ASSAM ELECTRICITY REGULATORY COMMISSION

(AERC)

TARIFF ORDER

TRUE-UP for FY 2016-17,

APR for FY 2017-18

AND

REVISED ARR AND TARIFF

for

FY 2018-19

Assam Power Generation Corporation Limited (APGCL)

Petition No. 18/2017 and 29/2017

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List of Abbreviations

A&G	Administrative and General
ABITA	Assam Branch of Indian Tea Association
ADB	Asian Development Bank
AFC	Annual Fixed Charges
AGCL	Assam Gas Company Limited
APC	Auxiliary Power Consumption
AEGCL	Assam Electricity Grid Corporation Limited
APM	Administered Pricing Mechanism
AERC	Assam Electricity Regulatory Commission
APDCL	Assam Power Distribution Company Limited
APGCL	Assam Power Generation Corporation Limited
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
ASEB	Assam State Electricity Board
BTPP	Bongaigaon Thermal Power Plant
BST	Bulk Supply Tariff
CAG/C&AG	Comptroller and Auditor General
CC	Combined Cycle
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
COD	Date of Commercial Operation
CPI	Consumer Price Index
CSGS	Central Sector Generating Stations
CTPS	Chandrapur Thermal Power Station
CTU	Central Transmission Utility
CWIP	Capital Work-In-Progress
DA	Dearness Allowance
EPC	Engineering Procurement and Construction
EPFI	Employees' Pension Fund Investment
FAR	Fixed Asset Register
FCC	Financial Completion Certificate
FINER	Federation of Industry & Commerce of North Eastern Region

FPA	Fuel Price Adjustment
FPPPA	Fuel and Power Purchase Price Adjustment
FY	Financial Year
GAIL	Gas Authority of India Limited
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
GoA	Government of Assam
GSHR	Gross Station Heat Rate
GT	Gas Turbine
IIT	Indian Institute of Technology
IoWC/IWC	Interest on Working Capital
kcal	kilo calorie
KLHEP	Karbii Langpi Hydro Electric Project
kW	kilo Watt
kWh	kilo Watt Hour
LRPP	Lakwa Replacement Power Project
LTPS	Lakwa Thermal Power Station
MAT	Minimum Alternate Tax
MMBTU	Million Metric British Thermal Unit
MMSCMD	Million Metric Standard Cubic Meter per Day
MNRE	Ministry of New & Renewable Energy
MOPNG	Ministry of Petroleum and Natural Gas
MSHEP	Myntriang Small Hydro Electric Project
MW	Mega Watt
MU	Million Units
MYT	Multi Year Tariff
NAPAF	Normative Annual Plant Availability Factor
NERLDC	North Eastern Region Load Despatch Centre
NRPP	Namrup Replacement Power Project
NTPS	Namrup Thermal Power Station
O&M	Operation and Maintenance
OC	Open Cycle
OIL	M/s Oil India Limited

PAF	Plant Availability Factor
PCC	Physical Completion Certificate
PFC	Power Finance Corporation Limited
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PoC	Point of Connection
R&M	Repairs and Maintenance
RBI	Reserve Bank of India
RoE	Return on Equity
ROI	Rate of Interest
ROP	Revision of Pay
RLDC	Regional Load Despatch Centre
SAC	State Advisory Committee
SCM	Standard Cubic Meter
SHR	Station Heat Rate
SLDC	State Load Despatch Centre
SLM	Straight Line Method
STU	State Transmission Utility
TDS	Tax Deduction at Source
TVS	Technical Validation Session
USD	United States Dollar
WHR	Waste Heat Recovery
WPI	Wholesale Price Index

ASSAM ELECTRICITY REGULATORY COMMISSION

Guwahati

Present

Shri Subhash Ch. Das, Chairperson

Shri Dipak Chakravarty, Member

Petition No. 18/2017 and 29/2017

Assam Power Generation Corporation Limited (APGCL) - **Petitioner**

ORDER

(Passed on March 19, 2018)

(1) APGCL filed Petition for approval of Truing up for FY 2016-17, Annual Performance Review (APR) for FY 2017-18 and revised Aggregate Revenue Requirement (ARR) and determination of Tariff for FY 2018-19 as per MYT Regulations, 2015 (Petition No. 29/2017) on November 29, 2017.

(2) Also, APGCL filed the Petition for Aggregate Revenue Requirement and approval of provisional Tariff for FY 2018-19 for Lakwa Replacement Power Project (Petition No. 18/2017) on September 26, 2017. The Commission held an Admissibility Hearing on November 29, 2017 and admitted the Petition (Petition No. 18/2017).

(3) Further, the Commission held an Admissibility Hearing on December 13, 2017, and admitted the Petition (Petition No. 29/2017) vide Order dated December 13, 2017. The Commission conducted preliminary analysis of the Petitions submitted by APGCL and found that the Petitions were incomplete in material particulars. Therefore, additional data and clarifications on the APR Petition were sought from APGCL vide letter dated December 12, 2017 and these were submitted by them on December 28, 2017.

(4) On admission of the both Petitions (Petition No. 18/2017 and 29/2017), in accordance with Section 64 of the Electricity Act 2003, the Commission directed APGCL to publish a summary of the ARR and Tariff filings in local dailies to facilitate due public participation

(5) Accordingly, a Public Notice was issued by the APGCL inviting objections/suggestions from stakeholders to be submitted on or before January 10, 2018. The notice was published in six (6) leading newspapers of the State on December 20, 2017. A copy of the Petitions and other relevant documents were also made available to the consumers and other interested Parties at the office of the Managing Director of APGCL. A copy of the Petition was also made available on the websites of the Commission and APGCL.

(6) The Commission received suggestions/objections from three (3) stakeholders on the Petitions filed by APGCL. The stakeholders were notified about the place, date and time of Hearing, to enable them to take part in the Hearing to be held at Assam Administrative Staff College, Khanapara, Guwahati on February 17, 2018. The Hearing was held as scheduled. The details are discussed in the relevant Chapters of this Tariff Order.

(7) The Petition was also discussed in the meeting of the State Advisory Committee (SAC) (constituted under Section 87 of the Electricity Act, 2003) held on February 8, 2018 at Assam Administrative Staff College, Khanapara, Guwahati.

(8) While examining the revised submission, the Commission observed additional data requirements vis-à-vis replies to original data requirement, which were sought from APGCL vide letter dated February 9, 2018 and February 22, 2018. APGCL submitted the replies to such data requirements on February 13, 2018 and February 28, 2018.

(9) The Commission, now in exercise of its powers vested under Sections 61, 62, 86 and 181 of the Electricity Act, 2003 and all other powers enabling it in this behalf and taking into consideration the submissions made by the Petitioner, objections and suggestions received from stakeholders and all other relevant materials on record, has approved the True-up for FY 2016-17, APR for FY 2017-18, revised ARR for FY 2018-19, and determined the Generation Tariff for FY 2018-19 for existing Generating Stations as detailed in subsequent pages. The provisional tariff for LRPP has also been determined.

(10) The Commission directs APGCL to publish a Public Notice intimating the revised Generation Tariff for existing Generating Stations before the implementation of this Order in English and Vernacular newspapers and on the website of APGCL.

(11) The approved Generation Tariff shall be effective from April 1, 2018 and shall continue until replaced by another Order by the Commission.

(12) Accordingly, the Petition Nos. 18/2017 and 29/2017 stand disposed of.

Sd/-	**Sd/-**
(D. Chakravarty)	**(S. C. Das)**
Member, AERC	**Chairperson, AERC**

1 INTRODUCTION

1.1 Constitution of the Commission

1.1.1 The Assam Electricity Regulatory Commission (hereinafter referred to as the AERC or the Commission) was established under the Electricity Regulatory Commissions Act, 1998 (14 of 1998) on February 28, 2001. The first proviso of Section 82(1) of the Electricity Act, 2003 (hereinafter referred as the Act or the EA, 2003) has ensured continuity of the Commission under the Electricity Act, 2003.

1.1.2 The Commission is mandated to exercise the powers and functions conferred under Section 181 of the Electricity Act, 2003 (36 of 2003) and to exercise the functions conferred on it under Sections 61, 62 and 86 of the Act from June 10, 2003.

1.2 Tariff related Functions of the Commission

1.2.1 Under Section 86 of the Act, the Commission has the following tariff related functions:

a) To determine the tariff for electricity, wholesale, bulk or retail, as the case may be;
b) To regulate power purchase and procurement process of the distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;
c) To promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.2.2 Under Section 61 of the Act in the determination of tariffs, the Commission is to be guided by the following:

a) The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;
b) That the electricity generation, transmission, distribution and supply are conducted on commercial principles;
c) That factors which would encourage efficiency, economical use of the resources, good performance, optimum investments, and other matters which the State

commission considers appropriate for the purpose of this Act;

d) The interests of the consumers are safeguarded and at the same time, the consumers pay for the use of electricity in a reasonable manner based on their customer category cost of supply;

e) That the tariff progressively reflects the cost of supply of electricity at an adequate and improving level of efficiency and also gradually reduces cross subsidies;

f) The National Electricity Plan formulated by the Central Government including the National Electricity Policy and Tariff Policy.

1.3 Background

1.3.1 APGCL is the successor corporate entity of erstwhile ASEB formed pursuant to the notification of the Government of Assam, notified under sub-sections (1), (2), (5), (6) and (7) of Section 131 and Section 133 of the Electricity Act 2003 (Central Act 36 of 2003), for the purpose of transfer and vesting of functions, properties, interests, rights, obligations and liabilities, along with the transfer of personnel of the Board to successor entries. APGCL is a Company incorporated with the main object of generation of electricity in the State of Assam and is a Generating Company under the various provisions of the Act.

1.4 Multi Year Tariff Regulations, 2015

1.4.1 The Commission, in exercise of the powers conferred under Section 61 read with Section 181(2) (zd) of the Act, has notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2015 (herein after referred as “MYT Regulations, 2015”) on June 2, 2015. These Regulations are applicable for determination of Tariff for Generation, Transmission, SLDC, Wheeling and Retail Supply for the Control Period of three financial years from April 1, 2016 onwards up to March 31, 2019. These Regulations are applicable to all existing and future Generating Companies, Transmission Licensees and Distribution Licensees within the State of Assam.

1.4.2 APGCL filed the MYT Petition for approval of ARR for the Control Period from FY 2016-17 to FY 2018-19 and tariff for FY 2017-18 for existing Generating Stations and provisional tariff for NRPP as per MYT Regulations, 2015, along with True-up for FY 2014-15 and FY 2015-16 as per AERC (Terms and Conditions of Tariff) Regulations, 2006 (herein after referred as "Tariff Regulations, 2006"). The Commission issued the Order on the said MYT Petition on March 31, 2017 and approved Generation Tariff for FY 2017-18 for existing Generating Stations.

1.4.3 Further, the Commission notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2015, First Amendment, 2017 on November 8, 2017. In the said Regulations, certain provisions regarding the scope of Annual Performance Review, rate of interest for consumer security deposit, etc., have been amended.

1.4.4 Regulation 10 of the MYT Regulations, 2015, as amended in November 2017, specifies that the Commission shall undertake the APR and True-up for the respective years of the Control Period from FY 2016-17 to FY 2018-19, as reproduced below: *"10.3 The scope of the annual review and True up shall be a comparison of the actual performance of the Generating Company or Transmission Licensee or SLDC or Distribution Licensee with the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges and shall comprise the following*:

a) True Up: a comparison of the audited performance of the applicant for the previous financial year with the approved forecast for the financial year and truing up of expenses and revenue in line with Regulation 11including pass through of impact of uncontrollable items;

b) Annual Review: a comparison of the revised performance targets of the applicant for the current financial year with the approved forecast in the Tariff order corresponding to the Control period for the current financial year subject to prudence check including adjusting trajectories of uncontrollable and controllable items".

1.5 Procedural History

1.5.1 As per Regulation 10.2 of the MYT Regulations, 2015, APGCL is required to file an application for true-up for previous year, i.e., FY 2016-17, APR of current year, i.e., FY 2017-18 and tariff for ensuring year, i.e., FY 2018-19, not less than 120 days before the close of the current year.

1.5.2 APGCL accordingly filed a Petition for Truing up for FY 2016-17, APR for FY 2017-18 and for approval of revised ARR and Generation Tariff for FY 2018-19 on November 29, 2017.

1.5.3 Further, as per Regulation 41.4 of the MYT Regulations, 2015, APGCL may make a Petition for determination of provisional tariff for LRPP in advance of the anticipated COD. Accordingly, APGCL filed a Petition for approval of provisional tariff for LRPP on September 26, 2017. The Commission held an Admissibility Hearing on November 29, 2017 and admitted the Petition (Petition No. 18/2017) vide Order dated November 29, 2017.

1.5.4 The Commission held an Admissibility Hearing on December 13, 2017 and admitted the Petition (Petition No. 29/2017) vide Order dated December 13, 2017. The Commission conducted preliminary analysis of the Petition (Petition No. 29/2017) submitted by APGCL and found that the Petition was incomplete in material particulars. Therefore, additional data and clarifications on the APR Petition were sought from APGCL during the Technical Validation Session conducted on December 12, 2017. The replies were submitted by them on December 28, 2017.

1.5.5 On admission of the both Petitions (Petition No. 18/2017 and 29/2017), in accordance with Section 64 of the Act, the Commission directed APGCL to publish its Petition in the abridged form and manner to facilitate due public participation.

1.5.6 The copies of the Petition and other relevant documents were made available to consumers and other interested parties at the office of the Managing Director of APGCL. APGCL was also directed to make the copy of the Petition available on its website. A copy of the Petition was made available on the website of APGCL (www.apgcl.org) and also on the website of the Commission (www.aerc.gov.in) in downloadable format. A Public Notice was issued by APGCL inviting objections/suggestions from stakeholders on or before January 10, 2018, which was published in the following newspapers on December 20, 2017:

Date	**Name of Newspaper**	**Language**
20.12.2017	The Sentinel	English
20.12.2017	The Assam Tribune	English
20.12.2017	Asamiya Pratidin	Assamese

Date	Name of Newspaper	Language
20.12.2017	Dainik Janambhumi	Assamese
20.12.2017	Purbanchal Prahari	Hindi
20.12.2017	Dainik Jugasankha	Bengali

1.5.7 While examining the revised submission, the Commission observed additional data requirements vis-à-vis replies to original data requirement, which were sought from APGCL vide letter dated February 9, 2018 and February 22, 2018. APGCL submitted the replies to such data requirements on February 13, 2018 and February 28, 2018.

1.5.8 The Commission considered the objections received and sent communication to the stakeholders to take part in Hearing process by presenting their views in person before the Commission. Accordingly, the Commission scheduled a Hearing in the matter on February 17, 2018 at Assam Administrative Staff College, Khanapara, Guwahati. In this context, Notices were dispatched to the stakeholders personally/by Registered Post stating the date and time of Hearing. Also, a comprehensive Notice was published in Six (6) newspapers on February 7, 2018 in Assamese and English language. The Hearing was held at Assam Administrative Staff College, Khanapara, Guwahati on February 17, 2018 as scheduled. All stakeholders/respondents who participated in the Hearing were given opportunity to express their views on the Petition.

1.5.9 All the written representations submitted to the Commission and oral submissions made before the Commission in the Hearing and the responses of APGCL have been carefully considered while issuing this Tariff Order. The major issues raised by different consumers and consumer groups along with the response of APGCL, and views of the Commission are elaborated in Chapter 3 of this Order.

1.6 State Advisory Committee Meeting

1.6.1 A meeting of the State Advisory Committee (SAC) (constituted under Section 87 of the Act) was convened on February 8, 2018.

1.6.2 During the SAC meeting, AEGCL, APGCL and APDCL made presentations on their respective Tariff Petitions filed for FY 2018-19. Apart from this, the issue of devising Action Plan for increasing RPO to 8% for Solar and overall trajectory to 17% including

Solar and Non-Solar by 2022 in view of Ministry of New and Renewable Energy (MNRE) letter dated February 11, 2016, was also discussed.

1.6.3 As regards the Tariff Petition for AEGCL, it was discussed that PGCIL Charges have increased during FY 2016-17 on account of revision by CERC and switch over to Point of Connection (PoC) charges. One of the Members observed that PGCIL Charges accounted for 50% of AEGCL ARR. AEGCL submitted that most of the power consumed was imported from outside the State, hence, PGCIL Charges are high.

1.6.4 As regards the Tariff Petition of APGCL, the issues such as status of commissioning of NRPP, LRPP and Myntriang SHEP, status of Margherita Thermal Power Project, Minimum off-take with gas suppliers in view of de-commissioning of NTPS and LTPS, corrective actions for shortfall in generation on account of shortage of gas, etc., were discussed in detailed. It was also discussed that APGCL is losing out generation because of delay in commissioning of NRPP. Principal Secretary, Power, Government of Assam submitted that it is always economical to increase own generation.

1.6.5 As regards the Tariff Petition of APDCL, the issues such as high fixed charges for industries, levy of Minimum Charges instead of Fixed Charges, quality and reliable supply of power, non-uniform increase proposed for all categories, etc., were discussed in detailed. As regards the installation of separate Feeders for HT and Tea consumers, APDCL submitted that in Annual Plan for FY 2017-18, 35 Tea gardens have been selected for providing separate feeders.

As regards RPO trajectory, it was discussed that MNRE issued letter dated February 11, 2016 to States for developing an Action Plan for compliance of RPO up to 2022 and suggested that SERCs should notify RPO trajectory to reach 8% for Solar and 17% for Solar and Non-Solar by 2022. Accordingly, draft amendment was hosted by the Commission for comments of stakeholders. Members of SAC submitted their comments on the same.

1.6.6 The Minutes of the SAC Meeting are appended to this Order as **Annexure 1**.

2 Summary of APGCL's Petition

2.1 Background

2.1.1 APGCL submitted the Petition on November 29, 2017 seeking approval for True-up for FY 2016-17, APR for FY 2017-18 and Determination of revised ARR and Tariff for FY 2018-19 (Petition No. 29/2017) and on September 26, 2017. for determination of Provisional Tariff for FY 2018-19 for LRPP (Petition No. 18/2017). The Generation Tariff is to be recovered from the Assam Power Distribution Company Limited (APDCL), who is the sole buyer of power from APGCL.

2.2 True-up for FY 2016-17

2.2.1 APGCL submitted the True-up for FY 2016-17 based on the audited accounts. The summary of ARR and Revenue Gap/(Surplus) claimed by APGCL for FY 2016-17 is shown in the following Table:

Table 1: True-up ARR for FY 2016-17 as submitted by APGCL (Rs. Crore)

Sr. No.	Particulars	NTPS	LTPS	KLHEP	APGCL
I	**POWER GENERATION (MU)**				
1	Gross Generation	356.35	891.40	397.13	1644.88
2	Net Generation	333.18	823.46	395.14	1551.59
3	Auxiliary Consumption %	6.50%	7.64%	0.50%	5.67%
II	**Fixed Charges**				
1	*Operation & Maintenance Expenditure*	46.59	54.96	24.57	126.12
2	*Interest & Finance Charges*	7.89	26.73	12.09	46.7
3	*Interest on working Capital*	6.61	11.78	2.67	21.06
4	*Income taxes*	1.01	2.53	1.13	4.67
5	*Depreciation*	1.37	14.71	21.20	37.28
6	*ROE*	8.53	22.18	10.64	41.35
7	*Prior period items*	1.99	1.93	0.84	4.76
8	*Less: Other Income*	5.83	7.84	4.46	18.14
9	Total Fixed Charges	68.16	126.98	68.66	263.80
III	Fuel Cost	89.61	199.16	-	288.78
VI	Total Revenue Requirement	157.77	326.14	68.66	552.57
VII	Add: Incentive for generation for FY 2016-17	-	8.56	-	8.56
VIII	Add: Incentive for Secondary Energy generation	-	-	0.92	0.92

Sr. No.	Particulars	NTPS	LTPS	KLHEP	APGCL
IX	Total Cost	157.77	334.70	69.59	562.06
X	Revenue from Sale of Power	161.58	301.77	68.16	531.51
XI	Revenue Gap/(Surplus)	(3.81)	32.93	1.43	30.55

2.2.2 APGCL has claimed revenue gap along with carrying cost of Rs. 34.46 Crore for FY 2016-17in the true-up.

2.3 Annual Performance Review for FY 2017-18

2.3.1 APGCL has claimed the ARR after APR for FY 2017-18 based on its estimations, as detailed in the table below:

Table 2: ARR after APR for FY 2017-18 as submitted by APGCL (in Rs Crore)

Sr. No.	Particulars	NTPS	LTPS	KLHEP	APGCL
I	**POWER GENERATION (MU)**				
1	Gross Generation	384.87	725.92	405.00	1515.78
2	Net Generation	367.55	685.99	402.97	1456.51
3	Auxiliary Consumption %	4.50%	5.50%	0.50%	3.91%
II	**Fixed Charges**				
1	*Operation & Maintenance Expenditure*	42.37	45.90	23.64	111.91
2	*Interest & Finance Charges*	0.66	1.54	26.42	28.61
3	*Interest on working Capital*	6.08	9.18	4.10	19.37
4	*Depreciation*	2.18	15.13	22.10	39.41
5	*ROE*	8.53	22.18	10.64	41.35
6	*Less: Other Income*	5.18	6.46	3.94	15.58
7	Total Fixed Charges	54.64	87.47	82.96	225.07
III	Fuel Cost	88.71	158.11	-	246.82
IV	Total Revenue Requirement	143.35	245.58	82.96	471.89
V	Revenue from Sale of Power	140.89	248.84	74.70	464.44
VI	Adjustment in SOP on account of Review Order	11.25	19.86	5.96	37.07
VII	Total sale of power	152.14	268.71	80.66	501.51
VII	Revenue Gap/(Surplus)	(8.79)	(23.13)	2.30	(29.62)

2.3.2 APGCL submitted that it has not considered the surplus tariff for FY 2017-18 since the figures for FY 2017-18 are estimated and subjected to True-up. APGCL further submitted that it shall consider the same at the time of True-up Petition for the FY 2017-18.

2.4 ARR and Tariff Determination for FY 2018-19 for NTPS

2.4.1 APGCL has projected the ARR for FY 2018-19for NTPS as detailed in the Table below:

Table 3: ARR for NTPS for 2018-19 as submitted by APGCL (Rs. Crore)

Particulars	FY 2018-19
Gross Generation (MU)	539.43
Net Generation (MU)	515.15
Auxiliary Consumption (4.5%)	24.27
Fixed Charges	
O&M Expenses	51.41
Depreciation	2.40
Interest & Finance Charges	0.83
Interest on working Capital	8.12
ROE	8.63
Other Income	5.83
(A) Total Fixed Cost	**65.57**
(B) Fuel Cost	**131.16**
(C) ARR (A) + (B)	**196.72**
(D) Surplus for the year 2016-17 (True-up)	(3.81)
(E) Carrying Cost on Gap- 2016-17 - True -up	0
(F) Total Annual Revenue Requirement (C+D+E)	192.91
Fixed Cost Paise / kWh (sent out)	119.88
Fuel Cost Paise/ kWh (sent out)	254.60
Tariff Paise/ kWh (sent out)	**374.48**

Table 4: Tariff of NTPS for FY 2018-19 as claimed by APGCL

Particulars	NTPS
Annual Fixed Charges (Rs. Crore)	61.76
Monthly Fixed/Capacity Charges (Rs. Crore)	5.15
Energy Charges (Paise./kWh)	254.6

2.5 ARR and Tariff determination for FY 2018-19 for LTPS

2.5.1 APGCL has projected the ARR for the Control Period for FY 2018-19 for LTPS as detailed in the Table below:

Table 5: ARR for LTPS for FY 2018-19 as submitted by APGCL (Rs. Crore)

Particulars	FY 2018-19
Gross Generation (MU)	527.95
Net Generation (MU)	498.91
Auxiliary Consumption (4.5%)	29.04
Fixed Charges	
O&M Expenses	53.59
Depreciation	15.46
Interest & Finance Charges	0.45
Interest on working Capital	8.56
ROE	22.41
Other Income	7.84
(A) Total Fixed Cost	**92.62**
(B) Fuel Cost	**123.45**
(C) ARR (A) + (B)	**216.06**
(D) Surplus for the year 2016-17 (True-up)	32.93
(E) Carrying Cost on Gap- 2016-17 - True -up	3.75
(F) Total Annual Revenue Requirement (C+D+E)	252.74
Fixed Cost Paise / kWh (sent out)	259.16
Fuel Cost Paise/ kWh (sent out)	247.43
Tariff Paise/ kWh (sent out)	**506.59**

Table 6: Tariff of LTPS for FY 2018-19 as claimed by APGCL

Particulars	LTPS
Annual Fixed Charges (Rs. Crore)	129.30*
Monthly Fixed/Capacity Charges (Rs. Crore)	10.77
Energy Charges (Paise/kWh)	247.43

*Note – * Annual Fixed Charges as submitted by APGCL*

2.6 ARR for FY 2018-19 for KLHEP

2.6.1 APGCL has projected the ARR for the Control Period for FY 2018-19 for KLHEP as detailed in the Table below:

Table 7: ARR for KLHEP for 2018-19 as submitted by APGCL (Rs. Crore)

Particulars	FY 2018-19
Gross Generation (MU)	353.51
Net Generation (MU)	351.74
Auxiliary Consumption (4.5%)	1.77

Particulars	FY 2018-19
Fixed Charges	
O&M Expenses	53.01
Depreciation	22.33
Interest & Finance Charges	19.29
Interest on working Capital	3.56
ROE	10.88
ARR	**109.07**
Less: Other Income	4.46
Net ARR	**104.60**
GAP in the year 2016-17 (True-up)	1.43
Carrying Cost on Gap- 2016-17 - True -up	0.16
Total Annual Revenue Requirement (C+D+E)	106.19
Capacity Charge Paise / kWh (sent out)	150.95
Energy Charge Paise/ kWh (sent out)	150.95
Tariff Paise/ kWh (sent out)	**301.91**

Table 8: Tariff of KLHEP for FY 2018-19 as claimed by APGCL

Particulars	KLHEP
Capacity Charges (Rs. Crore)	52.30*
Energy Charge Rate (Paise/kWh)	150.95

*Note- * APGCL in its Petition has mentioned capacity charges for KLHEP as Rs. 4.42 Crore*

2.7 ARR for FY 2016-17 to FY 2018-19 for LRPP (Petition No. 18/2017)

2.7.1 APGCL has projected the ARR for FY 2018-19 for LRPP based on anticipated COD as detailed in the Table below:

Table 9: ARR for LRPP for FY 2018-19 as submitted by APGCL

Particulars	FY 2018-19
Gross Generation (MU)	551.88
Net Generation (MU)	532.56
Aux. Power Consumption (MU) 3.5%	19.32
Fixed Charges	
O&M Expenses	18.92
Depreciation	2.75
Interest & Finance Charges	2.25
Interest on working Capital	3.97

Particulars	FY 2018-19
ROE	3.95
Other Income	0.00
(A) Total Fixed Cost	**31.84**
(B) Fuel Cost	**73.01**
(C) ARR (A) + (B)	**104.86**
Fixed Cost Paise / kWh (sent out)	59.80
Fuel Cost Paise/ kWh (sent out)	137.10
Tariff Paise/ kWh (sent out)	**196.89**

3 Brief Summary of Objections Raised, Response of APGCL and Commission's Comments

3.1.1 The Commission has received suggestions and objections from three (3) numbers of stakeholders on the Petition filed by APGCL, from the following stakeholders:

Sr. No.	Name of Stakeholder
1	Shri. Jayanta Deka
2	Assam Branch of Indian Tea Association (ABITA), Guwahati
3	Federation of Industry & Commerce of North Eastern Region (FINER)*

Note: The suggestions/objections of FINER were received during the Public Hearing

3.1.2 APGCL has submitted its responses to the objections/suggestions received from the above stakeholders.

3.1.3 The Commission considered the suggestions/objections received and notified the stakeholders to take part in the Hearing process by presenting their views in person before the Commission, if they so desired. The Commission held the Hearing at Assam Administrative Staff College, Guwahati on February 17, 2018.

3.1.4 The objector/s attended the Hearing and submitted their views/suggestions. All the written representations submitted to the Commission and the oral submissions made before the Commission in the Hearing and the responses of APGCL have been carefully considered while issuing this Tariff Order.

3.1.5 The objections/suggestions made by the stakeholders and responses of the Petitioner are briefly dealt with in this Chapter. The major issues raised by the stakeholders are discussed below along with the response of APGCL and views of the Commission.

3.1.6 While all the objections/suggestions have been given due consideration by the Commission, only, major responses/objections received related to the ARR and Tariff Petition and also those raised during the course of Hearings have been grouped and addressed issue-wise, in order to avoid repetition.

Issue 1: Plant Load Factor (PLF) and Plant Availability Factor (PAF)

Objection

ABITA submitted that the PLF for FY 2017-18 and FY 2018-19 is different from the PLF approved in the MYT Order and requested the Commission to consider the PLF as per the MYT Order dated March 31, 2017.

ABITA further added that APGCL has proposed a higher PAF for NTPS plant as compared to that approved in the Business Plan. APGCL has not proposed the revised estimates for FY 2017-18. ABITA has proposed PAF and PLF according to the MYT Order, and accordingly proposed the gross generation for each plant for FY 2017-18 and FY 2018-19.

FINER submitted that higher availability and PLF has been proposed by APGCL as compared to that approved for LTPS, however, the gross generation is shown lower than that approved for LTPS, which is contradictory and should be checked.

Response of APGCL

APGCL submitted that normative PLF of 50% for NTPS and LTPS has been proposed for FY 2017-18 and FY 2018-19 according to MYT Regulations, 2015.Further, APGCL has considered normative PAF of 50% for NTPS and LTPS for FY 2017-18 and FY 2018-19, as per MYT Regulations, 2015. However, in case of NTPS, PLF and PAF for FY 2017-18 is less than the norms because of the severe gas crisis faced by Generating Stations. NTPS received only 0.41 MMSCMD gas from April'17 to November'17 against contracted quantity of 0.66 MMSCMD.

APGCL submitted that it has considered the Gross Generation for FY 2017-18 and FY 2018-19 on the basis of maintenance schedules, gas availability constraints and rationales/calculations submitted in the Petition.

Commission's View

The Commission has considered the PAF of 50% for NTPS and LTPS as per MYT Regulations, 2015, as the recovery of full fixed cost is linked to achievement of normative Availability specified in the MYT Regulations, 2015. The impact of availability lower than normative level shall be addressed at the time of truing up for FY 2017-18 and FY 2018-19, respectively.

As regards the PLF projection for FY 2017-18 and FY 2018-19, the Commission has considered the gross generation for NTPS and LTPS as submitted by APGCL. The normative PLF target of 50% will be considered for computation of Incentive at the time of truing up for respective years. The detailed ruling of the Commission in this regard is given in Chapter 5 and Chapter 6 of this Order.

Issue 2: Auxiliary Consumption

Objection

ABITA requested the Commission to continue with Auxiliary Consumption approved in the MYT Order for respective Stations for FY 2016-17, and disallow the additional fuel cost on account of higher than approved Auxiliary Consumption. ABITA requested the Commission to approve the Auxiliary Consumption submitted by APGCL for FY 2017-18 and FY 2018-19, as it is in line with that approved in the MYT Order.

FINER submitted that the actual Auxiliary Consumption for Generating Stations of APGCL for FY 2016-17 is higher than that approved by the Commission and impact of such higher Auxiliary Consumption cannot be passed on to the consumers. FINER requested the Commission to approve Auxiliary Consumption for the Control Period as specified in the MYT Regulations, 2015.

Response of APGCL

APGCL submitted that Auxiliary Consumption of LTPS and NTPS is higher than normative in FY 2016-17, due to constraints like high energy consumption by gas booster compressor of LTPS and partial load operation in case of both LTPS and NTPS due to erratic gas supply condition. APGCL has considered Auxiliary Consumption as per the norms specified in the MYT Regulations, 2015for FY 2017-18 and FY 2018-19.

Commission's View

For true-up purpose, the Commission has allowed the Auxiliary Consumption for FY 2016-17 as per norms approved in MYT Order. The sharing of efficiency gains/losses has been done in accordance with the MYT Regulations, 2015.Thus, the impact of any inefficiencies is not being passed on to the consumers. The Commission has considered normative Auxiliary Consumption for FY 2017-18 and FY 2018-19. The detailed ruling of the Commission for Auxiliary Consumption for FY 2016-17, FY 2017-

18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 3: Station Heat Rate (SHR)

Objection

ABITA requested the Commission not to allow any inefficiency of performance of the Petitioner to be passed on in the true up for FY 2016-17. The inefficiencies are solely due to inadequate R&M activities undertaken by APGCL, which has also led to forced shut down. ABITA requested the Commission to consider approved norm of SHR or actual, whichever is lower for truing up of FY 2016-17.

ABITA requested the Commission to consider SHR claimed by the Petitioner for FY 2017-18 and FY 2018-19, which is as per the SHR approved in the MYT Order.

Response of APGCL

APGCL submitted that the actual SHR achieved by LTPS for FY 2016-17 is lower than the heat rate of old power stations, which is possible because of the adequate implementation of proper R&M works by APGCL. The actual SHR of NTPS for FY 2016-17 is slightly higher than normative SHR due to sudden breakdown of the Units, which is beyond the control of APGCL.

For FY 2017-18 and FY 2018-19, APGCL has considered SHR as per the norms specified in the MYT Regulations, 2015.

Commission's View

The Commission observes that APGCL has been delaying the approved special R&M activities in the past, which had affected the performance of the Generating Stations.

For the purpose of Truing up for FY 2016-17, SHR has been approved as per norms specified in the MYT Regulations, 2015. The sharing of efficiency gains/losses has been done in accordance with the MYT Regulations, 2015. Thus, the impact of any inefficiencies is not being passed on to the consumers. Further, the Commission has approved SHR for FY 2017-18 and FY 2018-19 for NTPS and LTPS as per norms specified in the MYT Regulations, 2015. The detailed ruling of the Commission for SHR for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 4: Fuel Cost

Objection

ABITA requested the Commission to direct APGCL to submit details of plant-wise fuel cost computation for Truing up for respective years in subsequent Petitions. ABITA requested the Commission to approve the fuel cost for FY 2016-17 as per technical norms approved in Business Plan and MYT Order. ABITA has proposed the fuel cost of Rs. 275.64 Crore as against Rs. 288.77 Crore claimed by APGCL for FY 2016-17.

ABITA has proposed the fuel cost for NTPS and LTPS for FY 2017-18 and FY 2018-19 on normative basis. ABITA requested the Commission not to relax any operational norms as the same can be controlled through R&M activities and effective management of plants.

FINER submitted that Statutory Auditors have categorically mentioned that due to non-timely payment of dues by APDCL, the fuel suppliers are charging interest on delayed payment by APGCL, which should not be allowed for determination of tariff. FINER further added that OIL has undersupplied 11.57 MMSCM gas during FY 2016-17 from the Minimum Guaranteed Quantity (MGQ), for which the plants have remained idle. However, APGCL has not raised any claim on OIL for supply lower than MGQ of gas, which has resulted in understatement of profits,

FINER further submitted that as per the Agreement for transportation of gas dated March 22, 2003 between AGCL and erstwhile ASEB, the MGQ of gas was 80% of 0.80 MMSCM. However, as per the Agreement dated November 28, 2007 between APGCL and OIL, the MGQ is 0.528 MMSCMD of gas upliftment. As per the difference in the MGQ in the two Agreements, APGCL could have avoided Rs. 115.87 Lakh as payment for transportation cost. APGCL also lost out a rebate of 2.5% on timely payment of dues to AGCL during FY 2016-17.

Response of APGCL

APGCL submitted that the fuel cost claimed for Truing up for FY 2016-17 is as per the old SHR norms effective till January 5, 2015 and actual cost incurred thereafter in FY 2016-17. APGCL has submitted the required data for computation of fuel cost including GCV and station-wise fuel bills for consideration of the Commission. APGCL has projected the fuel cost as per the projected generation, latest gas prices and normative parameters, and the detailed calculations have been submitted to the Commission.

Commission's View

For True-up purpose for FY 2016-17, the Commission has approved normative fuel cost based on actual GCV and price of fuel and approved performance parameters. The expenses are being allowed on normative basis only, and sharing of efficiency gains/losses has been done in accordance with the MYT Regulations, 2015. The Commission is of view that the earlier Regulations and its amendment are not relevant for Truing up for FY 2016-17. The Commission has considered the fuel cost for FY 2017-18 and FY 2018-19 based on the normative parameters and the actual fuel price and calorific value prevalent in the recent past, in line with the usual approach. The detailed ruling of the Commission for fuel Cost for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 5: O&M Expenses

Objection

For FY 2016-17, ABITA submitted that O&M Expenses are a controllable parameter and only 1/3rd of such increase should be allowed to be passed on to consumers. Special R&M expenses of Rs. 6.40 Crore should be excluded as APGCL has not provided the details of funding of the same. ABITA requested the Commission to check if the same has been funded by the State Government or by internal resources before allowing any amount of special R&M. ABITA requested the Commission not to allow any increase in O&M Expenses over and above the O&M Expenses approved in MYT Order for FY 2017-18 and FY 2018-19.

FINER requested the Commission not to allow the increase in O&M expenses as it is a controllable parameter. APGCL should make appropriate efforts for reducing this cost parameter, in the light of various issues pointed out by the Statutory Auditor. The inefficiencies and non-performance of APGCL should not be passed on to the consumers in terms of higher O&M Expenses. FINER further submitted that an arbitrary increase of 5.05% per annum in O&M costs for LTPS should not be allowed for ARR of FY 2018-19, till a clear picture of the O&M expenses is known after True-up of actual figures incurred, in years to come.

Response of APGCL

APGCL submitted that actual O&M expenses have been claimed in True up for FY 2016-17, under Regulation 10.3 (a) of MYT Regulations, 2015. Under special R&M, APGCL has undertaken Overhauling of Unit 3 of LTPS, for which in principle approval was accorded vide Para 5.4.8 on Page No. 79 of the MYT Order. However, due to emergency, the said work was undertaken in FY 2016-17. APGCL submitted that it has followed the same approach for projection of O&M Expenses for FY 2018-19, as adopted in the MYT Order dated March 31, 2017.

Commission's View

For True-up purpose for FY 2016-17, the Commission has approved the O&M expenses on normative basis. The sharing of normative expenses vis-à-vis actual O&M expenses has been undertaken in accordance with the provisions of the MYT Regulations, 2015. The Special R&M scheme has been allowed subject to prudence check, as the same is based on the Commission's approval.

As regards the O&M Expenses for FY 2017-18 and FY 2018-19, the Commission has allowed the normative O&M expenses in accordance with the MYT Regulations, 2015.The detailed ruling of the Commission for O&M Expenses for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 6: Depreciation

Objection

ABITA requested the Commission to consider Depreciation for FY 2017-18 and FY 2018-19 as per the Capital Expenditure and Capitalisation approved in the MYT Order and not to revise the capex and Capitalisation.

Response of APGCL

APGCL submitted that based on the revised Capital Expenditure and Capitalisation, the detailed calculation of depreciation, indicating the depreciation for different asset heads, for LTPS, NTPS and KLHEP for FY 2017-18 and FY 2018-19 has been submitted to the Commission. APGCL submitted that it has proposed depreciation for its existing generating stations as per Regulation 33 of the MYT Regulations, 2015.

Commission's View

In the present Order, the Depreciation has been re-computed based on the actual capitalisation in FY 2016-17, and approved capitalisation for FY 2017-18 and FY 2018-19. The Commission has approved the depreciation in line with provision of the MYT Regulations, 2015. The detailed Station-wise computation of depreciation for FY 2016-17, FY 2017-18 and FY 2018-19 is discussed in Chapter 4, Chapter 5 and Chapter 6 of this Order, respectively.

Issue 7: Interest and Finance Charges

Objection

ABITA submitted that APGCL has not submitted the details of Capital Expenditure and Capitalisation undertaken in FY 2016-17 for each plant. So, no addition of loan should be considered in computation of Interest and finance charges. ABITA requested the Commission to approve the normative Interest on loan proposed by ABITA of Rs. 28.70 Crore for FY 2016-17 based on the approach adopted in the MYT Order. ABITA also requested the Commission to recalculate the actual and legitimate interest and finance charges after undertaking prudence check of the loan schedule and such related information. ABITA further submitted that in the absence of clear demarcation between loans for existing plants and new plants, ABITA has considered the approved interest expenses as per the MYT Order for FY 2017-18 and FY 2018-19.

FINER submitted that APGCL needs to justify the increase in Interest and Finance Charges in light of various points raised by the Statutory Auditor. FINER added that the treatment of such charge should be given as per the accounting prudence.

Response of APGCL

APGCL submitted that actual Interest and finance charges of Rs. 46.70 Crore as per the Audited Annual Accounts for FY 2016-17have been claimed for FY 2016-17. APGCL has provided the station-wise details of capital expenditure and capitalisation loan data for FY 2016-17. APGCL has provided the station-wise and source-wise loans for FY 2016-17, FY 2017-18 and FY 2018-19 along with applicable rate of interest provided in Form 24 of the Petition. APGCL has claimed the Interest and Finance charges on normative basis for FY 2017-18 and FY 2018-19, which is lower than that approved in the MYT Order.

Commission's View

The Commission in the MYT Order has detailed the computation of Interest and finance charges on normative basis after taking into account the provisions of the MYT Regulations, 2015. In the present Order, the Commission has continued with the same approach and approved Interest and Finance Charges on normative basis, in accordance with the MYT Regulations,2015, after due prudence check. The station-wise Interest and finance charges have been computed by the Commission based on actual/approved capitalisation, the actual interest rates and the normative loans for FY 2016-17, FY 2017-18 and FY 2018-19. The detailed ruling of the Commission for Interest and finance Charges for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 8: Interest on Working Capital (IWC)

Objection

ABITA has proposed the IWC of Rs. 18.82 Crore for FY 2017-18 and Rs. 17.76 Crore for FY 2018-19, as against the APGCL submission of Rs. 18.19 Crore for FY 2017-18 and Rs. 20.24 Crore for FY 2018-19, in accordance with the provisions of the MYT Regulations, 2015.

Response of APGCL

APGCL submitted that it has claimed the IWC on normative basis as per the MYT Regulations, 2015 for FY 2016-17, FY 2017-18 and FY 2018-19. The detailed computation of the same has already been submitted to the Commission.

Commission's View

The Commission has approved IWC on normative basis for each Generating Station as per the MYT Regulations, 2015. The detailed ruling of the Commission for IWC for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 9: Return on Equity

Objection

ABITA requested the Commission to consider the equity base and return on equity only with respect to commissioned/completed projects, in line with MYT Regulations, 2015.ABITA submitted that it has proposed the addition of equity as approved in the Business Plan Order dated September 1, 2016. APGCL has proposed equity addition of Rs. 232 Crore during the Control Period, however, timing of equity addition is not in consonance with the commissioning of projects during the Control Period. ABITA requested the Commission to revalidate the equity additions during the Control Period and consider eligible equity only with respect to commissioned projects in line with the MYT Regulations, 2015.

Response of APGCL

APGCL submitted that it has claimed the equity base and return on equity with respect to its commissioned projects only, i.e., NTPS, LTPS and KLHEP in line with the MYT Regulations 2015. The computation of ROE is already provided to the Commission.

Commission's View

RoE has been allowed only for plants that have been commissioned, i.e., NTPS, LTPS and KLHEP, in accordance with the MYT Regulations, 2015. Further, the Commission has approved the provisional tariff for NRPP in the MYT Order dated March 31, 2017 and provisional tariff for LRPP in the present Order. However, such provisional tariff will be applicable only after commissioning of the respective projects. The detailed ruling of the Commission for Return on Equity for FY 2016-17, FY 2017-18 and FY 2018-19 is given in Chapter 4, Chapter 5 and Chapter 6, respectively.

Issue 10: Maintenance and Submission of Fixed Assets Register

Objection

FINER submitted that APGCL has not submitted any proof for assets actually in operation, which needs to be done by maintaining a Fixed Asset Register as per the Hon'ble APTEL's directives in Judgment dated October 21, 2011 in Appeal No. 121 of 2010. FINER further added that Fixed Asset Registers are not being maintained and details of that are not shown to the Statutory Auditor. Also, no physical verification of fixed assets has been done. Hence, no asset related expenditure should be allowed to be passed on to the consumers.

Response of APGCL

No response from APGCL has been received for the above said Objection.

Commission's View

The Commission is of the view that the Fixed Asset Register should be prepared and updated every year by APGCL, duly certified by Chartered Accountant. The necessary directions have been given in Chapter 9 (*Directives)* of this Order.

Issue 11: Prior Period Charges

Objection

ABITA submitted that Prior Period Charges should be allowed based on detailed prudence check by the Commission.

Response of APGCL

APGCL submitted that the item-wise details of prior period income and expenditure along with the reasons for claim/non-claim are elaborately explained in the Petition. The details of receipt as well as calculation of interest on Government of Assam loan are also submitted to the Commission.

Commission's View

The Commission has considered the treatment of prior period items based on the treatment allowed to that particular item in the true-up of the year to which the expenses/(income) pertain, as elaborated in Chapter 4 of this Order.

Issue 12: Claims pertaining to Ongoing/new Generating Stations

FINER submitted that APGCL has escalated the claim of financial impact on account of several new generating stations. APGCL should be directed to provide the reasoning and justification for delay in setting up new generating stations. For truing up for FY 2016-17, FINER requested the Commission to scrutinize the claims of APGCL in view of the various comments passed by Auditor in the Audited Accounts and disallow the inefficiencies of APGCL.

Response of APGCL

APGCL has proposed the station-wise tariff for FY 2018-19. For upcoming Generating Stations, tariff will be claimed only after COD.

Commission's View

The recovery of cost through tariff has been allowed only for plants that have been commissioned, i.e., NTPS, LTPS and KLHEP, in accordance with the MYT Regulations, 2015. Further, the Commission has approved the provisional tariff for NRPP in the MYT Order dated March 31, 2017 and provisional tariff for LRPP in the present Order. However, such provisional tariff will be applicable only after commissioning of the respective projects.

Issue 13: Aggregate Revenue Requirement

ABITA requested the Commission to undertake prudence check of the submissions and not to allow any inefficiency of APGCL to be passed on to the Consumers. ABITA has proposed revenue surplus of Rs. 26.61 Crore to be adjusted in FY 2018-19, against the revenue gap of Rs.30.55 Crore submitted by APGCL. ABITA requested the Commission to consider generation tariff of Rs. 2.90 per unit for FY 2017-18 and Rs 3.14 per unit for FY 2018-19.

FINER submitted that surplus submitted in Annual Performance Review of FY 2017-18, shall be higher after true up. The consumers shall be benefitted with a reduction in tariff. FINER further submitted that the impact of True up of FY 2016-17 including carrying cost of Rs. 34.46 Crore, should not be passed on through tariff, as the amount appearing in Annual Accounts of FY 2016-17 is doubtful, after considering comments of Statutory Auditor. APGCL shall have a Revenue Surplus after taking into account comments of Statutory Auditor regarding understatement of profit and losses incurred in FY 2016-17.

Response of APGCL

For FY 2016-17, APGCL proposed to recover the claim of Rs. 34.46 Crore (Revenue gap of Rs. 30.55 Crore + carrying cost Rs. 3.91 Crore) through tariff for FY 2018-19.

APGCL requested the Commission to consider the submissions of APGCL, while undertaking prudence check of the Tariff Petition for FY 2018-19.

Commission's View

The Revenue Gap/(Surplus) of APGCL for FY 2016-17, after due prudence check, has been allowed to be recovered in FY 2018-19, as detailed in Chapter 7 of this Order. Normative expenses have been allowed and cost of inefficiencies are not passed on to the consumers.

Issue 14: Incentive

ABITA submitted that in view of non-achievement of performance parameters and absence of details of computation of incentive, the claim of incentive is contradictory. ABITA requested the Commission to approve any claim for incentive after adequate prudence check as per methodology approved in MYT Order.

Response of APGCL

APGCL has claimed incentive for LTPS and Secondary Energy bill for KLHEP as per Regulatory norms.

Commission's View

Incentive, as applicable, has been allowed in accordance with the MYT Regulations, 2015, as detailed in Chapter 4 of the Order

Issue 15: Promotion of co-generation and generation of electricity from renewable sources of energy

Shri Jayanta Deka submitted that no serious efforts have been undertaken by APGCL to translate the provisions of Section 61(h) of the Electricity Act, 2003, in reality.

Response of APGCL

APGCL is making all efforts for promotion of co-generation and generation of electricity from Renewable Energy sources. The following are new and ongoing RE projects of APGCL:

(a) 13.5 MW Mytriang small hydroelectric project.

(b) 22.5 MW Borpani Middle-I Hydro Electric project.

(c) 24 MW Bopani Middle-II Hydro Electric projects.

(d) 120 MW Lower Kopili Hydro Electric Project.

(e) 80 MW Amguri solar power project.

Commission's View

The Commission noted the APGCL's replies.

Issue 16: Poor Performance of APGCL's Plants

ABITA submitted that performance of APGCL's plants during FY 2016-17 was poor. APGCL is unable to achieve the conservative targets set by the Commission. The R&M schemes proposed by the Petitioner in the past have not been implemented, which has resulted in deterioration of the plant. ABITA requested the Commission to not allow inefficiencies to be passed on to the consumer.

Response of APGCL

For FY 2016-17, APGCL has achieved more than normative PLF for both LTPS and KLHEP. NTPS could not achieve PLF due to low gas supply from OIL. Performance of APGCL's generating stations other than NTPS was satisfactory. In FY 2016-17, R&M works of LTPS Units 3 & 6 was carried out.

NTPS was commissioned in 1965 and has surpassed its useful life, hence, sudden and forced breakdowns are unavoidable. In view of ongoing NRPP, APGCL has presently been conservative in spending for capital intensive maintenance works of NTPS Units other than regular repair and maintenance.

Commission's View

As regards the performance of Generating stations, the performance parameters and the expenses are being allowed on normative basis only and sharing of efficiency gains/losses has been done in accordance with the MYT Regulations, 2015. Thus, the impact of any inefficiencies is not being passed on to the consumers.

4 Truing up of ARR for FY 2016-17

4.1 Methodology for Truing Up

4.1.1 The Commission has approved the ARR for existing Generating Stations for the Control Period from FY 2016-17 and FY 2018-19 in the MYT Order dated March 31, 2017.

4.1.2 APGCL submitted the Truing-up Petition for FY 2016-17 based on audited annual accounts and provisions of MYT Regulations, 2015, wherever applicable. APGCL has sought true-up for FY 2016-17, with the Revenue Gap/(Surplus) to be recovered from APDCL during FY 2018-19.

4.1.3 The Commission approves the cost parameters through approval of the ARR at the beginning of the year, keeping in view the data available at that point of time. The cost approvals for each of the items are based on projection of expenses and revenue before beginning of the year and the provisions of MYT Regulations, 2015, wherever applicable. The projections might vary over the course of the year.

4.1.4 The actual cost/values for certain elements/parameters may vary as against the approved cost during the year due to various controllable and uncontrollable factors. The Generating Company may end up with higher or lower expenditure, as the case may be, at the end of the year as against the approved cost.

4.1.5 The Commission analyses the actual expenditure for the previous year/years based on the audited Annual Accounts of the Generating Company and allows/disallows the recovery of the actual expenditure through the ensuing year's tariff, subject to prudence check.

4.1.6 In the present Chapter, the Commission has carried out the Truing up for FY 2016-17 for existing Generating Stations, i.e., NTPS, LTPS and KLHEP based on the submissions of APGCL, audited annual accounts for FY 2016-17 and provisions of the MYT Regulations, 2015. Apart from the audited accounts, the Commission sought Station-wise reconciliation of expenses claimed in the Petition with audited accounts for FY 2016-17 and the same has been considered for Truing up purpose.

4.1.7 In this Chapter, the Commission has analyzed all the elements of actual expenditure and revenue of APGCL for FY 2016-17, and undertaken the truing-up of expenses and revenue in accordance with Regulation 10.1 of the MYT Regulations, 2015. The Commission has approved the sharing of gains and losses on account of controllable factors between APGCL and its beneficiaries, in accordance with Regulation 13 of the MYT Regulations, 2015.

4.2 Plant Availability Factor (PAF)/Capacity Index

4.2.1 The Actual PAF/Capacity Index for NTPS and LTPS and KLHEP for FY 2016-17 as submitted by APGCL is shown in the Table below:

Table 10: Actual PAF/Capacity Index as submitted by APGCL

Station	Actuals
NTPS	33.99%
LTPS	65.10%
KLHEP	80.69%

4.2.2 APGCL submitted that the availability for KLHEP for FY 2016-17 was reduced to the level of 80.69% because of the following uncontrollable events for Unit 1:

(a) Outage from April 9, 2016, 18:29 hours to June 14, 2016, 20:54 hours because of burning of generator stator lead bar

(b) Outage from June 14, 2016, 22:29 hours to June 15, 2016, 21:06 hours because of thyristor cubicle fan failure

(c) Outage from December 5, 2016, 23:12 hours to December 9, 2016 due to low dam level and then undergo shutdown due to butterfly valve problem.

(d) Annual maintenance for 20 days from March 17, 2017.

Commission's Analysis

4.2.3 In accordance with Regulation 49.1 and Regulation 51 of MYT Regulations, 2015, the Target PAF / Capacity Index for recovery of full Fixed Charges are 50% for NTPS and LTPS and 90% for KLHEP. The Commission notes that PAF/Capacity Index submitted in the Petition by APGCL is same as PAF/Capacity Index as per SLDC Certificate. The Commission has considered the PAF/Capacity Index as per SLDC Certificate for the purpose of Truing up.

4.2.4 As regards the justification of lower PAF for NTPS, APGCL submitted that NTPS suffered heavy gas crisis in FY 2016-17. The average gas availability was 0.46 MMSCMD against contracted quantity of 0.66 MMSCMD. Due to low gas supply, the generation of NTPS was reduced. Moreover, due to aging of the Units of NTPS, frequent breakdown occurred in FY 2016-17, which reduced the availability of NTPS.

4.2.5 The Commission is of the view that the arrangement of fuel is the responsibility of procurer, i.e., APGCL only, and no relaxation can be given on account of lower gas availability. The Commission has approved the normative and actual PAF/Capacity Index for FY 2016-17 as shown in the following Table:

Table 11: PAF/Capacity Index as approved by the Commission for FY 2016-17

Station	Target Availability/Capacity Index (NAPAF) (%)	Actuals
NTPS	50%	33.99%
LTPS	50%	65.10%
KLHEP	90%	80.69%

4.2.6 Regulation 53.1 (b) of the MYT Regulations, 2015 specifies that recovery of fixed charges below the level of NAPAF shall be on pro-rata basis. As the actual PAF/Capacity Index for NTPS and KLHEP is lower than NAPAF, the reduction of fixed charges for NTPS and KLHEP is computed in subsequent Sections.

4.2.7 Further, the Commission notes that Unit 1 of LTPS has been de-commissioned on January 12, 2017. The effective installed capacity has been reduced to 142.20 MW for LTPS after de-commissioning of Unit 1. Accordingly, the installed capacity has been considered for the purpose of Truing up. However, the installed capacity for NTPS has been considered as 119.50 MW.

4.3 Plant Load factor (PLF)

4.3.1 APGCL in its Petition has submitted the actual PLF for NTPS as 33.33%, for LTPS as 64.60%, and for KLHEP as 45.33%, for FY 2016-17.

Commission's Analysis

4.3.2 As per Regulation 49.2 (i) of the MYT Regulations 2015, the target PLF for eligibility of incentive is 50% for NTPS and LTPS. The Commission notes that actual PLF for NTPS for FY 2016-17 is lower than normative, hence, it is not eligible for incentive. However, since actual PLF for LTPS is higher than 50%, the incentive for LTPS has been computed in subsequent Section of this Chapter.

4.3.3 Further, the generation of KLHEP is more than design energy, hence, it is eligible for incentive. The incentive has been computed in subsequent Section of this Chapter.

4.4 Auxiliary Consumption

4.4.1 APGCL submitted the actual Auxiliary Consumption for FY 2016-17 and Auxiliary Consumption approved by the Commission in the MYT Order as shown in the following Table:

Table 12: Auxiliary Consumption for FY 2016-17 as submitted by APGCL

Sl. No.	Station	MYT Order	Actual submitted by APGCL
1	NTPS	4.50%	6.50%
2	LTPS	5.50%	7.64%
3	KLHEP	0.50%	0.50%

Commission's Analysis

4.4.2 The Commission notes that actual Auxiliary Consumption for NTPS and LTPS is higher than the approved norms. In reply to the Commission's query regarding the justification of higher than approved Auxiliary Consumption for NTPS and LTPS, APGCL submitted that due to partial loading of its Units for erratic gas supply position and the aging of the units, Auxiliary consumption of NTPS and LTPS is higher. As Auxiliary Consumption is a performance parameter, in this Order, the Commission has approved the Auxiliary Consumption for FY 2016-17 same as that approved in the MYT Order as per norms. The sharing of gains/losses on account of Auxiliary Consumption has been undertaken in subsequent Section in this Chapter.

4.4.3 The Auxiliary Consumption approved by the Commission for the Truing Up of FY 2016-17 is shown in the Table below:

Table 13: Auxiliary Consumption (%) for FY 2016-17 as approved by the Commission for truing up

Sl. No.	Station	Approved after Truing up
1	NTPS	4.50%
2	LTPS	5.50%
3	KLHEP	0.50%

4.5 Gross Generation and Net Generation

4.5.1 The actual Gross Generation and Net Generation submitted by APGCL for 2016-17 is shown in the following Table:

Table 14: Actual Gross and Net Generation for FY 2016-17 as submitted by APGCL

Sl. No.	Station	Actual Gross Generation (MU)	Actual Net generation (MU)
1	NTPS	356.35	333.18
2	LTPS	891.40	823.26
	Total Thermal	**1,247.75**	**1,156.45**
3	KLHEP	397.13	395.14
	Total APGCL	**1,644.88**	**1,551.59**

Commission's Analysis

4.5.2 The Commission notes that actual Gross Generation and Net Generation submitted by APGCL for FY 2016-17 corresponds to the Gross and Net Generation declared in SLDC certificate. The break-up of Open Cycle and Closed cycle mode of actual Gross generation was sought from APGCL. It is noted that Open Cycle mode generation is 304.92 MU for NTPS and 680.54 MU for LTPS for FY 2016-17.

4.5.3 For truing up purpose, the Commission has approved the actual Gross Generation as per SLDC Certificate. The Net Generation has been approved after applying the Auxiliary Consumption approved for truing up.

4.5.4 Gross Generation and Net Generation approved by the Commission for FY 2016-17 is shown in the following Table:

Table 15: Gross and Net Generation for FY 2016-17 as approved by the Commission

Sl. No.	Station	Gross Generation (MU)	Net generation (MU)
1	NTPS	356.35	340.32
2	LTPS	891.40	842.37
	Total Thermal	**1,247.75**	**1,182.69**
3	KLHEP	397.13	395.14
	Total APGCL	**1,644.88**	**1,577.83**

4.6 Station Heat Rate

4.6.1 APGCL submitted that the Commission in MYT Order has approved SHR for NTPS and LTPS as 3900 kcal/kWh and 3200 kcal/KWh, respectively. The actual SHR was 4224 kcal/KWh for NTPS and 2978 kcal/kWh for LTPS.

Commission's Analysis

4.6.2 The Commission notes that actual SHR for NTPS is higher than the approved norms for FY 2016-17, while it is lower than the approved norms for LTPS in FY 2016-17. As regards the higher SHR of NTPS, APGCL submitted that the gas supply to NTPS was erratic in FY 2016-17, due to which the Units were running on part load, which increases the specific gas consumption of the Units, resulting in high SHR. However, the arrangement of fuel is the responsibility of APGCL, hence, the relaxation in normative SHR on account of lower supply of gas cannot be allowed.

4.6.3 The Commission approves SHR for NTPS and LTPS as per MYT Regulations, 2015. Being a controllable factor, the sharing of gains/losses has been computed in a subsequent Section of this Chapter. SHR approved by the Commission for NTPS and LTPS for FY 2016-17 for truing up is shown in the following Table:

Table 16: Station Heat Rate (kcal/kWh) for FY 2016-17 as approved by the Commission

Sl. No.	Station	MYT Order	Actual submitted by APGCL	Approved after Truing up
1	NTPS	3900	4224	3900
2	LTPS with WHRU	3200	2978	3200

4.7 Fuel Cost

4.7.1 APGCL submitted that the Commission in MYT Order dated March 31, 2017, had approved Fuel Cost of Rs. 310.08 Crore for NTPS and LTPS. As against this, APGCL has incurred actual fuel cost of Rs. 288.77 Crore for NTPS and LTPS as per audited accounts. APGCL has submitted the month-wise true copies of Fuel Bills raised by APGCL's suppliers for FY 2016-17 in its quarterly FPA reports. APGCL claimed the actual fuel cost of Rs. 89.61 Crore for NTPS and Rs. 199.16 Crore for LTPS.

Commission's Analysis

4.7.2 The Commission asked APGCL to submit the normative Fuel Cost for NTPS and LTPS. In reply, APGCL submitted the normative fuel cost of Rs. 82.74 Crore for NTPS and Rs. 201.42 Crore for LTPS for FY 2016-17, which works out to total normative Fuel Cost of Rs. 284.16 Crore for FY 2016-17.

4.7.3 The Commission observed that fuel cost of LTPS includes the amount of Rs. 9.67 Crore towards revision of Royalty and Minimum Guaranteed Quantity (MGQ) against OIL bills, and sought the documentary evidence of the same. Further, the Commission notes that fuel cost of LTPS include interest on Delayed Payment of Rs. 2.04 Crore. The Commission has disallowed the amount of Rs. 2.04 Crore for computing the gain/loss pertaining to fuel cost for LTPS.

4.7.4 In the Auditor's Report, the Commission observes that there was generation loss of 39.77 MU for LTPS and 55.93 MU for NTPS because of shortage of gas. Further, as regards LTPS, it is mentioned that during majority part of the year, OIL did not supply agreed MGQ and APGCL has not raised the claim for lower supply of gas. In this regard, the Management reply states that the main shortage is due to supply of lower quantity of gas by OIL/AGCL than the contracted quantity of gas. The contract with OIL for supply of gas to LTPS is of 0.5 MMSCMD. However, in FY 2016-17, LTPS received only 0.37 MMSCMD of gas from OIL/AGCL. OIL had entered into an Agreement with APGCL for 0.50 MMSCMD of gas on 16.09.2015 and as per the Article no. 7: MGQ shortfall quantity, both for buyer and seller, shall be calculated at the end of every month. The calculation formula is not applicable in practical scenario and hence, OIL has not served any MGQ bill to APGCL from the date of signing the Agreement. Meanwhile, OIL has put forward Revised Modalities for calculation of MGQ. Accordingly, necessary amendment of the Agreement will be made and bills for MGQ will be served by both Buyer and Seller.

4.7.5 **In view of the above, the Commission directs APGCL to expedite the amendment of Agreement so that it can be made effective during FY 2018-19, and submit the same to the Commission along with the next Tariff Petition.**

4.7.6 Further as regards NTPS, it is observed in Auditor's Report in Note XVII that APGCL has not booked Minimum Demand Charge bills raised by AGCL from January to March 2017. In this regard, the Management reply states that OIL had entered into an Agreement with APGCL for supply of 0.66 MMSCMD of gas on July 28, 2007. The allotted quantity of gas against NTPS was 0.8 MMSCMD vide their letter no D.O: L-15011/4/92 GP dated August 3, 1992. APGCL wrote from time to time to MoPNG and OIL for an Agreement for rest of the required quantity allotted for APGCL. In this regard OIL expressed their inability to commit gas not only to APGCL but to any North East consumer. The Agreement was executed between AGCL and erstwhile ASEB on March 23, 2003 for 15 years. As per the Agreement with M/s AGCL (Transporter) for NTPS, the contract quantity is 0.8 MMSCMD gas. APGCL shall not pay any transportation charge for the gas drawn by APGCL between 80% to 100% of the booked quantum, i.e., beyond 0.64 MMSCMD of gas, APGCL need not pay any transportation charge. APGCL further submitted that the necessary corrective measures will be taken in the next Agreement.

4.7.7 **In view of the above, the Commission directs APGCL to take necessary actions in the next Agreement, which is due by March 2018. Further, APGCL is directed to submit the copy of the revised Agreement to the Commission along with the next Tariff Petition.**

4.7.8 The Commission has verified the actual fuel price and Gross Calorific Value (GCV) of fuels from the actual fuel bills submitted by APGCL. Based on the detailed scrutiny of the Fuel bills, the Commission has considered the actual price of Fuel and GCV for NTPS and LTPS.

4.7.9 The actual weighted average GCV and landed price of gas considered by the Commission in the truing up of fuel cost is shown in the Table below:

Table 17: Actual GCV and Price for FY 2016-17 as considered by the Commission

Station	Wt. Avg. Gross Calorific Value of Gas (kcal/SCM)	Wt. Avg. Price of Gas (Rs./1000 SCM)
NTPS	9,032.43	5,381.41
LTPS	9,899.52	6,994.56

4.7.10 The Commission has trued up the Fuel Cost based on the approved performance parameters and actual fuel price and GCV for FY 2016-17. The Commission has approved the Gross Generation for NTPS and LTPS as discussed in earlier Section of this Chapter. The fuel cost for different thermal stations corresponding to approved generation has been computed based on the normative parameters approved in Regulations. The gain/loss between the normative Fuel Cost and actual Fuel Cost for FY 2016-17 has been computed in a subsequent Section of this Chapter.

4.7.11 On the above basis, normative Fuel Cost and actual Fuel Cost for FY 2016-17 for different thermal stations corresponding to actual gross generation is given in the Table below:

Table 18: Fuel Cost for FY 2016-17 as approved by the Commission for truing up

Station	Actual Fuel Cost (Rs. Crore)	Normative Fuel Cost (Rs. Crore)
NTPS	89.61	82.80
LTPS	197.12	201.54

4.8 Incentive for Generation

4.8.1 APGCL has claimed the Incentive on generation as per provisions of MYT Regulations, 2015. Since, actual PLF for LTPS is higher than the normative PLF of 50% for FY 2016-17, APGCL has claimed the Incentive of Rs. 8.56 Crore for LTPS at Rs. 0.50/kWh on the additional generation over and above normative PLF.

4.8.2 As regards KLHEP, APGCL submitted that Net Generation in FY 2016-17 was 395.144 MU with 7.094 MU of secondary energy. APGCL has billed Rs 0.92 Crore for secondary energy in March, 2017 at the rate of Rs 1.301/kWh, which was the lowest variable charge of the central sector thermal power generating station in the north east region for the month of March, 2017. Accordingly, APGCL claimed the Incentive for secondary energy of Rs 0.92 Crore for truing up of FY 2016-17.

Commission's Analysis

4.8.3 APGCL is eligible for incentive for the thermal stations at a flat rate of 50.00 paise/kWh, for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to target PLF. The incentive calculations for Thermal Generating Stations are given in the Tables below:

Table 19: Incentive approved by the Commission for Thermal Generating Stations

Sr. No.	Station	Net Generation (MU)		Ex-bus energy eligible for incentive (MU)	Incentive (Rs. Crore)
		At target PLF	Actual		
1	NTPS	499.86	333.18	0.00	0.00
2	LTPS	637.40	823.27	185.87	9.29
3	**Total**	**1,137.26**	**1156.45**	**185.87**	**9.29**

4.8.4 As regards the incentive for secondary energy generation for KLHEP, the Commission notes that the incentive claimed by APGCL is correct. Hence, the Commission approves the incentive for secondary generation of Rs. 0.92 Crore.

4.8.5 Accordingly, the Commission approves the incentive of Rs. 9.29 Crore for LTPS and Rs. 0.92 Crore for KLHEP for FY 2016-17.

4.9 O&M Expenses

4.9.1 APGCL submitted that the MYT Regulations, 2015 do not provide for separate approval of Employee expenses, A&G expenses and R&M expenses. The O&M expenses for each year of Control Period have been determined by escalating the trued-up expenses for FY 2015-16 at an escalation factor of 5.05% equal to average of last three years Consumption Price Index (CPI) and Wholesale Price Index (WPI) considered in the ratio of 60:40.

4.9.2 The actual O&M expenses and APGCL's claim for O&M expenses for FY 2016-17 are as shown in the table below:

Table 20: O&M expenses for FY 2016-17 as claimed by APGCL (Rs. Crore)

Station	MYT Order	As per Audited Accounts of APGCL	Amount Claimed by APGCL
NTPS	40.33	46.59	46.59
LTPS	43.69	55.61	54.96
KLHEP	22.50	28.58	24.57
Total	**106.52**	**130.78**	**126.12**

4.9.3 The Station-wise details of head-wise O&M expenses claimed for FY 2016-17 by APGCL are given in the table below:

Table 21: Details of O&M expenses claimed by APGCL for FY 2016-17 (Rs. Crore)

Station	Employee Cost	R&M	A&G	Total
NTPS	39.26	3.48	3.86	46.59
LTPS	40.04	11.80	3.12	54.96
KLHEP	16.32	5.55	2.70	24.57
Total	**95.61**	**20.83**	**9.68**	**126.12**

4.9.4 APGCL submitted that it had excluded R&M expenses to the extent of Rs. 401.08 Lakh as per audit observation for FY 2016-17 pertaining to the expenses incurred for KLHEP. APGCL also submitted that O&M expenses include Electricity bill from APDCL for FY 2016-17 amounting to Rs. 2.66 Crore. Further, APGCL submitted that R&M also includes Special R&M of Rs. 6.40 Crore incurred for overhauling of Unit 3 of LTPS, details of which have been provided in the Petition.

4.9.5 Accordingly, APGCL has claimed O&M expenses of Rs. 126.12 Crore for True-up.

4.9.6 As regards the Special R&M, APGCL submitted that an amount of Rs. 0.65 Crore appeared in audited accounts for FY 2016-17 for overhauling of Unit 6 of LTPS. However, APGCL has not claimed this amount as the same was received from Annual Plan 2014-15.

Commission's Analysis

4.9.7 In the MYT Order, the Commission has approved O&M Expenses on normative basis as per the provisions of MYT Regulations, 2015. In the MYT Order, the Commission has determined the O&M expenses by escalating the trued-up expenses for FY 2015-16 at an escalation factor of 5.05% equal to average of last three years CPI and WPI considered in the ratio of 60:40. For computation of normative O&M expenses in this Order, the Commission has considered the revised escalation factor of 4.70%.

4.9.8 The normative O&M expenses for FY 2016-17 approved by the Commission is shown in the following Table:

Table 22: O&M Expenses approved by Commission for FY 2016-17 (Rs. Crore)

Station	Particulars	Approved by the Commission
NTPS	Employee Expenses	33.40
	A&G Expenses	2.32
	R&M Expenses	4.47
	Total	**40.19**
LTPS	Employee Expenses	36.86
	A&G Expenses	2.08
	R&M Expenses	4.59
	Total	**43.54**
KLHEP	Employee Expenses	14.77
	A&G Expenses	4.24
	R&M Expenses	3.41
	Total	**22.42**

4.9.9 As regards the Special R&M expenses, the Commission approves the amount of Rs 6.40 Crore pertaining to overhauling of Unit 3 of LTPS.

4.10 Depreciation

4.10.1 APGCL submitted that the Commission in MYT Order dated March 31, 2017 approved Depreciation of Rs. 27.79 Crore for APGCL for FY 2016-17.

4.10.2 APGCL has considered the Gross Fixed Assets as per audited accounts. Further, as per the comments of the Statutory Auditor at para VII (d), an expenditure of Rs. 487.16 Lakh on account of major overhauling of GT#6 of LTPS is booked under the head fixed assets whereas the same should have been under the "*Repair and Maintenance of Plant & Machinery*". Based on the comments of the Statutory Auditor, APGCL has withdrawn the fixed assets addition of LTPS by an amount of Rs. 487.16 Lakh for the purpose of True-up for FY 2016-17. However, the expenditure is not claimed in the Special R&M, as the amount was received from Annual Plan 2014-15.

4.10.3 APGCL has considered depreciation as per audited accounts for FY 2016-17. The depreciation has been computed in audited accounts on straight line method as per depreciation rates specified in MYT Regulations, 2015. Further, APGCL submitted that as per Regulation 14 of MYT Regulations, 2015, assets created using consumer contribution or capital subsidy/grant, etc., need to be excluded for the purpose of depreciation. Accordingly, the depreciation has been calculated on grant utilized on capital assets at a weighted average rate of depreciation for the respective Generating Stations. This depreciation has been deducted from the total depreciation appearing in the audited accounts.

4.10.4 APGCL has claimed the depreciation of Rs. 1.37 Crore for NTPS, Rs. 14.71 Crore for LTPS and Rs. 21.20 Crore for KLHEP for FY 2016-17 for Truing up.

Commission's Analysis

4.10.5 The Commission in MYT Order has re-stated Station-wise Gross Fixed Assets (GFA) and accumulated depreciation for FY 2015-16 and accordingly computed the depreciation for FY 2015-16. For the purpose of Truing up, the Commission has considered the Station-wise Closing GFA of FY 2015-16 as the opening GFA for FY 2016-17. The Commission has considered the addition of GFA as per audited accounts after excluding the amount of Rs. 4.87 Crore pertaining to LTPS.

4.10.6 The Commission has computed depreciation as per scheduled rates specified in the Tariff Regulations, 2015. As per Regulation 33 of the MYT Regulations, 2015, the total depreciation during the life of the asset shall not exceed 90% of the original cost of Asset. The Commission has computed the depreciation separately for assets added under each asset head in each year. The Commission has disallowed the depreciation in excess of 90% of the original cost of asset under different asset heads.

4.10.7 Hence, in line with the approach adopted in the previous Orders and as specified in Regulation 33 of the MYT Regulations, 2015, the Commission has not considered the depreciation on assets funded through grants, consumer contribution or capital subsidy, for FY 2016-17.

4.10.8 Further, APGCL confirmed that no expenditure towards assets and capital work in Progress has been incurred out of grants/subsidies during FY 2016-17 with regard to NTPS, LTPS and KLHEP. Further, it is noted that Assets (vehicle) to the extent of Rs. 0.13 Crore of NTPS has been retired and accordingly, reduced from the closing GFA. The asset retired was fully depreciated hence, does not have any impact on the depreciation. Assets (lines & cables) of Rs 0.21 Crore and Assets (vehicle) to the extent of Rs. 0.10 Crore of CTPS has been retired and accordingly, reduced from the closing GFA. However, none of the asset capitalised/de-capitalised w.r.t CTPS is considered in computation of Return on Equity, Interest expenses and depreciation for FY 2016-17.

4.10.9 The station-wise depreciation approved by the Commission for True-up for FY 2016-17 is shown in following table:

Table 23: Depreciation for FY 2016-17 as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	As claimed by APGCL	Approved after Truing up
NTPS	Depreciation	1.14	1.47	3.74
	Less: Depreciation Funded by Grants	0.08	0.10	0.28
	Net Depreciation	**1.06**	**1.37**	**3.46**
LTPS	Depreciation	17.95	17.05	17.41
	Less: Depreciation Funded by Grants	2.49	2.34	2.41
	Net Depreciation	**15.46**	**14.71**	**14.99**
KLHEP	Depreciation	12.62	23.72	24.55
	Less: Depreciation Funded by Grants	1.35	2.52	2.63
	Net Depreciation	**11.27**	**21.20**	**21.92**

4.10.10 The detailed Station-wise computation of depreciation for NTPS, LTPS and KLHEP has been provided in **Annexure 2.**

4.11 Interest and Finance Charges

4.11.1 APGCL submitted that the Commission in the MYT Order approved Interest and Finance Charges of Rs. 30.90 Crore for FY 2016-17. APGCL has incurred Interest and Finance Charges of Rs. 57.14 Crore for FY 2016-17, based on audited accounts. These charges are inclusive of interest on GPF and penal interest. APGCL has not claimed interest on GPF since the Trust was not formed till FY 2016-17. APGCL has also not claimed the penal interest amount payable on GoA loan. The detailed computation of interest on GOA loan along with sanction letters are provided by APGCL. The repayments and payments of interest were made to PFCL during FY 2016-17 according to the demand raised by PFCL. An amount of Rs. 1 crore towards MSHEP, under the Interest on loan from State Government (Rs. 34.76 crore), has not been claimed. Further, an amount of Rs.79.05 Lakhs has been excluded from interest capitalized on account of MSHEP.

4.11.2 Accordingly, APGCL has claimed the Interest and Finance Charges of Rs. 46.70 Crore for FY 2016-17 as shown in the following Table:

Table 24: Interest Charges as submitted by APGCL for FY 2016-17 (Rs. Crore)

Sl. No.	Particulars	Actuals as per Audited Accounts	As claimed by APGCL
1	Interest on GoA loan	34.76	33.76
2	Interest on GoA Loan – Penal interest	5.89	0.00
3	Interest on PFC loan	51.90	51.90
4	Interest on ADB Loan	0.08	0.08
5	Interest on GPF	5.45	-
6	Less: Interest capitalised	(39.95)	(39.16)
7	Less: Penal Interest capitalised	(1.11)	0.00
8	Bank Charges	0.12	0.12
9	**Total Interest and Finance Charges**	**57.14**	**46.70**

Commission's Analysis

4.11.3 In the MYT Order, the Commission has approved the Interest on Loan Capital on normative basis as per Regulation 35 of MYT Regulations, 2015. In the MYT Order, the Commission has approved the Station-wise Interest on loan capital by considering the Station-wise normative loan.

4.11.4 As per the above said Regulation, normative loan outstanding as on April 1, 2016, shall be worked out by deducting the cumulative repayment as admitted by the Commission up to March 31, 2016, from the gross normative loan. Accordingly, the Commission has computed the normative loan outstanding as on April 1, 2016 as shown in the following Table:

Table 25: Computation of Normative loan outstanding as on April 1, 2016 (Rs. Crore)

Particulars	NTPS	LTPS	KLHEP
Gross Fixed Assets (a)	183.33	476.94	513.57
Grant (b)	13.16	65.50	54.66
Equity (c)	55.00	143.08	68.65

Particulars	NTPS	LTPS	KLHEP
Gross Normative Loan (d=a-b-c)	115.17	268.36	390.26
Less: Cumulative repayment (equal to accumulated depreciation) (e)	136.29	233.94	109.38
Net Normative loan (f=d-e)	(21.11)	34.42	280.87
Net Normative loan considered as on April 1, 2016 [g=maximum(0,f)]	**0.00**	**34.42**	**280.87**

4.11.5 The Commission has considered the opening net normative loan as on April 1, 2016 as shown in the above Table. The addition of loan has been considered equal to debt portion of capitalised works as approved by the Commission in this Order. The loan repayment has been considered equivalent to depreciation approved in this Order.

4.11.6 As per MYT Regulations, 2015, weighted average rate of Interest shall be computed based on outstanding loan as on April 1, 2016. The Commission sought details of outstanding loans as on April 1, 2016 along with documentary evidences. Accordingly, weighted average interest rate has been computed as 9.88% for NTPS, 12.04% for LTPS and 9.80% for KLHEP for computation of Interest on loan capital.

4.11.7 The interest on loan capital as approved by the Commission for FY 2016-17 is shown in the following Table:

Table 26: Interest on Loan Capital for FY 2016-17 as approved by the Commission (Rs. Crore)

Station	Particulars	Approved after Truing up
NTPS	Net Normative Opening Loan	-
	Addition of normative loan during the year	4.20
	Normative Repayment during the year	3.46
	Net Normative Closing Loan	0.73
	Interest Rate	9.88%
	Interest on Loan Capital	**0.04**
	Add: Bank Charges	0.04
	Net Interest on Loan Capital	**0.08**
LTPS	Net Normative Opening Loan	34.42
	Addition of normative loan during the year	0.06

Station	Particulars	Approved after Truing up
	Normative Repayment during the year	14.99
	Net Normative Closing Loan	19.49
	Interest Rate	12.04%
	Interest on Loan Capital	**3.25**
	Add: Bank Charges	0.05
	Net Interest on Loan Capital	**3.30**
KLHEP	Net Normative Opening Loan	280.87
	Addition of normative loan during the year	0.71
	Normative Repayment during the year	21.92
	Net Normative Closing Loan	259.66
	Interest Rate	9.80%
	Interest on Loan Capital	**26.47**
	Add: Bank Charges	0.03
	Net Interest on Loan Capital	**26.50**

4.12 Return on Equity (RoE)

4.12.1 APGCL submitted that the Commission in the MYT Order approved RoE separately for each Generating Stations for FY 2016-17. Since, there has been no variation in the Equity, APGCL has claimed the same amount in the True-up for FY 2016-17 as approved in MYT Order. APGCL has claimed ROE of Rs. 8.53 Crore for NTPS, Rs. 22.18 Crore for LTPS, and Rs. 10.64 Crore for KLHEP.

Commission's Analysis

4.12.2 The Commission has approved the Return on Equity in accordance with Regulation 34 of the MYT Regulations, 2015. The Commission has not considered any addition of equity for capitalised works as approved in this Order. Therefore, the approved Return on Equity at 15.50% is shown in the Table below:

Table 27: Return on Equity as approved by the Commission for FY 2016-17 (Rs. Crore)

Station	Particulars	MYT Order	Claimed by APGCL	Approved after truing up
NTPS	Opening Equity	55.00	55.00	55.00
	Closing equity	55.00	55.00	55.00
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**8.53**	**8.53**	**8.53**
LTPS	Opening Equity	143.08	143.08	143.08
	Closing equity	143.08	143.08	143.08
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**22.18**	**22.18**	**22.18**
KLHEP	Opening Equity	68.65	68.65	68.65
	Closing equity	68.65	68.65	68.65
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**10.64**	**10.64**	**10.64**

4.13 Interest on Working Capital (IoWC)

4.13.1 APGCL submitted that the Commission in the MYT Order approved IoWC of Rs. 18.08 Crore for FY 2016-17. As against this, APGCL has claimed normative IoWC of Rs. 21.06 Crore for FY 2016-17 in accordance with MYT Regulations, 2015. APGCL has considered the interest rate of 12.80% as per MYT Regulations, 2015.

4.13.2 APGCL has claimed IoWC of Rs. 6.61 Crore for NTPS, Rs. 11.78 Crore for LTPS and Rs. 2.67 Crore for KLHEP.

Commission's Analysis

4.13.3 The Commission has computed IoWC in accordance with Regulation 37.1 of the MYT Regulations, 2015. The rate of Interest has been considered equal to State Bank of India Base Rate as on 1stApril of the respective year plus 350 basis points, i.e., 12.80%. IoWC approved by the Commission for FY 2016-17 is shown in the following Table:

Table 28: IoWC as approved by the Commission for FY 2016-17 (Rs. Crore)

Station	Particulars	MYT Order	Claimed by APGCL	Approved after Truing up
NTPS	Fuel Cost for one month	10.13	7.47	10.13
	O&M Expenses for one month	3.36	3.88	3.35
	Maintenance Spares-30% of O&M	12.10	13.98	12.06
	Receivables for two months	28.95	26.30	29.38
	Total Working Capital Requirement	54.54	51.62	54.92
	Rate of Interest (%)	12.80%	12.80%	12.80%
	Interest on Working Capital	**6.98**	**6.61**	**7.03**
LTPS	Fuel Cost for one month	12.85	16.60	12.71
	O&M Expenses for one month	3.64	4.58	3.63
	Maintenance Spares-30% of O&M	13.11	16.49	13.06
	Receivables for two months	40.21	54.36	41.19
	Total Working Capital Requirement	69.81	92.02	70.59
	Rate of Interest (%)	12.80%	12.80%	12.80%
	Interest on Working Capital	**8.94**	**11.78**	**9.04**
KLHEP	O&M Expenses for one month	1.88	2.05	1.87
	Maintenance Spares-30% of O&M	3.38	7.37	3.36
	Receivables for two months	11.63	11.44	13.46
	Total Working Capital Requirement	16.88	20.86	18.69
	Rate of Interest (%)	12.80%	12.80%	12.80%
	Interest on Working Capital	**2.16**	**2.67**	**2.39**

4.14 Prior period Expenses/(Income)

4.14.1 APGCL submitted the Net Prior Period expenses of Rs. 7.68 Crore for FY 2016-17, as per the audited accounts. Against this, APGCL has considered the Net Prior Period expenses of Rs. 4.76 Crore for FY 2016-17 for truing up purpose. APGCL submitted the head-wise details along with justification for its claim towards prior period items for FY 2016-17.

Commission's Analysis

4.14.2 The Commission has analysed the details and justification for Net Prior Period expenses/(income) for FY 2016-17 as submitted by APGCL. The Commission has considered the treatment of prior period items based on the treatment allowed to that particular item in the true-up of the year to which the expenses/(income) pertain.

4.14.3 The Commission has disallowed the prior period expenses/(income) towards depreciation and interest and finance charges since, the depreciation had not been allowed by the Commission based on audited accounts. The Commission in past Orders had allowed depreciation and Interest and finance charges based on its own computation.

4.14.4 The Net prior period expenses/(income) submitted by APGCL and allowed by the Commission for FY 2016-17 are shown in the following Table:

Table 29: Net Prior Period expenses/(income) approved for FY 2016-17 (Rs. Crore)

Sr. No.	Particulars	Audited Accounts	APGCL's Submission	Approved after Truing up
	Prior Period (Income)			
1	Withdrawal of excess provision of depreciation of Rs.1,90,180/-.w.r.t FY 2014-15	(0.02)	(0.00)	(0.00)
2	Withdrawal of excess accounting of Penal Interest on Govt. loan of Rs.4,77,07,726/-	(4.77)	(0.00)	(0.00)
3	Withdrawal of excess capitalisation of interest on GoA loan of Rs.3,72,982/-.	(0.04)	(0.00)	(0.04)
4	Receipt from Income Tax Dept. as refund for the AY 13-14 by Rs.22,87,690/-.	(0.23)	(0.23)	(0.09)
5	EMD forfeited Rs.30,00,000/-in prior period now journalised as commented by AG	(0.30)	(0.30)	(0.30)
9	**Sub-total**	**(5.36)**	**(0.53)**	**(0.42)**
	Prior Period Expense			
10	Delayed payment surcharge paid to GAIL of Rs. 7,74,53,968/- accounted as per comment of	7.75	0.00	0.00

Sr. No.	Particulars	Audited Accounts	APGCL's Submission	Approved after Truing up
	Statutory Auditor			
11	Excess rebate claimed against AGCL (TC) bills and short payment of supplementary TC bill on account of service tax of NTPS adjusted for Rs. 86,29,427/-	0.86	0.86	0.86
12	Short Provision for MAT for the AY 2010-11 as per notice issued by Income-Tax Dept. u/s 156 for Rs 3,90,66,420/-	3.91	3.91	0.00
13	Employee costs relating to prior periods	0.52	0.52	0.52
17	**Sub-total**	**13.04**	**5.29**	**1.38**
18	**Net Prior Period Expenses/(Income)**	**7.68**	**4.76**	**0.96**

4.14.5 The Commission approves the net Prior Period Expenses/(Income) as shown in the above Table for FY 2016-17 after Truing up. Further, the Commission has allocated the Net prior period expenses to the existing Generating Stations with the same philosophy as proposed by APGCL. Accordingly, the Commission approves Station-wise Net prior period expenses of Rs. 0.21 Crore for NTPS, 0.52 Crore for LTPS and Rs. 0.23 Crore for KLHEP for FY 2016-17 after truing up.

4.15 Income Tax

4.15.1 APGCL has claimed Income Tax of Rs. 4.67 Crore for FY 2016-17 as per audited accounts. APGCL submitted the TDS Statement and Tax paid Challan along with the Petition.

Commission's Analysis

4.15.2 The Commission has verified the actual Income Tax paid with Tax Challan and TDS Statement submitted by APGCL. The Commission approves the actual Income Tax of Rs. 4.67 Crore for FY 2016-17 for truing up. The Commission has allocated Income Tax to the existing Generating Stations with the same philosophy as proposed by APGCL. Accordingly, the Commission approves Station-wise Income Tax of Rs. 1.01

Crore for NTPS, 2.53 Crore for LTPS and Rs. 1.13 Crore for KLHEP for FY 2016-17 after Truing up.

4.16 Other Income

4.16.1 APGCL submitted that the Commission in the MYT Order approved Other Income of Rs. 15.58 Crore. As against this, APGCL has claimed Other income of Rs. 18.14 Crore as per audited accounts for the purpose of True-up. The Station-wise Other income submitted by APGCL is shown in the following Table:

Table 30: Other Income as claimed by APCGL for True-up for FY 2016-17

Station	As per audited accounts	APGCL's claim
NTPS	5.83	5.83
LTPS	7.84	7.84
KLHEP	4.46	4.46
Total	18.14	18.14

Commission's Analysis

4.16.2 For the purpose of Truing up for FY 2016-17, the Commission has considered the actual Other Income of Rs. 18.14 Crore as per audited accounts, as submitted by APGCL. Accordingly, the Commission approves Other Income of Rs. 5.83 Crore for NTPS, Rs. 7.84 Crore for LTPS and Rs. 4.46 Crore for KLHEP, as submitted by APGCL.

4.17 Sharing of Gains and Losses

4.17.1 Regulation 11.2 of MYT Regulations, 2015 specifies the controllable factors for Generating Stations and Regulation 13 specifies the treatment of sharing of gain or loss on account of such controllable factors. The Commission has discussed the treatment of each controllable factor as under:

O&M Expenses

4.17.2 Regulation 11.2 of the MYT Regulations, 2015 specifies O&M Expenses (excluding terminal liabilities with regard to employees on account of changes in pay scales or dearness allowance due to inflation) as controllable factor. Hence, for undertaking sharing of gains or losses, the Commission has excluded the terminal liabilities from normative as well as actual Employee expenses. Accordingly, terminal liabilities are allowed on actual basis.

4.17.3 The sharing of gains or (losses) on account of O&M Expenses is shown in the following Table:

Table 4-31: Sharing of gains or losses for O&M Expenses for FY 2016-17 (Rs. Crore)

Particulars	Revised Normative	Actual	Gain/(Loss)	Sharing of Gains/(losses)	Sharing of Terminal Liabilities*	Net Sharing of Gain/(losses)
	a	b	c=a-b	d=c/3	e	f=d+e
NTPS	39.89	46.60	(6.71)	(2.24)	(1.56)	(3.80)
LTPS	43.24	48.56	(5.32)	(1.77)	(1.18)	(2.96)
KLHEP	22.08	24.57	(2.49)	(0.83)	(0.52)	(1.35)
Total	**105.21**	**119.73**	**(14.52)**	**(4.84)**	**(3.27)**	**(8.11)**

Note- Terminal Liabilities are allowed on actual basis. Hence, difference between actual Terminal Liabilities and Terminal liabilities built in normative expenses has been allowed directly to Sharing of gains/(losses)

Fuel Cost

4.17.4 Sharing of gains/(losses) on account of Performance parameters and Fuel Cost for True-up for FY 2016-17 is shown in table below

Table 32: Sharing of Gain/(Loss) on account of Fuel Parameters as approved by the Commission for True-up for FY 2016-17 (Rs. Crore)

Sr. No.	Station	Normative Cost	Actual Cost	Gain/(Loss)	Sharing of Gains/(losses)
1	NTPS	82.80	89.61	(6.81)	(2.27)
2	LTPS	201.54	197.12	4.42	1.47

Auxiliary Consumption

4.17.5 As per MYT Regulations, 2015, Auxiliary Energy Consumption is considered as controllable parameter. Sharing of gains/(losses) on account of Auxiliary Consumption for True-up for FY 2016-17 is shown in table below:

Table 33: Sharing of Gain/(Loss) on account of Auxiliary Energy Consumption as approved by the Commission for True-up for FY 2016-17 (Rs. Crore)

Station	Net Generation (MU) Normative	Net Generation (MU) Actual	ECR (Rs./kWh)	Gain/ (Loss) in MU	Gain/ (Loss)	Sharing of Gains/ (Losses)
NTPS	340.32	333.18	2.43	(7.13)	(1.74)	(0.58)
LTPS	842.37	823.27	2.39	(19.11)	(4.57)	(1.52)

4.17.6 The total sharing of Gains and Losses for FY 2016-17 has been summarised in the following Table:

Table 34: Total Sharing of Gain/(Loss) approved by the Commission for True-up for FY 2016-17 (Rs. Crore)

Particulars	NTPS	LTPS	KLHEP
Sharing of gains/(Losses) for O&M Expenses	(3.80)	(2.96)	(1.35)
Sharing of gains/(Losses) for Fuel Cost	(2.27)	1.47	-
Sharing of gains/(Losses) for Auxiliary Consumption	(0.58)	(1.52)	-
Grand Total	**(6.65)**	**(3.01)**	**(1.35)**

4.18 Reduction in Annual Fixed Charges

4.18.1 Since, the actual PAF for NTPS and KLHEP is lower than the normative PAF, the Annual Fixed Charges are to be disallowed on pro-rata basis as shown in the following Table:

Table 35: Reduction of fixed costs as approved by the Commission for True-up for FY 2016-17 (Rs. Crore)

Particulars	PAF (%) Normative	PAF (%) Actual	AFC (Rs. Crore)	Allowable AFC (Rs. Crore)	Disallowed AFC
NTPS	50.00%	33.99%	54.67	37.17	17.51
KLHEP	90.00%	80.69%	40.39	36.21	4.18

4.18.2 Further, the Commission notes that Unit 1 of LTPS was de-commissioned on January 2017. AFC computed by the Commission is for the whole station. Accordingly, the Commission has reduced the AFC towards the de-commissioning of Unit 1 of LTPS. As discussed in earlier Section, the effective capacity of LTPS for FY 2016-17 has reduced to 142.20 MW from the date of de-commissioning of Unit 1 of LTPS.

Accordingly, the reduction in AFC amount has been computed as Rs. 1.93 Crore on pro-rata basis.

4.19 Summary of True-up for FY 2016-17

4.19.1 The Summary of true-up for FY 2016-17 is shown in the following Table:

Table 36: True-up ARR for Existing Generating Stations for FY 2016-17 as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	NTPS			LTPS			KLHEP		
		MYT Order	APGCL's Submission	Approved after Truing up	MYT Order	APGCL's Submission	Approved after Truing up	MYT Order	APGCL's Submission	Approved after Truing up
A	**Annual Fixed Charges**									
1	O&M Expenses	40.33	46.59	40.19	43.69	54.96	49.94	22.50	24,57	22.42
2	Depreciation	1.06	1.37	3.46	15.46	14.71	14.99	11.27	21.20	21.92
3	Interest on Loans	0.49	7.89	0.08	3.26	26.73	3.30	27.15	12.09	26.50
4	Return on Equity	8.53	8.53	8.53	22.18	22.18	22.18	10.64	10.64	10.64
5	Interest on Working Capital	6.98	6.61	7.03	8.94	11.78	9.04	2.16	2.67	2.39
6	Income Tax	-	1.01	1.01	-	2.53	2.53	-	1.13	1.13
7	Prior Period items	-	1.99	0.21	-	1.73	0.52	-	0.84	0.23
8	Less: Other Income	5.18	5.83	5.83	6.46	7.84	7.84	3.94	4.46	4.46
9	**Annual Fixed Charges**	**52.20**	**68.16**	**54.67**	**87.06**	**126.98**	**94.65**	**69.78**	**68.66**	**80.78**
B	**Fuel Cost**	101.22	89.61	82.80	208.86	199.16	201.54			
C	Add: Incentive for Generation	-	-	-	-	8.56	9.29	-	0.92	0.92
D	Add: Sharing of (Gains)/losses	-	-	6.65	-	-	3.01	-	-	1.35
E	Less: Reduction in Fixed Cost	-	-	17.51	-	-	1.93	-	-	4.18
F	**Total Aggregate Revenue Requirement**	**153.43**	**157.77**	**126.62**	**295.92**	**334.70**	**306.56**	**69.78**	**69.59**	**78.87**

4.20 Revenue from Sale of Power

4.20.1 APGCL submitted that the revenue from sale of power for FY 2016-17 is Rs. 533.55 Crore as per Audited Accounts. As against this, APGCL has considered the revenue of Rs. 531.51 Crore, as shown in the following table:

Table 37: Revenue from Sale of Power as claimed by APGCL (Rs. Crore)

Sl. No.	Particulars	FY 2016-17
1	Variable charges from Normal Bill	428.32
2	Variable charges from FPA	(151.39)
3	Total Variable charges (Normal plus PFA)	276.93
3	Additional Secondary energy charge for KLHEP	0.92
4	Fixed Charges	318.77
5	**Total Revenue from Sale of power**	**596.62**
6	Less: Adjustment in line with AERC Tariff Order for FY 2017-18	62.15
7	Less: Secondary energy charges for KLHEP for FY 2016-17	0.92
8	Less: Proportionate fixed charges for Myntriang SHEP	2.04
10	**Total revenue from Sale of power claimed in true-up for FY 2016-17**	**531.51**

Commission's Analysis

4.20.2 The Commission notes that audited accounts have shown the actual revenue billed of Rs. 596.62 Crore for FY 2016-17. Further, APGCL has considered the adjustment of Rs. 62.15 Crore on account of MYT Order in audited accounts of FY 2016-17. However, the Commission has passed on this impact in FY 2017-18. Hence, in the present Order, the Commission has considered the impact of MYT Order in FY 2017-18 only.

4.20.3 APGCL in replies of data queries submitted that the deduction of Rs. 0.92 Crore from the actual revenue billed is erroneously done in the Petition. Further, since expenses for Myntriang SHEP are not approved in ARR, hence, the revenue billed on account of the same has been considered.

4.20.4 Accordingly, the Commission approves the revenue of Rs. 596.62 Crore for FY 2016-17 for truing up.

4.21 Revenue Gap/(surplus) for FY 2016-17

4.21.1 APGCL has claimed the Revenue Gap of Rs. 30.55 Crore for Truing up for FY 2016-17. Further, APGCL has submitted the carrying cost of Rs. 3.91 Crore. Accordingly, APGCL claimed Revenue Gap of Rs. 34.46 Crore including carrying cost.

Commission's Analysis

4.21.2 The Commission has computed the Revenue Gap/(Surplus) for FY 2016-17 as shown in the following Table:

Table 38: Revenue Gap/(Surplus) for FY 2016-17 as approved by the Commission (Rs. Crore)

Particulars	Submitted by APGCL	Approved after Truing up
ARR for NTPS	157.77	126.62
ARR for LTPS	334.70	306.56
ARR for KLHEP	69.59	78.87
Combined ARR	**562.06**	**512.05**
Revenue from Sale of Power	531.51	596.62
Revenue Gap/(Surplus)	**30.55**	**(84.57)**

4.21.3 The Commission approves the Revenue Surplus of Rs. 84.57 Crore arising out of Truing up for FY 2016-17. This Revenue Surplus along with carrying cost is considered for recovery in FY 2018-19 as discussed in Chapter 7 of this Order.

5 Annual Performance Review for FY 2017-18

5.1 Methodology for Annual Performance Review

5.1.1 The Commission had approved the ARR for each year from FY 2016-17to FY 2018-19for existing Generating Station in the MYT Order dated March 31, 2017.

5.1.2 Regulation 10.3 of the MYT Regulations, 2015, as amended in November 2017, specifies that the Commission shall undertake the APR and True-up for the respective years of the Control Period from FY 2016-17 to FY 2018-19, as reproduced below: *"10.3 The scope of* ***the annual review*** *and True up shall be a comparison of the actual performance of the Generating Company or Transmission Licensee or SLDC or Distribution Licensee with the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges and shall comprise the following*:

…

b) Annual Review: a comparison of the revised performance targets of the applicant for the current financial year with the approved forecast in the Tariff order corresponding to the Control period for the current financial year subject to prudence check including adjusting trajectories of uncontrollable and controllable items." (emphasis added)

5.1.3 APGCL submitted the Annual Performance Review (APR) Petition for FY 2017-18, supported by actual information available till September 2017 and estimated the values for the next six months.

5.1.4 From the above said Regulation, as amended in November 2017, it is clear that the main objective of APR is to compare the performance targets for FY 2017-18 vis-à-vis approved forecast in the MYT Order. The Revenue Gap/(Surplus) arising out of APR for FY 2017-18 shall not be passed on to the beneficiaries, and the same shall be considered at the time of Truing-up only.

5.1.5 In the present Chapter, the Commission has analysed the revised submission of all the elements of ARR vis-à-vis approved values in MYT Order for FY 2017-18. The Commission has computed the Revenue Gap/(Surplus) as an indication of the performance in FY 2017-18. No sharing of gains/(losses) has been undertaken at this stage and the same shall be considered at the time of Truing up for FY 2017-18.

5.2 Plant Availability Factor (PAF)/Capacity Index

5.2.1 Regulation 49.1 of the MYT Regulations, 2015 specifies the Normative Plant Availability Factor for recovery of full fixed charges, as 50% for both NTPS and LTPS. The Commission notes that APGCL has projected the Availability higher than the normative PAF.

5.2.2 Further, Regulation 51 of the First Amendment of the MYT Regulations, 2015, dated November 18, 2017 specifies normative PAF for KLHEP as 85%.

5.2.3 In accordance with the MYT Regulations, 2015, APGCL shall be eligible to recover full fixed charges if actual availability is higher than the normative PAF specified in MYT Regulations, 2015.

Table 39: Target PAF/Capacity Index for recovery of full fixed Charges

Station	Target Availability/Capacity Index (%)
NTPS	50%
LTPS	50%
KLHEP	85%

5.2.4 Further, the Commission notes that Unit 4 of LTPS and Unit 1 of NTPS were de-commissioned on October 24, 2017. The effective capacity for NTPS has reduced to 99.50 MW from the date of de-commissioning of Unit 1 of NTPS. Similarly, the effective capacity for LTPS further reduced to 127.20 MW after considering the de-commissioning of Unit 4 of LTPS. Accordingly, the installed capacity has been considered for the purpose of APR, after considering the de-commissioning of Unit 1 of NTPS and Unit 4 and Unit 1 of LTPS.

5.3 Auxiliary Consumption

5.3.1 APGCL has estimated the Auxiliary Consumption for existing Generating Stations as per MYT Regulations, 2015 and as approved in MYT Order. APGCL estimated the Auxiliary Consumption of 4.50% for NTPS, 5.50% for LTPS and 0.50% for KLHEP for the APR.

Commission's Analysis

5.3.2 The Commission notes that no variation in Auxiliary consumption has been estimated by APGCL vis-à-vis Auxiliary Consumption approved in the MYT Order, based on actual performance of H1 of FY 2017-18. The Commission approves the Auxiliary Consumption for existing Generating Stations as per MYT Regulations, 2015, for the purpose of APR, as shown in the following Table:

Table 40: Auxiliary Consumption as approved by the Commission for FY 2017-18

Sl. No.	Station	MYT Order	Estimated by APGCL	Approved for APR
1	NTPS	4.50%	4.50%	4.50%
2	LTPS	5.50%	5.50%	5.50%
3	KLHEP	0.50%	0.50%	0.50%

5.4 Gross Generation and Net Generation

5.4.1 The actual Gross Generation and Net Generation estimated by APGCL for 2017-18 is shown in the following Table:

Table 41: Actual Gross Net Generation as submitted by APGCL for FY 2017-18

Sl. No.	Station	Gross Generation (MU)	Net Generation (MU)
1	NTPS	384.87	367.55
2	LTPS	725.92	685.99
	Total Thermal	**1,110.79**	**1,053.54**
3	KLHEP	405.00	402.97
4	MSHEP	-	-
	Total APGCL	**1,515.78**	**1,456.51**

Commission's Analysis

5.4.2 The Commission had approved gross generation of 1489.51 MU for FY 2017-18 in the MYT Order. The Commission in the MYT Order had considered lower generation from NTPS in view of the commissioning of NRPP. However, the commissioning of NRPP is delayed. As regards the anticipated COD and reason for delay in commissioning of NRPP, APGCL submitted that COD of NRPP is yet to be finalized, in the context of the details mentioned below:

(a) BHEL earlier targeted combined cycle commissioning of the project by April 30, 2017. However, BHEL sought more time till July 31, 2017 as the erection activities of Waste Heat Recovery Unit were not completed. Even after that the project got delayed due to slow progress of works and BHEL sought further extension up to September, 2017.

(b) While BHEL was performing steam blowing operation, fire broke out at Automatic Voltage Regulator (AVR) panels. The AVR panels were replaced by new AVR panels on October 27, 2017.

(c) After replacement of damaged AVR panel, BHEL synchronized the Gas Turbine unit on November 5, 2017 with partial load for steam blowing operation of Waste Heat Recovery Steam Generator and other pre-commissioning checks/activities towards synchronization in combined cycle mode. However, on November 6, 2017, an incident of Gas Turbine stalling happened due to lube oil system failure. Because of the incident, all the bearings of Gas Turbine (GT), Load Gear Box and Generator were found in damaged condition. The Gas Turbine Rotor and Load Gear Box had to be shifted to Hyderabad works for detailed inspection and testing.

(d) The Load Gear Box has reached Hyderabad. The GT rotor is in transit. The necessary inspection and testing will be carried out at Hyderabad works.

(e) BHEL will finalize the revised commissioning schedule after restoration of the damaged equipment.

5.4.3 In view of the above, the Commission has not considered any generation from NRPP in FY 2017-18 as well as FY 2018-19. The Commission directs APGCL to submit the revised anticipated COD for NRPP as and when it is finalised with BHEL. The Commission notes that the commissioning of NRPP has got delayed to beyond the present Control Period. APGCL should strive for achieving the COD of NRPP as per revised timelines.

5.4.4 Further, it is also observed that during first half of FY 2017-18, the availability of gas was lower than contracted capacity, which led to lower generation. In view of the above, for the purpose of APR, the Commission has considered the gross generation for NTPS and LTPS as submitted by APGCL.

5.4.5 As regards KLHEP, it is observed that APGCL has estimated generation from KLHEP higher than its design energy (390 MU). In this regard, APGCL submitted that the actual generation from KLHEP in H1 of FY 2017-18 is 296.793 MU. For H2 of FY 2017-18, generation has been projected based on design energy and PLF as per MYT Regulations, 2015. Since, the actual generation for H1 is higher than the design energy for the period, the total projected generation is higher than approved gross generation. For the purpose of APR, the Commission has considered the gross generation for KLHEP as submitted by APGCL.

5.4.6 The Commission has computed the Net Generation based on above estimated Gross Generation and approved Auxiliary Consumption for FY 2017-18. The Gross Generation and Net Generation approved by the Commission for APR is shown in the following Table:

Table 42: Gross Generation and Net Generation approved by the Commission

Sl. No.	Station	Gross Generation (MU)	Net Generation (MU)
1	NTPS	384.87	367.55
2	LTPS	725.92	685.99
	Total Thermal	**1,110.79**	**1,053.55**
3	KLHEP	405.00	402.98
	Total APGCL	**1,515.79**	**1,456.52**

5.5 Station Heat Rate

5.5.1 The SHR approved by the Commission in MYT Order and as submitted by APGCL for FY 2017-18 is shown in the following Table:

Table 43:Gross Station Heat Rate (kcal/kWh) as projected by APGCL for FY 2017-18

Sl. No.	Station	MYT Order	APGCL's submission
1	NTPS	3900	3900
2	LTPS	3200	3200

Commission's Analysis

5.5.2 For the purpose of APR, the Commission approves SHR for NTPS and LTPS as per MYT Regulations, 2015. Accordingly, the Commission approves SHR of 3900 kcal/kWh for NTPS and 3200 kcal/kWh for LTPS for FY 2017-18.

5.6 Fuel Cost

5.6.1 APGCL estimated the fuel cost of Rs. 88.71 Crore for NTPS for FY 2017-18 as shown in the following Table:

Table 44: Total Fuel Cost for NTPS for FY 2017-18 as submitted by APGCL (Rs. Crore)

Sl. No.	Particular	Unit	MYT Order	APGCL's Submission		
				April to - September (Actual)	October to March (Estimated)	Total
1	Gross Generation	MU	195.10	146.96	237.91	384.87
2	Heat Rate	kcal/kWh	3900.00	3900.00	3900.00	3900.00
3	GCV of gas	kcal/SCM	9063.44	9032.39	9032.39	9032.39
4	Overall Heat	G. cal.	760875.99	573144.0	927849.00	1500993.0
5	Gas consumption	M. SCM	83.95	63.45	102.72	166.18
6	Price of Gas	Rs./1000 SCM	4848.09	4936.79	5586.56	5338.45
7	Total cost of Gas	Rs. Crore	40.70	31.33	57.39	88.71
8	Total Cost		40.70	31.33	57.39	88.71

5.6.2 APGCL estimated the fuel cost of Rs. 158.11 Crore for LTPS for FY 2017-18 as shown in the following Table:

Table 45: Total Fuel Cost for LTPS for FY 2017-18 as submitted by APGCL (Rs. Crore)

Sl. No.	Particular	Unit	MYT Order	APGCL's Submission		
				April to - September (Actual)	October to March (Estimated)	Total
1	Gross Generation	MU	904.41	367.29	358.63	725.92
2	Heat Rate	kcal/kWh	3200.00	3200.00	3200.00	3200.00
3	GCV of gas	kcal/SCM	10019.44	9901.69	9901.69	9901.69
4	Overall Heat	G. cal.	2894114.74	1175328.00	1147616.00	2322944.00
5	Gas consumption	M. SCM	288.85	118.70	115.90	234.60

Sl. No.	Particular	Unit	MYT Order	APGCL's Submission		
				April to - September (Actual)	October to March (Estimated)	Total
6	Price of Gas	Rs./1000 SCM	6295.86	6277.96	7212.18	6739.50
7	Total cost of Gas	Rs. Crore	181.86	74.52	83.59	158.11
8	Total Cost		181.86	74.52	83.59	158.11

Commission's Analysis

5.6.3 The Commission in MYT Order had approved the Fuel cost for NTPS and LTPS for FY 2017-18 based on approved performance parameters and latest GCV and price of Fuels available at that time. For the purpose of APR, the Commission has adopted the same approach and approves the Fuel cost based on approved performance parameters in this Order and latest fuel price and GCV.

5.6.4 The Commission has considered the GCV of gas and landed price of gas based on the latest fuel bills submitted by APGCL in FPA submission. In case of NTPS and LTPS, the Commission has considered the actual weighted average GCV of gas received for the period from April 2017 to December 2017.

5.6.5 For price of gas for FY 2017-18, the Commission has considered the actual weighted average landed price of gas for the period from April, 2017 to December, 2017 and considered the price for remaining three months equal to weighted average landed price of gas for October 2017 to December 2017. The Commission has considered the weighted average of actual landed price of gas for April to December 2017 and projected landed price of gas for January, 2018 to March, 2018.

5.6.6 The GCV and landed price of gas considered by the Commission for projection of fuel cost is shown in the following Table:

Table 46: GCV and Landed Price of Gas for FY 2017-18 as approved by the Commission

Station	Particulars	Approved for APR
NTPS	GCV of Gas (kcal/SCM)	8,954.10
	Price of Gas (Rs./1000SCM)	5,079.84
LTPS	GCV of Gas (kcal/SCM)	9,225.11
	Price of Gas (Rs./1000SCM)	6,293.45

5.6.7 The Commission has estimated the fuel cost for NTPS and LTPS based on approved performance parameters, GCV of gas and landed price of gas. The fuel cost provisionally approved by the Commission for NTPS and LTPS for FY 2017-18 for APR purposes is shown in the following Table:

Table 47: Fuel Cost approved by the Commission in APR for FY 2017-18

S. No.	Particulars	Derivation	Unit	NTPS	LTPS
1	Gross Generation	A	MU	384.87	725.92
2	Heat Rate	B	kcal/kWh	3900.00	3200.00
3	GCV of gas	C	kcal/SCM	8954.10	9225.11
4	Overall Heat	D=AxB	G. cal.	1500993.00	2322944.00
5	Gas consumption	E=D/C	M. SCM	167.63	251.81
6	Price of Gas	F	Rs./1000 SCM	5079.84	6293.45
7	Total Cost of Gas	G=ExF/10000	Rs. Crore	85.15	158.47
8	**Total Fuel Cost**		**Rs. Crore**	**243.63**	

5.7 O&M Expenses

5.7.1 APGCL submitted that the Commission in the MYT Order had approved O&M expenses of Rs. 42.37 Crore for NTPS, Rs 45.90 Crore for LTPS, and Rs. 22.64 Crore for KLHEP for FY 2017-18, which works out to total of Rs. 111.91 Crore. APGCL has not proposed any revision in the approved figures in APR for FY 2017-18. APGCL shall claim the actual O&M expenses at the time of True-up for FY 2017-18.

5.7.2 APGCL submitted the O&M Expenses for Rs. 42.37 Crore for NTPS, Rs. 45.90 Crore for LTPS and Rs. 23.64 Crore for KLHEP.

5.7.3 APGCL submitted that the Commission had approved overhauling of Unit 3 of LTPS in MYT Order, for which APGCL has claimed Rs. 6.40 Crore in the True-up Petition for FY 2016-17. Further, APGCL submitted that it shall claim the balance expenditure towards the above overhauling along with any further overhauling expenditure at the time of True-up for FY 2017-18.

Commission's Analysis

5.7.4 The Commission in the MYT Order has approved O&M Expenses on normative basis as per MYT Regulations, 2015 for FY 2017-18. For the purpose of APR, the

Commission continues with the same approach and approves Station-wise O&M expenses on normative basis as per MYT Regulations, 2015.

5.7.5 For arriving at normative O&M expenses for FY 2017-18, the Commission has considered the revised normative expenses of FY 2016-17 as approved in Chapter 4 of this Order. The Commission has computed normative O&M expenses by applying escalation factor of 3.12%, derived based on average of CPI and WPI for FY 2014-15 to FY 2016-17 in ratio of 60:40, on revised normative O&M Expenses for FY 2016-17 approved in this Order.

5.7.6 The O&M expenses provisionally approved by the Commission for FY 2017-18 are shown in the following Table:

Table 48: O&M expenses for FY 2017-18 as approved by the Commission (Rs. Crore)

Station	MYT Order	APGCL's Submission	Approved for APR
NTPS	42.37	42.37	41.45
LTPS	45.90	45.90	44.90
KLHEP	23.64	23.64	23.12

5.7.7 Further, the Commission sought the details of computation of ROP from APGCL. APGCL has estimated the impact of ROP of Rs. 3.24 crore for FY 2017-18. However, APGCL submitted that schedule of payment is yet to be declared by APGCL Board. In view of the above, the amount of Rs. 3.24 crore against ROP has been provisionally approved over and above the normative Employee expenses provisionally approved by the Commission for FY 2017-18. Accordingly, the Commission considers Station-wise impact of ROP as Rs. 0.49 Crore for NTPS, Rs. 0.64 Crore and Rs. 2.10 Crore for KLHEP for the purpose of APR.

5.7.8 Further, the Commission directs APGCL to submit actual impact on account of revision of pay, along with detailed justification and documentary evidences on basis of Audited Accounts for FY 2017-18 at time of Truing up.

5.7.9 As regards the Special R&M expenses, the Commission sought details from APGCL on the Special R&M planned during FY 2017-18. In this regard, APGCL submitted the following details:

Table 49: Special R&M planned by APGCL in FY 2017-18 (Rs. Crore)

Station	Name of Scheme	Proposed in FY	Proposed Outlay (Rs. Crore)	Status
NTPS	i. Overhauling of Steam Turbine Unit#6 including procurement of spares & contractual works	2017-18	1.50	In view of upcoming NRPP the work has been dropped.
LTPS	ii. Procurement of major spares for overhauling of GT Unit#3	2017-18	15.70	Work completed in FY 2017-18
	iii. Procurement of some major spares of Waste Heat Recovery Project	2017-18	2.50	Work completed in FY 2017-18

5.7.10 The Commission notes that for all the above works, in-principle approval was accorded in the MYT Order. In the present Order, the Commission has not considered the cost of such Special R&M in Annual Fixed Charges, as there have been delays in implementation by APGCL in the past. APGCL may approach the Commission after implementation of Special R&M along with details of actual expenses incurred at time of Truing up of FY 2017-18.

5.7.11 In view of the above, Station-wise O&M Expenses provisionally approved by the Commission for FY 2017-18 are summarised in the following Table:

Table 50: O&M expenses for FY 2017-18 as approved by the Commission (Rs. Crore)

Particulars	NTPS	LTPS	KLHEP
Normative O&M Expenses	41.45	44.90	23.12
Impact of ROP	0.49	0.64	2.10
Total O&M Expenses	**41.94**	**45.54**	**25.22**

5.8 Capital Expenditure and Capitalisation

5.8.1 APGCL submitted that the Commission, in the Order on Business Plan of APGCL dated September 1, 2016, approved the Capital Investment Plan for FY 2017-18. Further, APGCL has revised the schemes and corresponding outlay for Generating Stations for FY 2017-18, which is estimated as Rs 9.11 Crore for NTPS, Rs. 5.04 Crore for LTPS, and Rs. 6.49 Crore for KLHEP for FY 2017-18. APGCL submitted the capitalisation equivalent to capital expenditure proposed for FY 2017-18.

Commission's Analysis

5.8.2 The Commission in the Business Plan Order dated September 1, 2016 had approved the Capital Expenditure and Capitalisation for existing generation stations. In the MYT Order, the Commission has approved the Capital Expenditure for NTPS and LTPS, same as approved in the Business Plan Order. However, in case of KLHEP, the Commission has approved the revised capital expenditure submitted by APGCL for KLHEP.

5.8.3 APGCL submitted that the difference in Capital Investment proposed in the present Petition for APR of FY 2017-18 and Capital Investment approved in the MYT Order, is due to the present status of the plant and machineries of the stations. Moreover, the variation also incorporates the date of commissioning of NRPP and LRPP. In view of the above factors, some works proposed earlier have been dropped/revised and some new works have been incorporated in the Petition.

5.8.4 In the present Petition, it is observed that APGCL has projected much lower Capital Expenditure for LTPS and KLHEP for FY 2017-18 against that approved in the MYT Order. The Commission is of the view that delay in implementation of Capital Expenditure schemes will delay the improvement in performance of plants. The implementation of scheme is well within the control of APGCL, however, APGCL has deferred the implementation of schemes. The Commission is of the view that APGCL should implement the schemes for existing Generating Stations as approved in Business Plan Order by the end of the Control period.

5.8.5 For the purpose of the APR, the Commission provisionally approves the Capital Expenditure and Capitalisation as submitted by APGCL, as shown in the following Table:

Table 51: Capital Expenditure and Capitalisation as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved for APR
NTPS	Capital Expenditure	8.40	9.11	9.11
	Capitalisation	8.40	9.11	9.11
LTPS	Capital Expenditure	30.01	5.04	5.04
	Capitalisation	30.01	5.04	5.04

Station	Particulars	MYT Order	APGCL's Submission	Approved for APR
KLHEP	Capital Expenditure	19.90	6.49	6.49
	Capitalisation	19.90	6.49	6.49

5.8.6 The Commission further clarifies that the approach adopted by the Commission does not bar APGCL from implementing the schemes as approved in the Business Plan Order dated September 1, 2016. APGCL should make its best efforts to incur the Capital Expenditure approved in Business Plan Order.

5.8.7 As regards the funding of Capitalisation, the Commission has considered 100% debt funding as approved in the MYT Order.

5.9 Depreciation

5.9.1 APGCL submitted the Depreciation of Rs. 2.18 Crore for NTPS, Rs. 15.13 Crore for LTPS and Rs. 22.10 Crore for KLHEP for FY 2017-18. APGCL has estimated the depreciation based on revised GFA and revised capitalisation proposed in the present Petition.

Commission's Analysis

5.9.2 The Commission has considered the opening GFA for FY 2017-18equivalent to the closing GFA for FY 2016-17as approved in this Order. The Commission has computed depreciation as per scheduled rates specified in the MYT Regulations, 2015.

5.9.3 As per Regulation 33 of the MYT Regulations, 2015, the total depreciation during the life of the asset shall not exceed 90% of the original cost of Asset. The Commission has computed the depreciation separately for assets added under each asset head in each year. The Commission has disallowed the depreciation in excess of 90% of the original cost of asset under different asset heads.

5.9.4 Further, in line with the approach adopted in the MYT Order and as specified in Regulation 33 of the MYT Regulations, 2015, the Commission has not considered the depreciation on assets funded through grants, consumer contribution or capital subsidy, for FY 2017-18.

5.9.5 The depreciation provisionally approved for FY 2017-18 in APR is given in the Table below:

Table 52: Station wise depreciation approved for APR for FY 2017-18(Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved after APR
NTPS	Depreciation	1.62	2.34	1.67
	Less: Depreciation Funded by Grants	0.11	0.16	0.12
	Net Depreciation	**1.51**	**2.18**	**1.55**
LTPS	Depreciation	18.71	17.53	17.51
	Less: Depreciation Funded by Grants	2.51	2.39	2.42
	Net Depreciation	**16.20**	**15.13**	**15.10**
KLHEP	Depreciation	13.19	24,71	24.71
	Less: Depreciation Funded by Grants	1.38	2.61	2.63
	Net Depreciation	**11.81**	**22.10**	**22.08**

5.9.6 The detailed Station-wise computation of depreciation for NTPS, LTPS and KLHEP has been provided in **Annexure 2.**

5.10 Interest and Finance Charges

5.10.1 APGCL submitted the Interest on Loan for FY 2017-18 on normative basis as per MYT Regulations, 2015. APGCL has considered the Interest on loan based on revised net normative loan based on actual capitalisation of FY 2016-17 and revised proposed capitalisation for FY 2017-18. APGCL has claimed the Interest on Loan of Rs. 0.66 Crore for NTPS, Rs. 1.54 Crore for LTPS and Rs. 26.42 Crore for KLHEP for FY 2017-18.

Commission's Analysis

5.10.2 In the MYT Order, the Commission has approved Interest and finance charges on normative basis for FY 2017-18 as per Regulation 35 of MYT Regulations, 2015. For the APR, the Commission has considered the same approach and provisionally approved the Interest and finance charges on normative basis.

5.10.3 The closing net normative loan for FY 2016-17 as approved in this Order has been considered as opening net normative loan for FY 2016-17. The addition of loan has been considered equal to debt portion of capitalised works as approved in this Order. The loan repayment has been considered equivalent to Depreciation approved in this Order. As per MYT Regulations, 2015, weighted average rate of interest shall be computed based on actual outstanding loan as on April 1, 2017. The Commission sought details of outstanding loan as on April 1, 2017 along with documentary evidences. The Commission has computed the weighted average interest rate of 10.45% for FY 2017-18.

5.10.4 The Interest on loan capital provisionally approved by the Commission for FY 2017-18 is shown in the following Table:

Table 53: Interest and Finance Charge as approved for APR for FY 2017-18 (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved for APR
NTPS	Net Normative Opening Loan	9.91	2.83	0.73
	Addition of Normative Loan during the Year	8.40	9.11	9.11
	Normative Repayment during the year	15.46	2.18	1.55
	Net Normative Closing Loan	2.85	9.76	8.30
	Interest Rate	9.88%	10.46%	10.45%
	Interest on Laon capital	**0.63**	**0.66**	**0.47**
LTPS	Net Normative Opening Loan	19.66	19.77	19.49
	Addition of Normative Loan during the Year	30.01	5.04	5.04
	Normative Repayment during the year	16.20	15.13	15.10
	Net Normative Closing Loan	33.47	9.68	9.44
	Interest Rate	12.04%	10.46%	10.45%
	Interest on Laon capital	**3.20**	**1.54**	**1.51**
KLHEP	Net Normative Opening Loan	273.46	260.38	259.66
	Addition of Normative Loan during the Year	19.90	6.49	6.49
	Normative Repayment during the year	11.81	22.10	22.08
	Net Normative Closing Loan	281.55	244.78	244.08
	Interest Rate	9.80%	10.46%	10.45%
	Interest on Laon capital	**27.18**	**26.42**	**26.33**

5.11 Return on Equity (RoE)

5.11.1 APGCL submitted ROE for FY 2017-18 as per MYT Regulations, 2015. APGCL has not proposed any addition of equity towards the proposed capitalised works in FY 2017-18. APGCL has estimated the ROE for FY 2017-18 same as approved in MYT Order. APGCL claimed ROE of Rs. 8.53 Crore for NTPS, Rs. 22.18 Crore for LTPS and Rs. 10.64 Crore for KLHEP for FY 2017-18 for the purpose of APR.

Commission's Analysis

5.11.2 The Commission has approved the Return on Equity in accordance with Regulation 34 of the MYT Regulations, 2015. The Commission has not considered any addition of equity for capitalised works as approved in this Order. Therefore, the approved Return on Equity at 15.50% is shown in the Table below:

Table 54:Return on Equity as approved by the Commission for FY 2017-18 (Rs. Crore)

Station	Particulars	MYT Order	APGCL's submission	Approved for APR
NTPS	Opening Equity	55.00	55.00	55.00
	Closing equity	55.00	55.00	55.00
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**8.53**	**8.53**	**8.53**
LTPS	Opening Equity	143.08	143.08	143.08
	Closing equity	143.08	143.08	143.08
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**22.18**	**22.18**	**22.18**
KLHEP	Opening Equity	68.65	68.65	68.65
	Closing equity	68.65	68.65	68.65
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**10.64**	**10.64**	**10.64**

5.12 Interest on Working Capital (IoWC)

5.12.1 APGCL submitted that the Commission in MYT Order had approved IoWC of Rs.15.29 Crore for FY 2017-18. As against this, APGCL has estimated IoWC of Rs. 19.37 Crore for FY 2017-18based on the revised parameters. APGCL has considered the Rate of Interest of 12.80% as approved by the Commission in the MYT Order.

Commission's Analysis

5.12.2 The Commission has computed IoWC in accordance with Regulation 37.1 of the MYT Regulations, 2015. The rate of Interest has been considered equal to State Bank of India Base Rate as on 1stApril of FY 2017-18 plus 350 basis points, i.e., 12.60%.

5.12.3 For the purpose of APR, IoWC provisionally approved by the Commission for FY 2017-18 is shown in the following Table:

Table 55: Interest on Working Capital approved for APR for FY 2017-18 (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Estimations	Approved for APR
NTPS	Fuel Cost for one Month	3.31	7.39	8.95
	O&M Expense for one month	3.53	3.53	3.50
	Maintenance Spares – 30% of O&M	12.71	12.71	12.58
	Receivables for two months	15.34	23.89	26.77
	Total Working Capital Requirement	34.90	47.53	51.79
	Interest on Working Capital	**4.47**	**6.08**	**6.53**
LTPS	Fuel Cost for one Month	11.54	13.18	10.81
	O&M Expense for one month	3.82	3.83	3.80
	Maintenance Spares – 30% of O&M	13.77	13.77	13.66
	Receivables for two months	38.01	40.93	35.72
	Total Working Capital Requirement	67.14	71.70	63.99
	Interest on Working Capital	**8.59**	**9.18**	**8.06**
KLHEP	O&M Expense for one month	1.97	1.97	2.10
	Maintenance Spares – 30% of O&M	3.55	7.09	3.78
	Receivables for two months	11.93	13.83	13.71
	Total Working Capital Requirement	17.44	32.07	19.60
	Interest on Working Capital	**2.23**	**4.10**	**2.47**

5.13 Other Income

5.13.1 APGCL submitted that the Commission had approved Other Income of Rs. 15.58 Crore for FY 2017-18 in the MYT Order. APGCL did not propose any revision to the same and submitted the same Other income for FY 2017-18 for the purpose of APR.

Commission's Analysis

5.13.2 For the purpose of APR, the Commission provisionally approves the Other income for FY 2017-18 equal to the actual Other income approved for FY 2016-17 in this Order as shown in the following Table:

Table 56: Other Income approved for APR for FY 2017-18 (Rs. Crore)

Station	MYT Order	APGCL's Estimation	Approved for APR
NTPS	5.18	5.18	5.83
LTPS	6.46	6.46	7.84
KLHEP	3.94	3.94	4.46
Total	**15.58**	**15.58**	**18.14**

5.14 Summary of APR for FY 2017-18

5.14.1 The Summary of station-wise ARR after APR for FY 2017-18 is shown in the following tables:

Table 57: ARR for Existing Generation Stations for FY 2017-18 as approved by the Commission in APR (Rs. Crore)

Sr. No.	Particulars	NTPS			LTPS			KLHEP		
		MYT Order	APGCL's Submission	Approved for APR	MYT Order	APGCL's Submission	Approved for APR	MYT Order	APGCL's Submission	Approved for APR
A	**Annual Fixed Charges**									
1	O&M Expenses	42.37	42.37	41.45	45.90	45.90	44.90	23.64	23.64	23.12
2	Impact of ROP	-	-	0.49	-	-	0.64	-	-	2.10
3	Depreciation	1.51	2.18	1.55	16.20	15.13	15.10	11.81	22.10	22.08
4	Interest on Loans	0.63	0.66	0.47	3.20	1.54	1.51	27.18	26.42	26.33
5	Return on Equity	8.53	8.53	8.53	22.18	22.18	22.18	10.64	10.64	10.64
6	Interest on Working Capital	4.47	6.08	6.53	8.59	9.18	8.06	2.23	4.10	2.47
7	Less: Other Income	5.18	5.18	5.83	6.46	6.46	7.84	3.94	3.94	4.46
8	**Annual Fixed Charges**	**52.32**	**54.64**	**53.18**	**89.61**	**87.47**	**84.55**	**71.57**	**82.96**	**82.28**
B	**Fuel Cost**	40.70	88.71	85.15	181.86	158.11	158.47	**-**	**-**	-
F	**Total Aggregate Revenue Requirement**	**93.02**	**143.35**	**138.33**	**271.46**	**245.58**	**243.02**	**71.57**	**82.96**	**82.28**

5.15 Allowable AFC for FY 2017-18

5.15.1 The Commission notes that Unit 1 of LTPS has already been de-commissioned in FY 2016-17. Further, during FY 2017-18, Unit 4 of LTPS and Unit 1 of NTPS were de-commissioned on October 24, 2017.

5.15.2 The ARR computed in the above Table has been worked out for all Units of NTPS and LTPS. However, on account of de-commissioning of Units, the fixed cost pertaining to such Units is disallowed. The Commission has allocated the AFC to all Units on the basis of their installed capacity. The allowable AFC for de-commissioned Units has been computed based on the period for which these Units were in operation. The allowable Annual Fixed Cost for FY 2017-18 is provisionally approved as shown in the following Table:

Table 5-58: Allowable AFC after Annual Performance Review for FY 2017-18 (Rs. Crore)

Sr. No.	Unit	NTPS		LTPS	
		AFC	Allowable AFC	AFC	Allowable AFC
1	Unit 1	8.90	5.05	8.07	-
2	Unit 2	9.35	9.35	8.07	8.07
3	Unit 3	9.35	9.35	8.07	8.07
4	Unit 4	4.90	4.90	8.07	4.58
5	Unit 5	10.68	10.68	10.76	10.76
6	Unit 6	10.01	10.01	10.76	10.76
7	Unit 7			10.76	10.76
8	Unit 8			20.01	20.01
9	**Total**	**53.18**	**49.33**	**84.55**	**72.99**

5.16 Revenue from Sale of Power

5.16.1 In the MYT Order, the Commission had approved Revenue from Sale of Power of Rs. 436.06 Crore for FY 2017-18. Against this, APGCL has estimated Revenue from Sale of Power for APR as Rs. 143.35 Crore for NTPS, Rs. 248.84 Crore for LTPS for FY 2017-18 and Rs.74.70 Crore for KLHEP for FY 2017-18, which works out to total of Rs.471.89 Crore for FY 2017-18.

Commission's Analysis

5.16.2 For the purpose of APR for FY 2017-18, the Commission has considered the revenue from Fixed Charges equal to Fixed Charges approved by the Commission for FY 2017-18 in MYT Order. Accordingly, the Commission has considered the revenue from Fixed charges of Rs. 52.33 Crore for NTPS, Rs. 89.61 Crore for LTPS and Rs. 71.56 Crore for KLHEP, which works out to total revenue of Rs. 213.49 Crore for FY 2017-18.

5.16.3 As regards the revenue from Energy Charges, the Commission has considered the normative fuel cost approved in this Order for NTPS and LTPS. Any variation in actual fuel cost billed shall be considered at time of Truing up for FY 2017-18, subject to prudence check. Accordingly, revenue from Energy Charges works out to Rs. 243.63 Crore for FY 2017-18.

5.16.4 In addition to above, in the MYT Order, while determining the Tariff for FY 2017-18, the Commission has considered the past revenue gaps including the revenue surplus of FY 2016-17 arising out of provisional truing up for FY 2016-17. Subsequently, the Commission in review Order dated September 7, 2017 has revised past revenue surplus to Rs. 25.08 Crore. Accordingly, the same amount has also been considered as revenue for FY 2017-18.

5.16.5 Thus, the Commission has worked out revenue of Rs. 432.03 Crore for FY 2017-18 for the purpose of APR.

5.17 Revenue Gap/(Surplus) for FY 2017-18

5.17.1 APGCL has estimated Revenue Surplus of Rs. 8.79 Crore for NTPS for FY 2017-18, Revenue Surplus of Rs. 32.13 Crore for LTPS for FY 2017-18, and Revenue Gap of Rs. 2.30 Crore for KLHEP for FY 2017-18, which works out to total Revenue Surplus of Rs 29.62 Crore for APR.

Commission's Analysis

5.17.2 For computation of Revenue Gap/(Surplus), the Commission has considered the revenue of Rs.432.03 Crore for FY 2017-18. Accordingly, the Commission has computed the Revenue Gap/(Surplus) arising out of APR for FY 2017-18 as shown in the following Table:

Table 5-59:Revenue Gap/(Surplus)after Annual Performance Review for FY 2017-18 (Rs. Crore)

Sr. No.	Particulars	Approved after APR
1	ARR for NTPS	134.48
2	ARR for LTPS	231.46
3	ARR for KHEP	82.28
4	**Combined ARR**	**448.23**
5	Add: Revenue gap/(surplus) as approved in Review Order dated September 7, 2017	(25.08)
6	Less: Revenue from Sale of Power	432.03
7	**Revenue Gap/(Surplus)**	**(8.88)**

5.17.3 The APR reveals a Revenue Surplus of Rs. 8.88 crore for FY 2017-18. It is only indicative in the absence of Audited Annual Accounts for FY 2017-18. Hence, this is not carried forward to ARR for FY 2018-19. It will be considered only after Truing up process for FY 2017-18, after the Audited Annual Accounts are made available.

6 Revised ARR for FY 2018-19

6.1 Introduction

6.1.1 The Commission, vide its Order dated March 31, 2017 had approved the ARR for FY 2018-19 for existing Generating Stations. This Chapter deals with the determination of revised ARR for FY 2018-19 in accordance with the provisions of MYT Regulations, 2015, submissions made by APGCL with respect to the amounts approved in MYT Order dated March 31, 2017.

6.2 Capacity Addition for the FY 2018-19

6.2.1 The Commission in MYT Order had accepted the submission of APGCL regarding the commissioning of NRPP and LRPP during the Control Period. For the purpose of approval of ARR for the Control Period, the Commission has considered COD of GT Unit of NRPP as March 31, 2017 and WHR Unit as April 30, 2017. The Commission had also considered that after commissioning of NRPP, only Unit 3 (21 MW) and Unit 6 (22.50 MW) of NTPS would remain operational based on availability of gas. Further, the COD of LRPP had been considered as April 1, 2018 and it was assumed that after commissioning of LRPP, only Units 5, 6, 7 and 8 of LTPS would remain operational based on gas availability.

6.2.2 The Commission notes that the commissioning of NRPP has been further delayed. As discussed in earlier Chapter, APGCL submitted that BHEL will finalize the revised commissioning schedule after restoration of the damaged equipment. The Commission directs APGCL to submit the revised anticipated COD for NRPP as and when it is finalised with BHEL. **In view of this, the Commission accepts the submission of APGCL and has not considered any generation from NRPP during FY 2018-19.**

6.2.3 As regards LRPP, the Commission notes that APGCL has submitted the COD of LRPP as April 1, 2018. APGCL also filed a Petition for approval of provisional tariff for LRPP, which has been dealt in Chapter 7 of this Order. For the purpose of projection of ARR for FY 2018-19, the Commission has considered capacity addition towards LRPP. Further, it is assumed that after commissioning of LRPP, only Units 5, 6, 7 and 8 of LTPS would remain operational based on gas availability.

6.3 Gas Supply Position for FY 2018-19

6.3.1 APGCL in the present Petition submitted that the supply of gas was erratic during FY 2016-17 and FY 2017-18. The Commission sought the details of gas availability and gas allocation to each Station considering the commissioning of NRPP and LRPP. In this regard, APGCL submitted the following details:

(a) *Existing allocation of Gas:-* NTPS=0.66 MMSCMD and LTPS=0.90 MMSCMD

(b) *Post commissioning of NRPP:-* NTPS=0.168 MMSCMD and NRPP=0.492 MMSCMD

(c) *Post commissioning of LRPP:-* LTPS=0.54 MMSCMD and LRPP=0.36 MMSCMD

6.3.2 APGCL has also moved to install NRPP Phase-II (1 x 100 MW) which will require 0.492 MMSCMD gas. The action was initiated for obtaining additional gas linkage of 0.324 MMSCMD (0.492-0.168) gas from Ministry of Petroleum and Natural Gas, Government of India. The Secretary, Ministry of Petroleum and Natural Gas was intimated vide letter no. APGCL/CGM (GEN)/NATURAL GAS/2014-15/87 dated October 26, 2016.

6.3.3 The Commission notes that after commissioning of NRPP (GT/Open Cycle), the available gas after consumption of gas for NRPP will be used for NTPS. The lower availability of gas would affect the generation from NTPS. However, since the commissioning of NRPP is not yet finalised, the existing gas available will be fully utilised for generation from NTPS.

6.3.4 As regards the gas supply position of LTPS, the Commission notes that after commissioning of LRPP, 0.36 MMSCMD of gas will be allocated to LRPP and the remaining gas will be utilised for generation from LTPS. The lower generation of LTPS on account of non-availability of gas will reflect in the recovery of Fixed Charges for LTPS, as the same is linked to Availability, which in turn requires availability of gas.

6.3.5 The Commission is of the view that arrangement of fuel is the primary responsibility of the Generating Company. Hence, APGCL should make its best efforts for increasing the availability of gas from allocated sources so as to avoid loss of generation in its Generating Stations. For the purpose of projection of ARR for FY 2018-19, the Commission has considered the present gas availability as submitted by APGCL in its Petition.

6.4 Present Status of Existing Stations

NTPS

6.4.1 As regards NTPS, APGCL submitted that Unit 1 has been decommissioned on October 24, 2017.

6.4.2 Further, Units 2 and 3 are not operating on full load due to high cooling water temperature caused by inefficiency of old cooling water pumps. Also, major overhauling of GT Unit-2 (21 MW) was not considered in view of commissioning of NRPP. Since the date of commissioning of NRPP is yet to be finalised, APGCL has taken up regular maintenance of Unit-2 till the commissioning of NRPP.

6.4.3 Further, Unit 4 is preferred to be kept under forced shutdown in case of unavailability of gas on account of high GSHR. The Unit cannot be operated at its full load capacity even when sufficient gas is available as it is facing high exhaust temperature problem. This problem has not been resolved because of lack of spare parts.

6.4.4 Unit 5 faced some technical problems in addition to problem of low gas pressure, which results in restriction on average operating load. R&M of the Unit was carried out from October 21, 2017 to December 31, 2017.

6.4.5 R&M of Unit 6 is planned from March 1, 2018 to April 20, 2018 which shall increase the operating efficiency of the Unit.

LTPS

6.4.6 APGCL submitted that Unit 1 and Unit 4 were decommissioned on January 12, 2017 and October 24, 2017, respectively.

6.4.7 Unit 2 and 3 are in operating condition and generating power depending on the availability of gas. APGCL submitted that Units 2 and 3 will be decommissioned after commissioning of LRPP.

6.4.8 Unit 3 is under preventive maintenance from September 29, 2016 and deterioration of many parts has been observed and major repairing works are being carried out with available spares. Major overhauling of this Unit is proposed in FY 2017-18. Further, major overhauling of Unit 6 was earlier scheduled in November 2016, however, due to ongoing repairing work of Unit 3, it is scheduled in December 2018.

6.4.9 All other Units are in operating condition and generating power depending on availability of gas.

KLHEP

6.4.10 APGCL submitted that both the Units are in operating condition and generating power based on availability of water.

Effective Installed Capacity for Existing Generating Stations

6.4.11 After perusing the status of each Unit of the existing Generating Stations, the Commission notes that Unit 1 and Unit 4 of LTPS and Unit 1 of NTPS were de-commissioned. Accordingly, the effective installed capacity at starting of the year has been considered as 99.50 MW for NTPS and 127.20 MW for LTPS.

6.4.12 Further, Unit 2 and Unit 3 of LTPS will be de-commissioned after commissioning of LRPP during FY 2018-19. For the purpose of the present Order, the Commission has considered de-commissioning of Unit 2 and Unit 3 of LTPS immediately after commissioning of LRPP, i.e, May 1, 2018. Accordingly, the effective capacity for LTPS will be further reduced to 97.20 MW from the anticipated date of commissioning of Unit 2 and Unit 3 of LTPS.

6.5 Plant Availability Factor (%)

6.5.1 APGCL in its Petition has submitted the Availability for existing Stations for FY 2018-19 as shown in the following Table:

Table 60: Plant Availability factor as projected by APGCL for FY 2018-19

Station	MYT Order	Projected by APGCL
NTPS	50%	65%
LTPS	50%	65.61%
KLHEP	90%	90%

6.5.2 APGCL has proposed to undertake R&M of Cooling Tower of Unit 6 of NTPS from March 1, 2018 to April 30, 2018. Further, APGCL has proposed overhauling of Unit1 of KLHEP to be taken up from January 1, 2019 to March 9, 2019. Further, APGCL submitted that regular maintenance works for KLHEP will be done in lean seasons, and hence, generation will not be impacted.

Commission's Analysis

6.5.3 Regulation 49.1 of MYT Regulations, 2015 specifies the Normative Plant Availability factor for recovery of full fixed charges, as 50% for both NTPS and LTPS. The Commission notes that APGCL has projected the Availability higher than the normative PAF.

6.5.4 Further, Regulation 51, as amended in the first Amendment to the MYT Regulations, 2015 dated November 8, 2017 specifies normative PAF for KLHEP as 85%.

6.5.5 In accordance with the MYT Regulations, 2015, APGCL shall be eligible to recover full fixed charges if the actual availability is higher than the normative PAF specified in MYT Regulations, 2015.

6.6 Plant Load Factor (%)

6.6.1 APGCL submitted the Plant Load Factor (%) for existing Stations for FY 2018-19 as shown in the following Table:

Table 61: Plant Load Factor (%) as projected by APGCL

Station	MYT Order	Projected by APGCL
NTPS	50%	65%
LTPS	50%	65.61%
KLHEP	44.5%	45%

Commission's Analysis

6.6.2 Regulation 49.2 (i) of MYT Regulations, 2015 specifies the Normative Plant Load factor of 50% for NTPS and 50% for LTPS for incentive. Hence, the Commission approves PLF for Incentive for NTPS and LTPS as specified in the MYT Regulations, 2015. The incentive for NTPS and LTPS shall be computed at time of Truing up for FY 2018-19.

6.6.3 As regards KLHEP, Regulation 55.6 of the MYT Regulations specifies that in case the actual saleable energy in a year exceeds {DE x (100 – AUX) * (100-FEHS) /10000} MWh, the Energy Charge for the energy in excess of the above shall be billed equal to the lowest variable charges of the central sector thermal power generating stations in the north east region. Accordingly, the incentive for actual energy over and above Design energy shall be computed for KLHEP at time of Truing up.

6.7 Auxiliary Consumption (%)

6.7.1 APGCL submitted the Auxiliary Consumption for existing Stations for FY 2018-19 as per MYT Regulations, 2015, as shown in the following Table:

Table 62: Auxiliary Consumption as projected by APGCL

Station	MYT Order	Projected by APGCL
NTPS	4.50%	4.50%
LTPS	5.50%	5.50%
KLHEP	0.50%	0.50%

Commission's Analysis

6.7.2 Regulation 49.3 of the MYT Regulations, 2015 specifies the Auxiliary Consumption of 4.50% for NTPS and 5.50% for LTPS. The Commission has not considered different norms for the period before and after commissioning of LRPP. Further, Regulation 51.1 of MYT Regulations, 2015 specifies the Auxiliary Consumption of 0.50% for KLHEP.

6.7.3 Accordingly, the Commission approves the Auxiliary Consumption of 4.50% for NTPS, 5.50% for LTPS and 0.50% for KLHEP for FY 2018-19 as specified in the MYT Regulations, 2015.

6.8 Gross Generation and Net Generation

6.8.1 APGCL projected the Gross Generation and Net Generation for existing Generating Stations for FY 2018-19 as shown in the following Table:

Table 63: Gross Generation and Net Generation as projected by APGCL for FY 2018-19

Station	Gross Generation (MU)		Net Generation (MU)	
	MYT Order	Projected by APGCL	MYT Order	Projected by APGCL
NTPS	195.10	539.42	186.32	515.15
LTPS	538.70	527.95	509.07	498.91
KLHEP	390.00	353.51	388.05	351.74

Commission's Analysis

6.8.2 As discussed in an earlier Section of this Chapter, the Commission has not projected any generation from NRPP during FY 2018-19, and the generation from NTPS has been considered as submitted by APGCL. Further, the Commission has projected generation from LRPP as per COD considered for approval of provisional tariff and accordingly, considered the reduced generation of LTPS.

6.8.3 In case of KLHEP, the Commission notes that APGCL has projected the generation from KLHEP lower than the design energy of 390 MU for FY 2018-19 because of planned outage of Unit 1 for overhauling. The Commission has accepted the generation projected by APGCL.

6.8.4 The Commission has computed the Net Generation based on above estimated Gross Generation and approved Auxiliary Consumption for FY 2018-19. The Gross Generation and Net Generation approved by the Commission for FY 2018-19 is shown in the following Table:

Table 64: Gross and Net Generation as approved by Commission for FY 2018-19

Station	Gross Generation (MU)	Net Generation (MU)
NTPS	539.42	515.14
LTPS	538.75	509.12
KLHEP	353.51	351.74
Total	**1,431.68**	**1,376.00**

6.9 Station Heat Rate

6.9.1 APGCL, in its Petition, has projected SHR for existing Stations for FY 2018-19 as shown in the following Table:

Table 65: Station Heat Rate (kcal/kWh) as submitted by APGCL for FY 2018-19

Station	MYT Order	As projected by APGCL
NTPS	3900	3900
LTPS	3200	3200

Commission's Analysis

6.9.2 The Commission approves SHR for NTPS and LTPS as per MYT Regulations, 2015. Accordingly, the Commission approves SHR of 3900 kcal/kWh for NTPS and 3200 kcal/kWh for LTPS for FY 2017-18.

6.10 Fuel Cost

6.10.1 APGCL has considered GCV of 10000 kcal/SCM for NTPS. APGCL submitted that it has considered the landed price of gas for FY 2018-19 from October 2017 onwards based on the following:

a) Basic APM gas price = $1.73/MMBTU (60% of the Non-APM gas price of $2.89/MMBTU as per existing price declared by MOPNG effective from October 1, 2017)

b) USD Exchange rate = Rs. 64.36 equal to rate of September, 2016 obtained from RBI website.

6.10.2 APGCL has considered the landed price of gas for LTPS from October 2017 onwards based on the following:

a) Basic Non-APM gas price= $2.89/MMBTU (as per existing price declared by MOPNG effective from October 1, 2016)

b) Basic APM gas price = $1.73/MMBTU (60% of the Non-APM gas price)

c) USD Exchange rate = Rs. 66.74 equal to rate of September, 2017 obtained from RBI website.

6.10.3 Accordingly, APGCL has projected the landed price of gas for FY 2018-19 as shown in the following Table:

Table 66: Landed Price of Gas for FY 2018-19 (Rs./1000 SCM) as calculated by APGCL

Station	MYT Order	APGCL's submission
NTPS	4,848.09	5631.09
LTPS for gas supplied by GAIL	-	5698.89
LTPS for gas supplied by OIL	-	7822.96
LTPS (Wt. Avg. Price)	6,295.86	7235.11

6.10.4 Further, the fuel cost projected by APGCL for FY 2018-19 is shown in the following Table:

Table 67: Fuel Cost for FY 2018-19 as submitted by APGCL (Rs. Crore)

Station	MYT Order	APGCL's Projection
NTPS	40.70	131.16
LTPS	108.32	123.45

Commission's Analysis

6.10.5 In the MYT Order, the Commission had approved the Fuel cost for NTPS and LTPS for FY 2018-19 based on approved performance parameters and latest GCV and price of fuels available at that time. For the purpose of approving the fuel cost for FY 2018-19, the Commission has adopted the same approach and approves the Fuel cost based on approved performance parameters in this Order and latest fuel price and GCV.

6.10.6 The Commission has considered the GCV of gas and landed price of gas based on the latest fuel bills submitted by APGCL in FPA submission.

6.10.7 In case of NTPS and LTPS, the Commission has considered the actual weighted average GCV of gas received for the period from October 2017 to December 2017. For price of gas for FY 2018-19, the Commission has considered the actual weighted average landed price of gas for the period from October 2017 to December, 2017. Considering the decreasing trend in price of gas, the Commission has not considered any escalation in price of gas.

6.10.8 The GCV and landed price of gas considered by the Commission for projection of fuel cost is shown in the following Table:

Table 68: GCV and Landed Price of Gas for FY 2018-19 considered by the Commission

Station	Particulars	Approved by the Commission
NTPS	GCV of Gas (kcal/SCM)	9,056.79
	Price of Gas (Rs./1000SCM)	5,365.24
LTPS	GCV of Gas (kcal/SCM)	9,490.58
	Price of Gas (Rs./1000SCM)	6,849.83

6.10.9 The Commission has projected the fuel cost for NTPS and LTPS based on approved Performance parameters, GCV of gas and landed price of gas. The fuel cost projected by the Commission for NTPS and LTPS for FY 2018-19 is shown in the following Table:

Table 69: Fuel Cost approved by the Commission for FY 2018-19

S. No.	Particulars	Derivation	Unit	NTPS	LTPS
1	Gross Generation	A	MU	539.42	538.75
2	Heat Rate	B	kcal/kWh	3900.00	3200.00

S. No.	Particulars	Derivation	Unit	NTPS	LTPS
3	GCV of gas	C	kcal/SCM	9056.79	9490.58
4	Overall Heat	D=AxB	G. cal.	2103738.00	1724000.00
5	Gas consumption	E=D/C	M. SCM	232.28	181.65
6	Price of Gas	F	Rs./1000 SCM	5365.24	6849.83
7	Total Cost of Gas	G=ExF/10000	Rs. Crore	124.63	124.43
8	**Total Fuel Cost**		**Rs. Crore**	**249.06**	

6.11 O&M Expenses

6.11.1 APGCL submitted that it has projected O&M Expenses for FY 2018-19 based on O&M expenses proposed in True up for FY 2016-17 and escalated at 5.05% in accordance with the MYT Order. APGCL has projected O&M Expenses of Rs. 51.41 Crore for NTPS, Rs. 53.59 Crore for LTPS and Rs. 27.11 Crore for KLHEP for FY 2018-19.

6.11.2 Further, APGCL submitted that amount of Rs. 25.90 Crore has been proposed as Special R&M for major overhauling of KLHEP, Unit-1 which is proposed for FY 2018-19.

Commission's Analysis

6.11.3 In the MYT Order, the Commission has approved O&M Expenses on normative basis as per MYT Regulations, 2015 for FY 2018-19. For the purpose of projection of revised ARR, the Commission continues with the same approach and approves Station-wise O&M expenses on normative basis as per MYT Regulations, 2015.

6.11.4 For arriving at normative O&M expenses for FY 2018-19, the Commission has considered the revised normative expenses of FY 2017-18 as approved in Chapter 5 of this Order. The Commission has computed normative O&M expenses by applying escalation factor of 3.12%, derived based on average of CPI and WPI for FY 2014-15 to FY 2016-17 in the ratio of 60:40, on revised normative O&M Expenses for FY 2017-18 approved in this Order.

6.11.5 The O&M expenses approved by the Commission for FY 2018-19 is shown in the following Table:

Table 70: O&M expenses for FY 2018-19 as approved by the Commission (Rs. Crore)

Station	MYT Order	APGCL's Submission	Approved by the Commission
NTPS	44.51	51.41	42.74
LTPS	48.22	53.59	46.30
KLHEP	24.83	27.11	23.85

6.11.6 Further, as stated earlier, the Commission sought the details of computation of ROP from APGCL. APGCL has estimated the impact of ROP as Rs. 6.21 crore for FY 2018-19. However, APGCL submitted that schedule of payment is yet to be declared by APGCL Board. In view of the above, the amount of Rs. 6.21 crore against ROP has been provisionally approved over and above the normative Employee expenses approved by the Commission for FY 2018-19. Accordingly, the Commission approves Station wise impact of ROP as Rs. 1.62 Crore for NTPS, Rs. 1.89 Crore and Rs. 2.71 Crore for KLHEP for the purpose of APR.

6.11.7 Further, the Commission directs APGCL to submit actual impact on account of revision of pay, along with detailed justification and documentary evidences on basis of Audited Accounts for FY 2018-19 at time of Truing up.

6.11.8 As regards the Special R&M of Rs. 25.90 Crore claimed for overhauling of Unit 1 of KLHEP, APGCL submitted that this special R&M of Unit I of KLHEP is proposed for the first time in the Tariff Petition for FY 2018-19. APGCL submitted the copy of Board Resolution and DPR including the scope of work, cost details, copies of quotations received from the vendors, etc.

6.11.9 Turbine and Generator Set of Unit 1 and Unit 2 of KLHEP are of Fuji Electric make. As these sets were procured in 1983 and left untouched for more than 20 years, for keeping these Units in normal operating condition as per OEM, major overhauling is carried out for every five years. The first major Overhauling of Unit-1 and Unit-2 of KLHEP was carried out in the year 2012 and 2014. APGCL proposed to carryout second overhauling of Unit-1 and auxiliaries in 2018, under the supervision of OEM M/s Voith Fuji without implementing any outsourcing agency. For this, M/s Voith Fuji was asked to provide the offer for the spare parts along with services charges. Accordingly, Voith Fuji submitted the offer for the spares on December 20, 2016 and for service charges for one Unit on July 07, 2017. The Commission notes that the amount of Rs. 25.90 Crore includes Rs. 16.69 Crore towards spares for major overhauling and Rs. 9.21 Crore towards service charge for major overhauling.

6.11.10 After perusing the details of documents submitted by APGCL, the Commission in-principle approves the Special R&M of Unit I of KLHEP for major overhauling during FY 2018-19. Accordingly, the Commission has considered an amount of Rs. 25.90 Crore towards special R&M in FY 2018-19, over and above the approved O&M Expense in the Table above.

6.12 Capital Investment and its Funding

NTPS

6.12.1 APGCL submitted that the Commission had approved the Investment Plan for NTPS for FY 2018-19 vide its Order on Business Plan for APGCL dated September 1, 2019, in which Rs. 0.25 Crore for Major Overhauling of Unit-6 of NTPS was approved. Further, APGCL has proposed the revised capital expenditure for NTPS in which APGCL has projected Rs. 2.32 Crore for Electro-mechanical works for NTPS and Rs. 2.39 Crore for Civil Works for NTPS, which adds up to total of Rs. 4.71 Crore.

LTPS

6.12.2 APGCL submitted that the Commission had approved the Investment Plan for LTPS for FY 2018-19 vide its Order on Business Plan for APGCL dated September 1, 2019, in which Rs. 5.90 Crore was approved. Further, APGCL has proposed the revised capital expenditure for LTPS in which APGCL has projected Rs. 4.00 Crore for Electro-mechanical works for LTPS and Rs. 6.19 Crore for Civil Works for LTPS, which adds up to total of Rs. 10.19 Crore.

KLHEP

6.12.3 APGCL proposed to carry out Overhauling of Unit-1 of KLHEP for Rs. 25.90 Crore. APGCL claims that the above-mentioned overhauling is necessary for overall health of the Unit. Further, APGCL submitted that it has claimed the above-mentioned amount as Special R&M expenditure under O&M Head.

6.12.4 Additionally, APGCL has proposed Rs. 9.18 Crore for Electro-mechanical works for KLHEP for FY 2018-19 and Rs. 1.15 Crore for Civil Works for KLHEP for FY 2018-19, which adds up to the total of Rs. 10.33 Crore excluding Special R&M expenditure for KLHEP for FY 2018-19.

Commission's analysis

6.12.5 In the Business Plan Order dated September 1, 2016, the Commission had approved the Capital Expenditure and Capitalisation for existing generation stations. In the MYT Order, the Commission has approved the Capital Expenditure for NTPS and LTPS, same as approved in the Business Plan Order. However, in case of KLHEP, the Commission has approved the revised capital expenditure submitted by APGCL for KLHEP.

6.12.6 As discussed in earlier Chapter, APGCL submitted that the revised Capital Expenditure is proposed considering the revised date of commissioning of NRPP and LRPP.

6.12.7 For the purpose of revised projection, the Commission approves the Capital Expenditure and Capitalisation as submitted by APGCL as shown in the following Table:

Table 71: Capital Expenditure and Capitalisation as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved for Projection
NTPS	Capital Expenditure	0.25	4.71	4.71
	Capitalisation	0.25	4.71	4.71
LTPS	Capital Expenditure	5.90	10.19	10.19
	Capitalisation	5.90	10.19	10.19
KLHEP	Capital Expenditure	2.50	10.33	10.33
	Capitalisation	2.50	10.33	10.33

6.12.8 The Commission further clarifies that the approach adopted by the Commission does not bar APGCL from implementing the schemes as approved in Business Plan Order dated September 1, 2016. APGCL should make its best efforts to incur the capital expenditure approved in Business Plan Order.

6.12.9 As regards the funding of capitalised works, APGCL has considered the funding by normative debt:equity ratio of 70:30. However, while approving the scheme in Business Plan Order, the Commission has approved the funding of these scheme through debt only based on the submissions of APGCL. Hence, the Commission approves the funding of capitalised works through loan only for FY 2018-19. Any change in funding pattern may be considered at time of Truing up for FY 2018-19, subject to prudence check.

6.13 Depreciation

6.13.1 APGCL submitted that it has projected the depreciation in accordance with MYT Regulations, 2015, and based on approved GFA and proposed capital additions during FY 2018-19. APGCL has not considered the depreciation on assets funded through grants/subsidies as per Regulation 31 of MYT Regulations, 2015.

6.13.2 APGCL projected the Depreciation of Rs. 2.40 Crore for NTPS, Rs. 15.46 Crore for LTPS and Rs. 22.33 Crore for KLHEP for FY 2018-19.

Commission's analysis

6.13.3 The Commission has considered the opening GFA for FY 2018-19 equivalent to the closing GFA for FY 2017-18 as approved in this Order. The Commission has computed depreciation as per scheduled rates specified in the MYT Regulations, 2015.

6.13.4 As per Regulation 33 of the MYT Regulations, 2015, the total depreciation during the life of the asset shall not exceed 90% of the original cost of Asset. The Commission has computed the depreciation separately for assets added under each asset head in each year. The Commission has disallowed the depreciation in excess of 90% of the original cost of asset under different asset heads.

6.13.5 Further, in line with the approach adopted in the MYT Order and as specified in Regulation 33 of the MYT Regulations, 2015, the Commission has not considered the depreciation on assets funded through grants, consumer contribution or capital subsidy, for FY 2017-18.

Table 72: Depreciation for FY 2018-19 as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved by Commission
NTPS	Depreciation	1.84	2.57	1.86

Station	Particulars	MYT Order	APGCL's Submission	Approved by Commission
	Less: Depreciation on assets funded by Grants	0.13	0.17	0.13
	Net Depreciation	**1.71**	**2.40**	**1.74**
LTPS	Depreciation	19.71	17.86	17.83
	Less: Depreciation on assets funded by Grants	2.54	2.40	2.42
	Net Depreciation	**17.18**	**15.46**	**15.41**
KLHEP	Depreciation	13.73	24.92	24.92
	Less: Depreciation on assets funded by Grants	1.40	2.59	2.61
	Net Depreciation	**12.33**	**22.33**	**22.30**

The Station-wise computation of Depreciation is provided in **Annexure 2** to this Order.

6.14 Interest on Loan

6.14.1 APGCL has computed the Interest on loan as per the methodology specified in the MYT Regulations, 2015. APGCL submitted that the opening normative loan as on April 1, 2016 has been taken as the base and the additions during the period have been considered to arrive at the normative loan for FY 2018-19. APGCL estimated the Interest on Loan of Rs. 0.83 Crore for NTPS, Rs. 0.45 Crore for LTPS and Rs. 19.29 Crore for KLHEP.

Commission's Analysis

6.14.2 In the MYT Order, the Commission has approved Interest and finance charges on normative basis for FY 2017-18 as per Regulation 35 of the MYT Regulations, 2015. For the APR, the Commission has considered the same approach and approved the Interest and finance charges on normative basis.

6.14.3 The closing net normative loan for FY 2017-18 as approved in this Order has been considered as opening net normative loan for FY 2018-19. The addition of loan has been considered equal to debt portion of capitalised works as approved in this Order. The loan repayment has been considered equivalent to Depreciation approved in this Order. As per MYT Regulations, 2015, weighted average rate of interest shall be computed based on actual outstanding loan as on April 1, 2018. The Commission sought details of estimated outstanding loan as on April 1, 2018. The Commission has computed the weighted average interest rate of 8.13% for FY 2018-19.

6.14.4 The Interest on loan capital approved by the Commission for FY 2018-19 is shown in the following Table:

Table 73: Interest on Loan Capital for FY 2018-19 as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Submission	Approved by Commission
NTPS	Net Normative Opening Loan	2.85	9.76	8.30
	Addition of normative loan during the year	0.25	3.30	4.71
	Normative Repayment during the year	1.71	2.40	1.74
	Net Normative Closing Loan	1.39	10.66	11.27
	Interest Rate	9.88%	8.13%	8.13%
	Interest on Loan Capital	**0.21**	**0.83**	**0.80**
LTPS	Net Normative Opening Loan	33.47	9.68	9.44
	Addition of normative loan during the year	5.9	7.13	10.19
	Normative Repayment during the year	17.18	15.46	15.41
	Net Normative Closing Loan	22.19	1.36	4.22
	Interest Rate	12.04%	8.13%	8.13%
	Interest on Loan Capital	**3.35**	**0.45**	**0.55**
KLHEP	Net Normative Opening Loan	281.55	244.78	244.08
	Addition of normative loan during the year	2.5	7.23	10.33
	Normative Repayment during the year	12.33	22.33	22.30
	Net Normative Closing Loan	271.73	229.68	232.10
	Interest Rate	9.80%	8.13%	8.13%
	Interest on Loan Capital	**27.10**	**19.29**	**19.36**

6.15 Return on Equity

6.15.1 APGCL has computed the Return on Equity on average equity for the year at rate of return of 15.5% as per the MYT Regulations, 2015. APGCL has considered the addition of equity at 30% of proposed capitalisation for FY 2018-19. Against approved Return on Equity of Rs. 8.53 Crore for NTPS, Rs. 22.18 Crore for LTPS and Rs.10.64 Crore for KLHEP, APGCL has projected Return of Equity of Rs. 8.63 Crore, Rs. 22.41 Crore and Rs. 10.88 Crore respectively, for FY 2018-19.

Commission's Analysis

6.15.2 The Commission has approved the Return on Equity in accordance with Regulation 34 of the MYT Regulations, 2015. The Commission in Business Plan Order has approved the funding of capital schemes from debt only in line with approach submitted by APGCL. The Commission notes that APGCL has changed funding of capital schemes approved in Business Plan Order. However, the Commission has retained the funding for schemes from debt only as approved in Business Plan Order. Accordingly, the Commission has not considered any addition of equity for capitalised works as approved in this Order. Therefore, the approved Return on Equity at 15.50% is shown in the Table below:

Table 74: Return on Equity for FY 2018-19 as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Projection	Approved by Commission
NTPS	Opening Equity	55.00	55.00	55.00
	Addition	0.00	1.41	0.00
	Closing equity	55.00	56.41	55.00
	Average Equity	55.00	55.71	55.00
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**8.53**	**8.63**	**8.53**
LTPS	Opening Equity	143.08	143.08	143.08
	Addition	0.00	3.06	0.00
	Closing equity	143.08	146.14	143.08
	Average Equity	143.08	144.61	143.08
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**22.18**	**22.41**	**22.18**
KLHEP	Opening Equity	68.65	68.65	68.65
	Addition	0.00	3.10	0.00
	Closing equity	68.65	71.75	68.65
	Average Equity	68.65	70.20	68.65
	Rate of Return (%)	15.50%	15.50%	15.50%
	Return on Equity	**10.64**	**10.88**	**10.64**

6.16 Interest on Working Capital (IoWC)

6.16.1 APGCL has computed the IoWC as per provisions of the MYT Regulations, 2015 for existing generating Stations for FY 2018-19., APGCL has considered the rate of interest of 12.80% as approved in the MYT Order.

6.16.2 APGCL has projected IoWC of Rs. 8.12 Crore for NTPS, Rs. 8.56 Crore for LTPS and

Rs 3.56 Crore KLHEP for FY 2018-19.

Commission's Analysis

6.16.3 The Commission has computed IoWC in accordance with Regulation 37.1 of the MYT Regulations, 2015. As per the Regulation, the rate of Interest shall be equal to State Bank of India Base Rate as on 1st April of the respective year plus 350 basis points. Since, Base Rate for 1 April, 2018 is not available, the rate of interest considered for computation of IoWC for FY 2017-18 has also been considered for FY 2018-19. Accordingly, rate of interest of 12.60% has been considered for computation of IoWC for FY 2018-19.

6.16.4 Interest on working capital approved by the Commission for FY 2018-19 is shown in the following Table:

Table 75: Interest on Working Capital for FY 2018-19 as approved by the Commission (Rs. Crore)

Station	Particulars	MYT Order	APGCL's Estimation	Approved by Commission
NTPS	Fuel Cost for one month	3.31	10.93	8.39
	O&M Expenses for one month	3.71	4.28	3.70
	Maintenance Spares-30% of O&M	13.35	15.42	13.31
	Receivables for two months	15.69	32.79	26.13
	Total Working Capital Requirement	36.06	63.43	51.52
	IoWC	**4.62**	**8.12**	**6.49**
LTPS	Fuel Cost for one month	7.13	10.29	8.41
	O&M Expenses for one month	4.02	4.47	4.02
	Maintenance Spares-30% of O&M	14.47	16.08	14.46
	Receivables for two months	29.52	36.01	31.12
	Total Working Capital Requirement	55.14	66.84	58.00
	IoWC	**7.06**	**8.56**	**7.31**
KLHEP	O&M Expenses for one month	2.07	2.26	2.21
	Maintenance Spares-30% of O&M	3.72	8.13	3.98
	Receivables for two months	12.21	17.43	17.21
	Total Working Capital Requirement	18.00	27.83	23.40
	IoWC	**2.30**	**3.56**	**2.95**

6.17 Other Income

6.17.1 APGCL has projected the Other Income for existing Generating stations for FY 2018-19 as Rs. 5.83 Crore for NTPS, Rs. 7.84 Crore for LTPS and Rs. 4.46 Crore for KLHEP.

Commission's Analysis

6.17.2 For the purpose of revised projections of ARR, the Commission approves the Other income for FY 2018-19 equal to the actual Other Income approved for FY 2016-17 in this Order. The Commission notes that APGCL has also adopted the same approach for projecting Other Income. The Other income approved by the Commission is shown in the following Table:

Table 76: Other Income approved for FY 2018-19 (Rs. Crore)

Station	MYT Order	APGCL's Estimation	Approved by the Commission
NTPS	5.18	5.83	5.83
LTPS	6.46	7.84	7.84
KLHEP	3.94	4.46	4.46

6.17.3 **Summary of ARR for Control Period**

6.17.4 Based on the above analysis, the station-wise ARR approved for FY 2018-19 for existing Stations is summarised in the Table below:

Table 77: Summary of ARR for FY 2018-19 as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	NTPS			LTPS			KLHEP		
		MYT Order	APGCL's Projection	Approved by Commission	MYT Order	APGCL's Projection	Approved by Commission	MYT Order	APGCL's Projection	Approved by Commission
A	**Annual Fixed Charges**									
1	O&M expenses	44.51	51.41	42.74	48.22	53.59	46.30	24.83	27.11	23.85
2	Impact of ROP	-	-	1.62	-	-	1.89	-	-	2.71
3	Special R&M	-	-	-	-	-	-	-	25.90	25.90
4	Depreciation	1.71	2.40	1.74	17.18	15.46	15.41	12.33	22.33	22.30
5	Interest on Loans	0.21	0.83	0.80	3.35	0.45	0.55	27.10	19.29	19.36
6	Return on Equity	8.53	8.63	8.53	22.18	22.41	22.18	10.64	10.88	10.64
7	Interest on Working Capital	4.62	8.12	6.49	7.06	8.56	7.31	2.30	3.56	2.95
8	*Less: Other Income*	5.18	5.83	5.83	6.46	7.84	7.84	3.94	4.46	4.46
9	**Annual Fixed Charges**	**54.39**	**65.57**	**56.08**	**91.52**	**92.62**	**85.80**	**73.26**	**104.60**	**103.24**
B	**Fuel Cost**	**40.70**	**131.16**	**124.63**	**108.32**	**123.45**	**124.43**	**-**	**-**	**-**
C	**ARR**	**95.09**	**196.72**	**180.70**	**199.84**	**216.06**	**210.23**	**73.26**	**104.60**	**103.24**

6.18 Allowable AFC for NTPS and LTPS for FY 2018-19

6.18.1 As discussed in earlier Section of this Chapter, the Commission has considered the effective capacity for NTPS and LTPS for FY 2018-19, after de-commissioning of existing Units.

6.18.2 The ARR computed in the above Table has been worked out for all Units of NTPS and LTPS. However, on account of de-commissioning of Units, the fixed cost pertaining to such Units is to be disallowed. The Commission has allocated the AFC to all Units on the basis of their installed capacity. The allowable AFC for all Units has been computed based on the period for which the Units will be in operation. The allowable Annual Fixed Cost for FY 2018-19 is approved as shown in the following Table:

Table 6-78: Allowable AFC for FY 2018-19 as approved by the Commission (Rs. Crore)

Sr. No.	Unit	NTPS		LTPS	
		AFC	Allowable AFC	AFC	Allowable AFC
1	Unit 1	9.39	-	8.19	-
2	Unit 2	9.85	9.85	8.19	0.70
3	Unit 3	9.85	9.85	8.19	0.70
4	Unit 4	5.16	5.16	8.19	-
5	Unit 5	11.26	11.26	10.92	10.92
6	Unit 6	10.56	10.56	10.92	10.92
7	Unit 7			10.92	10.92
8	Unit 8			20.30	20.30
9	**Total**	**56.08**	**46.69**	**85.80**	**54.44**

6.18.3 The Commission has allowed the Annual Fixed Charges for NTPS and LTPS for recovery through Tariff in FY 2018-19 as shown in the above Table, subject to Target Availability. Any variation in actual de-commissioning of Unit 2 and Unit 3 shall be considered at time of Annual Performance Review of FY 2018-19.

7 Projection of ARR for LRPP

7.1 Background

7.1.1 Lakwa Thermal Power Station (LTPS) had installed capacity of 157.2 MW consisting of seven gas turbine Units. Out of these, three Units have capacity of 20 MW each and the remaining four are of 15 MW each. Of the four nos. of 15 MW Units operating in open cycle, three were commissioned in 1980-81 and one was commissioned in 1986. One unit of 15 MW was decommissioned in January 1, 2017, making the current installed capacity of LTPS as 142.2 MW.

7.1.2 The first four Units, on average, have been in operation for over thirty years till date. As they operating in open cycle mode, the heat rate of these Units at 3513 kcal/kWh is twice as much as that of the modern combined cycle plants. AERC stipulates heat rate of new Combined Cycle Power Plants at 1950 kcal/kWh. Considering the age of the gas turbines, replacement of these gas turbines was inevitable.

7.1.3 In view of the above, it was decided to replace the first four Units with a modern plant with better heat rate and thus, the Lakwa Replacement Power Project of 70 MW (7 Units of 10 MW each) was conceived.

7.1.4 Lakwa Replacement Power Project (LRPP) was planned under Assam Power Sector Investment programme (MFF-II) of Asian Development Bank (ADB) for arranging fund (90% as Grant and 10% as Term Loan). The loan agreement was signed between ADB, GOI and GoA on February 20, 2015. The equity part of the Project is being funded by GoA. The Letter of Award for execution of the project was issued to the consortium of Wartsila India Pvt. Ltd and Wartsila Finland on December 11, 2015 through process of competitive bidding, and the Contract Agreement was signed on January 19, 2016 and Zero Date started from March 9, 2016.

7.2 Commissioning of LRPP

7.2.1 APGCL in its Petition submitted that as of August 31, 2017, the overall physical progress of the project was 69.7% and overall financial progress of the project was 72%. Further, APGCL submitted that the COD of the project is expected by April 1, 2018.

7.2.2 The Commission sought the physical status of LRPP as on January 31, 2018. APGCL submitted that 96.2% of work has been completed with the following status of work:

(i) Engineering: 100%

(ii) Transportation (WFI + WIN equipment): 100 %

(iii) Installation and Construction: 97.8%

(iv) Civil construction:95.9%

(v) Mechanical installation:99.2%

(vi) Electrical installation:98.6%

(vii) Commissioning :71.1%

(viii) Pre-commissioning activities of the facilities are completed and the contractor has started the commissioning works.

(ix) First 5 minutes start up run of all the seven gas engines is done.

(x) No.1 gas engine genset is synchronized with the national grid on 13.02.2018.

(xi) All the seven gas engine gensets, i.e., 70 MW are expected to be synchronized with the national grid by 31.03.2018. COD of LRPP: 23-04-18 (as per time schedule furnished by Wartsila)

7.2.3 The Commission notes that Wartsila has mentioned COD of April 23, 2018 as per their time schedule.

7.2.4 **In view of the above, the Commission has considered COD of LRPP as April 30, 2018 for the purpose of approval of provisional Tariff.**

7.3 Approach for present Order

7.3.1 In Petition No. 42/2016, APGCL has sought approval of the ARR for LRPP for the Control Period. In reply to specific query of the Commission for filing the Petition under Regulation 41.4 of MYT Regulations, 2015, APGCL submitted that it has only submitted ARR Petition for LRPP and had not submitted the Tariff Petition since LRPP was expected to be commissioned in FY 2018-19. The Commission noted that there is no specific provision in the MYT Regulations, 2015 for approval of ARR for new generating stations expected to be commissioned, in the absence of specific Petition for approval of provisional tariff under Regulation 41.4 of MYT Regulations, 2015.

7.3.2 Thereby, Commission directed APGCL in its Order dated March 31, 2017 to submit a separate petition for approval of provisional tariff for LRPP on or before 180 days of anticipated date of commercial operation of plant, in accordance with Regulation 41.4 of MYT Regulations, 2015.

7.3.3 APGCL filed the present Petition for approval of ARR and determination of provisional tariff for FY 2018-19 for LRPP under Regulation 41.4 of the MYT Regulations, 2015.

7.3.4 Regulation 41.4 to 41.6 of the MYT Regulations, 2015 specify as under:

> *"41.4 A Generating Company may make a Petition for determination of provisional tariff in advance of the anticipated Date of Commercial Operation of Unit or Stage or Generating Station as a whole, as the case may be, based on the capital expenditure actually incurred up to the date of making the Petition or a date prior to making of the Petition, duly audited and certified by the statutory auditors and the provisional tariff shall be charged from the date of commercial operation of such Unit or Stage or Generating Station, as the case may be.*
>
> *41.5 A Generating Company shall make a fresh Petition in accordance with these Regulations, for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation of the Generating Station duly certified by the statutory auditors based on Annual Audited Accounts.*
>
> *41.6 Any difference in provisional tariff and the final tariff determined by the Commission and not attributable to the Generating Company may be adjusted at the time of determination of final tariff for the following year as directed by the Commission." (emphasis added)*

7.3.5 In view of the above, considering the anticipated date of commercial operation submitted by APGCL, the Commission, in the present Order, has approved the ARR for FY 2018-19 and determined the provisional tariff for LRPP for FY 2018-19 based on the scrutiny of information furnished by APGCL in accordance with the provisions of MYT Regulations, 2015.

7.4 Performance Parameters for FY 2018-19

7.4.1 APGCL in its Petition has submitted the performance parameters for LRPP for FY

2018-19 as shown in the following Table:

Table 79: Performance Parameters for LRPP as submitted by APGCL

Particulars	FY 2018-19
Plant Availability Factor (PAF) (%)	90%
Plant Load Factor (PLF) (%)	90%
Auxiliary Consumption (%)	3.50%
Gross generation (MU)	551.88
Net Generation (MU)	532.56
Gross Station Heat Rate (kcal/kWh)	2079

7.4.2 APGCL submitted that as a new station, regular maintenance shutdown has been considered to be included in PLF of 90%.

7.4.3 As regards SHR for LRPP, APGCL submitted that the Design Heat Rate of LRPP is 1873 kcal/kWh on NCV. Design Heat Rate on GCV has been derived from the Heat Rate on NCV by multiplying it with the factor of 1.11. APGCL further submitted that normative SHR applicable for LRPP as per MYT Regulations, 2015 is 2000 kcal/kWh. However, the Regulation specifies that *the Commission may decide to amend and notify the revised norms on case to case basis.* As design heat rate on GCV for LRPP is 2079 kcal/kWh, APGCL requested the Commission to revise normative SHR for LRPP to 2079 kcal/kWh. APGCL also submitted the guaranteed SHR from the Contract document of LRPP.

Commission's Analysis

7.4.4 Regulation 49.1 of the MYT Regulations, 2015 specifies the Normative PAF for new generating stations commissioned after April 1, 2016 as 85% for full recovery of Fixed Charges. Further, Regulation 49.2 of the MYT Regulations, 2015 specifies the Normative PLF for new Gas engine-based generating stations as 90% for incentive. Accordingly, the Commission provisionally approves PAF and PLF as 85% and 90%, respectively, for FY 2018-19.

7.4.5 As regards the Auxiliary Consumption for Gas engine based generating Station, Regulation 49.3 (ii) specifies the norm of 2% for open cycle and 3.50% for open cycle with Gas Booster compressor. The Commission notes that LRPP has projected installation of gas booster, hence, Auxiliary Consumption norm of 3.50% has been provisionally approved. Further, Auxiliary Consumption norm may be revised at the time of determination of final tariff based on actual capital cost, subject to prudence check and verification of gas booster compressor.

7.4.6 After considering the anticipated COD of LRPP, PLF and Auxiliary Consumption, the Commission has computed the Gross Generation and Net Generation for FY 2018-19.

7.4.7 As regards SHR, Regulation 49.4 (c) of the MYT Regulations, 2015 specifies SHR norms of 2000 kcal/kWh for open cycle for capacity more than 5 MW. Based on contract document of LRPP as submitted by APGCL, the Commission notes that Guaranteed Gross Heat Rate of LRPP is 1873 kcal/kWh. The Guarantee data clearly mentioned the Design Heat Rate as Gross Heat Rate, hence, the contention of APGCL regarding the heat rate on NCV is not justified. Hence, the Commission provisionally approves the SHR for LRPP as 2,000 kcal/kWh, as specified in the MYT Regulations, 2015.

7.4.8 Further, the Commission notes that there may be actual variation in GSHR during the operation of the plant, which would be known only after Performance Guarantee Test of LRPP. The Commission, at this stage, has considered the SHR as per the provisions of MYT Regulations, 2015 in the absence of performance guarantee tests. The Commission will take a view in the matter based on the performance guarantee test reports. The Commission directs APGCL to submit the performance guarantee test reports after completion of the same.

7.4.9 The performance parameters provisionally approved by the Commission for FY 2018-19 for LRPP are shown in the following Table:

Table 80: Performance Parameters for LRPP provisionally approved by the Commission

Particulars	FY 2018-19
Plant Availability Factor (PAF) (%) for Full recovery of Fixed Charges	85%
Plant Load Factor (PLF) (%) for Incentive	90%
Auxiliary Consumption (%)	3.50%
Gross generation (MU)	508.03
Net Generation (MU)	490.25
Gross Station Heat Rate (kcal/kWh)	2,000

7.5 Fuel Cost

7.5.1 APGCL has considered GCV of 9902 kcal/SCM based on average GCV of gas received at LTPS. APGCL submitted that it has considered the landed price of gas for LRPP for FY 2018-19 based on the following:

a) Basic Non-APM gas price = $2.48/MMBTU (as per existing price declared by MOPNG effective from October 1, 2017)

b) Basic APM Gas price = $1.49/MMBTU (60% of Non APM gas price)

c) USD Exchange rate = Rs. 64.36 equal to rate of September 20, 2016 obtained from RBI website.

7.5.2 Accordingly, APGCL has projected landed price of gas for LRPP for FY 2018-19 as Rs. 6300.90 per 1000 SCM, and projected the fuel cost as Rs. 73.01 Crore.

Commission's Analysis

7.5.3 The Commission notes that the gas allocation for LTPS will be used for operation of LRPP. No separate gas allocation has been sought by APGCL for LRPP. Hence, the Commission has considered the GCV of gas and landed price of gas as considered for LTPS for FY 2018-19 for approval of provisional tariff for LRPP. The GCV and landed price of gas considered by the Commission for projection of fuel cost is shown in the following Table:

Table 81: GCV and Landed Price of Gas for LRPP as approved by the Commission

Particulars	FY 2018-19
GCV of Gas (kcal/SCM)	9,490.58
Price of Gas (Rs./1000 SCM)	6,849.83

7.5.4 The Commission has projected the fuel cost for LRPP based on approved performance parameters, GCV of gas and landed price of Gas. The fuel cost provisionally approved by the Commission for LRPP for FY 2018-19 is shown in the following Table:

Table 82: Fuel Cost for LRPP approved by the Commission

S. No.	Particulars	Unit	APGCL's Submission	Provisionally approved by the Commission
1	Gross Generation	MU	551.88	508.03
2	Auxiliary Consumption	%	3.50%	3.50%
3	Net Generation	MU	532.56	490.25

S. No.	Particulars	Unit	APGCL's Submission	Provisionally approved by the Commission
2	Heat Rate	kcal/kWh	2079	2000
3	GCV of gas	kcal/SCM	9902.80	9490.58
4	Overall Heat	G. cal.	1147358.52	1016064.00
5	Gas consumption	M. SCM	115.86	107.06
6	Price of Gas	Rs./1000 SCM	6300.90	6849.53
7	Total cost of Gas	Rs. Crore	73.00	73.33
8	Ex-Bus Energy Charges	Rs./kWh	1.37	1.50

7.6 O&M Expenses

7.6.1 APGCL submitted the proposed O&M Expenses of Rs. 18.92 Crore for FY 2018-19 as per MYT Regulations, 2015.

Commission's Analysis

7.6.2 As regards O&M expenses for new Generating Stations, Regulation 52.2 (c) of the MYT Regulations, 2015 specifies the norm of Rs. 22.50 Lakh/MW for Gas Turbine/Combined Cycle Generating Stations for FY 2015-16. Further, it is specified that the O&M expenses for each subsequent year shall be determined by escalating the base expenses for FY 2015-16 at the escalation factor of 6.30% to arrive at permissible O&M expenses for each subsequent year.

7.6.3 Accordingly, O&M norm for FY 2018-19 has been computed as Rs. 27.03 lakh per MW. As LRPP is expected to be commissioned on April 1, 2018, the Commission has computed the O&M expenses for LRPP for FY 2018-19 based on norms provided in the MYT Regulations, 2015 as under:

Table 83: O&M Expenses for LRPP as provisionally approved by the Commission

Particulars	FY 2018-19
O&M Norms (Rs. Lakh/MW)	27.03
Effective Installed Capacity (MW)	70.00
Normative O&M Expenses (Rs. Crore)	18.92

7.7 Capital Cost and Means of Finance

7.7.1 APGCL submitted the Capital Investment and means of finance for LRPP as shown in the following Table:

Table 84: Capital Expenditure for LRPP as submitted by APGCL (Rs. Crore)

S. No.	Particulars	Actual upto August 31, 2017	September 1, 2017 to March 31, 2018 (Estimated)	FY 2018-19 (Estimated)	Total
1	Capital Expenditure	192.60	41.13	33.78	267.50
2	**Funding**				
	ADB Grant	165.78	23.31	24.26	213.35
	ADB Loan	18.42	2.59	2.70	23.71
	GoA Loan	1.30	0.23	0.00	1.53
	GoA Equity	7.10	15.00	6.82	28.92
	Total	192.60	41.13	33.78	267.50

Commission's Analysis

7.7.2 Regulation 41.4 of the MYT Regulations, 2015 requires application of provisional tariff based on the capital expenditure actually incurred up to the date of making the Petition or a date prior to making of the Petition, duly audited and certified by the statutory auditors. The Commission sought such details from APGCL separately for LRPP. APGCL submitted duly audited and certified capital expenditure actually incurred up to the date of making the Petition as August 31, 2017. As per CA certificate submitted by APGCL, it is observed that it has incurred the actual capital expenditure of Rs. 192.60 Crore as on August 31, 2017. The year-wise break up of capital expenditure incurred is as under:

(a) Capital expenditure up to FY 2015-16 – Rs. 24.61 Crore

(b) Capital expenditure during FY 2016-17 – Rs. 105.88 Crore

(c) Capital expenditure from April 1, 2017 to August 31, 2017 – Rs. 62.11 Crore.

7.7.3 The Commission notes that APGCL submitted the total project of Rs. 267.50 Crore. However, it has shown capital expenditure of Rs. 33.78 Crore during FY 2018-19. In this regard, the Commission sought the clarification from APGCL regarding project cost as on COD and after COD. APGCL submitted that the total project cost of LRPP is Rs.267.50 Crore. The project cost to be capitalised after COD and before the cut-off date is Rs. 33.78 crore. However, any foreign exchange rate variation (FERV) amount has not been considered in the financial calculations submitted in the provisional tariff Petition of LRPP. All such additional variations will be computed and adjusted at the time of financial closure of the project.

7.7.4 In view of the above, the Commission notes that estimated project cost of LRPP as on COD will be Rs. 233.72 Crore. Also, this exclude the impact of FERV, which will be considered after financial closure of the project.

7.7.5 In view of this, the Commission is of the view that at this stage, any attempt to approve the Capital Cost by carrying out the prudence check based on limited information will not serve any purpose as some components of cost are likely to undergo change till COD of the Project. It will be more appropriate to analyse the reasons for variation in actual Capital Cost with respect to original estimated capital cost. Further, the component of allowable Interest During Construction (IDC) would also need to be assessed, in view of the delay in completion of the project.

7.7.6 Hence, the Commission is not approving the capital cost of LRPP in this Order. The Commission shall approve the capital cost of the project after carrying out the prudence check of the capital cost while determining the final Tariff in accordance with Regulation 41.5 of MYT Regulations, 2015 based on audited capital cost as on COD. Hence, for the purpose of determination of provisional Tariff, the Commission has considered the capital cost at 80% of estimated capital expenditure till COD of the project, as submitted by APGCL.

7.7.7 The capital cost considered by the Commission for provisional tariff determination is shown in the following Table:

Table 85: Capital Cost as considered by the Commission (Rs. Crore)

Particulars	APGCL's Submission	Provisionally approved by the Commission
Project cost as on COD	233.72	186.98

7.7.8 As regards the means of finance, the Commission notes that funding of the project as proposed by APGCL is 80% from Grant, 10% from Equity and 10% from Debt. Further, after deducting the grant from the capital cost of the project, the funding would be in debt:equity ratio of 47:53. However, MYT Regulations, 2015 restricts the equity of the project up to 30%. The equity over and above 30% shall be considered as normative loan. Accordingly, the Commission has considered the normative debt:equity ratio of 70:30 after deducting the grant from the capital cost of the project.

7.7.9 Accordingly, the funding of capitalised works for LRPP as considered by the Commission for the purpose of determination of provisional tariff is shown in the following Table:

Table 86: Funding of Capital Cost as considered by the Commission (Rs. Crore)

Particulars	As on COD
Grant	151.27
Equity	10.71
Debt	25.00
Total Capitalised works	**186.98**

7.8 Depreciation

7.8.1 APGCL has projected the Depreciation for LRPP for FY 2018-19 as per MYT Regulations, 2015 as shown in the following Table:

Table 87: Depreciation for LRPP as submitted by APGCL (Rs. Crore)

Particulars	FY 2018-19
Depreciation	13.52
Less: Depreciation on assets funded through Grants	10.77
Net Depreciation	2.75

Commission's Analysis

7.8.2 For computation of depreciation, the Commission has considered the Capital Cost as on COD as GFA as on April 1, 2018. No Capital Cost after COD has been considered as asset addition during FY 2018-19. The Commission has considered the scheduled depreciation rates as specified in MYT Regulations, 2015. The Commission has not considered depreciation on assets funded through grants in accordance with Regulation 31 and 33 of MYT Regulations, 2015. Further, the Commission has computed the depreciation for FY 2018-19 from April 1, 2018 till March 31, 2019.

7.8.3 In view of the above, the Commission has approved depreciation for FY 2018-19, as per MYT Regulations, 2015, as given in the Table below:

Table 88: Depreciation for LRPP as provisionally approved by the Commission (Rs. Crore)

Particulars	FY 2018-19
Opening GFA	186.98
Addition during year	0.00
Closing GFA	186.98
Wt. avg. Depreciation rate	5.05%
Depreciation	**8.70**
Opening Grant towards GFA	151.27
Closing Grant towards GFA	151.27
Depreciation on Grants	7.65
Net Depreciation	**1.05**

7.9 Interest on loan capital

7.9.1 APGCL has projected the Interest on Loan of GoA and ADB Loan capital for LRPP for FY 2018-19 as per MYT Regulations, 2015, as shown in the following Table:

Table 89: Interest on Loan Capital for LRPP as submitted by APGCL (Rs. Crore)

Particulars	GoA Loan	ADB Loan
Opening Loan	1.53	21.01
Additions during the year	0.00	2.70
Repayment	0.19	2.56
Closing Loan	1.34	21.15
Average Loan	1.44	21.08
Rate of Interest	10%	10%
Interest on Loan	0.14	2.11
Total Interest on Loan	**2.25**	

Commission's Analysis

7.9.2 The Commission notes that Interest on loan capital for FY 2018-19 is required to be allowed on normative basis as per Regulation 35 of MYT Regulations, 2015. The Commission has considered the opening normative loan for FY 2017-18 equal to debt component considered for estimated project cost as on COD. The loan repayment has been considered equivalent to depreciation approved in this Order. The Commission has considered the weighted average rate of interest as 10% towards ADB Loan (@

10%) and State Government loan (@10%) as submitted by APGCL. Interest on loan capital has been computed for the period from COD till March 31, 2019. Further, the Commission shall revisit rate of interest at time of determination of final tariff for LRPP.

7.9.3 The interest on loan capital provisionally approved by the Commission for LRPP for FY 2018-19 is shown in the following Table:

Table 90: Interest on Loan Capital for LRPP provisionally approved by the Commission (Rs. Crore)

Particulars	FY 2018-19
Normative Opening Loan	25.00
Addition of normative loan during the year	0.00
Normative Repayment during the year	1.05
Normative Closing Loan	23.94
Interest Rate	10.00%
Interest on Loan Capital	**2.25**

7.10 Return on Equity

7.10.1 APGCL has projected the Return on Equity (ROE) of Rs. 3.95 Crore for LRPP for FY 2018-19 as per MYT Regulations, 2015.

Commission's Analysis

7.10.2 The Commission has approved the ROE in accordance with Regulation 34 of the MYT Regulations, 2015. ROE has been computed for the period from COD till March 31, 2019. Therefore, the provisionally approved Return on Equity at 15.50%% is shown in the Table below:

Table 91: Return on Equity for LRPP for FY 2018-19 as provisionally approved by the Commission (Rs. Crore)

Particulars	APGCL's Submission	Approved by Commission
Opening equity	22.10	10.71
Addition of equity during the year	6.82	0.00
Closing equity	28.92	10.71
Rate of return	15.50%	15.50%
Return on Equity	**3.95**	**1.53**

7.11 Interest on Working Capital (IoWC)

7.11.1 APGCL has projected the IoWC of Rs. 3.97 Crore for LRPP as per MYT Regulations, 2015. The rate of interest has been considered as State Bank of India Base Rate plus 350 basis points. APGCL has considered the rate of interest as 12.80%.

Commission's Analysis

7.11.2 The Commission has computed IoWC in accordance with Regulation 37.2 of the MYT Regulations, 2015. As per the Regulation, the rate of Interest shall be equal to State Bank of India Base Rate as on 1st April of the respective year plus 350 basis points. Since, Base Rate for 1 April, 2018 is not available, the rate of interest considered for computation of IoWC for FY 2017-18 has also been considered for FY 2018-19. Accordingly, rate of interest of 12.60% has been considered for computation of IoWC for FY 2018-19.

7.11.3 IoWC provisionally approved by the Commission for FY 2018-19 is shown in the following Table:

Table 92: IoWC for LRPP provisionally approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission	Approved by Commission
1	Fuel Cost for one month	6.32	6.11
2	O&M Expenses for one month	1.58	1.58
3	Maintenance Spares-30% of O&M	5.68	5.68
4	Receivables for two months	17.48	16.82
5	Total Working Capital Requirement	31.05	30.18
6	Rate of Interest	12.80%	12.60%
7	**Interest on working Capital**	**3.97**	**3.80**

7.12 Other Income

7.12.1 APGCL has not considered any Other Income for LRPP for FY 2018-19.

Commission's Analysis

7.12.2 At this stage, the Commission has not considered any Other Income for LRPP, however, the same shall be submitted by APGCL at the time of final Tariff Petition.

7.13 Summary of ARR for Control Period

7.13.1 Based on the above analysis, the ARR approved for LRPP for FY 2018-19 is summarised below:

Table 93: Summary of ARR for LRPP approved by the Commission (Rs. Crore)

S. No.	Particulars	APGCL's Submission	Approved by Commission
A	**Annual Fixed Charges**		
1	O&M expenses	18.92	18.92
2	Depreciation	2.75	1.05
3	Interest on Loans	2.25	2.25
4	Return on Equity	3.95	1.53
5	Interest on Working Capital	3.97	3.80
7	*Less:* Non-Tariff Income	-	-
8	**Total Annual Fixed Charges**	**31.84**	**27.56**
B	**Fuel Cost**	**73.01**	**73.33**
C	**Net ARR**	**104.86**	**100.89**

7.13.2 The Commission provisionally approves Annual Fixed Charges of Rs. 27.56 Crore and Energy Charges of Rs. 1.50/kWh. The same has been considered for approving the provisional tariff for LRPP in next Chapter.

8 Tariff for FY 2018-19

8.1 Cumulative Revenue Gap/(Surplus) and Net ARR for recovery

8.1.1 APGCL has computed the cumulative Revenue Gap/(Surplus) for True-up of FY 2016-17 as shown in the following Table:

Table 94: Revenue Gap/(Surplus) as submitted by APGCL (Rs. Crore)

Sr. No.	Particulars	Rs. Crore
1	Stand-alone Revenue Gap/(Surplus) for FY 2016-17	30.55
2	Carrying Cost for FY 2017-18 at SBI Base Rate + 3.5%	3.91
3	**Total**	**34.46**

Commission's Analysis

8.1.2 For computation of cumulative past Revenue Gap/(Surplus) for recovery, the Commission has considered the Revenue Gap/(Surplus) after truing up 2016-17 approved in this Order along with carrying cost. No Revenue Gap/(Surplus) has been proposed to be recovered through tariff in FY 2018-19 arising out of APR of FY 2017-18, in accordance with the MYT Regulations, 2015.

8.1.3 The Commission has computed the cumulative past Revenue Gap/(Surplus) to be recovered by APGCL from APDCL as shown in the following Table:

Table 95: Cumulative Revenue Gap/(Surplus) approved by the Commission (Rs. Crore)

Sr. No.	Particulars	ROI (%)	MYT Order	Approved in this Order
A	**Truing up for FY 2016-17**			
1	ARR for NTPS		52.20	126.62
2	ARR for LTPS		87.06	306.56
3	ARR for KHEP		69.78	78.87
4	**Combined ARR**		**209.04**	**512.05**
5	Revenue from Sale of Power		318.72	596.62
6	**Revenue Gap/(Surplus)**		**(109.68)**	**(84.57)**
7	Revenue Gap/(Surplus) considered in FY 2017-18 as per MYT Order		(109.68)	(109.68)
8	**Net Revenue Gap/(Surplus) (A)**		-	**25.11**
B	**Computation of carrying cost on Revenue Gap/(Surplus) in FY 2017-18 Order**			

Sr. No.	Particulars	ROI (%)	MYT Order	Approved in this Order
1	Revenue Gap/(Surplus) considered in FY 2017-18 as per MYT Order			(109.68)
2	Carrying/(holding) cost for FY 2016-17 (half Year)	12.80%		(7.02)
3	Carrying/(holding) cost for FY 2017-18 (half Year)	12.60%		(6.91)
4	**Total (B)**			**(13.93)**
C	**Computation of carrying cost on Net Revenue Gap/(Surplus) computed in this Order**			
1	Net Revenue Gap/(Surplus)			25.11
2	Carrying/(holding) cost for FY 2016-17 (half Year)	12.80%		1.61
3	Carrying/(holding) cost for FY 2017-18 (Full Year)	12.60%		3.16
4	Carrying/(holding) cost for FY 2018-19 (half year)	12.60%		1.58
5	**Total (C)**			**6.35**
D	**Cumulative Revenue Gap/(Surplus) along with carrying cost (A+B+C)**			**17.54**
E	**Monthly amount recoverable/(refundable) towards True-up for FY 2016-17**			**1.46**

The Commission approves the cumulative Revenue Gap of Rs. 17.54 Crore for APGCL. This Gap is to be recovered to APDCL in twelve monthly equal instalments of Rs. 1.46 Crore in FY 2018-19, as adjustments to the monthly bill.

8.2 Fixed Charges and Energy Charges for FY 2018-19 for NTPS, LTPS and LRPP

8.2.1 APGCL has proposed the Generation Tariff for NTPS, LTPS and Provisional Tariff for LRPP as shown in the following Table:

Table 96: Proposed Generation tariff as submitted by APGCL (Rs. Crore)

Station	Particulars	FY 2018-19
NTPS	Annual Capacity Charges (Rs. Crore)	65.56
	Energy Charges (Rs./kWh)	2.55
LTPS	Annual Capacity Charges (Rs. Crore)	92.63
	Energy Charges (Rs./kWh)	2.47
LRPP	Annual Capacity Charges (Rs. Crore)	31.84
	Energy Charges (Rs./kWh)	1.37

Commission's Analysis

8.2.2 The Commission has determined the Tariff for FY 2018-19 for NTPS, LTPS and provisional Tariff for FY 2018-19 for LRPP as under:

Annual Fixed Charges

8.2.3 In earlier Chapter, the Commission has determined the Annual Fixed Charges for NTPS, LTPS and LRPP.

8.2.4 Regulation 53.1 stipulates that the normative PAF for full recovery of Annual Fixed Charges shall be 50% for NTPS and LTPS and 85% for LRPP. The Availability approved by the Commission for these Stations is more than normative PAF. Hence, the Commission approves the full recovery of Fixed Charges for NTPS, LTPS and LRPP.

8.2.5 The Fixed Charges for NTPS, LTPS and LRPP as approved by the Commission for FY 2018-19 is shown in the following Table:

Table 97: Fixed Charges as approved for FY 2018-19 by the Commission (Rs. Crore)

Generating Station	Annual Fixed Charges	Monthly Fixed Charges
NTPS	46.69	3.89
LTPS	54.44	4.54
LRPP (Provisional)	27.56	2.30

8.2.6 However, in the event of actual Availability for the year, computed in accordance with the MYT Regulations, being less than the normative Availability, the Fixed Charges shall be proportionately adjusted as per the Regulations.

Energy Charges

8.2.7 The Commission has determined the Energy Charges (on energy sent-out basis) for NTPS, LTPS and LRPP as shown in the following Table:

Table 98: Energy Charges for FY 2018-19 approved by the Commission (Rs. Crore)

Station	Particulars	FY 2018-19
NTPS	Fuel Cost (Rs. Crore)	124.63
	Net Generation (MU)	515.14
	Energy Charges (Rs./kWh)	**2.42**
LTPS	Fuel Cost (Rs. Crore)	124.43

Station	Particulars	FY 2018-19
	Net Generation (MU)	509.12
	Energy Charges (Rs./kWh)	**2.44**
LRPP (Provisional)	Fuel Cost (Rs. Crore)	73.33
	Net Generation (MU)	490.25
	Energy Charges (Rs./kWh)	**1.50**

8.3 Capacity Charges and Energy Charge Rate for KLHEP

8.3.1 APGCL has proposed the tariff for KLHEP as shown in the following Table:

Table 99: Proposed Generation tariff as submitted by APGCL

Station	Particulars	FY 2018-19
KLHEP	Capacity Charges (Rs. Crore)	104.61
	Energy Charges (Rs./kWh)	1.41

Commission's Analysis

8.3.2 Regulation 55 of the MYT Regulations specifies the computation of Capacity Charges and Energy Charges for Hydro Generating Stations. The Commission has determined the Capacity Charges and Energy Charges for KLHEP for FY 2018-19 based on the applicable AFC and projected Availability as under:

Table 100: Capacity Charges and Energy Charges approved by the Commission for KLHEP for FY 2018-19

Particulars	FY 2018-19
Annual Fixed Charge (Rs. Crore)	103.24
NAPAF (%)	85%
Projected Availability (%)	85%
Capacity Charges (Rs. Crore)	**51.62**
Design Energy (MU)	390.00
Auxiliary Consumption (%)	0.50%
Net Design Energy (MU)	388.05
Energy Charge Rate (Rs. /kWh)	**1.330**

8.3.3 The Capacity Charges shall be computed for calendar month on monthly basis as per Regulation 55.2 and 55.3 of MYT Regulations, 2015.

8.4 Generation Tariff for FY 2018-19

8.4.1 The Commission approves the Generation Tariff for FY 2018-19 including past Revenue Gap/(Surplus) as shown in the following Table:

Table 101: Generation Tariff for FY 2018-19 approved by the Commission

Particulars	Particulars	FY 2018-19
NTPS	Annual Fixed Charges (Rs. Crore)	46.69
	Monthly Fixed Charges (Rs. Crore)	3.89
	Energy Charges (Rs./kWh)	2.42
LTPS	Annual Fixed Charges (Rs. Crore)	54.44
	Monthly Fixed Charges (Rs. Crore)	4.54
	Energy Charges (Rs./kWh)	2.44
LRPP-(Provisional)	Annual Fixed Charges (Rs. Crore)	27.56
	Monthly Fixed Charges (Rs. Crore)	2.30
	Energy Charges (Rs./kWh)	1.50
KLHEP	Capacity Charges (Rs. Crore)	51.62
	Energy Charge Rate (Rs./kWh)	1.330
Past revenue gaps/(surplus)	Cumulative past Revenue Gap/(Surplus) (Rs. Crore)	17.54
	Monthly amount to be refunded to APDCL (Rs. Crore)	1.46

Since, the Commission has determined Station-wise Generation Tariff for FY 2018-19, the billing shall be done for each station separately on monthly basis in accordance with the provisions of MYT Regulations, 2015.

Further, it is clarified that the billing of Provisional Fixed Charges and Provisional Energy Charges approved for LRPP shall commence only after COD of LRPP. Any reduction in allowable Fixed Cost for LTPS because of commissioning of LRPP shall be undertaken at time of truing up for FY 2018-19.

8.5 Applicability of Tariff

8.5.1 The approved Generation tariff for FY 2018-19 shall be effective from April 1, 2018 and shall continue until replaced/modified by an Order of the Commission.

Sd/-	**Sd/-**
(D. Chakravarty)	**(S. C. Das)**
Member, AERC	**Chairperson, AERC**

9 Directives

The Commission has issued certain directives to APGCL in the past Orders, with an objective of attaining operational efficiency and streamlining the flow of information, which would be beneficial to the sector and the Petitioner, both in the short-term and long-term.

As regards the directives issued by the Commission, APGCL has submitted the report to the Commission on compliance. The Commission has reviewed the compliance of directives submitted by APGCL. The Commission hereby issues the following directives along with new directives to APGCL as under:

Directive 1: Employee's Provident Fund

The Commission directs APGCL to complete the formalities of forming the Trust for Employee's Provident Fund as early as possible.

Directive 2: Procurement of gas

APGCL should continue to pursue with its gas suppliers to obtain the contracted quantum of gas on a regular basis.

The Commission directs APGCL to expedite the amendment of Agreement with M/s OIL India Ltd. regarding the revision in modalities of MGQ formula, so that it can be made effective during FY 2018-19 and submit the same to the Commission along with the next Tariff Petition. The Commission further directs APGCL to take necessary actions in the next Agreement with AGCL, which is due by March 2018. Further, APGCL is directed to submit the copy of the revised Agreement to the Commission along with the next Tariff Petition.

Directive 3: Monitoring of Progress of New Power Projects and Need for augmentation of own generating capacity

The Commission directs APGCL to expedite the completion of LRPP as per the schedule committed. The Commission directs APGCL to submit the revised anticipated COD for NRPP at the earliest, in consultation with BHEL. APGCL is also directed to expedite the completion of other ongoing Projects including Solar PV projects.

Directive 4 – Revision of Pay

The Commission directs APGCL to submit actual impact on account of ROP, including detailed calculation and justification along with documentary evidences on basis of Audited Accounts for FY 2017-18 and revised projections for FY 2018-19. APGCL should maintain details of expenses incurred on ROP in FY 2017-18 and FY 2018-19 and also for the arrears paid separately.

Directive 5: Gross Station Heat Rate for LRPP

The Commission will take a view regarding Gross Station Heat Rate for LRPP based on the performance guarantee test reports. The Commission directs APGCL to submit the performance guarantee test reports after completion of the same.

Directive 6: Petition for determination of Final Tariff for NRPP and LRPP

The Commission directs APGCL to file a fresh Petition for determination of final tariff for NRPP and LRPP based on actual capital expenditure incurred up to the date of commercial operation of the Generating Station duly certified by the statutory auditors, in accordance with Regulation 41.5 of MYT Regulations, 2015.

Directive 7: Fixed Asset Register

The Commission is of the view that Fixed Asset Register should be prepared and updated every year by APGCL, duly certified by Chartered Accountant. APGCL is directed to maintain Fixed Asset Register at their end and submit to the Commission as and when asked during tariff proceedings.

Directive 8 – Compliance of Audit Observations

The Commission noted that Statutory Auditors and CAG have made several comments on the Audited Accounts. APGCL is directed to take corrective actions on the same expeditiously.

Further, APGCL is directed to submit the status of compliance of above Directives to he Commission at the end of each quarter. The Commission will review the status in the month following the end of the quarter.

Sd/-	**Sd/-**
(D. Chakravarty)	**(S. C. Das)**
Member, AERC	**Chairperson, AERC**

10 Annexures

10.1 Annexure – 1 - Minutes of the 22nd Meeting of the State Advisory Committee

The 22nd meeting of the State Advisory Committee (SAC) was held on 8th February, 2018 at the Administrative Staff College, Guwahati.

The list of members, invitees and other officers/consultants present is appended at Annexure – A.

Presiding over the meeting, the Hon'ble Chairperson (Off.), AERC, Shri D. Chakravarty welcomed all members and invitees of the State Advisory Committee. Shri Chakravarty briefly explained that the purpose of the meeting was primarily to discuss the tariff petitions filed by the State Power utilities for FY 2018-19 and the uniform Renewable Purchase Obligation (RPO) targets proposed by the Ministry of New & Renewable Energy (MNRE), Government of India. This was followed by an introductory session among the members and invitees. Thereafter, the agenda items were taken up for discussion in seriatim. The important points raised by the Hon'ble Members during the course of discussions are briefly recorded below.

Agenda No. 1: Confirm the Minutes of the 21st meeting of SAC held on 04.03.2017

The Minutes of the 21st Meeting of the Committee were circulated among the Members and Special Invitees. No comment was received on the Minutes. With the approval of the members, the Minutes of the 21st meeting of the SAC were confirmed.

Agenda No. 2: Action Taken on the minutes of the 21st Meeting of SAC.

A power-point presentation was made by Consultant, Shri J. Bezbaruah from AERC on the salient features of action taken reports submitted by the power utilities. Hard copies of the action taken reports were also circulated among the members of SAC. The Chairperson (Off.), AERC asked the respective utilities to respond to any query from the SAC Members. The queries/ suggestions from the members and respective replies are noted below:

i) Representative from CII, Ms S. Sarma commented that RPO targets and its fulfillment through purchase of Renewable Energy Certificates (RECs) is an additional financial burden on the State. She questioned as to whether RPO fulfillment is necessary at present, given the fact that availability of renewable energy in the State is limited.

   It was informed from the Chair that RPO targets were set by the Commission considering the policy directives of the Government of India. Besides, opinion of the Stakeholders were also considered while fixing the RPO targets, therefore, RPO fulfillment cannot be avoided by the obligated entities. Shri Chakravarty observed that a State like Assam has sufficient renewable energy potential which needs to be harnessed by the obligated entities in order to avoid buying RECs. That is one of the objectives of RPO – to encourage generation of renewable energy. He stated that the issue may be discussed further when the agenda item for RPO is taken up.

ii) Regarding installation of separate feeders for HT and Tea Consumers, Secretary ABITA, Shri A. Sharma stated that the consumers in North Bank particularly Udalguri, Lakhimpur, Rangapara and Biswanath need to be looked into given the poor power situation prevailing in those areas. He stated that the North Bank is yet to be covered in the proposed plan.

In his reply, MD APDCL, Shri P. Gupta (IAS) stated in the Annual Plan for FY 2017-18, 35 gardens have been selected for providing separate feeders at an estimated cost of Rs 8.31 Cr and the tender process for these are underway. He informed that, in addition, execution of separate feeders for 85 Tea gardens is going on under ADB funding at an estimated cost of Rs 35 Crore. He further informed that if there was any tea garden which needs to be taken up on priority, it can be added to the list in the next budget. He stated that the list of Tea estates included for feeder separation will be provided to ABITA.

Representative from AIMO, Shri H. Sutodiya informed that Karbi Anglong district was the least yielding district of Assam with regard to tea. The power situation in Karbi Anglong District is not at all conducive for the few organized tea gardens situated there, and therefore, these gardens may be considered for feeder separation on priority. He explained that with implementation of the Government of India "Power for All" Schemes, a number of domestic consumers have been added to the feeders providing power to the gardens. As a result, the power quality has deteriorated in these gardens and separate feeders are likely to help the situation.

Hon'ble Chairperson (Off.), AERC requested APDCL to look into the matter and MD, APDCL assured to do so.

iii) Hon'ble Member, AERC, Shri S.C. Das IAS (Retd.) expressed surprise that tariff for the 2 MW Namrup Solar PV project was quoted so high at Rs 6.57 /kWh and that too when land was offered for free. He observed that the cost of solar power was declining and tariffs determined by the Commission recently for solar projects including land cost is around Rs 6 /kWh. Shri Das suggested that since the 2 MW Project was abandoned by APGCL, the Company may now consider setting up a Grid Interactive solar plant of higher capacity instead.

MD APGCL, Ms. Kalyani Baruah informed that the Company has already decided to set up a solar plant of 15 MW in Namrup as land is available.

Member AERC, Shri S.C Das further suggested that APGCL should explore the possibility of setting up solar projects in other areas of Assam as well. He observed that the price of solar power is likely to decrease further.

MD APDCL informed that the price quoted by APDCL in the recent reverse auction for solar power without evacuation facility was in the range of Rs 4.36 /kWh and Rs 4.48/ kWh and PPA with developers are likely to be signed within 31st March, 2018.

Ms S. Sharma, CII suggested that tariffs determined should be commensurate with voltage at which power is supplied, connected load, etc.

Shri K. Medhi, Secretary, NESSIA asked the status regarding the proposal for installation of prepaid meters in 5 Circles of Assam, whether annual calenders for generating consumer awareness published by APDCL were being circulated among the consumers, the status of distribution of LEDs and status of the Amguri and Chandrapur Solar Power Projects.

MD, APDCL, Shri P. Gupta (IAS) informed as follows:

- Although decision was taken to install prepaid meters in the 5 highest loss making districts of Assam from savings under ADB funds, the same was diverted to the lower Kopili project and material procurement for transformers. Inspite of this, installation of prepaid meters has been taken up intensively. Around 22,000 prepaid meters have been procured and these are being installed and more shall be done in future.
- Annual calenders are displayed in all the APDCL collection and billing offices so that awareness can be generated among consumers visiting these offices. Besides, various awareness programs to ensure safety and other issues have been undertaken by the respective field offices.
- Approximately 20 lakh LED bulbs have been distributed so far under UJALA and DELP schemes. Consumers can have real time information regarding distribution of LEDs through the UJALA App of the Government of India.
- MD, APGCL, Ms K. Baruah informed that the 70 MW Amguri Solar Project is progressing well and is likely to come under operation within 2019. She further informed that the 20 MW Chandrapur Solar plant was found to be unfeasible due to its undulating structure.

  The Principal Secretary, Power, Government of Assam, Shri J. Baruah (IAS) informed that Government of India has proposed extension of the National Grid gas pipelines to Assam. He stressed that APGCL may seize the opportunity to start a gas based thermal power station in Chandrapur. Besides, since modern thermal plants require lesser manpower and space, the available infrastructure at Chandrapur might be used to house a training institute for power sector employees of the State.

iv) Shri J. Baruah (IAS), Principal Secretary, Power, Government of Assam stated that he was contemplating to hold a meeting with ABITA and tea associations to discuss the issues related to tea gardens as it was an important sector contributing more than 10 % of APDCL's revenue.

v) Prof. B.K. Roy, NIT Silchar observed that the Companies did not provide any reply/ status to many issues discussed during the last meeting. He suggested that if action against any issue was pending, the companies should inform so.

On his query regarding status of constitution of Coordination Committees (to resolve power related issues with the tea gardens), it was informed by MD, APDCL that meetings have been held among officers of APDCL and tea garden officials from time to time and a number of issues were resolved, wherever possible. However, APDCL was considering institutionalizing the Committees so that they met every month.
Ms S. Sarma, CII requested that these committees should be formed for other HT consumers as well.

Hon'ble Chairperson (Off.), AERC requested that the status of the functioning of these Committees be forwarded to the Commission.

Prof, B.K. Roy, NIT Silchar also suggested that awareness programmes on power sector may be organized in schools through quiz, debate and essay writing competitions, etc. He opined that such programmes can be very effective and could be conducted by the local APDCL offices and cost involvement would be minimal.

Agenda No. 3 (i) : Presentation on Tariff Petition for FY 2018-19 by AEGCL

There was a brief power point presentation on the revised Annual Revenue Requirement and tariff for FY 2018-19 along with true up for FY 2016-17 and Annual Performance Review for FY 2017-18. The status of ongoing projects in AEGCL was also discussed. The following discussions took place during the course of the presentation.

i) Shri H. Sutodiya, AIMO wanted to know the reason behind cheap power i.e less than Rs 3/ kWh from Bhutan. Hon'ble Member, AERC Shri S.C. Das informed that most of the power projects in Bhutan are hydro based projects and subsidized by the Government and therefore, cheaper.

ii) Ms S. Sarma, CII suggested that Assam should try to procure this cheap power as the requisite infrastructure to transmit this power is available.

Hon'ble Member, AERC Shri S.C. Das informed that the power from Bhutan cannot be procured directly by APDCL as it is international power and is allocated by the Government of India. He informed that Assam has been allocated 118 MW from Nikasu Power Project, Bhutan which is likely to be received from July, 2019.

MD, APDCL, Shri P. Gupta (IAS) stated that cross-border power transmission Regulations are yet to be framed by the Central Commission.

Hon'ble Member, AERC Shri Das informed that till such time these Regulations are framed, power can be transmitted through bilateral arrangement as is being done by Tripura and Bangladesh.

Representative from IEX, Shri N. Sabikhi informed that although cross – border trading is presently being done on bilateral mode, it may become possible for Assam to buy power directly through the exchanges as the CERC Regulations (which is under draft stage) permits term ahead transactions for cross border trading. He further informed that once the system is in place, Assam will be able to compete with any other State in India on the exchange for cross border power from SAARC nations (barring Pakistan and Afghanistan).

iii) Shri S. Agarwal, FINER asked the reasons behind increase in the PGCIL and depreciation charges than what was approved by the Commission in FY 2016-17 and FY 2017-18.

MD, AEGCL, Shri S. N. Kalita informed that PGCIL charges have increased on account of the revision by CERC and switch over to Point of Connection charges. He further informed that depreciation charges shown during the presentation were inclusive of grants and is likely to change, as the Commission do not allow grants in depreciation to be passed on to tariff.

iv) Shri K. Medhi, Secretary, NESSIA observed that more than 50% of AEGCL cost accounted for PGCIL charges. Therefore, he suggested that the Company may try to built and augment its own network at least within the State, particularly, in view of the new initiatives under Advantage Assam and accommodate the anticipated increased power flow.

MD, AEGCL Shri S. N. Kalita informed that since most of the power consumed within the State was imported from outside the State, PGCIL charges were high. MD, AEGCL remarked that the suggestion was noted. He informed that plans are already on to augment the capacity of the State transmission network and steps would be taken accordingly.

Agenda No. 3 (ii): Presentation on Tariff Petition for FY 2018-19 by APGCL

APGCL made a brief power point presentation on the revised Annual Revenue Requirement and tariff for FY 2018-19 along with true up for FY 2016-17 and Annual Performance Review for FY 2017-18. The status of ongoing projects in APGCL was also discussed. The important points raised by the participants during the course of the presentation are summarized below:

i) MD, APGCL, Ms K. Baruah informed that the Lakwa Replacement Power Project (LRPP) of 70 MW will become operational from April 2018. The LRPP will replace the LTPS Stage I Project of 60 MW.

ii) Regarding the status of 70 MW Amguri Solar Power Project, MD APGCL reiterated that SECI is the consultant for the project and tender has been floated for reverse bidding with a capping of Rs 3.50/ kWh. She informed that the Capacity Utilization Factor (CUF) for the project is considered as 17%.

Representative from ABITA, Shri A. Kakati mentioned that the climatic conditions in the region was perhaps not very conducive for setting up solar projects. Citing an example of a private100 KW solar plant set up, he stated that CUF achieved from this Solar Plant is much lesser than expected at about 14%, He, however, said that this may be so due to location of the solar plant, which is near to Bhutan.

MD, APDCL, Shri P. Gupta (IAS) informed that the CUF recorded at the 5 MW solar power project at Balipara is 15.5%. MD, APDCL stated that solar projects constitute a sizeable part of power generation in Germany even when intensity of solar radiation is relatively less than in Assam. Member, AERC observed that lower CUF may also be due to sub-standard quality of the solar panels being supplied.

iii) On a query from Ms S. Priyadarshini, Associate Prof, DCB Girls' College regarding the status of Namrup Replacement Power Project (NRPP) and Myntriang SHEP, it was informed by MD, APGCL, Ms. K. Baruah that NRPP could not be commissioned last year due to some unfortunate breakdowns in the plant machineries. M/s Bharat Heavy Electricals Limited (BHEL), the developer of the project has sought extension for commissioning of the project and it was expected that the plant may be commissioned by September, 2018.

Regarding Myntriang SHEP, it was informed that Stage I of the project would come into operation by April 2018. Stage II of the project is already under operation.

Replying to a query from Prof. B.K. Roy, regarding who would bear the enhancement in project cost caused by delay of NRPP, MD APGCL stated that penalty charges have already been incurred on M/s BHEL due to the time overrun and any additional project cost would be entirely borne by M/s BHEL. Nevertheless, APGCL is losing generation due to delay in commissioning of NRPP.

iv) Shri K. Medhi, NESSIA stated that the Margherita Thermal Power Project has been inordinately delayed and enquired regarding the status of the project.

MD, APGCL, Ms K. Baruah informed that the Ministry of Power, Government of India has approved an enhanced 3,200 (800x4) MW thermal Power Plant in Margherita and NTPC Limited has recently submitted a DPR for the first phase i.e. 1600 (800x2) MW of the Project. Ms.Baruah further informed that the most crucial parameter for the successful commissioning of the project is grant of coal linkage. The DPR is now under examination and once it is finalized along with the coal linkage, the project is likely to be commissioned within 5 years. However, the present production capacity of the NER Coal Fields is only about 1 million ton per year which is insufficient to run a coal based project of this capacity. As providing Coal linkage to the project is a prerogative of the Government of India, therefore, no concrete timeline can be drawn at present regarding the completion of the project.

v) Shri S. Agarwal, FINER questioned APGCL on the status of their agreement with the gas suppliers with regard to minimum off take/ supply of gas in view of the decommissioning of the APGCL Stations of Namrup & Lakwa.

MD, APDCL explained that according to the GSA with Oil India Limited (OIL), in case of less off take of gas by APGCL than agreed quantity, due to decommissioning /breakdown of any generating unit, the Company would be required to compensate OIL and if OIL is unable to supply gas as per the agreement, it would have to compensate APGCL. As per this arrangement, Rs 1.49 Cr is payable to OIL.

Shri Agarwal commented that since APGCL was not receiving adequate gas supply for its power stations, APGCL may explore the possibility of buying gas from traders at competitive rates on rental basis to avoid loss in generation and also paying compensation against minimum guaranteed quantity.

vi) Ms. S. Sarma, CII questioned regarding the present shortfall in generation in the State and strategy, if any, to overcome this shortfall.

MD, APGCL, Ms K. Baruah informed that at present the gross generation from APGCL generating units was around 240 MW although average peak demand is 1450 MW and off-peak demand is around 1200 MW. Ms Baruah informed that a number of new projects are under different stages of development namely the 120 MW Lower Kopili Hydro Electric Project, Myntriang Stage I, NRPP and LRPP besides, a number of Solar projects. It was informed that replacement plants namely NRPP and LRPP would contribute additional 60 MW power into the system (50 MW and 10 MW respectively).

The Principal Secretary, Power, Government of Assam, Shri J. Baruah (IAS) informed that in addition to APGCL, the Distribution Company procured power from Central Sector Generating Sectors, through bilateral and exchange trading, Banking, etc to meet the demand for the State. He further informed that although there was an occasionally shortfall during peak hours, the Company could sell power during off-peak hours. He stressed that although there was power available from different sources outside the State, it always made economic sense to increase own power generation as APDCL power cost about Rs 4.09/ unit, power from outside cost around Rs 5.23/unit.

vii) CII Representative suggested that since the State has surplus power during off-peak hours, the industries may be incentivized to shift their load to the off-peak hours.

Member AERC, Shri S.C. Das opined that such a provision through Time of Day Tariffs already exist in the State for four categories of industrial consumers namely Oil & Coal, Tea, HT Industry I & HT Industry II.

viii) Prof. B.K. Roy, NIT Silchar questioned whether the Company carried out preventive maintenance as it was observed that Unit I of Stage II Myntriang SHEP was under forced shutdown from 20.11.2016 due to Thrust Pad bearing damage.

It was informed from APGCL that the damage was caused due to landslide in the area and mud rushing into the power station. It was stated that removing mud from the station itself took over two months and there was more than just bearing damage. However, proper precaution has been undertaken to ensure that such damage is not repeated. APGCL informed that the breakdown was due to natural calamity and unforeseen. It was further informed that preventive maintenance is practiced in the Company for smooth functioning of the generating units. In KLHEP, which is now over 10 years in operation, engineers from Japan visit the project regularly as a component of preventive maintenance.

Agenda No. 3 (iii): Presentation on Tariff Petition for FY 2018-19 by APDCL

There was a short Power Point presentation from APDCL on the revised Annual Revenue Requirement and tariff for FY 2018-19 along with true up for FY 2016-17 and Annual Performance Review for FY 2017-18. The following discussions took place during the course of the presentation:

i) Shri H. Sutodia, AIMO sought clarification on a few points. These along with the respective replies as noted below –

   a. Fixed charge collected from the consumers is meant to recover the infrastructure costs for supplying power. The infrastructure costs are likely to reduce over the years due to depreciation, etc. The fixed charge component is already high for the industries and whether any study is being done by the Discom to review the infrastructure cost with regard to the connected load of the consumers.
   b. MD, APDCL, Shri P. Gupta (IAS) informed that fixed charge levied by the Discom is not linked to the infrastructure and its expansion of the Company alone but rather consist of the Operation and maintenance charges including salary to its employees. Major chunk of the fixed cost almost 60% constitutes payment to generating units which is collected in two parts – fixed and variable.
   c. Whether minimum charges can be levied instead of separate fixed and consumption charges.
   d. APDCL replied that “Minimum Charge” is an old concept and most of the State utilities have done away with it. Minimum charges consisted of fixed charge and other charges like energy charge. As per Electricity Act 2003, tariffs must constitute of at least two charges – fixed and variable.
   e. The supervision and other charges are collected from the new consumers wanting to set up industries in the State under “Make in Assam”, despite the fact that the cost of materials are borne by the consumers themselves. Whether these supervision and other charges be done away with.
   f. MD, APDCL Shri P. Gupta (IAS) clarified that the supervision charge is a miscellaneous charge constituting 15% of the labour charge and these charges are not connected to material cost. Member, AERC, Shri Das further clarified that prior to

2005; supervision charge was 15% of the entire cost which was quite high, however, AERC stepped in and reduced this charge to 15% of labour cost only. He observed that by levying these charges, the Discom take the responsibility that the line has been properly constructed following the norms and safety standards.

g. Industries in the State, particularly tea and food processing units require to maintain a steady backup of spares and machineries so as to meet exigencies, whenever required. Whether there can there be a provision of additional connected load without affecting the fixed charges.
h. Shri P. Gupta (IAS) MD, APDCL informed that as per the new AERC Supply Code Regulations, 2017, the industries would be allowed to contract the demand as per their requirement irrespective of their connected load.
i. Hon’ble Member, AERC, Shri S.C. Das clarified that seasonal industries had to declare a minimum 65% of the connected load as contracted demand. But with notification of the AERC Supply Code Regulations, 2017, the industries may declare contracted demand as per their requirement, however; such demand cannot be more than the sanctioned connected load for the industry. He stated that the new Regulations may be downloaded from the official website of the Commission.

ii) Shri K. Medhi, NESSIA offered the following suggestions –

a. If the quality of power improves, a nominal and reasonable increase will be considered justified by the consumers as the price of all necessary commodities have risen over the years. Therefore, the Discom should make efforts to provide good quality, reliable power to its consumers.
b. From the tariff proposal, it can be seen that increase proposed in the fixed charge for industrial, commercial and domestic consumers are not uniform.
c. Load survey for the consumers is not conducted regularly and as such, the Discom is losing substantial revenue on account of fixed charge. The connected load of the consumers tend to increase over the years with increase in their electrical equipments, however, such increase is hardly intimated to the Discom. Although, the Discom give notices of voluntary load declaration from time to time, this may not be as effective as load survey.
d. The tariff for General Purpose consumers consisting of temples, mosque etc is already high. Due to this many organizations resort to unauthorized means of getting power instead of legal ways. Therefore, tariff for this category needs to be reviewed.
e. 90% of the meters in Jeevan Dhara category are either defective or not working and these need to be replaced.

Hon’ble Chairperson (Off.), AERC thanked the member for his suggestions.

Shri P. Gupta (IAS), MD, APDCL informed that tariff increase proposed for all categories is not uniform as in some categories tariff is already high.

Hon’ble Member AERC, Shri S.C. Das stated that the industrial sector is actually cross subsidizing the domestic consumers through higher tariffs. In fact, if voltage based tariff would have become applicable, tariffs for many industrial categories would have decreased as they were receiving power at a higher voltage causing low loss in the power network. However, such an arrangement would be a heavy burden to the domestic consumers and therefore, Commission follows the tariff policy while determining tariff.

iii) Ms S. Sarma, CII opined that voltage fluctuations in remote areas were severe and corrective measures need to be initiated in this regard.

Member AERC, Shri S.C. Das stated that infrastructure must be improved to encourage setting up of industries in rural areas. He opined that tariff determination based on voltage fluctuations would not be feasible, however, feeder separation of domestic and industry, initiated by the Company, should help improve the situation in rural areas considerably.

iv) Shri H. Sutodiya, AIMO suggested that the intimation regarding anticipated power failures should be given to the industrial units.

Principal Secretary, Power Government of Assam, Shri J. Baruah (IAS) suggested that this can be done for all IRCA consumers through email, mobile numbers.

v) Shri S. Agarwal, FINER gave the following suggestions:

a. The Company should give rebate on load factor, increase the rebate on power factor to encourage consumers for efficient power utilization and performance.
b. With the possibility of more industries coming into the State with *Advantage Assam*, newer categories for HT consumers must be introduced. Also, both LT and HT consumers should be encouraged to opt for receiving power at a higher voltage by providing incentives in tariff.

vi) Shri N. Sabikh, IEX stated that depending on the type of industry like continuous, seasonal, etc. tariff may be formulated in a way (by increasing/ decreasing the fixed charge and decreasing /increasing the energy charge) so that the average cost to the industry remains same and revenue expected to be recovered for the Discom also remains intact.

He complemented the Discom for managing their power portfolio effectively. The power purchase is 70-80% of the ARR and there is still scope of optimizing the same. IEX has developed a system which allows the Discom to optimize their power purchase on a day-ahead basis whether that power is from a State or Central generator. The discoms need to put in their quantum of power to buy into the system on a day ahead basis, and the most optimal power portfolio would be made available. Maharashtra, Bihar, Punjab are now trying to use this system to optimize their power purchase. He stated that although, it may not be possible to optimize the power purchase everyday, it can be done for a substantial period over the year, benefitting the discom by saving on its power purchase cost.

vii) Prof. B.K. Roy NIT, Silchar asked what the temporary rate for an agricultural consumer will be above 7.5 Hp.

It was informed that the consumer will come under HT temporary category.

viii) Ms S. Sarma, CII requested if an awareness campaign could be conducted on the functioning of the prepaid meters by the Discom. She offered that CII may also be a partner for the campaign.

The Discom agreed to the suggestion.

Agenda No 6: Promotion of Renewable Energy and RPO trajectory

A presentation was made by Shri N.K. Deka, Consultant (T), AERC on the RPO Regulations and its amendments notified by the Commission from time to time which is briefly discussed in the following paragraphs:

The Commission notified the AERC (RPO and its Compliance) Regulations, 2010 on 2nd November, 2010 fixing a trajectory for both solar and non-solar RPO compliance for FY 2010-11 up to FY 2014-15. Subsequently, the Commission amended the RPO Regulation, 2010 vide 1st Amendment notification dated 15th October, 2015 and provided a RPO trajectory for FY 2015-16 to FY 2018-19 keeping in mind the renewable resources available within the State and the views received from the obligated entities.

The Ministry of Power (MoP), GoI notified the new National Tariff Policy (NTP) dated 28.01.2016. and in light of the NTP, the Ministry of New & Renewable Energy (MNRE) issued a letter dated 11.02.2016 to the states requesting to develop Action plan for compliance of RPO upto 2022 and suggesting the SERCs to notify the RPO trajectory so as to reach 8% Solar and overall trajectory of 17% including Solar & Non-Solar by 2022.

In compliance of the National Tariff Policy and MNRE requests; the Commission initiated the process of revising the 2nd amendment of RPO trajectory. The above draft amendment Regulations were hosted on the Commission's website and Public Notice was issued in the newspapers for objections/ suggestions from stakeholders..

After carefully examining, the suggestions from public/utilities and availability of RE Resources within the state and considering the impact of revision of RPO on the retail tariffs, the Commission revised the RPO trajectory and notified the same vide 2nd amendment to RPO regulations, 2010 on 14th March, 2017 as below:

FY	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Non –Solar	3%	5%	6%	7%	8%	9%
Solar	1%	4%	5%	6%	7%	8%
Total	4%	9%	11%	13%	15%	17%

It may be mentioned here that on 22.07.2016, MNRE, GoI issued another guideline proposing a uniform Long-term trajectory of RPOs for Non-Solar & Solar Energy for FY 2016-17 to FY

2018-19 for all States/Union Territories, where it was proposed that 17% overall RPO may be achieved by FY 2018-19 itself. The same is shown in table below:

FY	2016-17	2017-18	2018-19
Non –Solar	8.75%	9.50%	10.25%
Solar	2.75%	4.75%	6.75%
Total	11.50%	14.25%	17.00%

As the Commission notified the revised RPO trajectory in accordance with NTP on 14th March, 2017 another revision within the year would have additional burden on the obligated entities. The matter was therefore, placed before the SAC for deliberation and advice.

Hon'ble Chairperson (Off.), AERC informed that the matter is under deliberation at the Forum of Regulators and it has been also proposed that the differentiation between solar and non-solar RPO be removed.

The following deliberations took place after the presentation:

i) MD, APDCL, Shri P. Gupta, IAS stated that it was becoming increasingly difficult to buy renewable power either through the exchanges and also through DEEP portal as bidders are not available. He stated that a number of renewable projects are under implementation within the state and until these projects are commissioned, there will be no option left but to buy Renewable Energy Certificates (RECs).

ii) Member AERC, Shri S.C Das stated that the matter has been placed before the State Government and it is now the State Government to give policy directives in this regard. The Commission has complied with the directives of the Government of India after taking the views of the stakeholders concerned and accordingly made the trajectory upto 2021-22.

iii) Shri S. Agarwal, FINER commented that RPO trajectory should be based on the available RE resources within the state. He observed that the tariff of the State is already high and increase in RPO trajectory may force the obligated entities to buy RECs which would further increase the tariff burden on the consumers. He also stated that trading of solar RECs have been kept on a hold by the Hon'ble Supreme Court due to pricing issues.

iv) Ms S. Sarma, CII stated that till such time the RE potential in the State is tapped to a certain extent, perhaps the RPO targets may be kept lower.

v) Chairperson (Off.) AERC, Shri D. Chakravarty explained that these are policy initiatives of the Government of India and every State is expected to follow the same irrespective of the present RE availability in the State. RECs have been introduced so that States not having RE potential/ availability can purchase these in the exchanges. He further observed that the Commission has to monitor compliance by the obligated entities in accordance with its Regulations.

vi) Shri N. Sibikhi, IEX stated that RPO compliance is a national initiative to improve the green portfolio. He observed that RPO is comparable to taxation to encourage and benefit renewable energy producers. He stated that the States have to decide whether to make or buy RE. RE producing potential differ across different States within the country and it is always economical to produce renewable power in States that have greater potential depending on the climatic conditions and natural resources available. Therefore, States not having RE potential or yet to develop adequate RE generating units may resort to buying RECs from the exchanges to meet their RPO. The REC market was developed for this reason. He stated that the Discoms throughout the nation, initially, were deferring buying RECs, however, they have now started buying RECs to meet the RPO shortfall to clear their backlogs. As such, the REC market has seen an upsurge in the previous year and he expressed apprehension that if the trend continues, the floor price for RECs may be discontinued.

vii) Shri S. Agarwal, FINER observed that although, the Discoms had the option of setting up renewable generation projects through developers, the Captive consumers had no option left but to buy RECs to meet their non solar obligations because they can set up rooftop solar plants, however, may not be able to set up non-solar projects. This would increase their cost of production and ultimately, the consumers would have to bear the cost.

viii) Shri N. Sibikhi, IEX stated that as the term RPO goes, Renewable Purchase is perceived as an Obligation rather than as a Responsibility. He observed that it may not be feasible for a small industry to set up a renewable generation unit; therefore buying RECs may be the only viable option.

ix) Shri S. Agarwal, FINER requested that RPO trajectory of other States may be studied vis -a- vis their availability before drawing the trajectory for Assam.

x) MD, AEGCL, Shri S.N. Kalita also requested that a detailed study may be done before deciding on the RPO trajectory.

xi) Shri K. Medhi, NESSIA asked regarding the solar potential of the State mentioned in the State Solar Policy and incentives available. it was informed by the Principal Secretary, Power, Shri J. Baruah, IAS that solar potential has been stated as 14000 MW and incentives to industries have also been provided. No incentive has been provided regarding grant of land for solar projects as most of the land available is fertile in nature.

Agenda No. 5: Any Other matter.

No other matter came up for discussion.

Chairperson (Off.), AERC assured the members that the tariff proposals of the utilities would be prudently scrutinized and the valuable suggestions offered by each stakeholder would be taken into account while determining tariffs for FY 2018- 19.

The meeting ended with vote of thanks from the Chair.

Sd/-

(D. Chakravarty)

Chairperson (Off.),

Assam Electricity Regulatory Commission.

ANNEXURE –A

LIST OF MEMBERS, SPECIAL INVITEES & OFFICERS PRESENT

MEMBERS

1. Shri Dipak Chakravarty, Chairperson (Off.), AERC
2. Shri Subhash Chandra Das, Member, AERC
3. Shri Jishnu Baruah, IAS Principal Secretary, Power, Government of Assam and Chairman APDCL/AEGCL/APGCL
4. Shri Abhijit Sharma, Secretary. ABITA

   Shri Abhijit Kakati, MRK, ABITA
5. Shri Harsh Sutodiya, EC Member, AIMO
6. Shri J.N. Baruah, Board Member, AASSIA
7. Shri Saurabh Agarwala, Chairman, Power Committee, FINER

   Shri Saurabh Burakhi, FINER
8. Birendra Kr. Das, President, Grahak Suraksha Sanstha
9. Nitin SabiKhi, AUP, IEX
10. Ms. Shanta Sarma, CII, NE Chapter
11. Ms. Sushmita Priyadarshini, Associate Profesor, DCB Girl's College
12. Prof. B.K. Roy, HoD, Electrical, NIT, Silchar

SPECIAL INVITEES

1. Shri Puru Gupta, IAS, Managing Director, APDCL
2. Ms. Kalyani Baruah, Managing Director, APGCL
3. Shri Satyendra Nath Kalita, Managing Director, AEGCL
4. Shri Sailen Baruah, President, NESSIA
5. Shri Kumud Medhi, Secretary, NESSIA.

OFFICERS FROM APDCL

1. Shri Dilip Kr. Saikia,CGM / PP&D, APDCL
2. Shri Pankaj Kr. Bhuyan, CGM (COM), APDCL

3. Shri Binoy M Saikia, GM (TRC), APDCL
4. Shri Sanjib Goswami,GM(RE), APDCL
5. Shri Ramendra Choudhary, DGM(COM-T), APDCL
6. Shri Pradeep Kr. Baishya, AGM, APDCL
7. Shri Nilmadhab Deb,AM (F&A), APDCL

OFFICERS FROM AEGCL

1. Shri M.J. Saikia, CGM, AEGCL
2. Shri Suresh Kaimal, AGM (F&A)AEGCL
3. Shri G.K. Bhuyan, AGM, AEGCL
4. Shri Debasish Paul, AM(F&A), AEGCL
5. Shri Rupam Dhar, AO, AEGCL

OFFICERS FROM APGCL

1. Shri Anil Kr. Phukan, CGM (GEN), APGCL
2. Shri Meena B. Choudhary, GM, APGCL
3. Shri Ranjit Das, DM, APGCL
4. Shri A.K.S. Zaman, AM, APGCL

OFFICERS FROM AERC

1. Shri S.K Roy, Secretary, AERC
2. Shri A.N. Devchoudhury, Joint Director (Tariff), AERC
3. Shri A. Purkayastha, Deputy Director (Finance), AERC
4. Shri G. Sharma, Deputy Director (Engg.), AERC

CONSULTANTS FROM AERC:

1. Ms. P. Sharma, Sr. Consultant, AERC
2. Shri N.K. Deka, Consultant (Technical), AERC
3. Shri S. Tamuli, Consultant (I), AERC
4. Shri J. Bezbaruah, Consultant (II), AERC

10.2 Annexure 2- Station Wise Depreciation

10.2.1 Depreciation for NTPS (Rs. Crore)

NTPS

Sr. No.	Particulars	FY 2016-17					FY 2017-18					FY 2018-19				
		Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation
1	Land	9.71	-	-	9.71	-	9.71	-	-	9.71	-	9.71	-	-	9.71	-
2	Building	11.14	0.04	-	11.18	0.37	11.18	-	-	11.18	0.37	11.18	-	-	11.18	0.37
3	Hydraulic works	0.04	-	-	0.04	0.00	0.04	-	-	0.04	0.00	0.04	-	-	0.04	0.00
4	Other civil works	21.78	2.92	-	24.71	0.78	24.71	8.67	-	33.38	0.97	33.38	2.39	-	35.77	1.15
5	Plant & machinery- Gas	94.47	1.29	-	95.76	0.22	95.76	0.44	-	96.20	0.08	96.20	2.32	-	98.52	0.15
6	Plant & machinery- Hydel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Lines & cables	1.95	-	-	1.95	0.10	1.95	-	-	1.95	0.10	1.95	-	-	1.95	0.10
8	Vehicle	0.68	-	(0.13)	0.55	0.04	0.55	-	-	0.55	-	0.55	-	-	0.55	-
9	Furniture	1.04	0.02	-	1.06	0.07	1.06	-	-	1.06	0.07	1.06	-	-	1.06	0.01
10	Other office equipment	1.06	0.06	-	1.12	0.07	1.12	-	-	1.12	0.07	1.12	-	-	1.12	0.07
11	Roads on land belonging to others	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Capital spares at Generating Stations	41.46	-	-	41.46	2.09	41.46	-	-	41.46	-	41.46	-	-	41.46	-
13	**TOTAL**	**183.33**	**4.33**	**(0.13)**	**187.53**	**3.74**	**187.53**	**9.11**	**-**	**196.64**	**1.67**	**196.64**	**4.71**	**-**	**201.35**	**1.86**
14	Depreciation on Grant					0.28					0.12					0.13
15	**Net Depreciation**					**3.46**					**1.55**					**1.74**

10.2.2 Depreciation for LTPS (Rs. Crore)

LTPS

Sr. No.	Particulars	FY 2016-17					FY 2017-18					FY 2018-19				
		Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation
1	Land	4.75	-	-	4.75	-	4.75	-	-	4.75	-	4.75	-	-	4.75	-
2	Building	32.21	-	-	32.21	1.08	32.21	-	-	32.21	1.08	32.21	-	-	32.21	1.08
3	Hydraulic works	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Other civil works	42.75	-	-	42.75	1.43	42.75	1.29	-	44.04	1.45	44.04	6.19	-	50.23	1.57
5	Plant & machinery- Gas	272.15	-	-	272.15	14.37	272.15	3.75	-	275.90	14.47	275.90	4.00	-	279.90	14.67
6	Plant & machinery- Hydel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Lines & cables	9.29	-	-	9.29	0.49	9.29	-	-	9.29	0.49	9.29	-	-	9.29	0.49
8	Vehicle	0.24	-	-	0.24	-	0.24	-	-	0.24	-	0.24	-	-	0.24	-
9	Furniture	0.42	0.04	-	0.46	0.03	0.46	-	-	0.46	0.01	0.46	-	-	0.46	0.00
10	Other office equipment	0.20	0.02	-	0.23	0.01	0.23	-	-	0.23	0.01	0.23	-	-	0.23	0.01
11	Roads on land belonging to others	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Capital spares at Generating Stations	114.93	-	-	114.93	-	114.93	-	-	114.93	-	114.93	-	-	114.93	-
13	**TOTAL**	**476.94**	**0.06**	**-**	**477.00**	**17.41**	**477.00**	**5.04**	**-**	**482.04**	**17.51**	**482.04**	**10.19**	**-**	**492.23**	**17.83**
14	Depreciation on Grant					2.41					2.42					2.42
15	**Net Depreciation**					**14.99**					**15.10**					**15.41**

10.2.3 Depreciation for KLHEP (Rs. Crore)

KLHEP

Sr. No.	Particulars	FY 2016-17					FY 2017-18					FY 2018-19				
		Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation	Opening GFA	Addition	Retirement	Closing GFA	Depreciation
1	Land	4.40	-	-	4.40	-	4.40	-	-	4.40	-	4.40	-	-	4.40	-
2	Building	17.28	0.04	-	17.31	0.58	17.31	-	-	17.31	0.58	17.31	-	-	17.31	0.58
3	Hydraulic works	162.38	-	-	162.38	8.57	162.38	-	-	162.38	8.57	162.38	-	-	162.38	8.57
4	Other civil works	102.72	-	-	102.72	3.43	102.72	3.69	-	106.42	3.49	106.42	1.15	-	107.57	3.57
5	Plant & machinery- Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Plant & machinery- Hydel	174.84	0.65	-	175.50	9.25	175.50	2.80	-	178.29	9.34	178.29	9.18	-	187.47	9.66
7	Lines & cables	32.57	-	-	32.57	1.72	32.57	-	-	32.57	1.72	32.57	-	-	32.57	1.72
8	Vehicle	0.29	-	-	0.29	-	0.29	-	-	0.29	-	0.29	-	-	0.29	-
9	Furniture	0.00	-	-	0.00	0.00	0.00	-	-	0.00	0.00	0.00	-	-	0.00	0.00
10	Other office equipment	0.04	0.02	-	0.06	0.00	0.06	-	-	0.06	0.00	0.06	-	-	0.06	0.00
11	Roads on land belonging to others	0.28	-	-	0.28	0.01	0.28	-	-	0.28	0.01	0.28	-	-	0.28	0.01
12	Capital spares at Generating Stations	18.76	-	-	18.76	0.99	18.76	-	-	18.76	0.99	18.76	-	-	18.76	0.80
13	**TOTAL**	**513.57**	**0.71**	**-**	**514.28**	**24.55**	**514.28**	**6.49**	**-**	**520.77**	**24.71**	**520.77**	**10.33**	**-**	**531.10**	**24.92**
14	Depreciation on Grant					2.63					2.63					2.61
15	**Net Depreciation**					**21.92**					**22.08**					**22.30**