been considered for tariff computations and the same shall be considered during Mid-Term Review or tariff determination for the next control period, as the case may be.

6.7.6 The working capital requirement has been computed considering the following:

- Cost of coal towards stock corresponding to 30 days generation corresponding to target Availability (for thermal stations alone).
- Cost of coal for 30 days of generation corresponding to target Availability (for thermal stations alone).
- Cost of secondary fuel oil for two months of generation corresponding to target Availability (for thermal stations alone).
- Maintenance spares at 20% of the O&M expenses for thermal stations and 15 % of the O&M expenses for hydel stations.
- O&M expenses for one month.
- Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on target Availability.
- Minus payables for fuel (including secondary fuel oil) to the extent of thirty days of the cost of fuel computed at target Availability.

6.7.7 The rate of IoWC has been considered as 10.05% which is equivalent to the Bank Rate plus 150 basis points as on 01.04.2019 against the value as on filing date as the Petition was filed after a lot of delay.

6.7.8 The station-wise IoWC claimed by TSGenco and approved by the Commission is as shown in the Table below:

Table 62: Interest on Working Capital approved for 4th control period
Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	59.11	43.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	44.56	31.99	44.68	32.27	45.24	32.61	45.45	32.98	44.00	33.36
KTPS-VI	46.94	36.06	47.19	36.12	47.54	36.25	47.89	36.40	46.01	36.56
KTPS-VII	72.46	55.68	72.84	56.37	74.76	56.77	77.02	56.54	78.23	56.32
RTS-B	9.28	6.76	9.48	6.90	9.70	7.05	9.94	7.22	10.18	7.40
KTPP-I	47.72	37.36	47.77	37.37	47.89	37.45	48.03	37.56	45.67	36.52
KTPP-II	58.90	46.00	58.41	45.94	61.13	45.98	62.09	46.03	62.42	46.10
BTPS	0.00	0.00	40.22	16.39	121.61	83.72	126.88	87.33	126.68	87.05

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Hydel										
Nagarjuna Complex	10.45	8.43	10.57	8.46	10.70	8.51	10.85	8.56	11.01	8.62
Srisailam LB	12.14	10.03	12.21	10.04	12.29	10.05	12.38	10.07	12.49	10.09
Small Hydel	2.05	1.52	2.13	1.58	2.22	1.63	2.32	1.69	2.41	1.76
Mini Hydel	0.38	0.27	0.39	0.28	0.41	0.29	0.42	0.30	0.44	0.31
Pochampad II	0.40	0.29	0.41	0.30	0.42	0.31	0.44	0.32	0.43	0.31
Priyadarshini Jurala	4.00	2.96	4.02	2.97	4.04	2.98	4.06	2.99	4.09	3.00
Lower Jurala	6.48	5.40	6.38	5.33	6.51	5.26	6.50	5.20	6.44	5.13
Pulichintala	3.86	3.14	3.95	3.20	4.10	3.25	4.21	3.31	4.32	3.37

6.7.9 The variation in IoWC claimed by TSGenco and approved by the Commission is on account of variation in working capital and the interest rate.

6.8 O&M EXPENSES

Petitioner's submission

6.8.1 TSGenco has claimed O&M expenses of Rs.1980.15 crore, Rs.1672.68 crore, Rs.2047.78 crore, Rs.2139.86 crore and Rs.2241.88 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.

6.8.2 TSGenco submitted that it has computed O&M expenses for existing stations in accordance with the Clause 19 of Regulations No.1 of 2019 as under:

- i) The employee cost for the first year of 4th control period has been computed by considering average of the employee cost of the immediately preceding control period i.e., FY 2014-15 to FY 2018-19 and CPI inflation factor based on point to point change in CPI for industrial worker as per Labour Bureau, Gol for FY 2018-19 and thereafter reducing by an efficiency factor of 1%. The employee cost for the subsequent year of 4th control period has been computed based on employee cost of preceding year and CPI inflation factor.
- ii) R&M expenditure for the nth year has been arrived by multiplying GFA of the nth year with 'K' & WPI inflation factor. The 'K' factor is the average percentage of R&M expenses upon GFA for 3rd control period from FY 2014-15 to FY 2018-19 and WPI inflation factor is point to point change in WPI for immediately preceding year i.e., FY 2018-19.
- iii) A&G expense for the first year of 4th control period has been computed by escalating average audited A&G expense of the immediately preceding three financial years i.e., FY 2016-17 to FY 2018-19 with the inflation factor. The A&G expense for the subsequent year of 4th control period has been computed by escalating the preceding year A&G expenses with the inflation factor.
- iv) The CPI inflation, WPI inflation & Inflation factor for the FY 2018-19 are 5.40%, 4.26% & 4.81% respectively. The same has been considered for arriving the Employee cost, R&M expenses and A&G expenses respectively for the entire 4th control period i.e., FY 2019-20 to FY

2023-24.

- v) The provisions towards terminal benefits have been included in the Employee cost for the period from FY 2014-15 to FY 2018-19. The proposed terminal liabilities such as leave encashment, medical reimbursement in respect of pensioners for 4th control period FY 2019-20 to FY 2023-24 has been claimed on actual basis.
- vi) The expenses incurred on medical and other expenses are excluded from O&M expenses and recorded separately.
- vii) The one time expected expenses, such as implications of Pay Revision Commitment (PRC)-2018 and artisan salaries for FY 2018-19 have been excluded from the Employee cost and have been considered under provisions for 4th control period from FY 2019-20 to FY 2023-24.

6.8.3 The O&M expenses for new stations, i.e., KTPS-VII and BTPS station have been computed in accordance with the CERC (Terms and Condition of Tariff) Regulations, 2019. Further, the employee cost on account of PRC-2018 has been included in the O&M cost. The impact of PRC-2018 on employee cost is 40%, which translates to 20% increase in the O&M cost.

Commission's View

6.8.4 The Commission has gone through the computation of O&M expenses submitted by TSGenco based on the actual expenses incurred from FY 2014-15 to FY 2018-19.

6.8.5 The O&M expenses comprises of (i) Employee cost, (ii) R&M expenses and (iii) A&G expenses. Clause 19 of the Regulations No.1 of 2019 stipulates the methodology for determination of O&M expenses.

6.8.6 The Commission had approved normative O&M expenses (as a whole) for FY 2014-15 to FY 2018-19 considering the CERC and TSERC Generation Tariff Regulations. However, since the actual O&M expenses incurred by each station is available on actual basis and TSGenco has also submitted the reconciliation with the values with the Audited Accounts, the Commission has considered the actual station-wise Employee cost, R&M expenses and A&G expenses and has performed prudence checks on the same. The Commission's approval of O&M expenses for 4th control period from FY 2019-20 to FY 2023-24 has been detailed in the following paragraphs.

Employee Cost:

6.8.7 Clause 19.2 of the Regulations No.1 of 2019 stipulates as under:

"19.2 Employee Cost (EMP_n)

Employee cost shall be computed as per the approved norm escalated by CPI, adjusted by provisions for expenses beyond the control of the Generating Entity and one time expected expenses, such as recovery /adjustment of Terminal Benefits, implications of pay commission, arrears and interim relief, governed by the following formula

$$\mathbf{EMP_n = (EMP_b \times CPI\ Inflation) + Provision}$$

Where:

EMP_n: Employee expense for the Year “n”;

EMP_b: Employee expense as per the preceding Year;

For the first year of control period, expense shall be the average of the trued-up employee expenses after adding/deducting the share of efficiency gains/losses, for the immediately preceding control period, excluding abnormal, if any, subject to Prudence Check by the Commission.

CPI Inflation is the point to point change in the Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India, as reduced by efficiency factor of 1% for immediately preceding Year;

CPI index source for one-month lag: Ministry of Statistics-GOI

provided that in case CPI Inflation is a negative number, the escalation/change shall be 0%.

Provision refers to provision for expenses beyond control of the Generating Entity and expected one-time expenses as specified above.”

- 6.8.8 As per the above, the EMP_b for FY 2019-20 shall be the average of the trued-up employee expenses after adding/deducting the share of efficiency gains/losses, for the immediately preceding control period i.e., FY 2014-15 to FY 2018-19, excluding abnormal, if any, subject to Prudence Check by the Commission.
- 6.8.9 Hence, the Commission has considered the employee cost for FY 2014-15 to FY 2018-19 based on the actuals as per the audited accounts for the respective years including the remeasurement of gains/losses on employee and medical and welfare expenses for arriving at the employee cost for the base year. As per the submission of TSGenco, the employee cost booked in audited accounts under the head of remeasurement of gains/losses on employee considers the impact of Actuarial Valuation and impact of PRC 2018. For determining station wise employee cost for the base year, actual employee cost as per audited accounts has been determined in proportion to station wise employee cost submitted by TSGenco.

6.8.10 The employee cost for FY 2019-20 and subsequent years of 4th control period has been computed by considering the CPI Inflation of 1.04 based on point-to-point change in CPI for industrial workers as per Labour Bureau, GoI for FY 2018-19 and thereafter reducing by an efficiency factor of 1% and the average employee cost arrived based on the norms approved for 3rd control period from FY 2014-15 to FY 2018-19.

6.8.11 It is noted that TSGenco has excluded the one time expected expenses, such as implications of PRC-2018 and artisan salaries for FY 2018-19 from the employee cost for the base year and have been considered under provisions for 4th control period from FY 2019-20 to FY 2023-24. However, the Commission has not considered the provisions for separately for FY 2019-20 to FY 2023-24 since the employee cost for the base year already includes provisions for such one time expected expenses. The Commission noted that TSGenco has not considered impact PRC-2022 while calculating the employee expenses for FY 2019-24. Hence, the Commission has not approved any effect due to PRC for 4th control period from FY 2019-20 to FY 2023-24. The Commission is of the view that the same shall be claimed based on the actuals either during the Mid Term Review or during Truing up at the end of 4th control period.

R&M Expenses:

6.8.12 Clause 19.3 of the Regulations No.1 of 2019 stipulates as under:

“19.3 Repairs and Maintenance Expense ($R\&M_n$)

The expense shall be calculated as percentage (as per the norm defined) of Opening Gross Fixed Assets for the Year governed by following formula:

$$R\&M_n = K_n \times GFA_n \times WPI \text{ Inflation}$$

Where:

$R\&M_n$: Repairs & Maintenance expense for n th Year;

GFA_n : Opening Gross Fixed Assets for n th Year;

K_n : ‘K’ is the immediately preceding control period average (expressed in %) governing the relationship between R&M and Gross Fixed Assets (GFA);

WPI Inflation: point to point change in Wholesale Price Index (WPI) for immediately preceding Year;

Provided that in case WPI inflation is a negative number, the escalation/ change shall be 0%.

Source for WPI-As published by Office of Economic Adviser-GOI”

6.8.13 The WPI arrived based on the provisions of the Regulations No.1 of 2019 for FY 2018-19 is 4.26%. The escalation factor arrived based on the same is 1.04.

6.8.14 The 'K' factor for each station has been considered as the average percentage of actual R&M expenses (excluding any outliers) upon opening GFA for 3rd control period from FY 2014-15 to FY 2018-19. However, the 'K' factor is arrived for new stations that came up during the previous control period based on the years in which the entire station became operational instead of specific units of the Station. The R&M expenses for each year of 4th control period has been arrived at by multiplying the approved opening GFA for the respective year with the 'K' factor for each station and WPI Inflation.

A&G Expenses:

6.8.15 Clause 19.4 of the Regulations No.1 of 2019 stipulates as under:

“19.4. Administrative & General Expense (A&G_n)

A&G expense shall be computed as per the norm escalated by the inflation factor and adjusted by provisions for confirmed initiative (IT etc. initiatives as proposed by the Generating Entity and validated by the Commission) or other expected one-time expenses, and shall be governed by the following formula:

$$\mathbf{A\&G_n = A\&G_{fo} * Inflation\ Factor) Provision}$$

Where:

A&G_n: A&G expense for the Year “n”;

A&G_{fo}: For the first Year of the control period, it shall be the average of the audited A&G expense for the immediately preceding three (3) Financial Years if available, and for subsequent Years it shall be the preceding Year escalated by the inflation factor;

Inflation Factor: is the sum of the following:

- *point to point change in the Wholesale Price Index (WPI) numbers as per Office of Economic Advisor of Government of India for immediately Year reduced by an efficiency factor of 1% multiplied by 0.5.*
- *point to point change in Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India in the previous year, as reduced by an efficiency factor of 1% multiplied by 0.5.*
- *Provided that in case inflation Factor is a negative number, the escalation/change shall be 0%.*
- *Provision: Cost for initiatives or other one-time expenses as proposed by the Generating Entity and validated by the Commission.”*

6.8.16 The Inflation Factor calculated based on the provisions mentioned above is 1.04.

6.8.17 The A&G_{fo} for the base year shall be the average of the audited A&G expenses for the immediately preceding 3 Financial Years i.e., FY 2016-17 to FY 2018-19 and escalating the same with the Inflation Factor of 1.04. However, for new stations that came up during the previous control period, A&G_{fo} is arrived based on the years in which the entire station became operational instead of specific units of the Station.

6.8.18 The A&G expenses for the subsequent years of 4th control period has been computed by considering the Inflation Factor of 1.04 based on point-to-point change in CPI for industrial workers as per Labour Bureau, Gol and point-to-point change in WPI as Office of Economic Advisor, Gol for FY 2019-20 as per the Regulations.

6.8.19 Employee cost, A&G expenses and, R&M expenses arrived by the Commission based on the above methodology is summarised in the table below:

Table 63: Components of O&M Expenses determined for 4th control period

Rs. in crore

Station	FY 2019-20			FY 2020-21			FY 2021-22			FY 2022-23			FY 2023-24		
	Emp	A&G	R&M	Emp	A&G	R&M	Emp	A&G	R&M	Emp	A&G	R&M	Emp	A&G	R&M
Thermal															
KTPS-O&M	418.90	16.41	42.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	121.55	10.92	35.00	126.96	11.34	36.49	132.61	11.78	38.05	138.51	12.23	39.67	144.67	12.71	41.36
KTPS-VI	121.55	10.92	35.93	126.96	11.34	37.46	132.61	11.78	39.05	138.51	12.23	40.72	144.67	12.71	42.46
KTPS-VII	130.21	11.27	4.36	134.78	11.67	4.51	139.57	12.08	4.67	144.42	12.50	4.84	149.49	12.94	5.01
RTS-B	64.34	5.53	9.63	67.21	5.75	10.04	70.20	5.97	10.47	73.32	6.20	10.92	76.58	6.44	11.38
KTPP-I	110.89	4.00	29.42	115.82	4.16	30.67	120.97	4.32	31.98	126.36	4.48	33.34	131.98	4.65	34.76
KTPP-II	128.47	4.49	30.33	134.19	4.66	31.62	140.16	4.84	32.97	146.40	5.03	34.38	152.91	5.22	35.84
BTPS				93.52	8.09	3.13	340.48	29.47	11.40	352.53	30.51	11.81	364.87	31.58	12.22
Hydel															
Nagarjuna Complex	84.14	7.07	12.84	87.88	7.35	13.39	91.79	7.63	13.96	95.88	7.92	14.56	100.15	8.23	15.18
Srisaillam LB	70.88	6.72	9.34	74.03	6.98	9.74	77.32	7.25	10.15	80.77	7.53	10.58	84.36	7.82	11.03
Small Hydel	30.08	0.82	1.90	31.42	0.85	1.98	32.82	0.88	2.07	34.28	0.92	2.16	35.81	0.95	2.25
Mini Hydel	5.10	0.14	0.32	5.33	0.14	0.34	5.57	0.15	0.35	5.82	0.16	0.36	6.07	0.16	0.38
Pochampad II	5.01	0.14	0.32	5.24	0.14	0.33	5.47	0.15	0.35	5.71	0.15	0.36	5.97	0.16	0.38
Priyadarshini Jurala	31.19	1.29	1.69	32.58	1.34	1.76	34.03	1.39	1.83	35.54	1.45	1.91	37.12	1.50	1.99
Lower Jurala	24.89	1.56	1.96	26.00	1.62	2.05	27.15	1.68	2.14	28.36	1.75	2.23	29.62	1.81	2.32
Pulichintala	44.57	1.04	1.23	46.55	1.08	1.29	48.63	1.13	1.35	50.79	1.17	1.40	53.05	1.22	1.46

6.8.20 Clause 19.1 of the Regulations No.1 of 2019 stipulates as under:

“The O&M expenses for each year of the control period shall be approved based on the formula shown below:

$$O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times 99\%$$

... ..”

6.8.21 Based on the above, the O&M expenses are approved as 99% of the sum of the values calculated under each head of the O&M expenses. The Commission, however has approved the O&M expenses for new stations viz., BTPS and KTPS-VII as per the norms of CERC Tariff Regulations, 2019 as the actual O&M expenses for such stations are not available. The summary of the O&M expenses claimed by TSGenco and approved by the Commission for FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 64: O&M Expenses approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	561.03	472.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	200.81	165.79	209.82	173.04	220.47	180.61	230.33	188.51	240.73	196.75
KTPS-VI	201.62	166.71	210.50	174.00	219.87	181.61	229.73	189.55	240.13	197.84
KTPS-VII	175.01	145.84	181.15	150.96	187.58	156.32	194.11	161.76	200.93	167.44
RTS-B	89.70	78.71	93.99	82.17	98.50	85.77	103.26	89.53	108.28	93.46
KTPP-I	164.28	142.86	171.54	149.14	179.20	155.69	187.26	162.54	195.76	169.68
KTPP-II	182.23	161.66	190.76	168.77	203.30	176.19	213.57	183.95	223.47	192.04
BTPS	0.00	0.00	161.77	104.74	457.62	381.35	473.82	394.85	490.41	408.67
Hydel										
Nagarjuna Complex	112.14	103.02	117.47	107.54	123.08	112.25	128.99	117.18	135.22	122.32
Srisaillam LB	94.06	86.06	98.59	89.84	103.37	93.78	108.40	97.89	113.70	102.18
Small Hydel	36.99	32.48	38.88	33.91	40.87	35.41	42.96	36.98	45.17	38.62
Mini Hydel	6.27	5.51	6.59	5.75	6.93	6.01	7.29	6.27	7.66	6.55
Pochampad II	6.17	5.41	6.48	5.65	6.81	5.90	7.16	6.16	7.53	6.44
Priyadarshini Jurala	37.42	33.82	39.34	35.32	41.36	36.88	43.49	38.51	45.74	40.21
Lower Jurala	29.03	28.13	30.49	29.37	32.08	30.66	33.73	32.01	35.45	33.42
Pulichintala	44.50	46.37	46.86	48.44	49.37	50.59	51.98	52.83	54.74	55.17

6.9 RETURN ON EQUITY (RoE)

Petitioner's submission

- 6.9.1 TSGenco has claimed RoE of Rs.1020.52 crore, Rs.987.86 crore, Rs.1412.01 crore, Rs.1764.15 crore and Rs.1776.85 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.
- 6.9.2 TSGenco submitted that it has computed the RoE in accordance with the Regulations No.1 of 2019. Where actual equity deployed is less than 30%, of the capital cost actual equity has been considered and where actual equity deployed is more than 30% of the capital cost, equity in excess of 30% has been considered as notional loan.
- 6.9.3 Rate of pre-tax Return on the Equity has been computed in the range from 18.78% to 19.99% based on the MAT of 17.472% and base rate of RoE from 15.50% to 16.50%. The base of RoE is considered as 15.50% for the thermal

and run-of-river stations and 16.50% for hydel stations with pondage. The RoE is considered as 16.00% in respect of KTPS-VII since it has been constructed within the time line, where the additional rate of return of 0.50% is allowed.

Commission's View

- 6.9.4 The Commission has approved RoE in accordance with Clause 11 of the Regulations No.1 of 2019 based on station wise approved GFA. The rate of RoE has been considered as 18.78% for all generating stations other than storage type hydro generating stations by grossing up the base rate of 15.50% with the MAT rate of 17.472%.
- 6.9.5 In the reply to query of the Commission, TSGenco confirmed that stations for which base RoE has been claimed as 16.50% are pondage/storage type station. Therefore, based on the submission of the TSGenco and considering the provisions of Regulation, the Commission approved RoE as 19.99% by grossing up the base rate of 16.50% with the MAT rate of 17.472% for pondage/storage type generating stations.
- 6.9.6 The Commission observed that TSGenco has computed equity base considering the net fixed assets. However, the Commission approves equity base as 30% of the GFA approved as per the Regulations No.1 of 2019 except for BTPS where, the project was envisioned by financing 15% through equity. Hence, for BTPS, the equity base is approved at 15% provisionally and shall be reviewed when all the units are commissioned.
- 6.9.7 The equity base claimed by TSGenco and approved by the Commission is summarised in the Table below:

Table 65: Equity Base approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	91.26	232.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	484.09	644.84	405.20	644.84	397.96	644.84	311.29	644.84	224.62	644.84
KTPS-VI	541.76	759.15	619.32	759.15	693.32	759.15	755.89	759.15	679.12	759.15
KTPS-VII	571.61	1418.28	499.99	1516.24	473.74	1576.79	1058.12	1576.79	1412.29	1576.79
RTS-B	38.26	38.11	38.26	38.11	38.26	38.11	36.84	38.11	24.79	38.11
KTPP-I	584.28	764.65	604.10	764.65	596.16	764.65	588.23	764.65	483.79	764.65
KTPP-II	739.73	1022.62	388.51	1022.62	969.08	1022.62	1207.06	1022.62	1218.05	1022.62
BTPS	0.00	0.00	885.43	985.19	1922.68	1213.33	2987.83	1267.18	2969.24	1267.18
Hydel										
Nagarjuna Complex	584.62	576.24	584.62	576.24	584.62	576.24	584.62	576.24	584.62	576.24

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Srisaillam LB	1012.82	1012.71	1012.82	1012.71	1012.82	1012.71	1012.82	1012.71	1012.82	1012.71
Small Hydel	35.16	36.16	36.31	36.16	36.31	36.16	33.82	36.16	30.72	36.16
Mini Hydel	9.40	9.37	9.40	9.37	9.40	9.37	9.40	9.37	9.40	9.37
Pochampad II	8.92	8.92	8.92	8.92	8.92	8.92	8.92	8.92	8.92	8.92
Priyadarshini Jurala	207.57	207.20	207.57	207.20	207.57	207.20	207.57	207.20	207.57	207.20
Lower Jurala	257.62	485.28	254.13	485.28	294.96	485.28	296.65	485.28	286.58	485.28
Pulichintala	133.59	130.86	135.79	131.57	141.88	131.57	144.66	131.57	147.41	131.57

6.9.8 The RoE claimed by TSGenco and approved by the Commission is summarised in the Table below:

Table 66: Return on Equity approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	17.14	43.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	90.92	121.11	76.10	121.11	74.74	121.11	58.47	121.11	42.19	121.11
KTPS-VI	101.75	142.58	116.32	142.58	130.22	142.58	141.97	142.58	127.55	142.58
KTPS-VII	110.82	266.37	96.94	284.77	91.85	296.15	205.14	296.15	273.80	296.15
RTS-B	7.19	7.16	7.19	7.16	7.19	7.16	6.92	7.16	4.66	7.16
KTPP-I	109.74	143.61	113.46	143.61	111.97	143.61	110.48	143.61	90.86	143.61
KTPP-II	138.93	192.06	72.97	192.06	182.01	192.06	226.70	192.06	228.77	192.06
BTPS	0.00	0.00	60.84	105.19	361.11	227.88	561.16	238.00	557.67	238.00
Hydel										
Nagarjuna Complex	116.89	115.21	116.89	115.21	116.89	115.21	116.89	115.21	116.89	115.21
Srisaillam LB	202.49	202.47	202.49	202.47	202.49	202.47	202.49	202.47	202.49	202.47
Small Hydel	7.03	7.23	7.26	7.23	7.26	7.23	6.76	7.23	6.14	7.23
Mini Hydel	1.77	1.76	1.77	1.76	1.77	1.76	1.77	1.76	1.77	1.76
Pochampad II	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78
Priyadarshini Jurala	38.99	38.92	38.99	38.92	38.99	38.92	38.99	38.92	38.99	38.92
Lower Jurala	48.38	91.14	47.73	91.14	55.40	91.14	55.72	91.14	53.82	91.14
Pulichintala	26.71	26.16	27.15	26.30	28.37	26.30	28.92	26.30	29.47	26.30

6.10 NON-TARIFF INCOME (NTI)

Petitioner's submission

6.10.1 TSGenco has not proposed any NTI for 4th control period from FY 2019-20 to FY 2023-24. TSGenco submitted that the actual NTI will be filed while submission of MTR Petition before the Commission.

Commission's View

6.10.2 The Commission observed that TSGenco has not submitted NTI for 4th control period from FY 2019-20 to FY 2023-24. However, as per the provisions of Regulations No.1 of 2019, NTI is one of the components of AFC and the Generating Entity is required to submit the forecast NTI to the Commission. Clause 16(a) of the Regulations No.1 of 2019 provides the tentative list of

items that constitute NTI. Therefore, the Commission directed TSGenco to submit station wise NTI. In response, TSGenco submitted actual station wise NTI for 3rd control period from FY 2014-15 to FY 2018-19. The Commission has provisionally considered actual of NTI for FY 2019-20 as per the audited accounts and apportioned the same to its generating stations based on the actual NTI submitted for FY 2014-15 to FY 2018-19. The Commission has not considered any further escalation of NTI during the remaining years of 4th control period. However, the Commission has considered additional NTI based on addition of new stations during 4th control period from FY 2019-20 to FY 2023-24.

The NTI approved by the Commission is summarised in the Table below:

Table 67: NTI approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Thermal										
KTPS-O&M	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	0.00	3.01	0.00	3.01	0.00	3.01	0.00	3.01	0.00	3.01
KTPS-VI	0.00	3.01	0.00	3.01	0.00	3.01	0.00	3.01	0.00	3.01
KTPS-VII	0.00	4.82	0.00	4.82	0.00	4.82	0.00	4.82	0.00	4.82
RTS-B	0.00	0.79	0.00	0.79	0.00	0.79	0.00	0.79	0.00	0.79
KTPP-I	0.00	4.40	0.00	4.40	0.00	4.40	0.00	4.40	0.00	4.40
KTPP-II	0.00	5.27	0.00	5.27	0.00	5.27	0.00	5.27	0.00	5.27
BTPS	0.00	0.00	0.00	2.70	0.00	7.12	0.00	9.49	0.00	9.49
Hydel										
Nagarjuna Complex	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.60
Srisaïlam LB	0.00	0.35	0.00	0.35	0.00	0.35	0.00	0.35	0.00	0.35
Small Hydel	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04
Mini Hydel	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04
Pochampad II	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04
Priyadarshini Jurala	0.00	0.35	0.00	0.35	0.00	0.35	0.00	0.35	0.00	0.35
Lower Jurala	0.00	0.07	0.00	0.07	0.00	0.07	0.00	0.07	0.00	0.07
Pulichintala	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02

6.11 ADDITIONAL PENSION LIABILITIES

- 6.11.1 TSGenco has claimed additional Pension Liabilities of Rs.1080.07 crore, Rs.1175.11 crore, Rs.1281.34 crore, Rs.1394.83 crore and Rs.1517.03 crore for FY 2019-20, FY 2020-21, FY 2021-22, FY 2022-23 and FY 2023-24 respectively.
- 6.11.2 TSGenco submitted that the liability of Rs.4386.95 crore towards meeting the pension liability of the following was vested in the erstwhile APGenco in terms

of the statutory First Transfer Scheme dated 30.01.2000 notified by the State Government under the AP Electricity Reforms Act, 1998:

- The pensioners/family pensioners of the erstwhile APSEB as on 31.03.1999 and
- The employees of the erstwhile APSEB as on 31.03.1999 working thereafter for the erstwhile APGenco, APTransco and the Discoms and since retired.

6.11.3 The erstwhile APGenco had issued bonds in favour of the Master Trust which are redeemable over a period of 30 years. In order that the Master Trust is liable to pay 100% of the pension commitment of pensioners as on 31.01.1999 and 74% of the pension commitment of employees who retired after 01.02.1999 (26% being funded by the separate P&G Trusts of the erstwhile APGenco, APTransco and four Discoms), the APGenco is required to make the following annual payments as per the bond schedule:

- An amount towards repayment of the principal as per the bond schedule; and
- Interest on the outstanding liability as per the bond schedule; and
- Additional interest, being the actual amount of pension payment in a year in excess of the aggregate for that year of the scheduled repayment and interest aforesaid as per the bond schedule, which is passed through in the tariff.

6.11.4 The additional interest has been recognized and allowed in the tariff on a year to year basis to TSGenco by the Commission in GTO dated 05.06.2017.

6.11.5 By a transfer scheme notified by the State Government in G.O.Ms.29 dated 31.05.2014 under the provisions of the A.P. Electricity Reforms Act, 1998, 42% of the outstanding pension liability (i.e., bonds issued to the Master Trust) as on 31.03.2014 was vested in TSGenco with the corresponding obligations for repayment, payment of interest and payment of additional interest, and it was considered that the additional interest would pass through in the generation tariff of TSGenco.

6.11.6 Accordingly, the additional liabilities on estimate basis is considered as a pass through in the tariff as part of fixed cost subject to adjustment for actuals on a year to year basis.

6.11.7 The above additional liabilities are in addition to the yearly contributions being made to the TSGenco's P&G Trust for funding the 26% Pension and gratuity

liability for its employees who were in service as on 01.02.1999 and retiring thereafter and also gratuity liability for its employees who were recruited after 01.02.1999 which are included as part of O&M expenses.

Commission's View

- 6.11.8 TSGenco in its filing claimed Rs.6448.38 crore towards additional pension liabilities for 4th control period from FY 2019-20 to FY 2023-24. As statutory First Transfer Scheme dated 30.01.2000 notified by the erstwhile State Government under the AP Electricity Reform Act, 1998, the obligation to meet pension liability of the erstwhile APSEB employees was vested with the erstwhile APGenco. The G.O.Ms.No.29 (Transfer Scheme) issued on 31.05.2014 as per the AP Electricity Reform Act, 1998 and AP Reorganisation Act, 2014 provides for the payment of pension liabilities by TSGenco.
- 6.11.9 Upon reorganisation of the erstwhile APSEB into erstwhile APGenco and erstwhile APTransco on 01.02.1999, the pension liability of employees who retired in erstwhile APSEB, and also of those employees on the payrolls on the date of reorganisation to the extent of their services in the erstwhile APSEB were transferred to the erstwhile APGenco.
- 6.11.10 For the purpose of discharging pension liability as discussed above, a Master Trust was formed. During the year 2002-03, the erstwhile APGenco issued two series of bonds, guaranteed by the erstwhile Government of Andhra Pradesh, to the Trust.
- 6.11.11 Based on the First Transfer Scheme notified by the erstwhile Govt. of A.P. vide G.O.Ms.No.9 Energy (Power-III) dated 29.01.1999 read with G.O.Ms.No.11, Energy (Power-III) dated 31.01.2000, the liabilities on account of loan repayment and terminal benefits of employees as on the effective date of the said transfer scheme were covered through the depreciation and RoE charged on the re-valued assets.
- 6.11.12 The liability was transferred to TSGenco vide G.O.Ms.No.29 dated 31.05.2014 (Transfer Scheme notified by the erstwhile Gov. of A.P.) based on the provisions of the A.P. Reorganisation Act, 2014 and the AP Electricity Reforms Act, 1998.

6.11.13 TSGenco has to discharge 42.39% of the total pension liability of the erstwhile APGenco as on the said date, as the assets constituting the generating stations allocated to the Telangana State were valued at Rs.1379 crore being 42.39% of the total asset value of Rs.3253 crore based on the provisional balance sheet of APGenco as on 31.03.2014.

6.11.14 The erstwhile APERC in the Order dated 24.03.2003 in O.P.No.402 of 2002 allowed actual pension liabilities as a passthrough in the tariff on a year-to-year basis up to the FY 2032-33. The aforementioned Order of the APERC shows that any additional liability due to increase in the amount of pension is recognised as a pass through in the tariff of APGenco. The year wise estimated pension liability and the resulting additional liability over and above the year-wise amount to be redeemed as per the pension bond schemes are furnished by TSGenco. However, the Commission has considered the actual Pension Liability of Rs.1227.55 crore for FY 2019-20 and has allowed an escalation of 5% towards DA and retirement commuted pension and gratuity payments. The Additional Pension Liability allowed by the Commission is as under:

Table 68: Additional Pension Liabilities approved for 4th control period

Rs. in crore

Particulars	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Estimated Interest	1227.55	1288.93	1353.37	1421.04	1492.09
Share from Bonds	158.99	163.07	163.91	166.03	168.70
Additional Pension Liability	1068.56	1125.86	1189.46	1255.01	1323.39

6.12 OTHER SUBMISSIONS

6.12.1 TSGenco has claimed expenses for the following items other in addition of above discussed items:

- Leave Encasement;
- Medical allowance to pensioners;
- License and Regulatory fee;
- Water Charges;
- Medical and other welfare expenses; and
- Information Technology;

Commission's View

6.12.2 Clause 19.6 of the Regulations No.1 of 2019 stipulates as under:

“19.6 Any expenditure on account of license fee, initial or renewal, fee for determination of tariff and audit fee shall be allowed on actual basis, over and above the A&G expenses approved by the Commission.”

6.12.3 The above clause provides for allowing expenses on account of license fee, initial or renewal, fee for determination of tariff and audit fee on actual basis, over and above the A&G expenses approved by the Commission. Therefore, the Commission is of view to allow License and Regulatory fee based on actual during MTR.

6.12.4 Clause 2.59 of Regulations No.1 of 2019 provides for allowing water charges over and above the approved O&M expenses. The Commission has approved water charges as claimed by TSGenco.

6.12.5 As regards leave encashment and medical allowance to pensioners, the Commission is of the view that the leave encashment and medical allowance for pensioners shall be allowed based on the actuals during MTR since the actuals for FY 2019-20 is not available presently. However, the expenses claimed under the head “Medical & other welfare expenses” are already included while arriving at O&M Expenses. Hence, the Commission has not approved the same for 4th control period from FY 2019-20 to FY 2023-24.

6.12.6 As regards IT expenses, the Commission is of the view that IT expenditure is part of capital expenditure and it shall not be permitted to be claimed as separate one-time expenses. Therefore, these expenses are not allowed to be separately recovered as a part of AFC.

6.12.7 Other expenses claimed by TSGenco and approved by the Commission are summarised in the Table below:

Table 69: Other Expenses approved for 4th control period

Rs. in crore

Particulars	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Leave Encashment to Pensioners	5.78	0.00	14.38	0.00	19.38	0.00	15.07	0.00	20.11	0.00
Medical Allowance to Pensioners	5.58	0.00	5.91	0.00	6.27	0.00	6.64	0.00	7.04	0.00
Licence & Regulatory Fee	0.00	0.00	1.51	0.00	0.00	0.00	0.00	0.00	1.51	0.00
Water Charges	27.54	27.54	46.67	46.67	49.47	49.47	52.43	52.43	55.58	55.58
Medical & other welfare expenses	21.46	0.00	22.75	0.00	24.11	0.00	25.56	0.00	27.09	0.00
IT	0.70	0.00	5.50	0.00	15.00	0.00	4.00	0.00	2.00	0.00

6.13 ANNUAL FIXED CHARGES (AFC)

Commission's View

6.13.1 Based on the above, station wise AFC claimed by TSGenco and approved by the Commission is shown in the Tables below:

Table 70: AFC approved for 4th control period

Rs. in crore

Station	Depreciation		O&M Expenses		Return on Equity		Interest on Loan		IoWC		NTI		Fixed Charges	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
AFC approved for FY 2019-20														
Thermal														
KTPS-O&M	64.18	51.28	561.03	472.73	17.14	43.75	1.76	0.00	59.11	43.59	0.00	2.50	703.22	608.85
KTPS-V	86.67	32.82	200.81	165.79	90.92	121.11	0.00	0.00	44.56	31.99	0.00	3.01	422.96	348.71
KTPS-VI	133.63	127.32	201.62	166.71	101.75	142.58	71.76	67.32	46.94	36.06	0.00	3.01	555.70	536.98
KTPS-VII	243.14	247.04	175.01	145.84	110.82	266.37	424.34	320.53	72.46	55.68	0.00	4.82	1025.77	1030.64
RTS-B	12.05	10.11	89.70	78.71	7.19	7.16	3.54	2.00	9.28	6.76	0.00	0.79	121.75	103.96
KTPP-I	136.63	125.13	164.28	142.86	109.74	143.61	46.57	63.25	47.72	37.36	0.00	4.40	504.93	507.82
KTPP-II	179.83	178.75	182.23	161.60	138.93	192.06	228.90	177.98	58.90	46.00	0.00	5.27	788.79	751.13
BTPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thermal Total	856.14	772.45	1574.67	1334.26	576.48	916.65	776.86	631.08	338.96	257.44	0.00	23.79	4123.12	3888.09
Hydel														
Nagarjuna Complex	65.11	87.97	112.14	103.02	116.89	115.21	58.60	44.93	10.45	8.43	0.00	0.60	363.19	358.95
Srisaillam LB	60.20	86.43	94.06	86.06	202.49	202.47	103.72	93.79	12.14	10.03	0.00	0.35	472.61	478.44
Small Hydel	3.10	3.36	36.99	32.48	7.03	7.23	1.00	0.98	2.05	1.52	0.00	0.04	50.16	45.54
Mini Hydel	1.09	0.90	6.27	5.51	1.77	1.76	0.58	0.29	0.38	0.27	0.00	0.04	10.09	8.69
Pochampad II	1.57	1.56	6.17	5.41	1.78	1.78	1.27	0.94	0.40	0.29	0.00	0.04	11.19	9.96
Priyadarshini Jurala	36.53	32.75	37.42	33.82	38.99	38.92	29.98	21.46	4.00	2.96	0.00	0.35	146.92	129.57
Lower Jurala	82.15	72.09	29.03	28.13	48.38	91.14	115.82	86.59	6.48	5.40	0.00	0.07	281.86	283.29
Pulichintala	23.51	19.43	44.50	46.37	26.71	26.16	31.42	27.58	3.86	3.14	0.00	0.02	130.00	122.67
Hydel Total	273.27	304.50	366.58	340.81	444.04	484.68	342.38	276.56	39.75	32.06	0.00	1.51	1466.01	1437.10
Total	1129.40	1076.96	1941.25	1675.06	1020.52	1401.33	1119.24	907.64	378.71	289.50	0.00	25.30	5589.13	5325.19
AFC approved for FY 2020-21														
Thermal														
KTPS-O&M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	86.67	32.82	209.82	173.04	76.10	121.11	0.00	0.00	44.68	32.27	0.00	3.01	417.27	356.23
KTPS-VI	133.63	127.32	210.50	174.00	116.32	142.58	49.20	54.53	47.19	36.12	0.00	3.01	556.85	531.54
KTPS-VII	256.46	264.10	181.15	150.96	96.94	284.77	432.96	317.76	72.84	56.37	0.00	4.82	1040.34	1069.15
RTS-B	12.05	10.11	93.99	82.17	7.19	7.16	2.31	0.99	9.48	6.90	0.00	0.79	125.01	106.54
KTPP-I	136.63	125.13	171.54	149.14	113.46	143.61	30.23	50.70	47.77	37.37	0.00	4.40	499.64	501.55
KTPP-II	181.88	178.75	190.76	168.71	72.97	192.06	251.19	160.21	58.41	45.94	0.00	5.27	755.22	740.40
BTPS	117.31	200.74	161.77	104.74	60.84	105.19	222.42	377.89	40.22	16.39	0.00	2.70	602.56	802.26
Thermal Total	924.63	938.98	1219.53	1002.77	543.81	996.49	988.32	962.08	320.59	231.36	0.00	23.99	3996.89	4107.68
Hydel														
Nagarjuna Complex	65.11	87.97	117.47	107.54	116.89	115.21	51.65	36.18	10.57	8.46	0.00	0.60	361.68	354.75
Srisaillam LB	60.20	86.43	98.59	89.84	202.49	202.47	96.20	85.02	12.21	10.04	0.00	0.35	469.69	473.45
Small Hydel	3.10	3.36	38.88	33.91	7.26	7.23	0.46	0.56	2.13	1.58	0.00	0.04	51.83	46.60
Mini Hydel	1.09	0.90	6.59	5.75	1.77	1.76	0.44	0.17	0.39	0.28	0.00	0.04	10.28	8.83
Pochampad II	1.57	1.56	6.48	5.65	1.78	1.78	1.11	0.78	0.41	0.30	0.00	0.04	11.36	10.05
Priyadarshini Jurala	36.53	32.75	39.34	35.32	38.99	38.92	26.08	18.20	4.02	2.97	0.00	0.35	144.95	127.81
Lower Jurala	82.42	72.09	30.49	29.37	47.73	91.14	107.95	79.39	6.38	5.33	0.00	0.07	274.97	277.25
Pulichintala	23.90	19.54	46.86	48.44	27.15	26.30	29.36	25.70	3.95	3.20	0.00	0.02	131.22	123.16
Hydel Total	273.92	304.61	384.69	355.82	444.05	484.84	313.25	246.00	40.06	32.16	0.00	1.51	1455.98	1421.90
Total	1198.55	1243.59	1604.23	1358.59	987.86	1481.33	1301.57	1208.08	360.65	263.52	0.00	25.50	5452.86	5529.58
AFC approved for FY 2021-22														
Thermal														
KTPS-O&M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	86.67	32.82	220.47	180.61	74.74	121.11	0.00	0.00	45.24	32.61	0.00	3.01	427.11	364.15
KTPS-VI	133.63	127.32	219.87	181.61	130.22	142.58	27.03	41.74	47.54	36.25	0.00	3.01	558.28	526.49
KTPS-VII	291.50	274.65	187.58	156.32	91.85	296.15	479.29	304.61	74.76	56.77	0.00	4.82	1124.98	1083.68
RTS-B	12.05	10.11	98.50	85.77	7.19	7.16	1.08	0.25	9.70	7.05	0.00	0.79	128.53	109.55
KTPP-I	136.63	125.13	179.20	155.69	111.97	143.61	16.80	38.14	47.89	37.45	0.00	4.40	492.48	495.64
KTPP-II	205.35	178.75	203.30	176.13	182.01	192.06	217.48	142.43	61.13	45.98	0.00	5.27	869.27	730.08
BTPS	465.86	434.87	457.62	381.35	361.11	227.88	794.97	784.14	121.61	83.72	0.00	7.12	2201.16	1904.84
Thermal Total	1331.69	1183.66	1566.53	1317.49	959.08	1130.55	1536.66	1311.31	407.86	299.84	0.00	28.41	5801.82	5214.43
Hydel														

Station	Depreciation		O&M Expenses		Return on Equity		Interest on Loan		IoWC		NTI		Fixed Charges	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
Nagarjuna Complex	65.11	87.97	123.08	112.25	116.89	115.21	44.70	27.42	10.70	8.51	0.00	0.60	360.47	350.76
Srisaillam LB	60.20	86.43	103.37	93.78	202.49	202.47	88.67	76.24	12.29	10.05	0.00	0.35	467.02	468.62
Small Hydel	3.10	3.36	40.87	35.41	7.26	7.23	0.08	0.18	2.22	1.63	0.00	0.04	53.53	47.77
Mini Hydel	1.09	0.90	6.93	6.01	1.77	1.76	0.31	0.06	0.41	0.29	0.00	0.04	10.50	8.98
Pochampad II	1.57	1.56	6.81	5.90	1.78	1.78	0.95	0.63	0.42	0.31	0.00	0.04	11.54	10.15
Priyadarshini Jurala	36.53	32.75	41.36	36.88	38.99	38.92	22.18	14.94	4.04	2.98	0.00	0.35	143.09	126.12
Lower Jurala	85.09	72.09	32.08	30.66	55.40	91.14	100.20	72.19	6.51	5.26	0.00	0.07	279.28	271.28
Pulichintala	24.97	19.54	49.37	50.59	28.37	26.30	28.27	23.64	4.10	3.25	0.00	0.02	135.08	123.30
Hydel Total	277.67	304.61	403.87	371.48	452.94	484.82	285.35	215.30	40.69	32.28	0.00	1.51	1460.51	1406.98
Total	1609.36	1488.26	1970.40	1688.97	1412.01	1615.37	1822.01	1526.60	448.55	332.12	0.00	29.92	7262.33	6621.41

AFC approved for FY 2022-23

Thermal														
KTPS-O&M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	86.67	32.82	230.33	188.51	58.47	121.11	0.00	0.00	45.45	32.98	0.00	3.01	420.91	372.41
KTPS-VI	133.63	127.32	229.73	189.55	141.97	142.58	6.07	28.96	47.89	36.40	0.00	3.01	559.30	521.79
KTPS-VII	315.72	274.65	194.11	161.76	205.14	296.15	434.69	276.42	77.02	56.54	0.00	4.82	1226.68	1060.70
RTS-B	12.05	10.11	103.26	89.53	6.92	7.16	0.00	0.00	9.94	7.22	0.00	0.79	132.17	113.24
KTPP-I	136.63	125.13	187.26	162.54	110.48	143.61	3.36	25.59	48.03	37.56	0.00	4.40	485.76	490.03
KTPP-II	212.44	178.75	213.57	183.88	226.70	192.06	184.73	124.65	62.09	46.03	0.00	5.27	899.54	720.11
BTPS	525.86	454.17	473.82	394.85	561.16	238.00	748.72	769.01	126.88	87.33	0.00	9.49	2436.44	1933.86
Thermal Total	1423.00	1202.96	1632.09	1370.62	1310.83	1140.67	1377.58	1224.63	417.31	304.05	0.00	30.79	6160.81	5212.13

Hydel														
Nagarjuna Complex	65.11	87.97	128.99	117.18	116.89	115.21	37.74	18.67	10.85	8.56	0.00	0.60	359.58	346.98
Srisaillam LB	60.20	86.43	108.40	97.89	202.49	202.47	81.15	67.47	12.38	10.07	0.00	0.35	464.62	463.98
Small Hydel	3.10	3.36	42.96	36.98	6.76	7.23	0.00	0.00	2.32	1.69	0.00	0.04	55.14	49.23
Mini Hydel	1.09	0.90	7.29	6.27	1.77	1.76	0.17	0.00	0.42	0.30	0.00	0.04	10.73	9.20
Pochampad II	1.57	1.56	7.16	6.16	1.78	1.78	0.79	0.47	0.44	0.32	0.00	0.04	11.75	10.26
Priyadarshini Jurala	36.53	32.75	43.49	38.51	38.99	38.92	18.27	11.68	4.06	2.99	0.00	0.35	141.35	124.50
Lower Jurala	86.58	72.09	33.73	32.01	55.72	91.14	93.94	64.99	6.50	5.20	0.00	0.07	276.46	265.36
Pulichintala	25.46	19.54	51.98	52.83	28.92	26.30	26.20	21.57	4.21	3.31	0.00	0.02	136.78	123.53
Hydel Total	279.64	304.61	424.01	387.84	453.31	484.82	258.27	184.86	41.17	32.43	0.00	1.51	1456.40	1393.04
Total	1702.64	1507.56	2056.10	1758.46	1764.15	1625.48	1635.85	1409.48	458.48	336.48	0.00	32.30	7617.22	6605.17

AFC approved for FY 2023-24

Thermal														
KTPS-O&M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KTPS-V	0.00	32.82	240.73	196.75	42.19	121.11	0.00	0.00	44.00	33.36	0.00	3.01	326.91	381.03
KTPS-VI	30.43	127.32	240.13	197.84	127.55	142.58	0.00	16.17	46.01	36.56	0.00	3.01	444.12	517.45
KTPS-VII	327.96	274.65	200.93	167.44	273.80	296.15	387.86	248.23	78.23	56.32	0.00	4.82	1268.77	1037.97
RTS-B	12.05	10.11	108.28	93.46	4.66	7.16	0.00	0.00	10.18	7.40	0.00	0.79	135.16	117.35
KTPP-I	17.31	54.02	195.76	169.68	90.86	143.61	0.00	16.60	45.67	36.52	0.00	4.40	349.61	416.04
KTPP-II	214.38	178.75	223.47	191.97	228.77	192.06	164.93	106.87	62.42	46.10	0.00	5.27	893.96	710.49
BTPS	525.86	454.17	490.41	408.67	557.67	238.00	689.27	715.79	126.68	87.05	0.00	9.49	2389.89	1894.18
Thermal Total	1127.98	1131.85	1699.69	1425.82	1325.50	1140.67	1242.06	1103.66	413.19	303.31	0.00	30.79	5808.42	5074.51

Hydel														
Nagarjuna Complex	65.11	87.97	135.22	122.32	116.89	115.21	30.79	9.92	11.01	8.62	0.00	0.60	359.02	343.43
Srisaillam LB	60.20	86.43	113.70	102.18	202.49	202.47	73.62	58.69	12.49	10.09	0.00	0.35	462.50	459.52
Small Hydel	3.10	3.36	45.17	38.62	6.14	7.23	0.00	0.00	2.41	1.76	0.00	0.04	56.83	50.93
Mini Hydel	1.09	0.90	7.66	6.55	1.77	1.76	0.03	0.00	0.44	0.31	0.00	0.04	10.99	9.48
Pochampad II	0.44	0.43	7.53	6.44	1.78	1.78	0.64	0.37	0.43	0.31	0.00	0.04	10.82	9.28
Priyadarshini Jurala	36.53	32.75	45.74	40.21	38.99	38.92	14.37	8.42	4.09	3.00	0.00	0.35	139.72	122.96
Lower Jurala	87.52	72.09	35.45	33.42	53.82	91.14	87.68	57.80	6.44	5.13	0.00	0.07	270.91	259.51
Pulichintala	25.94	19.54	54.74	55.17	29.47	26.30	24.07	19.51	4.32	3.37	0.00	0.02	138.55	123.87
Hydel Total	279.94	303.47	445.21	404.91	451.35	484.82	231.20	154.71	41.63	32.59	0.00	1.51	1449.33	1378.99
Total	1407.92	1435.32	2144.91	1830.73	1776.85	1625.48	1473.25	1258.36	454.82	335.91	0.00	32.30	7257.75	6453.50

Table 71: Summary of AFC approved for 4th control period

Rs. in crore

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FYs 2019-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
KTPS-O&M	703.22	608.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	703.22	608.85
KTPS-V	422.96	348.71	417.27	356.23	427.11	364.15	420.91	372.41	326.91	381.03	2015.17	1822.54
KTPS-VI	555.70	536.98	556.85	531.54	558.28	526.49	559.30	521.79	444.12	517.45	2674.25	2634.26
KTPS-VII	1025.77	1030.64	1040.34	1069.15	1124.98	1083.68	1226.68	1060.70	1268.77	1037.97	5686.55	5282.14
RTS-B	121.75	103.96	125.01	106.54	128.53	109.55	132.17	113.24	135.16	117.35	642.63	550.65
KTPP-I	504.93	507.82	499.64	501.55	492.48	495.64	485.76	490.03	349.61	416.04	2332.43	2411.07
KTPP-II	788.79	751.13	755.22	740.40	869.27	730.08	899.54	720.11	893.96	710.49	4206.77	3652.20

Station	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FYs 2019-24	
	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved	As filed	Approved
BTPS	0.00	0.00	602.56	802.26	2201.16	1904.84	2436.44	1933.86	2389.89	1894.18	7630.06	6535.13
Thermal Total	4123.12	3888.09	3996.89	4107.68	5801.82	5214.43	6160.81	5212.13	5808.42	5074.51	25891.06	23496.84
Nagarjuna Complex	363.19	358.95	361.68	354.75	360.47	350.76	359.58	346.98	359.02	343.43	1803.94	1754.88
Srisaillam LB	472.61	478.44	469.69	473.45	467.02	468.62	464.62	463.98	462.50	459.52	2336.44	2344.01
Small Hydel	50.16	45.54	51.83	46.60	53.53	47.77	55.14	49.23	56.83	50.93	267.49	240.07
Mini Hydel	10.09	8.69	10.28	8.83	10.50	8.98	10.73	9.20	10.99	9.48	52.59	45.17
Pochampad II	11.19	9.96	11.36	10.05	11.54	10.15	11.75	10.26	10.82	9.28	56.65	49.69
Priyadarshini Jurala	146.92	129.57	144.95	127.81	143.09	126.12	141.35	124.50	139.72	122.96	716.03	630.96
Lower Jurala	281.86	283.29	274.97	277.25	279.28	271.28	276.46	265.36	270.91	259.51	1383.48	1356.70
Pulichintala	130.00	122.67	131.22	123.16	135.08	123.30	136.78	123.53	138.55	123.87	671.62	616.53
Hydel Total	1466.01	1437.10	1455.98	1421.90	1460.51	1406.98	1456.40	1393.04	1449.33	1378.99	7288.23	7038.01
Sub Total	5589.13	5325.19	5452.86	5529.58	7262.33	6621.41	7617.22	6605.17	7257.75	6453.50	33179.29	30534.85
Addnl interest on PB	1080.07	1068.56	1175.11	1125.86	1281.34	1189.46	1394.83	1255.01	1517.03	1323.39	6448.38	5962.29
Leave Encashment to Pensioners	5.78	0.00	14.38	0.00	19.38	0.00	15.07	0.00	20.11	0.00	74.72	0.00
Medical Allowance to Pensioners	5.58	0.00	5.91	0.00	6.27	0.00	6.64	0.00	7.04	0.00	31.44	0.00
Licence & Regulatory Fee	0.00	0.00	1.51	0.00	0.00	0.00	0.00	0.00	1.51	0.00	3.02	0.00
Water Charges	27.54	27.54	46.67	46.67	49.47	49.47	52.43	52.43	55.58	55.58	231.69	231.69
Medical & other welfare expenses	21.46	0.00	22.75	0.00	24.11	0.00	25.56	0.00	27.09	0.00	120.97	0.00
IT	0.70	0.00	5.50	0.00	15.00	0.00	4.00	0.00	2.00	0.00	27.20	0.00
Grand Total	6730.26	6421.29	6724.69	6702.10	8657.90	7860.34	9115.75	7912.62	8888.11	7832.48	40116.71	36728.82

6.13.2 The Fixed Cost/kWh approved for each station for 4th control period considering the Normative Generation derived based on the Performance Parameters approved for the Control Period is summarised below:

Table 72: Summary of Fixed Cost/kWh approved for 4th control period
Rs./kWh

Station	Capacity (MW)	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Thermal						
KTPS-O&M	420	2.620	0.000	0.000	0.000	0.000
KTPS-V	500	1.091	1.117	1.142	1.168	1.195
KTPS-VI	500	1.652	1.640	1.624	1.610	1.596
KTPS-VII	800	1.821	1.894	1.920	1.879	1.839
RTS-B	62.5	2.805	2.883	2.964	3.064	3.175
KTPP-I	500	1.562	1.547	1.529	1.512	1.284
KTPP-II	600	1.916	1.893	1.867	1.841	1.817
BTPS	1080	0.000	3.836	2.761	2.628	2.574
Hydel						
Nagarjuna Complex	875.6	3.224	3.186	3.150	3.116	3.085
Srisaillam LB	900	4.007	3.965	3.925	3.886	3.849
Small Hydel	54	2.525	2.585	2.649	2.730	2.825
Mini Hydel	9.16	1.812	1.841	1.872	1.918	1.977
Pochampad II	9	6.064	6.119	6.179	6.247	5.654
Priyadarshini Jurala	234	3.223	3.180	3.137	3.097	3.059
Lower Jurala	240	5.328	5.215	5.102	4.991	4.881

Station	Capacity (MW)	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Pulichintala	120	5.617	5.639	5.646	5.656	5.672

6.14 ENERGY CHARGES

Petitioner's submission

6.14.1 TSGenco submitted that it has computed variable cost for the energy supplied from the thermal generating station in accordance with Clause 17 and 21.6 of the Regulations No.1 of 2019.

6.14.2 TSGenco considered the station wise weighted average variable costs of FY 2019-20 for the purpose of computation of working capital for the entire 4th control period. Further, the variable cost of BTPS is considered same as KTPS-VII.

6.14.3 The ECR claimed by TSGenco for 4th control period i.e., FY 2019-20 to FY 2023-24 is as shown in the Table below:

Table 73: ECR claimed by TSGenco for 4th control period

Station	ECR (Rs./kWh)
KTPS-O&M	3.32
KTPS-V	2.76
KTPS-VI	2.73
RTS-B	3.04
KTPP-I	3.02
KTPP-II	2.90
KTPS-VII	2.55
BTPS	2.55

Commission's View

6.14.4 Clause 21.6 of the Regulations No.1 of 2019 stipulates the methodology for determination of ECR which stipulates the GCV of coal to be considered on as received basis. Clause 21.7 and 21.10 of the Regulations No.1 of 2019 stipulate as under:

"21.7 Provided that the details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal and the weighted average GCV of the fuels as fired shall also be provided separately, along with the bills of the respective month.

... .."

"2.10 Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal or gas or liquid fuel shall be adjusted on a monthly basis on the basis of average GCV of coal or gas or liquid fuel in stock, as fired and weighted average landed cost incurred by the Generating

Entity for procurement of coal, oil or gas or liquid fuel, as the case may be for a Station.”

6.14.5 The Commission clarifies that the ‘as received’ GCV as specified in Clause 21.6 is to be considered while determining the tariff under MYT provisions. As the benefit of GCV loss from ‘pit head’ to ‘as fired’ needs to be passed on to the generator, the same shall be taken care of in Clause 21.7 and Clause 21.10 which provides for adjustment of the variation in GCV considered in tariff determination and ‘as fired’ GCV. Therefore, the Commission rules that the monthly adjustment in variation in GCV of coal has to be carried out in accordance with Clause 21.10 of the Regulations No.1 of 2019.

6.14.6 The Commission, has approved the following norms of operation in accordance with Regulations No.1 of 2019, considering the actuals submitted by TSGenco for 3rd control period from FY 2014-15 to FY 2018-19:

Table 74: Summary of approved Operating Norms for 4th control period

Particulars	Normative Plant Availability	Auxiliary Consumption	Gross Station Heat Rate	Secondary Fuel oil consumption	Transit Loss
Unit	%	%	kcal/kWh	ml/kWh	%
KTPS-O&M	70.00%	10.00%	3000	2	0.80%
KTPS-V	80.00%	9.00%	2500	2	0.80%
KTPS-VI	80.00%	7.50%	2450	2	0.80%
KTPS-VII	85.00%	5.25%	2151	0.5	0.80%
RTS-B	75.00%	10.00%	3000	2	0.80%
KTPP-I	80.00%	7.50%	2450	2	0.80%
KTPP-II	80.00%	7.00%	2400	2	0.80%
BTPS	85.00%	8.50%	2273	0.5	0.80%

6.14.7 Clause 21.10 of the Regulations No.1 of 2019 provides for monthly adjustment of variation in fuel prices on account of any variations in GCV and prices of fuels. Therefore, the Commission has computed the base ECR considering the weighted average of the actual fuel prices (including transit losses) and GCV for FY 2019-20.

6.14.8 Based on the above norms of operation and tentative fuel prices and GCV, the Base ECR computed by the Commission is as shown in the Table below:

Table 75: Summary of ECR approved for 4th control period

Particulars	Auxiliary Consumption	Gross Station Heat Rate	Secondary Fuel oil consumption	Calorific Value of Secondary Fuel	Landed Price of Secondary Fuel	Weighted Average Gross Calorific Value of Coal	Landed Price of Coal	Specific Coal Consumption	ECR	
Legend	AUX	GHR	SFC	CVSF	LPSF	CVPF	LPPF			
Units	%	kcal/kWh	ml/kWh	kcal/l	Rs./ml	kcal/kg	Rs./kg	kg/kWh	Rs./kWh	
KTPS-O&M	As filed	-	-	-	-	-	-	-	3.320	
	Approved	10.00%	3000	2	9700	0.05	2897.18	2.90	1.04	3.412
KTPS-V	As filed	-	-	-	-	-	-	-	2.760	
	Approved	9.00%	2500	2	9819	0.04	2958.38	2.79	0.85	2.668
KTPS-	As filed	-	-	-	-	-	-	-	2.730	

VI	Approved	7.50%	2450	2	9819	0.04	3880.15	3.90	0.63	2.733
KTPS-	Claimed	-	-	-	-	-	-	-	-	2.550
VII	Approved	5.25%	2151	0.5	9819	0.05	4283.91	4.51	0.50	2.409
RTS-B	Claimed	-	-	-	-	-	-	-	-	3.040
	Approved	10.00%	3000	2	9381	0.06	3765.94	3.23	0.80	2.988
KTPP-I	Claimed	-	-	-	-	-	-	-	-	3.020
	Approved	7.50%	2450	2	9390	0.04	4051.97	4.53	0.60	3.035
KTPP-II	Claimed	-	-	-	-	-	-	-	-	2.900
	Approved	7.00%	2400	2	9390	0.05	4157.35	4.59	0.58	2.925
BTPS	Claimed	-	-	-	-	-	-	-	-	2.550
	Approved	8.50%	2273	0.5	9819	0.04	2958.38	2.79	0.77	2.363

6.14.9 The Base ECR approved by the Commission shall remain the same for the entire 4th control period from FY 2019-20 to FY 2023-24. However, the variation in fuel prices and GCV shall be billed in accordance with the provisions of the Regulations No.1 of 2019.

6.15 COMMISSION'S DIRECTIVES

6.15.1 The Commission's earlier Directives and new Directives issued in this Order are enclosed at Appendix-B.

6.16 APPLICABILITY

6.16.1 The Generation Tariffs determined for each year of 4th control period from FY 2019-20 to FY 2023-24 are applicable from 1st April to 31st March of the respective Financial Year. However, as FY 2019-20 and FY 2020-21 lapsed and FY 2021-22 is almost over, the Commission directs the Petitioner to recover/adjust the difference in revenue recoverable in accordance with the Tariff approved in this Order vis-à-vis the Tariff charged from 1st April 2019 till 31st March 2022 in twelve (12) equal monthly instalments. For FY 2022-23, the Generation Tariffs are applicable w.e.f. 1st April, 2022.

This Order is corrected and signed on this the 22nd day of March, 2022.

Sd/-
(BANDARU KRISHNAIAH)
MEMBER

Sd/-
(M.D.MANO HAR RAJU)
MEMBER

Sd/-
(T.SRIRANGA RAO)
CHAIRMAN

//CERTIFIED COPY//

Appendix-A Schedule of Approved tariff

1. The AFC approved by the Commission for 4th control period from FY 2019-20 to FY 2023-24 is as shown in the Table below:

Rs. in crore

Station	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Thermal					
KTPS-O&M	608.85	0.00	0.00	0.00	0.00
KTPS-V	348.71	356.23	364.15	372.41	381.03
KTPS-VI	536.98	531.54	526.49	521.79	517.45
KTPS-VII	1030.64	1069.15	1083.68	1060.70	1037.97
RTS-B	103.96	106.54	109.55	113.24	117.35
KTPP-I	507.82	501.55	495.64	490.03	416.04
KTPP-II	751.13	740.40	730.08	720.11	710.49
BTPS	0.00	802.26	1904.84	1933.86	1894.18
Thermal Total	3888.09	4107.68	5214.43	5212.13	5074.51
Hydel					
Nagarjuna Complex	358.95	354.75	350.76	346.98	343.43
Srisaillam LB	478.44	473.45	468.62	463.98	459.52
Small Hydel	45.54	46.60	47.77	49.23	50.93
Mini Hydel	8.69	8.83	8.98	9.20	9.48
Pochampad II	9.96	10.05	10.15	10.26	9.28
Priyadarshini Jurala	129.57	127.81	126.12	124.50	122.96
Lower Jurala	283.29	277.25	271.28	265.36	259.51
Pulichintala	122.67	123.16	123.30	123.53	123.87
Hydel Total	1437.10	1421.90	1406.98	1393.04	1378.99
Sub Total	5325.19	5529.58	6621.41	6605.17	6453.50
Addnl interest on PB	1068.56	1125.86	1189.46	1255.01	1323.39
Leave Encashment to Pensioners	0.00	0.00	0.00	0.00	0.00
Medical Allowance to Pensioners	0.00	0.00	0.00	0.00	0.00
Licence & Regulatory Fee	0.00	0.00	0.00	0.00	0.00
Water Charges	27.54	46.67	49.47	52.43	55.58
Medical & Other Welfare expenses	0.00	0.00	0.00	0.00	0.00
IT	0.00	0.00	0.00	0.00	0.00
Grand Total	6421.29	6702.10	7860.34	7912.62	7832.48

2. The norms of operation approved for 4th control period from FY 2019-20 to FY 2023-24 is as shown in the Table below:

Particulars	Normative Plant Availability	Auxiliary Consumption	Gross Station Heat Rate	Secondary Fuel oil consumption	Transit Loss
Unit	%	%	kcal/kWh	ml/kWh	%
KTPS-O&M	70.00%	10.00%	3000	2	0.80%
KTPS-V	80.00%	9.00%	2500	2	0.80%
KTPS-VI	80.00%	7.50%	2450	2	0.80%

Particulars	Normative Plant Availability	Auxiliary Consumption	Gross Station Heat Rate	Secondary Fuel oil consumption	Transit Loss
<i>Unit</i>	%	%	<i>kcal/kWh</i>	<i>ml/kWh</i>	%
KTPS-VII	85.00%	5.25%	2151	0.5	0.80%
RTS-B	75.00%	10.00%	3000	2	0.80%
KTPP-I	80.00%	7.50%	2450	2	0.80%
KTPP-II	80.00%	7.00%	2400	2	0.80%
BTPS	85.00%	8.50%	2273	0.5	0.80%

3. The base ECR computed by the Commission for 4th control period is as shown in the Table below:

Station	ECR (Rs./kWh)
KTPS-O&M	3.412
KTPS-V	2.668
KTPS-VI	2.733
KTPS-VII	2.409
RTS-B	2.988
KTPP-I	3.035
KTPP-II	2.925
BTPS	2.363

4. The computation and payment of Capacity Charges and Energy Charges shall be in accordance with the provisions of the Regulations No.1 of 2019.
5. Incentive for higher PLF shall be in accordance with the provisions of the Regulations No.1 of 2019.

Appendix-B

Commission's Directives

Earlier Directives

1. Endeavour to finish all the future projects within stipulated timelines to prevent cost overruns.
2. To approach the Commission for approval with regard to renovation & modernisation expenditure for all the plants.
3. Maintain separate records and books of account for each unit of every power station.
4. Maintain the following with respect to capitalisation of fixed assets.
 - a. Date of capitalisation/placed into service;
 - b. Accumulated depreciation of each asset;
 - c. Date of decapitalisation wherever applicable;

New Directives

5. **Mid-Term-Review (MTR) Petition**
The Commission directs TSGenco to submit MTR Petition in terms of Regulations No.1 of 2019 by 30th November, 2022.
6. **Scheme-wise Details of Capital Cost for New Stations**
The Commission directs TSGenco to submit the proposal for final capital cost and revised tariff for BTPS after commissioning of the final unit. The Commission also directs TSGenco to submit the proposal for determination of capital cost and Tariff for YTPS before its CoD as per the Regulations No.1 of 2019. TSGenco shall submit the scheme-wise capitalisation for new plants, viz., KTPS-VII, BTPS and YTPS with Financial Package, Time and Cost over-run for each station along with proper quantification of the cost over-run, justification for the time over-run and Financial Package-wise undischarged liabilities as on COD of the respective plant while filing the MTR Petition.
7. **Auditor's Certificates for Completed Cost of KTPS-VII and BTPS**
The Commission directs TSGenco to submit the Auditor's Certificate for completed cost of KTPS-VII and BTPS along with Financial Packages, IDC drawl, etc., while filing the MTR Petition.
8. **Installation of FGD**
The Commission directs TSGenco to submit the details of FGD installation along with DPR, project cost, physical & financial progress of work, etc., in its Mid-Term Review Petition for the consideration of the Commission.
9. **Cost of Captive Coal mined for KTPP**
The Commission directs TSGenco to submit the detailed cost benefit analysis of the coal mined from the captive mines for KTPP and provide comparison of the cost reduction on operation of these captive mines along with the detailed cost break-up of the coal mined along with the MTR Petition.
10. **Liabilities on pension bonds**
The Commission directs TSGenco to extract the request of the stakeholder that the Government of Telangana shall bear the additional burden of pension

bonds and communicate to the Principal Secretary, Energy, GoTS for favourable consideration.

11. **Action plan for continued operation of old plants**

The Commission observed that RTS-B has far exceeded the useful life of 25 years. The Commission directs TSGenco to submit the action plan for improving the operational efficiency of the same. The Commission also directs to submit the retirement plan, if proposed any, for RTS-B.



Appeared in Namasthe Telangana and Eenadu on 02.03.2021

తెలంగాణ స్టేట్ ఎలక్ట్రిసిటీ రెగ్యులేటరీ కమిషన్ (TSERC)
 D.No.11-4-660, 5th Floor, Singareni Bhavan, Red Hills, Hyderabad-500 004

తెలంగాణ సబ్ పవర్ జనరేషన్ అథారిటీస్ బయలిద్
బహిరంగ ప్రకటన

ఓ.పి. నెం.5/2021 మరియు ఓ.పి. నెం. 6/2021 మరియు ల.ఎ.నెం. 1/ 2021 కొరకు వరలంబ పద్మాల నియంత్రణా వ్యవధి (2014-19) కొరకు రెవీజ్డ్ స్టేజ్ VII కు సంబంధించి మూలదన వ్యయం మరియు టారిఫ్ నిర్ధారించుట మరియు ప్రస్తుత స్టేజ్ కొరకు జనరేషన్ టారిఫ్ను పెంచడం మరియు నియంత్రణా వ్యవధి (2019-24) కొరకు ప్రస్తుత మరియు కొత్త స్టేజ్ నిమిత్తం జనరేషన్ టారిఫ్ మరియు కొత్త స్టేజ్ కొరకు మూలదన వ్యయ నిర్ధారణపై పిటిషన్లు ఓ.పి. నెం.5/2021 మరియు ఓ.పి. నెం. 6/2021 మరియు ల.ఎ.నెం. 1/ 2021 లపై బహిరంగ విచారణ మరియు అక్షేపణలు/ సలహాలను స్వీకరించుటకు సంబంధించి 4-2-2021న తెలంగాణ స్టేట్ పవర్ జనరేషన్ కార్పొరేషన్ లిమిటెడ్ (TSGENCO) బహిరంగ ప్రకటనను జారీచేసింది.

బహిరంగ విచారణ తేదీలు, అక్షేపణలు/ సలహాలను స్వీకరించుటకు సవరించిన గడువు తేదీలు గలవై తెలిపిన విధంగా రిపెడ్యూలు చేయబడినవి.

సం.	అంశం	ప్రారంభ తేదీ	సమాప్త తేదీ
1.	అక్షేపణలు/ సలహాలను స్వీకరించుటకు దినం తేదీ	25-2-2021	12-3-2021
2.	బహిరంగ విచారణ	10-3-2021	17-3-2021

హైదరాబాద్
 తేదీ: 2-3-2021

సం/- కమిషన్ ఉత్తర్య మేలకు
 నిర్వహణ అండ్ మేనేజింగ్ డైరెక్టర్, TSGENCO

Appeared in the Hindu and Business Standard on 02.03.2021

BEFORE THE HONOURABLE
TELANGANA STATE ELECTRICITY REGULATORY COMMISSION (TSERC)
 D.No.11-4-660, 5th Floor, Singareni Bhavan, Red Hills, Hyderabad-500 004

TELANGANA STATE POWER GENERATION CORPORATION LIMITED
PUBLIC NOTICE

Revised schedule for O.P.No.5 of 2021, O.P.No. 6 of 2021 & LA No.1 of 2021

Telangana State Power Generation Corporation Ltd.(TSGENCO) issued a Public Notice on 04.02.2021 regarding receiving Objections/Suggestions and Public hearing on Petitions O.P.No.5 of 2021 and O.P.No. 6 of 2021 & LA No.1 of 2021 for Determination of capital cost for new stations and Generation Tariff for the existing and new stations for the Control Period (2019-24) and Truing up the Generation Tariff for the existing stations and Determination of Capital Cost & Tariff in respect of KIPS Stage VII for the 3rd control period (2014-19).

Revised Timelines for receipt of Objections/Suggestions, Public hearing dates are re-scheduled as below:

S.No.	Event	Initial due Date	Revised due Date
1.	Last date for receipt of Objections/Suggestions	25.02.2021	12.03.2021
2.	Public Hearing	10.03.2021	17.03.2021

Hyderabad
 Date:02.03.2021

Sd/- BY ORDER OF THE COMMISSION
 CHAIRMAN AND MANAGING DIRECTOR, TSGENCO

Appeared in Siasat on 02.03.2021

باجا دی عزت وافت
تسنگانه ایسٹیت ریگولٹری کمیشن (TSERC)
 گور نمبر 114-660 پانچویں منزل 'سنگاریں بھون' ریڈ ہلز، حیدرآباد، 500004

تسنگانه ایسٹیت یاور جنریشن کارپوریشن لمیٹڈ
اعلان عام

تسنگانہ ایسٹیت یاور جنریشن کارپوریشن لمیٹڈ (TSGENCO) نے 04-02-2021 کو اپنی پبلک نوٹس جاری کی تھی جس میں O.P.No.5 of 2021, O.P.No. 6 of 2021 & LA No.1 of 2021 کے متعلق اعتراضات اور سفارشات کی درخواستیں قبول کرنے کے لیے ایک تاریخ مقرر کی تھی۔ تاہم، اس تاریخ کو پہلے سے مقررہ تاریخوں کے ساتھ ساتھ O.P.No.5 of 2021, O.P.No. 6 of 2021 & LA No.1 of 2021 کے متعلق اعتراضات اور سفارشات کی درخواستیں قبول کرنے کے لیے ایک نئی تاریخ مقرر کی گئی ہے۔

سلسلہ	تاریخ	اقدامات
1	12-03-2021	اعتراضات اور سفارشات کی درخواستیں قبول کرنے کے لیے
2	17-03-2021	عام جلسہ

Hyderabad
 Date: 02-03-2021

Annexure-II
**List of Stakeholders who submitted the written Objections/
Suggestions**

Sl. No.	Name and address of the Stakeholder
1)	Sri M.Venugopala Rao, Senior Journalist & Convenor, Centre for Power Studies, H.No.1-100/MP/101, Monarch Prestige, Journalists' Colony, Gopanpally, Serlingampally Mandal, Hyderabad 500 032.
2)	Sri M.Thimma Reddy, Convenor, People's Monitoring Group on Electricity Regulation, 139, Kakatiyanagar, Hyderabad 500 008.
3)	The Federation of Telangana Chambers of Commerce and Industry (FTCCI), Federation House, 11-6-841, Red Hills, Hyderabad 500 004.
4)	Power Company of Karnataka Limited (PCKL)/Karnataka ESCOMs, 501, KPTCL Building, Kaveri Bhavan, Bangalore 560 009.



Annexure-III

List of Stakeholders who presented their objections/suggestion in virtual Public Hearing through Video Conference held on 31.05.2021

Sl. No.	Name and address of the Stakeholder
1)	Sri M.Venugopala Rao, Senior Journalist & Convenor, Centre for Power Studies, H.No.1-100/MP/101, Monarch Prestige, Journalists' Colony, Gopanpally, Serlingampally Mandal, Hyderabad 500 032.
2)	The Federation of Telangana Chambers of Commerce and Industry (FTCCI), Federation House, 11-6-841, Red Hills, Hyderabad 500 004.

