



**TELANGANA STATE ELECTRICITY
REGULATORY COMMISSION,
HYDERABAD**

**Aggregate Revenue Requirement (ARR)
and Determination of Generation Tariff
of 3rd Control Period 2014 - 2019
for
Telangana State Power Generation
Corporation Limited (TSGENCO)**

5th June, 2017

TELANGANA STATE ELECTRICITY REGULATORY COMMISSION

HYDERABAD

Present

Sri Ismail Ali Khan, Chairman

Sri H. Srinivasulu, Member (Finance)

Dated 05.06.2017

O.P No. 26 of 2016

In the matter of

Determination of tariff of TSGENCO generating stations for the control period from 01.04.2014 to 31.03.2019 under Section 62 of the Electricity Act, 2003 for the electricity supplied by TSGENCO to distribution licensees.

Between

Telangana State Power Generation Corporation Limited,
Vidyut Soudha, Hyderabad – 82 (TSGENCO)

.....**Applicant**

And

1. Southern Power Distribution Company of Telangana Ltd., Mint Compound, Hyderabad – 500 004.
2. Northern Power Distribution Company of Telangana Ltd., 1-1-503, NIT Main Road, Chaitanyapuri, Kazipet, Warangal-506 004.
3. Eastern Power Distribution Company of Andhra Pradesh Ltd., P&T Colony, Seethammadhara, Visakhapatnam – 530 020.
4. Southern Power Distribution Company of Andhra Pradesh Ltd., Srinivasa kalyana mandapam backside, Tiruchanoor Road, Kesvayana Gunta, Tirupati - 517 501.
5. ESCOMs of Karnataka state

..... **Respondents**

Petition was filed on 30.11.2016 and public hearing was conducted on 6th February, 2017 in the court hall of TSERC, 5th floor, Singareni Bhavan, Redhills, Hyderabad.

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ORDER

CHAPTER 1 - INTRODUCTION

1. Telangana State Power Generation Corporation Limited (herein after referred to as “**TSGENCO** “ or as the “**Applicant**”) was incorporated on 19.05.2014 as a limited liability company under the Companies Act, 2013.
2. 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 at 01.06.2014).
3. TSGENCO commenced generation and supply of electricity to the distribution companies in Telangana, namely, Northern Power Distribution Company of Telangana Ltd. (herein after referred to as “**TSNPDCL**”) and Southern Power Distribution Company of Telangana Ltd. (herein after referred to as “**TSSPDCL**”) and also to the distribution companies of Andhra Pradesh, namely, Eastern Power Distribution Company of Andhra Pradesh Ltd. (herein after referred to as “**APEPDCL**”) and Southern Power Distribution Company of Andhra Pradesh Ltd. (herein after referred to as “**APSPDCL**”). 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.
4. The erstwhile Andhra Pradesh Electricity Regulatory Commission (herein after referred to as “**erstwhile APERC**”) functioned as a joint electricity regulatory commission for the states of Andhra Pradesh and Telangana w.e.f. 02.06.2014 till 02.11.2014 and determined the tariff of the generating stations of erstwhile APGENCO for the second 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. Telangana State Electricity Regulatory Commission (herein after referred to as “**TSERC**”) commenced functioning w.e.f. 03.11.2014. Erstwhile APERC Regulations 1 of 2008 provides regulations for determination of generation tariff. TSERC has adopted all the APERC regulations/orders/guidelines until the regulations are altered, repealed or amended by TSERC vide Regulation No. 1 of 2014.

5. As per G.O.MS. No. 29 dated 31.05.2014, the following power purchase agreements (PPAs) were transferred to TSGENCO.

Table 1.1. PPA details of TSGENCO stations

S. No.	Name of the Generating Station	Installed capacity (MW)	PPA date	Valid upto	Commissioning /COD of units
Thermal Stations (Old stations)					
1	KTPS- ABC/ KTPS O&M	720(4X60+ 4x120)	22.12.2009	31.03.2019	04.07.1966 to 10.01.1978
2	KTPS Stage -V	500(2X250)	22.12.2009	31.03.2019	31.03.1997 to 28.02.1998
3	KTPS - Stage- VI	1X500	22.12.2009	22.10.2036	23.10.2011
4	RTS -B	1X62.5	22.12.2009	31.03.2019	17.10.1971
5	KTPP-Stage - I	1X500	22.12.2009	13.09.2035	14.09.2010
Hydel Stations (Old stations)					
6	Nagarjuna Sagar Complex HES(Main power house & left canal)	875.6(1X110 +7X100.8 & 2X30)	22.12.2009	31.03.2019	07.03.1978 to 27.09.1992
7	Srisaillam LBPH	900(6X150)	22.12.2009	06.03.2019	26.01.2001 to 04.09.2003
8	Small Hydel (Singur, Pochampadu, Nizam Sagar & Palair HES)	54(2X7.5+ 3X9+2X5 & 1X2)	22.12.2009	31.03.2019	07.03.1978 to 31.03.2000
9	Mini Hydel (Peddapalli HES)	9.16(6X0.22 +3X0.23+2X 0.325 +10X0.5+2X 0.75)	22.12.2009	31.03.2019	31.03.1986 to 29.01.2004
10	Pochampad - II	9	22.12.2009	11.10.2045	12.10.2010
11	Priyadarshini Jurala HES (PJHES)	234 (6X39)	19.05.2014	03.08.2046	31.08.2008 to 04.08.2011

S.No.	Name of the Generating Station	Installed capacity (MW)	PPA date	Valid upto	Commissioning/COD of units
New stations (commissioned/to be commissioned in 2014-19)					
12	KTPP-Stage II	1X600	27.01.2016	23.03.2041	24.03.2016
13	Lower Jurala HES (LJHES)	240(6X40)	30.12.2010	30.09.2051	Unit I-19.10.2015 Unit II-05.10.2015 Unit III-28.07.2016 Unit IV-28.07.2016 Unit V-20.08.2016 Unit VI-01.10.2016
14	Pulichintala HES	120(4x30)	30.12.2010	35 years from CoD of last unit	Unit I-29.09.2016 Units II,III & IV yet to be commissioned (deviation from petition)

Note:

- i) Sl. No. 1-10, 13 and 14 the PPAs were entered between Erstwhile APGENCO and Erstwhile APDISCOMs*
- ii) Sl. No. 11 the PPAs were entered in between Erstwhile APGENCO, Erstwhile APDISCOMs and ESCOMs of Karnataka and as per article 2.3 of the PPA, the fixed cost and the energy generated will be shared in the ratio of 50:50 between TSDISCOMs /APDISCOMs and ESCOMs of Karnataka State.*
- iii) Sl. No. 12 the PPA was entered between TSGENCO and TSDISCOMS.*

6. TSGENCO filed a petition before TSERC on 30th November, 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 State of Telangana which achieved Commercial Operations (hereinafter referred to as “CoD”) in the control period 2014-19.
7. TSGENCO should have filed the petition for tariff determination for the control period 2014-19 in FY 2014-15, after TSGENCO came into existence. However, the issues related to apportionment of assets and liabilities between Andhra Pradesh Power Generation Corporation Limited (hereinafter referred as “APGENCO”) and TSGENCO of old stations as per the Reorganisation Act are yet to be resolved and the demerger is under process, which resulted in delay in filing of tariff as claimed by TSGENCO in its filing.

CHAPTER 2 - FILINGS OF TSGENCO

8. With the above backdrop, TSGENCO filed a petition before TSERC on 30.11.2016 under Section 62 of the Electricity Act, 2003 and in accordance with the erstwhile APERC Regulation No.1 of 2008, for determination of tariff for the control period 2014-19 for the electricity supplied / to be supplied from its various generating stations.

9. The summary of fixed and variable charges as filed by TSGENCO

Table 2.1. Fixed charges claimed in the petition (₹ Cr)

S No	Name of the Station	Capacity MW	2014-15	2015-16	2016-17	2017-18	2018-19
A	Thermal						
1	KTPS O&M	720.00	559.64	580.57	609.61	627.51	635.16
2	RTSB	62.50	44.44	49.71	53.39	55.39	57.54
3	KTPS Stage V	500.00	296.16	303.49	309.11	315.31	322.19
4	KTPP Stage 1	500.00	624.55	610.09	591.47	570.80	550.58
5	KTPS Stage VI	500.00	627.64	602.69	586.83	568.03	549.68
6	KTPP Stage II	600.00	-	13.56	890.41	1108.66	1068.27
	Sub Total A	2,882.50	2,152.43	2,160.11	3,040.82	3,245.70	3,183.42
B	Hydel						
7	NAGARJUNA SAGAR	875.60	167.08	173.07	272.89	270.95	269.31
8	SRISAILAM LBHES	900.00	520.07	507.46	495.46	483.19	471.18
9	SMALL HYDEL	54.00	35.24	36.35	37.34	38.44	39.65
10	MINI HYDEL	9.16	7.23	7.36	7.49	7.63	7.80
11	POCHAMPADU STAGE-II	9.00	8.49	8.59	8.71	8.84	8.98
12	PRIYADARSHINI JURALA HES	234.00	134.19	132.67	131.25	129.68	128.23
13	LOWER JURALA HES	240.00	-	121.89	317.21	411.88	407.02
14	PULICHINTHALA HES	120.00	-	-	19.44	130.72	129.99
	Sub Total B	2,441.76	872.30	987.39	1,289.79	1,481.33	1,462.16
	Total(A+B)	5,324.26	3,024.73	3,147.50	4,330.61	4,727.03	4,645.58
	Additional interest on pension bonds	-	469.84	552.96	603.21	660.30	723.40
	Total fixed charges	-	3,494.57	3,700.46	4,933.82	5,387.33	5,368.98

Table 2.2. Variable charges claimed in the petition (₹/unit)

Name of the Thermal Station	2014-15	2015-16	2016-17	2017-18	2018-19
KTPS O&M	2.67	2.57	2.87	2.87	2.87
RTS – B	2.63	3.03	3.53	3.53	3.53
KTPS – Stage V	2.19	2.21	2.19	2.19	2.19
KTPS – Stage VI	3.38	2.89	2.98	2.98	2.98
KTPP – Stage I	2.47	2.68	2.73	2.73	2.73
KTPP – Stage II	--	--	2.68	2.68	2.68

10. Additional capitalisation:

TSGENCO claimed additional capital expenditure for the control period 2009-14, FY 2014-15 and FY 2015-16 but did not claim any additional capital expenditure for the existing plants for FY 2016-17, FY 2017-18 and FY 2018-19 in the current filing, and further stated that the documentary evidence along with justification and details of capital expenditure (to be) incurred from FY 2016-17 to FY 2018-19 for the existing plants shall be submitted to the Commission separately.

11. Further, TSGENCO requested for consideration of the following in the petition

- Allow pass-through of additional interest on pension bonds and contribution to Pension & Gratuity Trust in terms of the statutory First Transfer Scheme dated 30.01.2000 notified by the State Government under the AP Electricity Reform Act, 1998 and the transfer scheme notified by the State Government in G.O. Ms. 29 dated 31.05.2014 under the provisions of the A.P. Electricity Reform Act, 1998, in addition to the yearly contributions being made to the APGENCO's Pension & Gratuity Trust for funding the pension liability of employees retired before 01.02.1999 and 26% pension liability for its employees who were in service as on 01.02.1999 and retiring thereafter and also gratuity liability for its employees which are included as part of O&M expenses. TSGENCO submitted a claim of Rs.3,009.72 Cr towards additional pension liability over a period of five (5) years during the control period 2014-19.

Table 2.3. Additional liability on pension as filed in the petition (in ₹ Cr)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Additional liability on pension bonds	469.84	552.96	603.21	660.31	723.40	3,009.72

- Reservation:
 - Nothing in this application be construed as any admission or to prejudice any disputes, issues, dissensions or contentions of the TSGENCO and/or the State of Andhra Pradesh, whether raised hitherto or hereafter, on any matter arising out of the provisions of the A.P. Reorganization Act, 2014, or otherwise, including but not limited to issues relating to the supply of power from the TSGENCO generating stations to the distribution companies or the validity of the PPAs.
 - Nothing in this application be construed to limit or affect the provisional nature of any valuation of any asset or liability by or under any transfer scheme or otherwise, and provision may be made to give full consequential effect for any variation or upon any finalization of the same hereafter.

12. Prayer for Interim tariff:

The petitioner 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 capital cost of new plants (KTPP Stage- II, Lower Jurala HES and Pulichintala HES)
- dispose of this application, subject to adjustments of payments made thus far and direct the respondent DISCOMs to pay the Applicant, difference if any, for FYs 2014-2015, 2015-2016 and 2016-17
- duly adjust variable costs for the energy delivered by Applicant to the respondent DISCOMs from 01.04.2014 at the various rates set out in ANNEXURE-F3 of the Retail Supply Tariff Order dated 30.03.2013 passed by the erstwhile APERC for actual gross calorific value of the fuel and the actual landed costs of fuel for each month
- duly adjust variable costs for the energy delivered by Applicant to the respondent DISCOMs from 01.04.2015 at the various rates set out in ANNEXURE-V of the Retail supply Tariff Order dated 27.03.2015 for FY 2015-16 and ANNEXURE-F of the Retail supply Tariff Order dated 23.06.2016 for FY 2016-17 passed by TSERC for actual gross calorific value of the fuel and the actual landed costs of fuel for each month
- provide generation incentives as eligible on the basis of 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.

13. Main Prayer:

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

- accept and take on record the application for determination of tariff for the

control period 2014-2019 under Sections 62 and 64 of the Electricity Act 2003

- direct the Applicant to publish the application by notice as required by section 64, as per the draft public notice of the application, or in such other form as may be specified by the Hon'ble Commission, in two English and two Telugu daily newspapers as may be specified by the Hon'ble Commission
- consider and adopt the Operation & Maintenance (hereinafter referred to as "O&M") expenses and year-on-year escalation thereof in respect of generating stations as provided in the CERC Regulation, 2014.
- determine the tariff for the control period 2014-2019 for the supply of electricity generated by the Applicant from its various power generating stations to the distribution licensees at the rates proposed by the Applicant and/or as otherwise determined by the Hon'ble Commission in accordance with law and/or as the Hon'ble Commission considers fit in the facts and circumstances of the case.

CHAPTER 3 - OBJECTIONS

Public notice, public hearings, objections received, replies of TSGENCO and the Commission analysis

14. The petition filed by TSGENCO was admitted and taken on record under sections 61 and 62 of the Electricity Act 2003, by the Commission and assigned O.P No. 26 of 2016. TSGENCO was directed to publish a public notice on 27.12.2016 as per the format in two (2) English newspapers, two (2) Telugu newspapers and one (1) Urdu newspaper having wide circulation in Telangana State inviting objections/suggestions if any by the affected or interested person(s)/stake holders by 23.01.2017. TSGENCO was directed to upload the filings for determination of tariff on their official website in PDF in entirety as filed before TSERC for facilitating interested person(s) to view/download. The Commission further directed TSGENCO to make available hard copies of filings at their corporate office and other offices on payment, not exceeding photocopying charges. Copies of filings of TSGENCO were also placed on the website of TSERC. The last date for receipt of objections/suggestions was 23.01.2017 and the last date for arranging responses by TSGENCO was 31.01.2017. TSGENCO placed replies to the objections/suggestions received on its website before 31.01.2017.

As per the public notice, a public hearing was held on 06-02-2017 in the court hall of TSERC. Commencing the public hearing, Sri D. Prabhakar Rao, Chairman and Managing Director of TSGENCO gave a presentation of the filings of tariff determination for the third control period 2014-19 with a brief description about TSGENCO and its plants, requirement of capacity addition, the methodology adopted for tariff filing and need for additional capitalisation of existing plants. Finally, he requested the Commission to approve the tariff as per the filings.

In response to the public notice, individuals/entities (refer Annexure-I) submitted their objections/suggestions/comments to which TSGENCO furnished replies before the due date.

15. The objections /comments /suggestions /requests received from individuals /entities / others & stake holders, the replies furnished by TSGENCO and analysis of the Commission are discussed in detail hereunder.

- **O&M expenses:**

- Objection:**

- The O&M expenses in the filings, computed as per the latest CERC Regulations are not tenable under the law since these O&M norms are not adopted by the Commission. Hence, the Hon'ble Commission is requested to strictly allow O&M expenses as per the norms specified in the APERC Regulation No. 1 of 2008.

- Reply from TSGENCO:**

- The O&M expenses provided in the Regulation No. 1 of 2008 were based on the CERC 2004 Regulation and as amended in 2006 for the control period 2004-2009. Clause 10 of the APERC Regulation No. 1 of 2008 provides for the

application of further amendments to the CERC Regulation upon adoption by the Hon'ble Commission by special or general order. The CERC subsequently issued revised Regulation for the control period 2009-2014 and 2014-2019 which, inter alia provided also for allowing pay revision, as the pay revision was due for Central PSUs during those periods. In respect of APGENCO power stations, APERC admitted O&M expenses based on the CERC 2014 Regulations for the control period 2014-19 and also admitted the pay revision of 2014 and other fixed charge components, which are considered as per the APERC Regulation No.1 of 2008. TSGENCO submitted O&M expenses in its filings in line with the APGENCO's filings for control period 2014-19, since the power generated is being shared as per the G.O MS No. 20 dated 8-5-2014 (power share of TS Discoms @53.89% and AP Discoms @46.11%).

Commission's view: The Commission, in accordance with Clause 10 of APERC Regulation No. 1 of 2008, hereby adopts CERC (Terms and Conditions of generation tariff) Regulations, 2014 to the extent of O&M expenses specified in CERC Regulations, 2014 for thermal power stations for determination of generation tariff for FY 2014-19. With respect to the hydel stations O&M Expenses have been adopted in accordance with Clause 12 of APERC Regulation No.1 of 2008.

- **Weighted Average Capital Cost (WACC):**

Objection:

TSGENCO has claimed WACC of 14% whereas the WACC determined as per APERC Regulation No.1 of 2008 is 13.4% considering interest rate at 12.5%, Return on Equity at 15.5% and the Debt-Equity ratio is 70:30. The interest rate of 12.5% considered by TSGENCO is on higher side and there is every scope for negotiating with banks and financial institutions.

Reply from TSGENCO:

TSGENCO claimed the interest on working capital as per Clause 12.4 (b) of APERC Regulation No. 1 of 2008 in accordance with the Return on Capital Employed (RoCE). Interest rate of 12.5% on loans taken by TSGENCO which are mainly from the REC and PFC, who are the prime lenders to power sector and Return on Equity of 15.5% was considered. RoCE rate proposed at 14% based on the Debt-Equity ratio as determined at the beginning of the control period as per Clause 12.1 of APERC Regulation 1 of 2008 i.e. as on 1.4.2014.

Commission's view: Commission has considered the Debt-Equity ratio of 70:30 and floating interest rates are considered as per the submission of TSGENCO in the petition which are less than 12.5 % p.a. With this approach, WACC for each plant differs based on floating interest rate and is less than 13.4% p.a. for all the plants. TSGENCO endeavoured in the best interest of consumers to source the loans from banks/lending institutions to avail loans at lower interest rates wherever feasible.

- **Additional capital expenditure:**

Objection:

As per Article 10.8 of APERC Regulation No. 1 of 2008, the capital cost determined for power plants shall include further capital expenditure incurred, if any, up to the first financial year closing, one year after the CoD of last unit of the project, as the case may be is admitted by the Commission. TSGENCO claimed additional capital expenditure of Rs.570.56 Cr for old thermal stations incurred after a long period of their commissioning for the second control period 2009-14. The details of above additional capital expenditure and Renovation & Modernization works were not submitted by APGENCO. As per the above regulation, such claim cannot be considered at a later stage and the Commission may reject the same. Similarly in case of NSHES, an additional capitalisation of Rs.650 Cr which forms 37% of total capital cost of the plant also should not be allowed.

Reply from TSGENCO:

Among existing stations, KTPS O&M and RTS-B have been functioning for more than forty years and functioning well above the country standards. Due to ageing of the station units, renovation and modernisation was required in certain areas of the respective plants. There is a need for capital investment to improve generation and efficiency of these plants. TSGENCO has not claimed additional capitalisation for the existing stations as on 31.03.2009 for the control period 2009-14 as indicated in APERC Order in O.P. No.15 of 2009 dated 31.05.2014. TSGENCO has not claimed additional capitalisation for plants commissioned in control period 2009-14 for FY 2013-14. In the current filings, TSGENCO submitted additional capitalisation incurred during the control period 2009-14 and during FY 2014-15 and FY 2015-16 on actual basis for existing stations to the Hon'ble Commission for approval as per clause 15 of CERC Regulation, 2014 and will be recovered through the tariff as per article 3.1.2 (c) of PPA entered with Discoms. In respect of NSHES, the NSTPD dam cost was added to the NSHES towards additional capital expenditure.

Commission's view:

Additional capital expenditure for old stations existing as on 31.03.2014 were approved based on the relevant Regulations in place. The erstwhile APERC has approved additional capital expenditure for the stations which were commissioned in second control period 2009-14. For the old stations existing as on 31.03.2009, additional capital expenditure was not approved by the erstwhile APERC. The Commission has undertaken the prudence check of additional capital expenditure incurred in control period 2009-14, FY 2014-15, FY 2015-16 based on the justification furnished by TSGENCO in meeting the expenditure in view of the need for increasing the efficiency and extending the plant life beyond useful life and then approved Gross Fixed Assets (GFA) as

mentioned in Chapter 4 of the current tariff order. However, the Commission has reduced the claim of additional capital expenditure by Rs.214.87 Cr after prudence check for the control period 2009-14, FY 2014-15 and FY 2015-16.

- **Plant installation planning:**

- **Objection:**

- Basis for addition of new installed capacity by TSGENCO need to be provided. Discoms should submit long-term load forecast, resource planning, procurement strategy to the Commission and public hearing should be held. As per ARR filings of TS Discoms for FY 2017-18, the cost of purchasing 15,810 MUs (28.87% of total power purchased) is Rs.8,802 Cr (36.04% of total cost). It indicates cost of power purchase from GENCO includes the cost of backing down.

- **Reply from TSGENCO:** It is not pertaining to GENCO

- **Commission's view:** There are still some bottlenecks in the implementation strategy of long term power surveys, system planning and augmentation of generation at national level. The process of backing down of conventional power is inevitable under the guidelines of Government in restriction of backing down of non-conventional power and also the surplus situation cannot be accurately forecasted due to unpredictable circumstances. However, the Commission has considered the long term power plan, uninterrupted power supply during peak hours, reliability and quality power supply to all categories in line with the policy of State Govt.

- **Public Hearing on PPA:**

- **Objection:**

- PPAs and project capital cost should be approved by the Commission before determining the tariff for new plants. During last couple of years, number of plants are being commissioned, whose project costs are very high. The Engineering Procurement Construction (EPC) contracts are awarded without going for competitive bidding. It is to be noted that no public hearing has been held neither by the erstwhile APERC in the undivided Andhra Pradesh nor by the Hon'ble TSERC on PPAs and capital cost determination of any one of the subject projects for which TSGENCO is seeking tariff determination. The Commission is requested to hold public hearing on PPAs in the case of KTHP Stage-II, KTHP Stage VI plants and Hydel stations, Lower Jurala and Pulichintala.

- **Reply from TSGENCO:** Public hearing for PPAs is under the purview of the Hon'ble Commission. The capital cost for all the existing stations of TSGENCO which are in operation, the tariff was determined till 2013-14 by Hon'ble APERC vide its order in OP No. 15 of 2009 dated 31.05.2014. The capital cost of new stations was provisionally approved in the retail supply tariff order 2016-17 subject to final tariff order for the control period 2014-19. For new plants, the contracts are awarded to M/s. BHEL, a Central Government undertaking, on EPC basis.

Commission's view: The Commission while determining the tariff, approved the capital cost for all new plants (to be) commissioned in the control period 2014-19 after due process of regulatory provisions and prudence check by taking consumer's best interest into consideration. Final capital cost may change upon approval of additional capital expenditure, if any, for each project upon filing of audited financials before the Commission.

- **Incentives for achieving PLF in excess of threshold PLF:**

Objection:

If CERC regulations are applicable for O&M expenses, they should be applicable in all respects. The threshold PLF for payment of incentives shall be 85% keeping in view the new technology and regulations of CERC. The APERC regulations on generation tariff are not revised after 2008 and TSERC is requested to revise the said regulations keeping in view the new technology as well as the revised regulations of CERC.

Reply from TSGENCO: As per Clause 10 of APERC Regulation No. 1 of 2008, the Commission may adopt amendments made in CERC regulations by a special order or a general order. The CERC issued revised regulations for control periods 2009-14 and 2014-19. Hon'ble APERC has also followed CERC regulations for O&M regulations. Since there is power sharing arrangement between AP and Telangana, TSGENCO has adopted the same methodology in its filings. Decision regarding threshold of PLF for complete recovery of fixed charges and claim of incentives may be taken by the Commission.

Commission's view: The Commission, in accordance with Clause 10 of APERC Regulation No.1 of 2008, hereby adopts the CERC (Terms and Conditions of generation tariff) Regulations, 2014 to the extent of O&M expenses specified in the CERC regulations for generation tariff for FY 2014-19, in view of latest changes brought in the aforesaid regulations for thermal power stations and follows Clause 12 of APERC Regulation No.1 of 2008 for hydel power stations. The CERC regulations are adopted for KTPP II since it commenced commercial operations in the current control period. Incentives for thermal plants other than KTPP Stage II shall be as per APERC and for KTPP Stage II, incentive shall be as per CERC. The revision of regulations for adaptability of improved technology will be given due consideration while framing of new regulations by TSERC.

- **Upgradation of plants to comply with environment norms:**

Objection:

All the power projects should be converted to FGD (Flue Gas Desulphurisation), to reduce warming of environment as per international understanding. We don't know whether TSGENCO is prepared to convert all the projects, time to be taken for conversion and the quantum of burden on the consumer.

Reply from TSGENCO: TSGENCO will comply with the new emission norms prescribed by the Ministry of Environment, Forest and Climate change (MoEF & CC)

Commission's view: The reply furnished by TSGENCO is in order. Time and quantum of burden on consumer are not yet estimated. TSGENCO has been directed to furnish the information in this regard.

- **Chhattisgarh PPA:**

Objection:

The PPA with Chhattisgarh project tilts in favour of Chhattisgarh power project and loss to Telangana consumer. There are many short comings in the project like – station yet to be commissioned, COD yet to be declared and there is no interstate transmission line connectivity. TSDISCOMs are not prepared to share any information under the RTI Act and ERC refuses to give any information. There seems to be no transparency.

Reply from TSGENCO: It is under the purview of Hon'ble Commission

Commission's view: The Commission has already conducted a public hearing in respect of procurement of power from Chhattisgarh and the issues are discussed in detail in the interim order dated 31-03-2017 passed by the Commission.

- **Need for addition of New Plants:**

Objection:

Media reports indicate that work on Bhadradri and Yadadri plants of TSGENCO is going on. Besides this, TSTRANSCO's application for transmission tariff mentioned that KTPS VII unit will be connected to the grid during 2017-18. The recent Central Electricity Authority (CEA) report indicated that no new thermal plants would be needed in the country until 2027. The ARR filings of TSDISCOM indicate a surplus power of 10,000 MUs for the year 2017-18. Hence, the need for addition of new plants is to be re assessed.

Reply from TSGENCO: As per the 18th Electric Power survey (EPS) by CEA the installed capacity required in the State of Telangana by 2018-19 would be 17,041MW to meet the peak demand of 13,108MW. The capacity addition by TSGENCO is to meet the increased demand for power in the Telangana State. TSGENCO has filed tariff petition for determination of tariff for the existing power stations and new power stations (KTPP Stage-II, LJHES and Pulichintala HES). It is to inform that TSGENCO will file the application for determination of tariff for KTPS —VII stage, 120 days in advance before COD of the unit for approval of Hon'ble Commission.

Commission's view: The installed capacity requirement is estimated in 18th EPS by CEA for the State of Telangana and considering the balance useful life of existing stations in Telangana, the reply of TSGENCO is in order. The Commission has also taken demand from upcoming lift irrigation schemes and

industrial growth into consideration, in line with policies of Government of Telangana.

- **Reduction of contribution from Andhra Pradesh and Karnataka Governments in capital cost of Priyadarshini Jurala:**

Objection:

The Power Corporation of Karnataka Limited (PCKL) claimed that TSGENCO gross fixed assets as on 31.3.2014 were Rs.702.76 Cr for 234 MW Priyadarshini Jurala Hydro Electric Scheme (6x39 MW). PCKL, on behalf of ESCOMs of Karnataka/State of Karnataka, deposited a sum of Rs.70 Cr on 06.04.2013 to APGENCO/TSGENCO i.e., 50% of power block cost of Jurala Hydro Electric Scheme. Similarly, as agreed in the meeting, Government of Andhra Pradesh has also shared 50% of power block cost of Jurala Hydro Electric Scheme. The amount contributed by both the States i.e., Andhra Pradesh and Karnataka has not been reduced from the gross block of asset of the above project.

Reply from TSGENCO: TSGENCO has considered GFA as on 31.03.2014 as Rs.702.76 Cr. for Priyadarshini Jurala Hydro Electric Project which is exclusive of cost of power block.

Commission's View: The erstwhile APERC in the Tariff Order for control period 2009-14 verified the facts for Priyadarshini Jurala HES for final capital cost and additional capitalisation for the period 2009-14. Therefore, the GFA of Rs.687.11 Cr (Rs.670.15 Cr in previous order till FY 2012-13 and Rs.16.96 Cr for FY 2013-14), as approved by the APERC order dated 31-05-2014 in O.P.No 15 of 2009 is considered as closing GFA of FY 2013-14 while determining the tariff for the control period 2014-19.

- **Additional Capital expenditure after Cut-off date for Priyadarshini Jurala HES:**

Objection:

As per Clause 10.8 of the APERC Regulation 1 of 2008, the capital cost as determined for Priyadarshini Jurala, shall also include further capital expenditure incurred, if any, up to the first financial year, closing one year after the date of commercial operation of the last unit of the project, its stage or the units, as the case may be is admitted by the Commission. It shall also include capitalized initial spares subject to the ceiling norms as a percentage of the actual cost of the plant and machinery. The actual (original) cost as on the cut-off date as admitted by the Commission shall constitute the approved capital cost. The objection of PCKL is with respect to the deviation from Clauses 10.8 and 10.9 of the Regulation for determination of capital cost and allow any capital cost within the framework of APERC Regulation No.1 of 2008.

Reply from TSGENCO: TSGENCO submitted the additional capital expenditure of Rs.32.61 Cr for the control period 2009-14, Rs.1.78 Crores for the year 2014-

15 and Rs.1.68 Cr for the year 2015-16 for the approval of the Hon'ble Commission.

Commission's view: The erstwhile APERC in the Tariff Order for the control period 2009-14 approved the final capital cost for Priyadarshini Jurala including additional capitalisation for the control period 2009-14. The Commission upon scrutiny of the claim of Rs.32.61Cr for the control period 2009-14, observed that Rs.16.96 Cr (which is a part of the present claim of Rs.32.61 Cr) was already approved under the same head in the erstwhile APERC Order vide O.P. No 15 of 2009 dated 31-05-2014. Hence, this Commission follows the approval accorded by the erstwhile APERC. Further, for FY 2014-15 and FY 2015-16, the Commission has carried out the prudence check of the claim and allows Rs.0.62 Cr against a claim of Rs.1.78 Cr for FY 2014-15 and Rs.1.18 Cr against a claim of Rs.1.68 Cr for FY 2015-16.

- **Approval of additional capital expenditure for Priyadarshini Jurala:**

Objection:

The original approved estimated cost was Rs.547 Cr. In the petition, petitioner has shown Rs.702 Cr as at the end of 31.3.2014 and subsequently further increased to Rs.706.22 Cr as on 31.3.2016. The original approved estimated cost to be considered as Gross block of assets

Reply from TSGENCO: Hon'ble Erstwhile APERC approved the capital cost of the project as Rs.670.15 Cr in OP 15 dated 31.05.2014. Additional capital expenditure of Rs.32.61 Cr for the control period 2009-14, Rs.1.78 Crores for the year 2014-15 and Rs.1.68 Crores for the year 2015-16 has been submitted for the approval of the Hon'ble Commission.

Commission's view: The Commission upon scrutiny on the claim of Rs.32.61Cr for the control period 2009-14, observed that Rs.16.96 Cr (which is a part of the present claim of Rs.32.61 Cr) was already approved under the same head in the erstwhile APERC Order vide O.P. No 15 of 2009 dated 31-05-2014. Hence, the Commission follows the erstwhile APERC order. Further, for FY 2014-15 and FY 2015-16, the Commission has carried out the prudence check of the claim and allows Rs.0.62 Cr against the claim of Rs.1.78 Cr for FY 2014-15 and Rs.1.18 Cr against the claim of Rs.1.68 Cr for FY 2015-16.

- **Interest on Working capital and RoCE calculation:**

Objection:

Working capital and interest on working capital should be considered as per Clause 12.4 (c) and (e) of the APERC Regulation No. 1 of 2008. The petitioner has adopted interest on working capital @ 14 % p.a.in the RoCE calculation and as per the above regulation interest on working capital should be equal to short term Prime Lending Rate (PLR) of State Bank of India (SBI) on the date on which the petition for determination of tariff was made.

Reply from TSGENCO: Estimation of interest on working capital has been computed as per the clause 12.4 (c) and (e) of the erstwhile APERC Regulation No. 1 of 2008.

Commission's view: The interest on working capital is considered @14.05% based on SBI's short term PLR interest rate on working capital as per the APERC Regulation No. 1 of 2008 for all the plants except KTPP State II. The CERC Regulations, 2014 are adopted for KTPP Stage II since there are no regulations available for a 600MW plant in APERC Regulations or TSERC Regulations.

- **Penalties for project delays:**

Objection:

PPAs should contain clauses for penalty for delay in implementation of projects etc. Delays in the project invariably increases costs like overheads, interest during construction period (IDC) and price escalations. Capital cost for new plants commissioned in the control period 2009-14 were on higher side. Hence, impermissible cost escalation in new projects should be disallowed. For provision of Commission and omission of GENCO, consumers of power should not be penalised.

Reply form TSGENCO: It is under the purview of Hon'ble Commission

Commission's view: The Commission approved the capital cost of new projects after due check for prudence 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 of this order, taking the best interests of consumers into consideration.

- **Takeover of TSGENCO's pension liability by Government:**

Objection:

TSGENCO has claimed additional interest on pension bonds and contribution to Pension & Gratuity trust on estimate basis and is being considered as a pass through in the filing. The Commission had been liberal in allowing additional interest in tariff orders dated 24.3.2003 and 4.7.2013. The pension bonds are supposed to be funded by contributions from employees and management and interest thereon earned periodically. Hon'ble Commission is requested to advice the Telangana State Government to take the pension liabilities of TSGENCO similar to the methodology adopted for TS DISCOMs under the UDAY scheme.

Reply for TSGENCO: 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 interest shall be allowed as a pass through in the tariff of GENCO on year-to-year

basis as per article 3.1.2 (c) of the PPA entered into with the distribution companies, dated 22.12.2009. TSGENCO is meeting its equity requirement from internal sources and borrowings. TSGENCO will take Government support as and when required.

Commission's view: The UDAY scheme does not appear to be applicable to generating companies or for the liabilities incurred by the generating companies. The State Government has to take a policy decision on any budgetary support to TSGENCO. Hence, the issue is not within the Commission's jurisdiction.

- **Term of PPA agreements:**

Objection:

Term of PPA of some projects of TSGENCO is confined to relatively shorter periods ranging from 5-10 years and there is no provision for buyout in the PPAs. Since TSGENCO and TSDISCOMs are utilities of TS Government, PPAs for all projects should be determined for 35 years as is the case with some of the other projects

Reply from TSGENCO: The erstwhile APGENCO has signed a PPA with the distribution companies on 22.12.2009 for 10 years, as the then existing thermal and hydro plants are commissioned long back. For new thermal stations, PPA validity is for 25 years and for new Hydel stations, PPA validity is for 35 years from COD of last unit or project.

Commission's view: Reply from TSGENCO is in order.

- **Prudence check of capital cost:**

Objection:

The Comptroller and Auditor General of India (CAG) in its report for the year 2010 examined KTPP Stage- I plant and found excess spending of Rs. 555.48 Cr (26.74% of the plant's capital cost). Capital cost of other power plants of TSGENCO shall be assessed on similar lines and excess spending shall not be allowed to be recovered from generation tariff.

Reply from TSGENCO: Hon'ble APERC approved the capital cost of KTPP-I in its Order vide O.P.No15 of 2009 dated 31.05.2014. TSGENCO submitted the capital cost of the projects to the Hon'ble Commission for approval.

Commission's view: The capital cost for new plants is subject to the prudence check in accordance with regulations in force and the reply of TSGENCO is in order.

- **KTPP Stage II raw water pipeline expenditure:**

Objection:

The CAG report for the year ending March 2014 found that selection of costlier pipes for raw water pipeline of KTPP Stage-II resulted in avoidable excess cost

of Rs.43.30 Cr. We request the Commission not to allow this excess expenditure to be claimed through generation tariff. We request the Commission to hold public hearings on PPAs with the new power plants of TSGENCO.

Reply from TSGENCO: DI pipes are installed considering the advantage of power saving, superior quality, durability of DI pipe lines and the need for replacement of MS pipes (after meeting their useful life of 25 years).

Commission's view: The Commission carried out the prudence check based on the justification provided by TSGENCO and allowed the expenditure.

- **Capital cost of KTPP Stage II:**

Objection:

According to the present filing, capital cost of KTPP Stage II at the time of CoD was Rs.3,237.85 Cr and Rs.1,096.26 Cr was spent after the CoD taking the total capital cost to Rs.4,334.11 Cr. Significantly, more than 25% of the total capital cost is reported to be incurred after the CoD. The per MW cost of plant Rs.7.22 Cr/MW which is one of the highest in the country. The Commission is requested to undertake prudence check in approval of capital cost for KTPP Stage-II

Reply from TSGENCO: It is informed that an amount of Rs.3,237.85 Cr is capitalized as on date of CoD (24.03.2016) as against the actual expenditure incurred Rs.3,465.54 Cr for the FY 2015-16. The balance works of KTPP Stage II are under work in progress as on date of CoD and the details of balance capital expenditure will be submitted to the Commission for approval. It is also mentioned that about Rs.3,820 Cr expenditure already incurred by the end of December 2016.

Commission's view: The GFA claimed for KTPP Stage II is based on the total capital cost of the project. However, the Commission has taken only the completed works into account and has provisionally allowed an amount of Rs.3,461.39 Cr against a claim of Rs.3,655.08 Cr on completed works after prudence check (remainder is treated as work in progress). Further, the Commission will take into account the cost of similar technology plants while determining the final cost.

- **Comparison of fixed and variable charges with Retail Supply Tariff Order:**

Objection:

The fixed & variable charges claimed in the petition by TSGENCO are higher than those mentioned for the plants in TSDISCOM filings for the year 2017-18.

Reply from TSGENCO: The fixed charges which are furnished in the tariff filings for the FY 2017-18 in the control period 2014-19 in respect of KTPS Stage V, KTPS Stage VI, KTPP Stage -II, LJHES and Pulichintala compared to ARR filings by DISCOMs due to the difference of additional capital expenditure for FY 2014-15 and 2015-16. Variable cost of TSGENCO thermal stations submitted to

Hon'ble Commission is based on the weighted average cost for the Q1 period of Fuel Cost Adjustment FY 2016-17 (April'16, May'16 and June'16)

Commission's view: The reply of TSGENCO is in order. The approved figures are discussed in Chapter 4 of this order.

- **Performance of KTPS Stage VI and KTPP Stage II:**

Objection:

The present filings do not include information on performance of KTPP Stage II and KTPS Stage VI plants during the year FY 2016-17

Reply from TSGENCO: TSGENCO submitted filings for 3rd control period 2014-19 for determination of generation tariff

Commission's view:

The Commission directed TSGENCO to provide actual Station Heat Rate (hereinafter referred as "SHR") and auxiliary consumption details which are as under.

a. KTPS VI

- Auxiliary consumption is 4.48%, 5.21%, 5.03% for the years FY 14-15, FY 15-16 and FY 16-17 respectively and
- SHR is 2,228 Kcal/kWh, 2,259 Kcal/kWh, 2,288 Kcal/kWh for the years FY 14-15, FY 15-16 and FY 16-17 respectively.

For KTPS Stage VI, actuals are compared with the norms given in the APERC Regulation No. 1 of 2008. The performance of this plant is better than the specified norms.

b. KTPP-II

- Auxiliary consumption is 5.60% and 6.59% for the years FY 15-16 and FY 16-17 respectively and
- SHR is 2,286 Kcal/kWh and 2,293 Kcal/kWh for FY 15-16 and FY 16-17 respectively.

For KTPP Stage II, the actuals are compared with the CERC Regulations 2014 (Auxiliary consumption of 5.25% and SHR of 2,305.11 kCal/kg) and the approved numbers are restricted to lower of actuals or norms.

- **Depreciation:**

Objection:

The Commission is requested to undertake the prudence check of depreciation based on the MoP notification 1994.

Reply from TSGENCO: The depreciation for the existing stations of thermal and hydel was considered as per the APERC order in OP. No. 15/2009, dated 31.05.2015 for the current control period 2014-19 and depreciation considered for new projects is as per the MoP notification dated 29.03.1994.

Commission's view: Depreciation on old assets acquired before 2009 is determined as per the MoP rates notified in 1994 notification and for new asset additions, depreciation is allowed as per the CERC Regulations, 2014.

- **Interest on pension bonds over and above scheduled interest:**

Objection:

TSGENCO claimed interest on pension bonds for the third control period without furnishing the station wise details such as total assets and liabilities, scheduled interest and over and above the scheduled interest amount. The Hon'ble Commission is requested for prudence check on it while finalising the tariff. It is also submitted that the component of interest on pension bonds is only for old stations such as KTPS -O&M, RTS-B, as per Annexure -II of order dated 24-3-2003 in O.P. No.402 /2002. The Hon'ble Commission may disallow the claims of TSGENCO while determining the tariff.

Reply from TSGENCO: TSGENCO has claimed the interest on pension bonds over and above scheduled interest, shall be allowed as pass through in generation tariff on year-to-year as per the article 3.1.2 9(c) of the PPA entered with the DISCOMs dated 22.12.2009. For APGENCO Hon'ble APERC considered interest on pension bonds over and above scheduled interest in its order dated 26-3-2016 in O.P. 03/2016.

Commission's view: Approval of additional liability on pension bonds is discussed in detail in chapter 4 of this tariff order.

**CHAPTER 4 - TARIFF DETERMINATION BY COMMISSION
(Third control period 2014-19)**

16. The Commission has sought for additional information for carrying out the prudence check and tariff determination. Accordingly, as directed by the Commission, TSGENCO furnished additional information. Based on the information furnished, taking regulations in force into consideration, after prudence check, the Commission has determined the tariff for the control period 2014-19.

17. Additional capitalisation for stations existing as on 31.03.2014:

The erstwhile APERC in the APGENCO tariff order dated 31.05.2014 in O. P. No. 15 of 2009 for the control period 2009-14 determined the GFA of TSGENCO stations existing as on 31.03.2009. As per the additional information provided by TSGENCO, the additional capital expenditure of stations commissioned in second control period i.e. 2009-14 was approved till FY 2012-13 and the additional capitalisation for FY 2013-14 was not claimed in the filings for the control period 2009-14.

In the current petition filed by TSGENCO for determination of generation tariff for the third control period, the additional capital expenditure incurred for old stations during 2009-14, 2014-15 and 2015-16 is given as under:

Table 4.1. Additional Capitalisation claimed for Old stations (in ₹ Cr)

Thermal Stations						
S No	Name of the Station	Capacity (MW)	Additions 2009-14 (₹ Cr)	Additions 2014-15 (₹ Cr)	Additions 2015-16 (₹ Cr)	Total (₹ Cr)
1	KTPS O&M	720.00	195.26	55.39	52.12	302.77
2	RTS -B	62.50	9.71	20.40	7.31	37.42
3	KTPS Stage-V	500.00	116.53	14.79	2.14	133.46
4	KTPP Stage-I	500.00	134.59	30.36	12.79	177.74
5	KTPS Stage - VI	500.00	114.47	5.66	15.55	135.68
	Total thermal	2,282.50	570.56	126.60	89.91	787.07

Hydel Stations						
S No	Name of the Station	Capacity (MW)	Addition 2009-14 (₹ Cr)	Addition 2014-15 (₹ Cr)	Addition 2015-16 (₹ Cr)	Total (₹ Cr)
6	Nagarjuna Sagar (main complex and left canal power house)	875.60	33.09	47.06	608.46	688.61
7	Srisaïlam Left Bank PH	900.00	15.26	0.95	3.64	19.85
8	Small Hydel	54.00	3.14	0.47	0.05	3.66
9	Mini Hydel	9.16	0.52	0.08	0	0.60
10	Pochampad- II	9.00	0.71	0.04	0.01	0.76
11	Priyadarshini Jurala HES	234.00	32.61	1.78	1.68	36.07
	Total hydel	2,081.76	85.33	50.38	613.84	749.55

Commission's approach in approving additional capital expenditure:

The Commission has scrutinised item wise expenditure of additional capital expenditure and allowed the expenditure to the extent permissible under Clause 10.9 of APERC Regulation No.1 of 2008 and Clauses 14 & 15 of CERC Regulations, 2014.

- The additional capital expenditure on assets such as furniture, air-conditioners, computers etc. purchased after cut-off date shall not form part of additional capital expenditure.
- Some of the claims filed as additional capital expenditure are of O&M nature. Such expenses shall form part of O&M and are not treated as additional capital expenditure.

Additional Capital Expenditure of KTHP-I, KTHP-VI, Pochampadu-II and Priyadarshini Jurala:

- The additional capital expenditure for the above plants, which were commissioned in the control period 2009-14 was approved in the second control period (2009-14) tariff order. The additional capital expenditure is approved only till FY 2012-13 and the additional capital expenditure for FY 2013-14 was not filed in the petition before the erstwhile APERC.
- As per the APERC Regulation No.1 of 2008, undischarged liabilities (payables) at a future date shall be a part of the capital cost. The additional capitalisation claimed for these stations for the second control period includes the penalties waived by TSGENCO to the contractor due to the

mutual agreement between TSGENCO and contractors of the respective projects. Since these penalties did not form part of the capital cost approved by the erstwhile APERC, they cannot be allowed at a later stage more so beyond the cut-off dates.

The APERC order for the second control period (2009-14) states the following with respect to the penalties levied on contractors for the new plants commissioned in the second control period 2009-14.

“It has been noticed that APGENCO levied penalties/fines of Rs.483.64 Cr on suppliers/contractors since this effectively reduces the cost, this amount was deducted from capital costs of the projects.”

- The details for additional capital expenditure in FY 2013-14 were not provided separately by TSGENCO for KTHP Stage-I and KTHS Stage VI. Hence, the Commission has considered closing GFA as on 31.03.2014 approved by the erstwhile APERC as opening GFA for FY 2014-15.

Additional capital expenditure of Nagarjuna Sagar HES:

The total additional capital expenditure claimed for FY 2014-15 (Rs.47.06 Cr) and FY 2015-16 (Rs.608.46) is Rs.655.52 Cr. Of this total claim of Rs.655.52 Cr, an amount of Rs.648.31 Cr (Rs.40.5 Cr for FY 2014-15 and Rs.607.81 Cr for FY 2015-16) is towards the capital cost of Nagarjuna Sagar Tail Pond Dam (NSTPD). The balance claim of Rs.7.21 Cr is towards the additional capital expenditure of Nagarjuna Sagar Complex. The power house at Nagarjuna Sagar Tail Pond (2X25 MW) is in possession of APGENCO and the dam is under the control of TSGENCO. The dam was essentially built to store the water from downstream of Nagarjuna Sagar main dam and use this water by reverse pumping for power generation during the peak load. This cost is not allowed in additional capitalisation for FY 2014-15 and FY 2015-16 because the asset is not ready for use and the same is treated as capital work in progress. TSGENCO is directed to approach the Commission for inclusion of Nagarjuna Sagar tail pond dam cost in Nagarjuna Sagar HES towards additional capitalisation, when reverse pumping mode becomes operational.

Also, the APERC in its order for third control period allowed the cost of power house at NSTPD (2X25 MW), provisionally as audited accounts were not available.

Projects clustering in Small and Mini Hydrel:

As per the second control period tariff order of APERC, Small hydel (72 MW) consists of Pochampad-I, Singur, Nizam Sagar and Penna Ahobilam and Mini hydel consists of Peddapalli, Palair and Chettipet. After bifurcation of the erstwhile Andhra Pradesh and reorganization of projects in to small and mini hydel, Penna Ahobilam (20 MW) and Chettipet (1 MW) are retained by APGENCO. The projects with the Telangana State i.e. Pochampad-I, Singur, Nizam Sagar and Palair projects are now grouped as small hydel (54 MW) and Peddapalli project is grouped as

mini hydel (9.16 MW) and the same convention is followed in this petition. Division of assets between the Andhra Pradesh and the Telangana is based on the ratio of installed capacity.

Apportionment of Common items for stations in KTPS:

TSGENCO has claimed additional capital expenditure of Rs.99.50 Cr for pipeline from the river Godavari in KTPS Stage V. Since this pipeline serves KTPS O&M, KTPS Stage V and KTPS Stage VI, this is considered as a common capital expenditure. Hence, this cost has been apportioned amongst the aforementioned stations based on their installed capacity. Accordingly, the total of Rs.99.50 Cr in KTPS Stage V has been apportioned towards additional capital expenditure after the prudence check as follows

- Rs.28.92 Cr in KTPS Stage V
- Rs.28.92 Cr in KTPS Stage VI
- Rs.41.66 Cr in KTPS O&M

Table 4.2. GFA approved for old plants (₹ Cr)

S No	Name of the Station	GFA approved in previous tariff order	Additions in 2009-14	Additions in 2014-15	Additions in 2015-16	Total Additional capitalization Approved
1	KTPS O&M	959.69	227.98	48.13	51.84	327.95
2	RTS B	59.65	6.32	20.12	6.65	33.09
3	KTPS V	2,080.07	41.23	6.21	1.80	49.24
5	KTPP 1	2,529.96	-	18.45	11.27	29.72
4	KTPS VI	2,359.60	28.92	9.79	0.51	39.22
	Sub total	7,988.97	304.45	102.70	72.07	479.22
6	NAGARJUNA SAGAR	1,071.71	24.22	1.48	-	25.70
7	SMALL HYDEL	118.71	1.88	0.25	-	2.13
8	SRISILAM'	3,367.99	7.67	(2.97)	3.37	8.07
9	MINI HYDEL	30.78	0.52	0.04	-	0.56
10	POCHAMPADU-II	29.36	0.24	-	-	0.24
11	PRIYADARSHINI JURALA	670.15	16.96	0.62	1.18	18.76
	Sub total	5,288.70	51.49	(0.58)	4.55	55.46
	Total	13,277.67	355.94	102.12	76.62	534.68

18. Provisional Capital cost approval for new stations:

The CoD details of new stations in this control period are provided in Table 1.1. All the stations which achieved CoD during this control period 2014-19 still have some works in progress, hence, such costs are not taken into consideration in

current control period. Pending finalization of books of account and their audit, the Commission approves the capital costs of new stations provisionally. Upon completion of balance works in these stations, TSGENCO may approach the Commission with the audited financial statements along with the Independent Auditors Report for the approval of the completed capital cost.

Approach in Capital cost determination for new stations:

I. KTHP-II:

a. Plant information:

- i. Installed capacity:** 1x600 MW
- ii. Zero date:** 21-1-2009
- iii. Timeline for completion as per the CERC regulations:** 42 months (by July-2012)
- iv. Actual CoD:** 24-3-2016 (86 months from zero date)
- v. Project delay:** 44 months

b. Justifications for delays given by TSGENCO:

- Non-provision of inputs by BHEL (BTG contractor) to BoP contractor
- Reasons attributable to the erstwhile APGENCO
- Strikes by employees
- Non-availability of sand
- Inability of Balance of Plant (BoP) contractor to carry out the works as per the contract timelines and consequent change in BoP contractor.

After formation of the Telangana State, TSGENCO completed the project by reassigning the works to other agencies and reduction of scope of work of BoP contract with a condition that the additional expenditure is to be back charged to the BoP contractor.

The delays in the completion of the project resulted in price escalation in Boiler-Turbine-Generator (BTG) contract, establishment charges, pre-operative expenses and Interest during construction period (IDC).

Boiler -Turbine - Generator (BTG):

The Commission after detailed scrutiny of the BTG contract approves Rs.1,522.99 Cr against the claim of Rs.1,525.00 Cr. The total escalated price of the contract is reduced by the liquidated damages of Rs.2.01 Cr imposed on the contractor. The final cost will be revised after considering the final penalties levied on the contractor. Further, no escalations in the costs shall be allowed by the Commission.

Balance of Plant (BoP):

The claim for BoP contract work cost is reduced by Rs.21.68 Cr of liquidated damages (LDs). After the prudence check, the Commission approves Rs.701.32 Cr for BoP contract against a claim of Rs.723 Cr.

IDC and Establishment charges:

The Commission has considered the reasons furnished by TSGENCO for delay of 44 months in completion of the project very carefully. Based on justification provided by TSGENCO and considering the performance of TSGENCO in completion of the project after formation of the Telangana State, the Commission allows 80% of the IDC and establishment charges claimed by the petitioner in the petition. In this context, the Commission relies on the ratio laid down by the APTEL Appeal no. 108 of 2014 dated 15.05.2015 in Power company of Karnataka Ltd & 5 others vs CERC & 3 others.

IDC and Establishment charges of KTHPP-II

Particulars	Claimed (Rs.Cr)	Approved (Rs.Cr)
IDC	850	680
Establishment charges	90	72

Further, the Commission directs the TSGENCO to complete the future projects in accordance with timelines stipulated in the regulations to avoid the impact of increase in IDC, overheads and price escalations in the capital cost which ultimately gets reflected in the tariff.

Raw water pipeline:

DI pipes are installed considering the advantage of power saving, superior quality, durability of DI pipe lines and the need for replacement of MS pipes (after meeting their useful life of 25 years). After considering the facts very carefully, the cost of pipeline Rs.207 Cr is hereby approved.

Additional Coal Handling Plant:

After considering the contract carefully, the Commission hereby approves Rs.186 Cr for additional coal handling plant against a claim of Rs.218 Cr for KTHPP Stage II.

Initial Spares:

The Capital cost is being approved as per the CERC Regulations, 2014. Hence, 4% of plant and machinery cost is being approved towards initial spares. The claim of Rs.48.75 Cr is less than the ceiling norms given in regulations, hence the claim is hereby approved.

Contingencies:

Since, the COD of the station is already achieved, contingencies are allowed as per actuals. Hence, Rs. 4.28 Cr is allowed against an estimated claim of Rs.74.36 Cr.

Start-up expenses:

TSGENCO has claimed Rs.7 Cr for start-up expenses which is being allowed as a part of the capital cost.

Capital works in progress:

- **Other Civil Works:** Construction of staff quarters and other civil works in the plant are under progress, for which TSGENCO filed a revised estimate of Rs.120 Cr. Based on the actual work execution details furnished by TSGENCO, the Commission approves a sum of Rs.31.61 Cr provisionally.
- **Wet ash handling plant:** The estimated cost of ash handling plant is Rs.17 Cr. Pending commencement of works, based on contract, Rs.9.67 Cr is allowed provisionally and the remainder is treated as work in progress.
- **Ash pond and raising of bund for existing ash pond:** Pending land acquisition and finalisation of contract for raising the bund of existing ash pond, the amount of Rs.174 Cr claimed, is treated as capital work in progress.
- **Conveyor from pit-head mine:** Rs.105 Cr has been approved by the Board of TSGENCO for establishing a conveyor from pit-head mine to the plant. Due to hurdles like land acquisition to initiate this work, this is treated as capital work in progress. This cost shall be considered in final capital cost subject to prudence check and cost-benefit analysis.

Provisional capital cost approved:

The Commission provisionally approves the capital cost of Rs.3,470.62 Cr of this project and the same is capitalised in two years as under:

- FY 2015-16 – Rs.3,229.78 Cr
- FY 2016-17- Rs.240.84 Cr

II. Lower Jurala:**a. Plant information:**

- **Installed capacity:** 6x40 MW
- **Zero date:** 14-07-2008
- **Projected CoD as per DPR:** 34 months from zero date for unit-I (May-2011)
- **Actual CoD:** 19.10.2015
- **Project delay:** 51 months

The CoD of other units are as per details mentioned in Table 1.1.

b. Justification for delays furnished by TSGENCO:

Delay in Excavation works (908 days) of intake pool, power house pit, tail race pond and tail race channel

- Heavy rains, floods, de-watering and desilting, inundation of work during floods in 2009
- Execution of supplemental quantities
- Stoppage of works by villagers affected by the project

Power house construction works delay (1046 days):

- Execution of supplemental quantities
- Non-availability of sand in designated quarry
- Bandhs during state bifurcation
- Submergence of power house due to breakage of seal at sluice gate
- Coordination gap between E&M and Civil wings

Weir works completion delay (53 months):

- Land acquisition process
- Stoppage of work by Rekulapally villagers
- Execution of supplemental quantities
- Unprecedented rains and floods

IDC and Establishment charges:

Considering the reasons for delays which span across all the units and status of their works completion, the Commission hereby allows a total delay of 45 months for the project as reasonable. Based on the allowed delay in the project, the Commission approves an IDC of Rs.432.48 Cr (claim of Rs.699.84 Cr) and establishment charges of Rs.66.77 Cr (claim of Rs.72.05 Cr). In this context, the Commission relies on the ratio laid down by the APTEL appeal no. 108 of 2014 dated 15.05.2015 in Power company of Karnataka Ltd & 5 others vs CERC & 3 others.

Civil works:

Based on the contracts executed, the Commission hereby approves the cost of Rs.568.83 Cr (claim of Rs.697.91 Cr) after scrutiny of the expenditure. Approval for costs relating to pending works which include final touch ups to the power house, acquisition of land and construction of quarters for employees is subject to the Commission's prudence check upon completion.

Plant and equipment:

Foreign exchange variation of Rs.24.64 Cr in this contract is disallowed in accordance with the Regulation and the balance sum of Rs.474.70 Cr is hereby approved as against the claim of Rs.499.34 Cr.

Provisional capital cost approved:

Hence, a total cost of Rs.1,542.78 Cr is hereby approved provisionally against a claim of Rs.1,969.14 Cr and the remaining costs to be incurred in civil works shall be considered as capital work in progress.

III. Pulichintala:

- **Installed Capacity:** 4x30MW
- **Zero date:** 11.06.2007
- **Projected CoD:** 48 months(June 2011)
- **Actual CoD:** 29.09.2016 (Unit-I)
- **Project delay:** 63 months

There is a further delay in commissioning of Units II, III and IV. The actual CoD of units II, III, IV are not as per the filings. Hence, the Commission approves the CoD dates of units II, III and IV as 01.07.2017 and the fixed charges are provisionally approved based on the approved CoD date.

Justifications furnished by TSGENCO for delays in the project:

- Excavation due to steep slopes and slippery soil conditions
- Land acquisition process
- Inundation of power house due to floods in years 2009 and 2011
- Increase in excavation quantities
- Change in penstock diameter which resulted in steep increase in quantities of cement and steel required
- Change in E&M erection contractor due to abnormal price escalation demand by the erstwhile contractor

Considering the reasons for delays which span across all the units and status of their works completion, the Commission hereby allows a total delay of 24 months for the whole project as reasonable and the balance of months as unreasonable. In this context, the Commission relies on the ratio laid down by the APTEL appeal no.108 of 2014 dated 15.05.2015 in Power company of Karnataka Ltd & 5 others vs CERC & 3 others.

Capital costs claimed and provisionally approved for Pulichintala:

Costs	Claimed (Rs.Cr)	Approved(Rs.Cr)	Basis for approval
IDC	105.49	44.26	Allowed part of delay and after prudence check
Establishment	49.59	27.67	
Civil works	192.83	157.17	Contracts executed and are in place. Balance treated as work in progress
E&M works	215.58	204.74	
Total	563.49	433.84	

- Of the provisionally approved cost of Rs.157.17 Cr under the civil works head, Rs.123.30 Cr is allocated to FY 2016-17 and Rs.33.87 Cr to FY 2017-18.
- E&M cost is approved after disallowing liquidated damages of Rs.10.84 Cr
- E&M costs incurred for unit-I, Rs.66.17 Cr is allocated to FY 2016-17 and balance of Rs.138.57 Cr is allocated to FY 2017-18.
- GFA of Rs.228.21 Cr is approved for 2016-17 and Rs.205.64 is approved for 2017-18.

Table 4.3. GFA approved for new stations (₹ Cr)

FY	KTPP Stage II		Lower Jurala HES		Pulichintala HES	
	GFA at the beginning	Additions	GFA at the beginning	Additions	GFA at the beginning	Additions
2014-15	-	-	-	-	-	-
2015-16	-	3,229.78	-	1,332.59	-	-
2016-17	3,229.78	240.84	1,332.59	210.19	-	228.21
2017-18	3,470.62	-	1,542.78	-	228.21	205.64
2018-19	3,470.62	-	1,542.78	-	433.85	-

Components of Fixed charges

- **Weighted Average Cost of Capital:**

Debt-Equity:

In accordance with Clauses 10.13 and 12.1(b) of the APERC Regulation No. 1 of 2008, the Commission adopted the debt-equity ratio of 70:30 for the control period 2014-19 against the filing of 53:47 of TSGENCO.

Cost of Debt:

The Commission adopted the floating interest rates (which were either 12.5% or lower), as filed in the petition. However, the actual interest rates shall be taken into consideration during the true-up.

Return on Equity:

The Commission adopted Return on Equity of 15.5% as per clause 12.1(b) of the APERC Regulation No. 1 of 2008.

- **Depreciation:**

Depreciation on assets is calculated based on the details (Form-12 of APERC Regulations) furnished by TSGENCO. During the prudence check, the Commission observed a difference in GFA of assets provided as per Form-12 and closing GFA as on 31.03.2014 as approved in the tariff order for the control period 2009-14 passed by the erstwhile APERC. In the absence of information

on disallowance of capital expenditure in second control period (2009-14) and also on addition of assets in FY 2014-15 and FY 2015-16, the Commission computed the depreciation as under:

- The depreciation on old assets is pro-rated based on the GFA approved in the second control period tariff order due to difference in asset details provided in Form-12 and GFA approved in the said order
- In respect of additions to assets approved in the current tariff order, the depreciation is computed as per Clause 27 of the CERC Regulations, 2014
- First year depreciation for all assets added is approved at 50% of annual depreciation based on the normal regulatory practice where date of actual capitalisation is not furnished
- Depreciation is limited to claim of TSGENCO wherever the claim was less than the depreciation calculated as per above approach.

The Commission hereby approves a total depreciation of Rs.3,674.47 Cr against the claim of Rs.4,500.77 Cr for the control period 2014-19.

Table 4.4. Depreciation (₹ Cr)

Plant		2014-15	2015-16	2016-17	2017-18	2018-19
KTPS O&M	Filings	68.74	68.74	68.74	68.74	57.05
	Approved	53.96	40.07	17.01	17.01	17.01
RTS-B	Filings	2.71	2.71	2.71	2.71	2.71
	Approved	2.71	2.71	2.71	2.71	2.71
KTPS Stage V	Filings	32.00	32.00	32.00	32.00	32.00
	Approved	12.63	11.31	10.25	10.23	8.81
KTPP Stage 1	Filings	194.81	194.81	194.81	194.81	194.81
	Approved	183.85	184.28	185.35	184.10	182.97
KTPS Stage VI	Filings	181.69	181.69	181.69	181.69	181.69
	Approved	181.69	181.69	181.69	181.69	181.69
KTPP Stage II	Filings	0.00	0.00	253.85	339.79	339.79
	Approved	0.00	0.00	164.67	171.01	171.01
Nagarjuna Sagar Complex HES	Filings	34.85	34.85	46.82	46.82	46.82
	Approved	34.85	31.93	31.67	31.55	31.49
Srisaïlam LBPH	Filings	113.91	113.91	113.91	113.91	113.91
	Approved	113.91	113.91	113.91	113.91	113.91
Small Hydel	Filings	4.17	4.17	4.17	4.17	4.17
	Approved	4.00	4.01	4.00	3.94	3.91
Mini Hydel	Filings	0.98	0.98	0.98	0.98	0.98
	Approved	0.03	0.03	0.90	0.89	0.89
Pochampadu-II	Filings	1.00	1.00	1.00	1.00	1.00
	Approved	1.00	1.00	1.00	1.00	1.00
Priyadarshini Jurala HES	Filings	22.79	22.79	22.79	22.79	22.79
	Approved	22.79	22.79	22.79	22.79	22.79
Lower Jurala HES	Filings	0.00	21.29	58.65	66.95	66.95
	Approved	0.00	21.29	58.65	66.95	66.95
Pulichinthala HES	Filings	0.00	0.00	2.71	19.16	19.16
	Approved	0.00	0.00	2.71	18.62	19.16

- **Working Capital:**

The working capital interest rate of 14.05% is hereby approved in accordance with Clause 12.4 of Regulation No. 1 of 2008, against the claim of 14% in the petition, for which basis was not provided by TSGENCO. For KTPP Stage II, the working capital interest rate of 13.5% is hereby approved as per the CERC Regulations, 2014.

Table 4.5. Working capital (₹ Cr)

Plant		2014-15	2015-16	2016-17	2017-18	2018-19
KTPS O&M	Filings	492.08	487.69	533.40	540.52	546.15
	Approved	415.40	394.98	376.65	383.62	391.03
RTS-B	Filings	38.45	43.96	50.13	50.69	51.30
	Approved	34.84	38.83	35.97	36.54	37.15
KTPS Stage V	Filings	287.71	292.97	294.42	297.81	301.42
	Approved	235.45	238.38	234.65	237.97	241.25
KTPP Stage 1	Filings	356.18	374.09	377.20	375.54	374.04
	Approved	328.03	331.97	341.71	340.23	338.96
KTPS Stage VI	Filings	434.42	388.94	395.95	394.50	393.22
	Approved	396.61	343.42	331.04	329.77	328.65
KTPP Stage II	Filings	0.00	407.22	472.27	521.96	517.68
	Approved	0.00	446.40	480.36	481.01	480.74
Nagarjuna Sagar Complex HES	Filings	56.52	59.29	83.61	84.95	86.43
	Approved	40.73	40.44	40.68	40.98	41.34
Srisaïlam LBPH	Filings	139.10	139.21	139.55	139.90	140.40
	Approved	119.73	118.90	118.25	117.60	117.02
Small Hydel	Filings	9.15	10.57	10.97	11.39	11.85
	Approved	8.08	8.24	8.39	8.55	8.72
Mini Hydel	Filings	1.96	2.02	2.08	2.15	2.22
	Approved	1.51	1.56	1.75	1.78	1.81
Pochampadu-II	Filings	2.01	2.07	2.12	2.17	2.24
	Approved	1.87	1.89	1.91	1.94	1.97
Priyadarshini Jurala HES	Filings	31.44	31.61	31.82	32.01	32.24
	Approved	29.51	29.50	29.51	29.51	29.53
Lower Jurala HES	Filings	0.00	55.73	83.57	94.72	95.11
	Approved	0.00	61.32	70.52	67.80	67.25
Pulichinthala HES	Filings	0.00	0.00	18.15	30.05	30.32
	Approved	0.00	0.00	10.40	21.65	20.94

- **O&M expenses:**

- KTPS O&M (4x60 + 4x120 MW) and RTS-B (1x62.5 MW), owing to similarity in plant configuration, the Commission hereby adopts O&M norms in accordance with CERC Regulations, 2014 for NTPC Talcher (4x60 + 2x110 MW)
- For other thermal stations, the Commission, in accordance with Clause 10 of APERC Regulation No. 1 of 2008, hereby adopts the norms laid out in clause 29(1)(a) and 29(1)(b) of CERC Regulations, 2014.
- For hydel stations, the Commission hereby adopts O&M in accordance with clause 12.3 of the APERC Regulation No. 1 of 2008.

Pay revision:

Pay revision commitment of 40% has been considered with effect from 1st April 2014. The erstwhile APERC considered the impact of pay revisions in 2006 and 2010 while determining the tariff of APGENCO stations for the first and second control periods i.e. 2006-09 and 2009-14. O&M costs comprise of administrative and general expenses, repairs & maintenance expenditure and employee costs. Of the three, wage revision is based on the applicable agreements between the management, Government and the employee unions with limited scope for prudence check in the current petition. Further, even the CERC has also been allowing the impact of pay revision in its tariff orders. Therefore, the impact of pay revision in 2014 has been considered in this tariff order while computing O&M expenses as per the CERC Regulations 2014.

Impact of pay revision on O&M:

Employee costs being one of the components of O&M expenditure accounts for about 50 % of the total O&M expenses. Thus, pay revision of 40% increase in employee remuneration translates to 20% increase in O&M expenses.

For old plants and KTHP II, the Commission, after prudence check, hereby approves the O&M expenses as filed in the petition. The Commission hereby approves the O&M expenses for Lower Jurala and Pulichintala HES based on the approved GFA as per Table 4.2.

Table 4.6. O&M expenses for the control period (₹ Cr)

Plant		2014-15	2015-16	2016-17	2017-18	2018-19
KTPS O&M	Filings	372.90	396.32	421.29	447.81	475.98
	Approved	372.90	396.32	421.29	447.81	475.98
RTS-B	Filings	32.37	34.40	36.57	38.87	41.32
	Approved	32.37	34.40	36.57	38.87	41.32
KTPS Stage V	Filings	143.40	152.40	162.00	172.20	183.06
	Approved	143.40	152.40	162.00	172.20	183.06
KTPP Stage 1	Filings	96.00	102.06	108.48	115.32	122.58
	Approved	96.00	102.06	108.48	115.32	122.58
KTPS Stage VI	Filings	96.00	102.06	108.48	115.32	122.58
	Approved	96.00	102.06	108.48	115.32	122.58
KTPP Stage II	Filings	0.00	2.41	117.11	124.55	132.31
	Approved	0.00	2.41	117.14	124.56	132.34
Nagarjuna Sagar Complex HES	Filings	58.53	62.42	66.56	70.98	75.70
	Approved	50.91	52.95	55.07	57.27	59.56
Srisaïlam LBPH	Filings	47.98	51.17	54.56	58.19	62.05
	Approved	41.29	42.94	44.66	46.44	48.30
Small Hydel	Filings	21.44	22.86	24.38	26.00	27.73
	Approved	18.53	19.27	20.05	20.85	21.68
Mini Hydel	Filings	3.64	3.88	4.14	4.41	4.70
	Approved	3.14	3.27	3.40	3.54	3.68
Pochampadu-II	Filings	3.45	3.68	3.93	4.19	4.47
	Approved	3.10	3.22	3.35	3.49	3.63
Priyadarshini Jurala HES	Filings	21.16	22.57	24.07	25.67	27.37
	Approved	19.39	20.17	20.97	21.81	22.69
Lower Jurala HES	Filings	0.00	9.25	46.89	67.18	71.64
	Approved	0.00	11.27	27.28	29.88	31.07
Pulichinthala HES	Filings	0.00	0.00	5.08	28.84	30.76
	Approved	0.00	0.00	2.06	7.04	8.29

- **Return on Capital Employed (RoCE):**

The RoCE has been worked out in accordance with Clause 12.1, Regulation No.1 of 2008 except for KTPP II, wherein, the CERC Regulations, 2014 is adopted. The Commission here by approves a total RoCE of Rs.8,177.75 Cr against the claim of Rs.9,646.97 Cr for the control period 2014-19.

Table 4.7. RoCE for FY 2014-15 (₹ Cr)

Plant		GFA Opening	Acc dep	Net block	Working capital	WACC	RoCE
KTPS O&M	Filings	1154.95	804.20	350.75	492.07	14.00%	117.99
	Approved	1187.67	804.20	383.47	415.40	13.40%	107.05
RTS-B	Filings	69.36	40.99	28.37	38.45	14.00%	9.36
	Approved	65.97	40.99	24.98	34.84	13.40%	8.02
KTPS Stage V	Filings	2196.60	1621.73	574.87	287.72	14.00%	120.76
	Approved	2121.30	1621.73	499.57	235.45	13.40%	98.49
KTPP Stage 1	Filings	2664.55	636.88	2027.67	356.18	14.00%	333.74
	Approved	2529.96	442.07	2087.89	328.03	13.10%	316.43
KTPS Stage VI	Filings	2474.07	408.84	2065.23	434.43	14.00%	349.95
	Approved	2388.52	408.84	1979.68	396.61	13.18%	313.13
KTPP Stage II	Filings	0.00	0.00	0.00	0.00	14.00%	0.00
	Approved	0.00	0.00	0.00	0.00	13.19%	0.00
Nagarjuna Sagar Complex HES	Filings	1104.80	634.86	469.94	56.52	14.00%	73.70
	Approved	1095.93	635.50	460.43	40.73	13.40%	67.16
Srisaillam LBPH	Filings	3383.25	963.92	2419.33	139.10	14.00%	358.18
	Approved	3375.66	963.92	2411.74	119.73	13.40%	339.22
Small Hydel	Filings	121.85	62.17	59.68	9.15	14.00%	9.64
	Approved	120.29	58.04	62.25	8.08	13.40%	9.42
Mini Hydel	Filings	31.30	14.58	16.72	1.96	14.00%	2.62
	Approved	31.30	14.58	16.72	1.51	13.40%	2.44
Pochampadu-II	Filings	30.07	3.24	26.83	2.02	14.00%	4.04
	Approved	29.60	3.24	26.36	1.87	13.40%	3.78
Priyadarshini Jurala HES	Filings	702.76	89.68	613.08	31.44	14.00%	90.23
	Approved	687.11	89.68	597.43	29.51	13.36%	83.78
Lower Jurala HES	Filings	0.00	0.00	0.00	0.00	14.00%	0.00
	Approved	0.00	0.00	0.00	0.00	13.35%	0.00
Pulichinthala HES	Filings	0.00	0.00	0.00	0.00	14.00%	0.00
	Approved	0.00	0.00	0.00	0.00	12.88%	0.00

Table 4.8. RoCE for FY 2015-16 (₹ Cr)

Plant		GFA Opening	Acc dep	Net block	Working capital	WACC	RoCE
KTPS O&M	Filings	1210.34	872.94	337.40	487.69	14.00%	115.51
	Approved	1235.80	858.16	377.64	394.98	13.40%	103.53
RTS-B	Filings	89.76	43.70	46.06	43.96	14.00%	12.60
	Approved	86.09	43.70	42.39	38.83	13.40%	10.88
KTPS Stage V	Filings	2211.39	1653.73	557.66	292.98	14.00%	119.09
	Approved	2127.51	1634.36	493.15	238.38	13.40%	98.03
KTPP Stage 1	Filings	2694.91	831.69	1863.22	374.09	14.00%	313.22
	Approved	2548.41	625.92	1922.49	331.97	13.10%	295.28
KTPS Stage VI	Filings	2479.73	590.53	1889.20	388.94	14.00%	318.94
	Approved	2398.31	590.53	1807.78	343.42	13.18%	283.47
KTPP Stage II	Filings	3237.85	0.00	3237.85	407.22	14.00%	11.15
	Approved	3229.78	0.00	3229.78	446.40	13.19%	10.60
Nagarjuna Sagar Complex HES	Filings	1151.86	669.71	482.15	59.29	14.00%	75.80
	Approved	1097.41	670.35	427.06	40.44	13.40%	62.64
Srisaïlam LBPH	Filings	3384.20	1077.83	2306.37	139.21	14.00%	342.38
	Approved	3372.69	1077.83	2294.86	118.90	13.40%	323.44
Small Hydel	Filings	122.32	66.34	55.98	10.56	14.00%	9.32
	Approved	120.54	62.04	58.50	8.24	13.40%	8.94
Mini Hydel	Filings	31.39	15.56	15.83	2.02	14.00%	2.50
	Approved	31.34	14.61	16.74	1.56	13.40%	2.45
Pochampadu-II	Filings	30.11	4.24	25.87	2.07	14.00%	3.91
	Approved	29.60	4.24	25.36	1.89	13.40%	3.65
Priyadarshini Jurala HES	Filings	704.54	112.47	592.07	31.61	14.00%	87.32
	Approved	687.73	112.47	575.26	29.50	13.36%	80.81
Lower Jurala HES	Filings	1332.59	0.00	1332.59	55.73	14.00%	91.34
	Approved	1332.59	21.29	1311.30	61.32	13.35%	86.14
Pulichinthala HES	Filings	0.00	0.00	0.00	0.00	14.00%	0.00
	Approved	0.00	0.00	0.00	0.00	12.88%	0.00

Table 4.9. RoCE for FY 2016-17(₹ Cr)

Plant		GFA Opening	Acc dep	Net block	Working capital	WACC	RoCE
KTPS O&M	Filings	1262.46	941.68	320.78	533.41	14.00%	119.59
	Approved	1287.64	898.24	389.40	376.65	13.40%	102.65
RTS-B	Filings	97.07	46.41	50.66	50.13	14.00%	14.11
	Approved	92.74	46.41	46.33	35.97	13.40%	11.03
KTPS Stage V	Filings	2213.53	1685.73	527.80	294.43	14.00%	115.11
	Approved	2129.31	1645.67	483.64	234.65	13.40%	96.25
KTPP Stage 1	Filings	2707.70	1026.50	1681.20	377.20	14.00%	288.18
	Approved	2559.68	810.20	1749.48	341.71	13.10%	273.90
KTPS Stage VI	Filings	2495.28	772.22	1723.06	395.95	14.00%	296.66
	Approved	2398.82	772.22	1626.60	331.04	13.18%	257.97
KTPP Stage II	Filings	3237.85	0.00	3237.85	472.26	14.00%	519.42
	Approved	3470.62	164.67	3305.95	480.36	13.19%	499.42
Nagarjuna Sagar Complex HES	Filings	1760.32	704.56	1055.76	83.61	14.00%	159.51
	Approved	1097.41	702.28	395.13	40.68	13.40%	58.40
Srisailam LBPH	Filings	3387.84	1191.74	2196.10	139.55	14.00%	326.99
	Approved	3376.06	1191.74	2184.32	118.25	13.40%	308.54
Small Hydel	Filings	122.37	70.51	51.86	10.97	14.00%	8.79
	Approved	120.54	66.05	54.49	8.39	13.40%	8.43
Mini Hydel	Filings	31.39	16.54	14.85	2.08	14.00%	2.37
	Approved	31.34	14.64	16.71	1.75	13.40%	2.47
Pochampadu-II	Filings	30.12	5.24	24.88	2.12	14.00%	3.78
	Approved	29.60	5.24	24.36	1.91	13.40%	3.52
Priyadarshini Jurala HES	Filings	706.22	135.26	570.96	31.82	14.00%	84.39
	Approved	688.91	135.26	553.65	29.51	13.36%	77.92
Lower Jurala HES	Filings	1969.14	21.29	1947.85	83.56	14.00%	211.68
	Approved	1542.78	79.95	1462.83	70.52	13.35%	152.39
Pulichinthala HES	Filings	425.30	0.00	425.30	18.15	0.14	11.65
	Approved	228.21	2.71	225.50	10.40	12.88%	15.23

Table 4.10. RoCE for FY 2017-18(₹ Cr)

Plant		GFA Opening	Acc dep	Net block	Working capital	WACC	RoCE
KTPS O&M	Filings	1262.46	1010.42	252.04	540.53	14.00%	110.96
	Approved	1287.64	915.25	372.39	383.62	13.40%	101.31
RTS-B	Filings	97.07	49.12	47.95	50.69	14.00%	13.81
	Approved	92.74	49.12	43.62	36.54	13.40%	10.74
KTPS Stage V	Filings	2213.53	1717.73	495.80	297.82	14.00%	111.11
	Approved	2129.31	1655.91	473.40	237.97	13.40%	95.32
KTPP Stage 1	Filings	2707.70	1221.31	1486.39	375.54	14.00%	260.67
	Approved	2559.68	995.55	1564.13	340.23	13.10%	249.43
KTPS Stage VI	Filings	2495.28	953.91	1541.37	394.51	14.00%	271.02
	Approved	2398.82	953.91	1444.91	329.77	13.18%	233.86
KTPP Stage II	Filings	4334.11	253.85	4080.26	521.95	14.00%	644.31
	Approved	3470.62	335.68	3134.94	481.01	13.19%	476.95
Nagarjuna Sagar Complex HES	Filings	1760.32	751.38	1008.94	84.95	14.00%	153.14
	Approved	1097.41	733.95	363.46	40.98	13.40%	54.19
Srisailam LBPH	Filings	3387.84	1305.65	2082.19	139.90	14.00%	311.09
	Approved	3376.06	1305.65	2070.41	117.60	13.40%	293.19
Small Hydrel	Filings	122.37	74.68	47.69	11.39	14.00%	8.27
	Approved	120.54	70.06	50.48	8.55	13.40%	7.91
Mini Hydrel	Filings	31.39	17.52	13.87	2.15	14.00%	2.24
	Approved	31.34	15.54	15.81	1.78	13.40%	2.36
Pochampadu-II	Filings	30.12	6.24	23.88	2.17	14.00%	3.65
	Approved	29.60	6.24	23.36	1.94	13.40%	3.39
Priyadarshini Jurala HES	Filings	706.22	158.05	548.17	32.01	14.00%	81.23
	Approved	688.91	158.05	530.86	29.51	13.36%	74.88
Lower Jurala HES	Filings	1969.14	79.94	1889.20	94.72	14.00%	277.75
	Approved	1542.78	146.90	1395.88	67.80	13.35%	195.45
Pulichinthala HES	Filings	563.50	2.71	560.79	30.05	0.14	82.72
	Approved	433.85	21.34	412.51	21.65	12.88%	45.33

Table 4.11. RoCE for FY 2018-19(₹ Cr)

Plant		GFA Opening	Acc dep	Net block	Working capital	WACC	RoCE
KTPS O&M	Filings	1262.46	1079.16	183.30	546.16	14.00%	102.12
	Approved	1287.64	932.26	355.38	391.03	13.40%	100.02
RTSB	Filings	97.07	51.83	45.24	51.30	14.00%	13.52
	Approved	92.74	51.83	40.91	37.15	13.40%	10.46
KTPS Stage V	Filings	2213.53	1749.73	463.80	301.43	14.00%	107.13
	Approved	2129.31	1666.14	463.17	241.25	13.40%	94.39
KTPP Stage 1	Filings	2707.70	1416.12	1291.58	374.04	14.00%	233.19
	Approved	2559.68	1179.65	1380.03	338.96	13.10%	225.15
KTPS Stage VI	Filings	2495.28	1135.60	1359.68	393.22	14.00%	245.41
	Approved	2398.82	1135.60	1263.22	328.65	13.18%	209.77
KTPP Stage II	Filings	4334.11	593.64	3740.47	517.67	14.00%	596.14
	Approved	3470.62	506.68	2963.94	480.74	13.19%	454.36
Nagarjuna Sagar Complex HES	Filings	1760.32	798.20	962.12	86.43	14.00%	146.80
	Approved	1097.41	765.50	331.91	41.34	13.40%	50.02
Srisaillam LBPH	Filings	3387.84	1419.56	1968.28	140.40	14.00%	295.22
	Approved	3376.06	1419.56	1956.50	117.02	13.40%	277.85
Small Hydel	Filings	122.37	78.85	43.52	11.84	14.00%	7.75
	Approved	120.54	74.00	46.54	8.72	13.40%	7.41
Mini Hydel	Filings	31.39	18.50	12.89	2.22	14.00%	2.12
	Approved	31.34	16.43	14.92	1.81	13.40%	2.24
Pochampadu-II	Filings	30.12	7.24	22.88	2.24	14.00%	3.52
	Approved	29.60	7.24	22.36	1.97	13.40%	3.26
Priyadarshini Jurala HES	Filings	706.22	180.84	525.38	32.24	14.00%	78.07
	Approved	688.91	180.84	508.07	29.53	13.36%	71.84
Lower Jurala HES	Filings	1969.14	146.89	1822.25	95.10	14.00%	268.43
	Approved	1542.78	213.85	1328.93	67.25	13.35%	186.43
Pulichinthala HES	Filings	563.50	21.87	541.63	30.32	14.00%	80.07
	Approved	433.85	40.50	393.35	20.94	12.88%	53.34

- **Additional pension liability including interest on pension bonds:**
TSGENCO in its filing submitted a claim of Rs.3,009.72 crores for the control period 2014-19 towards additional pension liability including interest on pension bonds. As per the directions of the Commission, TSGENCO gave a presentation on the pension liability.

In terms of the statutory First Transfer Scheme dated 30th January, 2000, notified by the erstwhile State Government under the AP Electricity Reform Act, 1998, the obligation to meet the pension liability of the erstwhile APSEB employees was vested with the erstwhile APGENCO. The G.O. Ms. No.29 (Transfer Scheme) issued on 31st May, 2014 as per the AP Electricity Reform Act, 1998 and AP Reorganisation Act, 2014 provides for the payment of pension liabilities by TSGENCO.

Upon reorganisation of the erstwhile APSEB into erstwhile APGENCO and erstwhile APTRANSCO on 1st February, 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.

For the purpose of discharging the aforesaid pension liability, 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.

Based on the First Transfer Scheme notified by the erstwhile Govt. of A.P. vide GO Ms No.9 Energy (Power- III) dated 29th January, 1999 read with G.O.Ms. No. 11, Energy (Power-III) dated 31st January 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.

The liability was transferred to TSGENCO vide GO 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. 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.1,379 crores being 42.39% of the total asset value of Rs.3,253 crore based on the provisional balance sheet of APGENCO as on 31.03.2014.

The erstwhile APERC in the order dated 24.03.2003 in O.P.No.402 of 2002 allowed actual the liability of additional interest on pension bonds as a pass-through 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. The Commission hereby approves the pension liability as follows:

- FY 2014-15 and FY 2015-16: Actual pension liability.
- FY 2016-17: The liability filed in the petition was on estimate basis. Subsequently, as per the additional information furnished by TSGENCO, the Commission hereby approves the pension liability as per actuals which results in a reduction of pension liability.
- FY 2017-18 and 2018-19: A year on year increase of 5% and 3% per year is considered towards dearness allowance and retirement commuted pension and gratuity payments respectively. Hence, additional liability on pension bonds is hereby approved as per Table 4.12.

The Commission provisionally considered the amounts filed by TSGENCO towards the estimated liability on account of pension for the third control period as indicated in row (a) of the below table

Table 4.12. Additional liability on Pension (in ₹ Cr)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Est. Liability (a)	611.48	700.48	723.04	780.88	843.33	3,659.21
Share from Bonds (two pension bond schemes) (b)	141.64	147.52	153.31	156.73	158.99	758.19
Est. Addl. liability (a-b)	469.84	552.96	569.73	624.15	684.34	2,901.02

Hence, the total additional liability of Rs.2,901.02 Cr is hereby approved against the claim of Rs.3,009.71 Cr for the additional pension liability.

Additional interest on pension bonds was claimed by TSGENCO, the coupon rates and part of principal redemption required will be unreasonably high and cannot be implemented in practice. Hence, the estimated amount due to

additional pension liability over and above the year-wise amount redeemed through the pension bond schemes has to be passed on to tariff as additional pension liability.

- **Year-wise fixed charges approved:**

The Commission hereby approves the year wise fixed charges (provisional for stations commissioned in 2014-19) as tabulated below for the power supplied / to be supplied by TSGENCO from its various generating stations to the respondents for the third control period FY 2014-19.

Fixed charges approved

The total fixed charges approved by the Commission for the third control period (2014-19) are Rs.20,184.98 Cr as against Rs.22,885.17 Cr claimed in the petition.

Table 4.13. Fixed charges for FY 2014-15(₹ Cr)

Plant		Depreciation	O & M Expenses	ROCE	Fixed charges
KTPS O&M	Filings	68.74	372.90	117.99	559.63
	Approved	53.96	372.90	107.05	533.91
RTSB	Filings	2.71	32.37	9.36	44.44
	Approved	2.71	32.37	8.02	43.10
KTPS Stage V	Filings	32.00	143.40	120.76	296.16
	Approved	12.63	143.40	98.49	254.52
KTPP Stage 1	Filings	194.81	96.00	333.74	624.55
	Approved	183.85	96.00	316.43	596.28
KTPS Stage VI	Filings	181.69	96.00	349.95	627.64
	Approved	181.69	96.00	313.13	590.82
KTPP Stage II	Filings	0.00	0.00	0.00	0.00
	Approved	0.00	0.00	0.00	0.00
Nagarjuna Sagar Complex HES	Filings	34.85	58.53	73.70	167.08
	Approved	34.85	50.91	67.16	152.92
Srisaillam LBPH	Filings	113.91	47.98	358.18	520.07
	Approved	113.91	41.29	339.22	494.42
Small Hydel	Filings	4.17	21.44	9.64	35.25
	Approved	4.00	18.53	9.42	31.95
Mini Hydel	Filings	0.98	3.64	2.62	7.24
	Approved	0.03	3.14	2.44	5.61
Pochampadu-II	Filings	1.00	3.45	4.04	8.49
	Approved	1.00	3.10	3.78	7.88
Priyadarshini Jurala HES	Filings	22.79	21.16	90.23	134.18
	Approved	22.79	19.39	83.78	125.96
Lower Jurala HES	Filings	0.00	0.00	0.00	0.00
	Approved	0.00	0.00	0.00	0.00
Pulichinthala HES	Filings	0.00	0.00	0.00	0.00
	Approved	0.00	0.00	0.00	0.00
Total	Filings	657.65	896.88	1,470.21	2,997.24
	Approved	611.42	877.04	1,348.92	2,837.38

Table 4.14. Fixed charges for FY 2015-16 (₹ Cr)

Plant		Depreciation	O & M	RoCE	Fixed charges
KTPS O&M	Filings	68.74	396.32	115.51	580.57
	Approved	40.07	396.32	103.53	539.92
RTSB	Filings	2.71	34.40	12.60	49.71
	Approved	2.71	34.40	10.88	47.99
KTPS Stage V	Filings	32.00	152.40	119.09	303.49
	Approved	11.31	152.40	98.03	261.74
KTPP Stage 1	Filings	194.81	102.06	313.22	610.09
	Approved	184.28	102.06	295.28	581.62
KTPS Stage VI	Filings	181.69	102.06	318.94	602.69
	Approved	181.69	102.06	283.47	567.22
KTPP Stage II	Filings	0.00	2.41	11.15	13.56
	Approved	0.00	2.41	10.60	13.01
Nagarjuna Sagar Complex HES	Filings	34.85	62.42	75.80	173.07
	Approved	31.93	52.95	62.64	147.52
Srisaillam LBPH	Filings	113.91	51.17	342.38	507.46
	Approved	113.91	42.94	323.44	480.29
Small Hydel	Filings	4.17	22.86	9.32	36.35
	Approved	4.01	19.27	8.94	32.22
Mini Hydel	Filings	0.98	3.88	2.50	7.36
	Approved	0.03	3.27	2.45	5.75
Pochampadu-II	Filings	1.00	3.68	3.91	8.59
	Approved	1.00	3.22	3.65	7.87
Priyadarshini Jurala HES	Filings	22.79	22.57	87.32	132.68
	Approved	22.79	20.17	80.81	123.77
Lower Jurala HES	Filings	21.29	9.25	91.34	121.88
	Approved	21.29	11.27	86.14	118.70
Pulichinthala HES	Filings	0.00	0.00	0.00	0.00
	Approved	0.00	0.00	0.00	0.00
Total	Filings	678.94	965.48	1,503.09	3,147.49
	Approved	617.85	962.49	1,302.88	2,883.22

Table 4.15. Fixed charges for FY 2016-17 (₹ Cr)

Plant		Depreciation	O & M	RoCE	Fixed charges
KTPS O&M	Filings	68.74	421.29	119.59	609.62
	Approved	17.01	421.29	102.65	540.95
RTSB	Filings	2.71	36.57	14.11	53.39
	Approved	2.71	36.57	11.03	50.31
KTPS Stage V	Filings	32.00	162.00	115.11	309.11
	Approved	10.25	162.00	96.25	268.50
KTPP Stage 1	Filings	194.81	108.48	288.18	591.47
	Approved	185.35	108.48	273.90	567.73
KTPS Stage VI	Filings	181.69	108.48	296.66	586.83
	Approved	181.69	108.48	257.97	548.14
KTPP Stage II	Filings	253.85	117.14	519.42	890.41
	Approved	164.67	117.14	499.42	781.23
Nagarjuna Sagar Complex HES	Filings	46.82	66.56	159.51	272.89
	Approved	31.67	55.07	58.40	145.14
Srisaïlam LBPH	Filings	113.91	54.56	326.99	495.46
	Approved	113.91	44.66	308.54	467.11
Small Hydrel	Filings	4.17	24.38	8.79	37.34
	Approved	4.00	20.05	8.43	32.48
Mini Hydrel	Filings	0.98	4.14	2.37	7.49
	Approved	0.90	3.40	2.47	6.77
Pochampadu-II	Filings	1.00	3.93	3.78	8.71
	Approved	1.00	3.35	3.52	7.87
Priyadarshini Jurala HES	Filings	22.79	24.07	84.39	131.25
	Approved	22.79	20.97	77.92	121.68
Lower Jurala HES	Filings	58.65	46.89	211.68	317.22
	Approved	58.65	27.28	152.39	238.32
Pulichinthala HES	Filings	2.71	5.08	11.65	19.44
	Approved	2.71	2.06	15.23	20.00
Total	Filings	984.83	1,183.56	2,162.23	4,330.62
	Approved	887.59	1,181.99	1,812.23	3,881.81

Table 4.16. Fixed charges for FY 2017-18 (₹ Cr)

Plant		Depreciation	O & M	RoCE	Fixed charges
KTPS O&M	Filings	68.74	447.81	110.96	627.51
	Approved	17.01	447.81	101.31	566.13
RTSB	Filings	2.71	38.87	13.81	55.39
	Approved	2.71	38.87	10.74	52.32
KTPS Stage V	Filings	32.00	172.20	111.11	315.31
	Approved	10.23	172.20	95.32	277.75
KTPP Stage 1	Filings	194.81	115.32	260.67	570.80
	Approved	184.10	115.32	249.43	548.85
KTPS Stage VI	Filings	181.69	115.32	271.02	568.03
	Approved	181.69	115.32	233.86	530.87
KTPP Stage II	Filings	339.79	124.56	644.31	1108.66
	Approved	171.01	124.56	476.95	772.52
Nagarjuna Sagar Complex HES	Filings	46.82	70.98	153.14	270.94
	Approved	31.55	57.27	54.19	143.01
Srisailam LBPH	Filings	113.91	58.19	311.09	483.19
	Approved	113.91	46.44	293.19	453.55
Small Hydel	Filings	4.17	26.00	8.27	38.44
	Approved	3.94	20.85	7.91	32.70
Mini Hydel	Filings	0.98	4.41	2.24	7.63
	Approved	0.89	3.54	2.36	6.79
Pochampadu-II	Filings	1.00	4.19	3.65	8.84
	Approved	1.00	3.49	3.39	7.88
Priyadarshini Jurala HES	Filings	22.79	25.67	81.23	129.69
	Approved	22.79	21.81	74.88	119.48
Lower Jurala HES	Filings	66.95	67.18	277.75	411.88
	Approved	66.95	29.88	195.45	292.28
Pulichinthala HES	Filings	19.16	28.84	82.72	130.72
	Approved	18.62	7.04	45.33	70.99
Total	Filings	1,095.53	1,299.54	2,331.97	4,727.04
	Approved	909.80	1,279.01	1,759.37	3,948.18

Table 4.17. Fixed charges for FY 2018-19 (₹ Cr)

Plant		Depreciation	O & M	RoCE	Fixed charges
KTPS O&M	Filings	57.05	475.98	102.12	635.15
	Approved	17.01	475.98	100.02	593.01
RTSB	Filings	2.71	41.32	13.52	57.55
	Approved	2.71	41.32	10.46	54.49
KTPS Stage V	Filings	32.00	183.06	107.13	322.19
	Approved	8.81	183.06	94.39	286.26
KTPP Stage 1	Filings	194.81	122.58	233.19	550.58
	Approved	182.97	122.58	225.15	530.70
KTPS Stage VI	Filings	181.69	122.58	245.41	549.68
	Approved	181.69	122.58	209.77	514.04
KTPP Stage II	Filings	339.79	132.34	596.14	1068.27
	Approved	171.01	132.34	454.36	757.71
Nagarjuna Sagar Complex HES	Filings	46.82	75.70	146.80	269.32
	Approved	31.49	59.56	50.02	141.07
Srisaillam LBPH	Filings	113.91	62.05	295.22	471.18
	Approved	113.91	48.30	277.85	440.06
Small Hydrel	Filings	4.17	27.73	7.75	39.65
	Approved	3.91	21.68	7.41	33.00
Mini Hydrel	Filings	0.98	4.70	2.12	7.80
	Approved	0.89	3.68	2.24	6.81
Pochampadu-II	Filings	1.00	4.47	3.52	8.99
	Approved	1.00	3.63	3.26	7.89
Priyadarshini Jurala HES	Filings	22.79	27.37	78.07	128.23
	Approved	22.79	22.69	71.84	117.32
Lower Jurala HES	Filings	66.95	71.64	268.43	407.02
	Approved	66.95	31.07	186.43	284.45
Pulichinthala HES	Filings	19.16	30.76	80.07	129.99
	Approved	19.16	8.29	53.34	80.79
Total	Filings	1,083.84	1,382.26	2,179.47	4,645.57
	Approved	903.74	1,356.92	1,644.37	3,905.03

Table 4.18. Summary of fixed charges for the control period (₹ Cr)

Name of the Station		2014-15	2015-16	2016-17	2017-18	2018-19
Thermal Stations						
KTPS O&M	Filings	559.63	580.57	609.61	627.51	635.16
	Approved	533.92	539.92	540.95	566.13	593.01
RTSB	Filings	44.44	49.71	53.39	55.39	57.55
	Approved	43.10	47.99	50.31	52.32	54.49
KTPS Stage V	Filings	296.16	303.49	309.11	315.31	322.19
	Approved	254.52	261.74	268.50	277.75	286.27
KTPP Stage 1	Filings	624.55	610.09	591.47	570.80	550.58
	Approved	596.28	581.63	567.72	548.84	530.70
KTPS Stage VI	Filings	627.64	602.69	586.83	568.03	549.68
	Approved	590.82	567.22	548.14	530.87	514.04
KTPP Stage II	Filings	0.00	13.56	890.37	1108.64	1068.25
	Approved	0.00	13.01	781.23	772.51	757.70
Sub Total (a)	Filings	2,152.42	2,160.12	3,040.78	3,245.68	3,183.39
	Approved	2,018.63	2,011.51	2,756.85	2,748.43	2,736.20
Hydel Stations						
Nagarjuna Sagar Complex HES	Filings	167.08	173.07	272.89	270.95	269.31
	Approved	152.92	147.53	145.13	143.02	141.07
Srisaillam LBPH	Filings	520.07	507.46	495.46	483.19	471.18
	Approved	494.41	480.29	467.11	453.55	440.06
Small Hydel	Filings	35.24	36.35	37.34	38.44	39.65
	Approved	31.96	32.23	32.48	32.69	32.99
Mini Hydel	Filings	7.23	7.36	7.49	7.63	7.80
	Approved	5.62	5.75	6.77	6.78	6.81
Pochampadu-II	Filings	8.49	8.59	8.71	8.84	8.98
	Approved	7.88	7.88	7.87	7.88	7.89
Priyadarshini Jurala HES	Filings	134.19	132.67	131.25	129.68	128.23
	Approved	125.96	123.77	121.69	119.48	117.31
Lower Jurala HES	Filings	0.00	121.89	317.21	411.88	407.02
	Approved	0.00	118.70	238.32	292.28	284.46
Pulichinthala HES	Filings	0.00	0.00	19.44	130.72	129.99
	Approved	0.00	0.00	20.00	71.00	80.79
Sub Total (b)	Filings	872.31	987.39	1,289.78	1,481.33	1,462.16
	Approved	818.74	916.15	1,039.38	1,126.67	1,111.39
Total (a+b)	Filings	3,024.72	3,147.50	4,330.57	4,727.02	4,645.54
	Approved	2,837.38	2,927.66	3,796.23	3,875.10	3,847.59
Additional interest on pension bonds	Filings	469.84	552.96	603.21	660.31	723.4
	Approved	469.84	552.96	569.73	624.15	684.34
Total including pension liability	Filings	3,494.56	3,700.46	4,933.78	5,387.33	5,368.94
	Approved	3,307.22	3,480.62	4,365.96	4,499.25	4,531.93

Summary of fixed cost per unit approved for each plant:

The Fixed cost per unit is given as an indicative for all the plants except KTPP II based on the net generation assuming 80% PLF to calculate the gross generation. For KTPP II, rate is calculated taking normative PLF of 85% in accordance with CERC Regulations 2014.

Table 4.19. Fixed cost per unit for Thermal plants (₹/unit)

	2014-15	2015-16	2016-17	2017-18	2018-19
KTPS O&M	1.16	1.18	1.18	1.23	1.29
RTS-B	1.08	1.20	1.26	1.31	1.37
KTPS Stage V	0.80	0.82	0.84	0.87	0.90
KTPP Stage 1	1.81	1.78	1.73	1.67	1.61
KTPS Stage VI	1.77	1.71	1.65	1.60	1.54
KTPP Stage II	0.00	1.40	1.85	1.82	1.79

Table 4.20. Fixed cost per unit for Hydel plants (₹/unit)

	2014-15	2015-16	2016-17	2017-18	2018-19
Nagarjuna Sagar Complex HES	1.37	1.33	1.30	1.28	1.27
Srisilam LBPH	4.14	4.02	3.91	3.80	3.69
Small Hydel	1.77	1.79	1.80	1.81	1.83
Mini Hydel	1.17	1.20	1.41	1.41	1.42
Pochampadu II HES	4.80	4.80	4.80	4.80	4.80
Priyadarshini Jurala HES	3.13	3.08	3.03	2.97	2.92
Lower Jurala HES	0.00	14.21	6.02	5.50	5.35
Pulichintala HES	0.00	0.00	7.31	4.74	3.70

19. Variable charges, income tax, incentives and other charges shall be claimed and paid as per APERC Regulation 1 of 2008 for all plants other than KTPP II. CERC Regulations, 2014 shall be followed for KTPP II.

20. TSGENCO is entitled to recover the tariff from the respondents in proportion to the power supplied to them.

21. Difference in provisional fixed charges approved in the retail supply tariff orders, prior to issuance of this order, and the fixed charges approved in this order shall be adjusted in payments between TSGENCO and TS DISCOMs.

22. Directives:**TSGENCO is directed to comply with the following:**

- Upon finalisation and issuance of annual accounts, TSGENCO shall submit the same duly audited.
- All audit certificates, certifying any matter, shall be in accordance with "Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) issued by

Auditing and Assurance Standards Board (01.10.2016) of the Institute of Chartered Accountants of India”, as amended from time to time.

- Endeavour to finish all the future projects within stipulated timelines to prevent cost overruns.
- Endeavour to achieve efficiency of employee costs on par with NTPC and other central generating stations.
- Negotiate with banks and financial institutions to actively seek refinancing at lower interest rates.
- Furnish information on compliance with norms specified by MoEF on emission norms.
- To approach the Commission for approval with regard to renovation & modernisation expenditure for all the plants.
- Submit and seek approval of completed capital costs for new plants commissioned in control period 2014-19, namely:
 - KTPP Stage II
 - Lower Jurala HES
 - Pulichintala HES
- Penalties released to the contractors after cut-off date shall not form part of capital cost of the plant.
- To file the petition for determination of generation tariff 120 days prior to start of the control period, for future control periods.
- Undertake actuarial valuation for determining the future pension liabilities
- Maintain separate records and books of account for each unit of every power station
- Maintain the following with respect to capitalisation of fixed assets
 - Date of capitalisation/placed into service
 - Accumulated depreciation of each asset
 - Date of decapitalisation wherever applicable
- For KTPP II, based on audited accounts, revenue due to sale of infirm power and related fuel expenses prior to the CoD, shall be submitted.
- Explore alternative modes of transportation to achieve lowest coal transportation costs for KTPP units.
- Revise the pay revision policy to implement pay revisions once in five years in accordance with pay revision policy for central PSUs / State Government of Telangana.

This original petition no. 26 of 2016 is ordered accordingly.

This tariff order is applicable from 5th June, 2017

This order is signed on this day of 5th, June 2017

Sd/-
Sri H. Srinivasulu,
(Member)

Sd/-
Sri Ismail Ali Khan,
(Chairman)

Annexure - I

Objections were raised by

1. Power Corporation of Karnataka Limited
2. Sri. M. Thimma Reddy, Convener, People's Monitoring Group on Electricity
3. Sri. M. Venugopal Rao, Senior Journalist and Convener, Centre for power studies
4. Sri. D. Narsimha Reddy
5. Bharatiya Janata Party, Telangana
6. Andhra Pradesh Distribution Companies