



**ASSAM ELECTRICITY REGULATORY COMMISSION**

**(AERC)**

**TARIFF ORDER**

**March 21, 2022**

**TRUE-UP for FY 2020-21,**

**APR for FY 2021-22,**

**ARR for FY 2022-23 to FY2024-25**

**and**

**Tariff for FY 2022-23**

**FOR**

**Assam Power Generation Corporation**

**Limited (APGCL)**

**Petition No. 09/2021**

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## List of Abbreviations

A&G	Administrative and General
ABITA	Assam Branch of Indian Tea Association
ADB	Asian Development Bank
AEGCL	Assam Electricity Grid Corporation Limited
AERC	Assam Electricity Regulatory Commission
AFC	Annual Fixed Charges
AGCL	Assam Gas Company Limited
APC	Auxiliary Power Consumption
APDCL	Assam Power Distribution Company Limited
APGCL	Assam Power Generation Corporation Limited
APM	Administered Pricing Mechanism
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
ASEB	Assam State Electricity Board
CAG/C&AG	Comptroller and Auditor General
CC	Combined Cycle
CERC	Central Electricity Regulatory Commission
COD	Date of Commercial Operation
CPI	Consumer Price Index
DTR	Distribution Transformer
EPC	Engineering Procurement and Construction
ERP	Enterprise Resource Planning
FAR	Fixed Asset Register
FINER	Federation of Industry & Commerce of North Eastern Region
FPA	Fuel 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

HRSG	Heat Recovery Steam Generator
IoWC/IWC	Interest on Working Capital
kcal	kilo calorie
KLHEP	Karbi Langpi Hydro Electric Project
kW	kilo Watt
kWh	kilo Watt Hour
LED	Light Emitting Diode
LRPP	Lakwa Replacement Power Project
LTPS	Lakwa Thermal Power Station
MCLR	Marginal Cost of Funds based Lending Rate
MMBTU	Million Metric British Thermal Unit
MMSCMD	Million Metric Standard Cubic Meter per Day
MOPNG	Ministry of Petroleum and Natural Gas
MSHEP	Myntriang Small Hydro Electric Project
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
NAPAF	Normative Annual Plant Availability Factor
NRPP	Namrup Replacement Power Project
NTI	Non-Tariff Income
NTPS	Namrup Thermal Power Station
O&M	Operation and Maintenance
OC	Open Cycle
OEM	Original Equipment Manufacturer
OIL	M/s Oil India Limited
PAF	Plant Availability Factor
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PoC	Point of Connection
R&M	Repairs and Maintenance
RoE	Return on Equity
SAC	State Advisory Committee
SBI	State Bank of India
SCM	Standard Cubic Meter

SHR	Station Heat Rate
SLDC	State Load Despatch Centre
TVS	Technical Validation Session
WHRU	Waste Heat Recovery Unit
WPI	Wholesale Price Index



# ASSAM ELECTRICITY REGULATORY COMMISSION

Guwahati

Present

**Shri K.S. Krishna, Chairperson**

**Smt B. Borthakur, Member**

**Shri S.N. Kalita, Member**

Petition No. 09/2021

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

## ORDER

**(Passed on 21<sup>st</sup> March, 2022)**

- (1) APGCL filed Petition for approval of Truing up for FY 2020-21, Annual Performance Review (APR) for FY 2021-22, Aggregate Revenue Requirement (ARR) for FY 2022-23 to FY 2024-25, and determination of Tariff for FY 2022-23 for NTPS, LTPS, KLHEP and LRPP as per the AERC (Terms and Conditions for determination of Multi-Year Tariff) Regulations, 2018 (MYT Regulations, 2018) and AERC (Terms and Conditions for determination of Multi-Year Tariff) Regulations, 2021 (MYT Regulations, 2021) as applicable on November 30, 2021. The same was registered as Petition No. 09/2021.
- (2) The Commission observed that there were a few inconsistencies in the Petition. The Commission sought additional data and clarifications on the Petitions vide letter dated December 13, 2021.
- (3) The Commission held an Admissibility Hearing on December 23, 2021 and admitted the Petition (Petition No. 09/2021) vide Order dated December 23, 2021, subject to submission of additional information as sought for.

- (4) On admission of the Petition, 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 21, 2022. The notice was published in two (2) leading newspapers and short notice was published in five (5) leading newspapers of the State, as shown in the Table below:

<b>Date</b>	<b>Name of Newspaper</b>	<b>Content Published</b>
28.12.2021	The Assam Tribune	Public Notice in English
28.12.2021	Dainik Janambhumi	Public Notice in Assamese
28.12.2021	Dainik Jugasankha	Public Notice in English
28.12.2021	Purbanchal Prahari	Public Notice in English
28.12.2021	The Sentinel	Short Notice in English
28.12.2021	Bodosa (Bodo)	Short Notice in English
28.12.2021	Thekar (Karbi)	Short Notice in English

- (6) A copy of the Petition and other relevant documents were also directed to be 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.
- (7) In response to the Commission's letter dated December 13, 2021, APGCL submitted their replies to data gaps on January 10, 2022. After scrutinizing the first set of replies, a Technical Validation Session (TVS) was conducted on February 07, 2022. The Commission sought more clarifications on the Petition from APGCL vide letter dated February 08, 2022. The replies to the second set of queries were submitted by APGCL on February 15, 2022.
- (8) The Petitions were also discussed in the 29<sup>th</sup> Meeting of the State Advisory Committee (SAC) (constituted under Section 87 of the Electricity Act, 2003) held on February 25, 2022 at Bidyut Niyamak Bhawan, Six Mile, Guwahati.

- (9) The Commission received suggestion/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. A notice was also published in Newspapers inviting participation from the general public as well as the Respondents. The Hearing was held at Bidyut Niyamak Bhawan Six Mile, Guwahati on March 02, 2022 as scheduled. All stakeholders/respondents who participated in the Hearing were given the opportunity to express their views on the Petition. The details are discussed in the Chapters attached with this Order.
- (10) The Commission, now in exercise of its powers and functions 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 2020-21, APR for FY 2021-22, ARR for the Control Period from FY 2022-23 to FY 2024-25, and determined the tariff for FY 2022-23, as detailed in subsequent Chapters of this Order.
- (11) The Commission directs APGCL to publish a Public Notice intimating the revised Generation Tariff before the implementation of this Order, in English and Vernacular newspapers and on the website of APGCL.
- (12) The approved Generation Tariff shall be effective from April 01, 2022 and shall continue until replaced by any subsequent Order of the Commission.
- (13) Accordingly, the Petition 09 of 2021 stands disposed of.

**Sd/-**  
**(S.N. Kalita)**  
**Member, AERC**

**Sd/-**  
**(B. Borthakur)**  
**Member, AERC**

**Sd/-**  
**(K. S. Krishna)**  
**Chairperson, AERC**

# 1 INTRODUCTION

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## 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 EA 2003.
- 1.1.2 The Commission is mandated to exercise its powers and functions vested under Sections 61, 62, 86 and 181 of the EA 2003 and all the other powers enabling it in this behalf, to determine the ARR and Tariff of Assam Power Generation Corporation Limited (APGCL).

## 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 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 Assam State Electricity Board (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 EA 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 entities. 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.
- 1.3.2 APGCL owns and operates the generating stations previously owned by ASEB. APGCL started functioning as a separate entity from December 10, 2004.

### **1.4 Multi Year Tariff Regulations, 2018**

- 1.4.1 The Commission, in exercise of the powers conferred under Section 61 read with Section 181(2) (zd) of the Act, notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2018 (herein after referred as “MYT Regulations, 2018”) on July 17, 2018. 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, 2019 onwards up to March 31, 2022.
- 1.4.2 Regulation 4.2 of the MYT Regulations, 2018, specifies the MYT framework for the Control Period from FY 2019-20 to FY 2021-22, as reproduced below:

*“4.2 The Multi-Year Tariff framework shall be based on the following elements, for*

*calculation of Aggregate Revenue Requirement and expected revenue from tariff and charges for Generating Companies, Transmission Licensee, SLDC, Distribution Wheeling Business and Retail Supply Business:*

...

*(vi) Annual Performance review vis-à-vis the approved forecast and categorization of variation in performance as those caused by factors beyond the control of the applicant (uncontrollable items) shall be undertaken by the Commission;*

*(vii) True up of the past years based on audited annual accounts of the licensees and the Generation companies.*

*(viii) The mechanism for pass-through of approved gains or losses on account of uncontrollable items as specified by the Commission in these Regulations;*

*(ix) The mechanism for sharing of approved gains or losses arising out of controllable items as specified by the Commission in these Regulations;*

*(x) Tariff determination for Generating Companies, SLDC, Transmission Licensee and Distribution Wheeling Business and Retail Supply Business, for each financial year within the Control period based on the approved forecast. The tariff shall be reviewed at the time of the true-up and annual performance review.*

*(xi) There will be no true-up of the controllable items except on account of Force Majeure events or on account of variations attributable to uncontrollable items. The variations in the controllable items, as defined in regulation 10, over and above the norms specified will be governed by incentive and penalty framework specified in these regulations.*

*(xii) The tariff determined by the Commission and the directions given in the MYT order shall be the quid pro quo and mutually inclusive. The tariff determined shall, within the time period specified in the order, be subject to the compliance of the directions by the generating company and the licensees to the satisfaction of the Commission. Non-compliance of directions given in the tariff order may also lead to invocation of the provisions of section 142 of the Act.*

*(xiii) The tariff determined by the Commission shall continue to operate till it is modified or revised by the Commission.”*

## 1.5 Multi Year Tariff Regulations, 2021

1.5.1 The Commission, in exercise of the powers conferred under Section 61 read with Section 181(2) (zd) of the Act, notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2021 (herein after referred as “MYT Regulations, 2021”) on September 18, 2021. 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, 2022 onwards up to March 31, 2025. These Regulations are applicable to all existing and future Generating Companies, Transmission Licensees and Distribution Licensees within the State of Assam.

1.5.2 Regulation 4.2 of the MYT Regulations, 2021, specifies the MYT framework for the Control Period from FY 2022-23 to FY 2024-25, as reproduced below:

*“4.2 The Multi-Year Tariff framework shall be based on the following elements, for calculation of Aggregate Revenue Requirement and expected revenue from tariff and charges for Generating Companies, Transmission Licensee, SLDC, Distribution Wheeling Business and Retail Supply Business:*

*(1) Before commencement of Control Period, a forecast of the Aggregate Revenue Requirement and expected revenue from existing tariff and charges shall be submitted by the applicant and approved by the Commission;*

*(ii) A detailed Capital Investment Plan for each year of the Control Period, shall be submitted by the applicant for the Commission’s approval;*

*(iii) The applicant shall submit operating norms and trajectories of performance parameters for each year of the Control Period, for the Commission’s approval;*

*(iv) The applicant shall submit the forecast of Aggregate Revenue Requirement and expected revenue from existing tariff for each year of the Control Period, and the Commission shall approve the tariff for Generating Companies, SLDC, Transmission Licensee, Distribution Wheeling Business and Retail Supply Business, for each year of the Control Period;*

*(v) In its tariff petition, a generating company shall submit information to support the determination of tariff for each generating station*

*(vi) Annual Performance review vis-à-vis the approved forecast and categorization of variation in performance as those caused by factors beyond the control of the applicant (uncontrollable items) shall be undertaken by the Commission;*

*(vii) True up of the past years based on audited annual accounts of the licensees and the Generation companies.*

*(viii) The mechanism for pass-through of approved gains or losses on account of uncontrollable items as specified by the Commission in these Regulations;*

*(ix) The mechanism for sharing of approved gains or losses arising out of controllable items as specified by the Commission in these Regulations;*

*(x) Tariff determination for Generating Companies, SLDC, Transmission Licensee and Distribution Wheeling Business and Retail Supply Business, for each financial year within the Control period based on the approved forecast. The tariff shall be reviewed at the time of the true-up and annual performance review.*

*(xi) There will be no true-up of the controllable items except on account of Force Majeure events or on account of variations attributable to uncontrollable items. The variations in the controllable items, as defined in regulation 10, over and above the norms specified will be governed by incentive and penalty framework specified in these regulations.*

*(xii) The tariff determined by the Commission and the directions given in the MYT order shall be the quid pro quo and mutually inclusive. The tariff determined shall, within the time period specified in the order, be subject to the compliance of the directions by the generating company and the licensees to the satisfaction of the Commission. Non-compliance of directions given in the tariff order may also lead to invocation of the provisions of section 142 of the Act.*

*(xiii) The tariff determined by the Commission shall continue to operate till it is modified or revised by the Commission.”*

## **1.6 Procedural History**

1.6.1 As per Regulation 4.2 of the MYT Regulations, 2021, APGCL is required to file an application for true-up for previous year, i.e., FY 2020-21, APR for FY 2021-22, ARR



for the Control Period from FY 2022-23 to FY 2024-25, and tariff for FY 2022-23 on or before November 30, 2021.

- 1.6.2 APGCL filed the Petition for approval of Truing up for FY 2020-21, APR for FY 2021-22, ARR for FY 2022-23 to FY 2024-25, and determination of Tariff for FY 2022-23 as per MYT Regulations, 2018 and MYT Regulations, 2021 as applicable, on November 30, 2021. The same was registered as Petition No. 09/2021.
- 1.6.3 The Commission observed that there were a few inconsistencies in the Petition. The Commission sought additional data and clarifications on the Petitions vide letter dated December 13, 2021.
- 1.6.4 The Commission held an Admissibility Hearing on December 23, 2021 and admitted the Petition (Petition No. 90/2021) vide Order dated December 23, 2021, subject to submission of additional information as sought for.
- 1.6.5 On admission of the Petition, 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.
- 1.6.6 Accordingly, a Public Notice was issued by APGCL inviting objections/suggestions from stakeholders to be submitted on or before January 21, 2022. The notice was published in two (2) leading newspapers and short notice was published in five (5) leading newspapers of the State, as shown in the Table below:

<b>Date</b>	<b>Name of Newspaper</b>	<b>Content Published</b>
28.12.2021	The Assam Tribune	Public Notice in English
28.12.2021	Dainik Janambhumi	Public Notice in Assamese
28.12.2021	Dainik Jugasankha	Public Notice in English
28.12.2021	Purbanchal Prahari	Public Notice in English
28.12.2021	The Sentinel	Short Notice in English
28.12.2021	Bodosa (Bodo)	Short Notice in English
28.12.2021	Thekar (Karbi)	Short Notice in English

- 1.6.7 A copy of the Petition and other relevant documents were also directed to be 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.

- 1.6.8 In response to the Commission's letter dated December 13, 2021, APGCL submitted their replies to data gaps on January 10, 2022. After scrutinizing the first set of replies, a Technical Validation Session (TVS) was conducted on February 07, 2022. The Commission sought more clarifications on the Petition from APGCL vide letter dated February 08, 2022. The replies to the second set of queries were submitted by APGCL on February 17, 2022.
- 1.6.9 The Petitions were also discussed in the 29<sup>th</sup> meeting of the State Advisory Committee (SAC) (constituted under Section 87 of the EA 2003) held on February 25, 2022 at Bidyut Niyamak Bhawan, Six Mile, Guwahati.
- 1.6.10 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. A notice was also published in Newspapers inviting participation from the general public as well as the Respondents. The Hearing was held at Bidyut Niyamak Bhawan, Six Mile, Guwahati on March 02, 2022 as scheduled. All stakeholders/respondents who participated in the Hearing were given the opportunity to express their views on the Petition. The details are discussed in the Chapters attached with this Order.
- 1.6.11 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.

## **1.7 State Advisory Committee Meeting**

- 1.7.1 A meeting of the SAC was convened on February 25, 2022 and members were briefed on the Tariff Petition of APGCL. 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 30, 2021 seeking approval for Truing up for FY 2020-21, APR for FY 2021-22, ARR for FY 2022-23 to FY 2024-25, and determination of Tariff for FY 2022-23 (Petition No.09/2021). 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 2020-21

2.2.1 APGCL submitted the True-up for NTPS, LTPS, LRPP and KLHEP for FY 2020-21. APGCL submitted that the True-up for FY 2020-21 is based on the audited accounts and in line with the provisions on true-up of various costs as specified under Regulation 10 of the MYT Regulations, 2018. The summary of ARR and Revenue Gap/(Surplus) claimed by APGCL for FY 2020-21 is shown in the following Table:

**Table 1: True-up ARR for FY 2020-21 as submitted by APGCL (Rs. Crore)**

Sl. No.	Particulars	NTPS	LTPS	KLHEP	LRPP	TOTAL APGCL
<b>I</b>	<b>Power Generation</b>					
1	Gross Generation (MU)	231.08	447.57	202.62	477.07	<b>1358.34</b>
2	Net Generation (MU)	218.73	410.61	202.05	467.41	<b>1298.80</b>
3	Auxiliary Consumption (%)	5.35%	8.26%	0.28%	2.03%	<b>4.38%</b>
<b>II</b>	<b>Fixed Charges</b>					
4	Operation & Maintenance Expenditure	36.07	41.19	30.34	21.30	<b>128.90</b>
5	Interest & Finance Charges	0.10	0.18	18.78	2.89	<b>21.95</b>
6	Interest on working Capital	3.16	4.36	2.79	2.97	<b>13.28</b>
7	Depreciation	1.45	11.45	21.14	2.68	<b>36.72</b>
8	Return on Equity	8.53	22.18	10.64	2.44	<b>43.78</b>
9	Income Tax	0.00	0.00	0.00	0.00	<b>0.00</b>
10	Special R&M	0.00	0.00	24.24	0.00	<b>24.24</b>
11	Capacity Building	0.004	0.004	0.00	0.00	<b>0.009</b>
12	Less: Other Income	8.54	17.38	10.07	0.00	<b>35.99</b>
<b>II</b>	<b>Total Fixed Charges</b>	<b>40.76</b>	<b>61.98</b>	<b>97.87</b>	<b>32.28</b>	<b>232.89</b>
III	Fuel Cost	43.88	69.97	0.00	64.45	<b>178.29</b>

Sl. No.	Particulars	NTPS	LTPS	KLHEP	LRPP	TOTAL APGCL
IV	<b>Total Revenue Requirement</b>	<b>84.65</b>	<b>131.94</b>	<b>97.87</b>	<b>96.72</b>	<b>411.18</b>
V	Incentive for generation for FY 2020-21	0.00	0.00	0.00	0.00	<b>0.00</b>
VI	<b>Total Cost</b>	<b>84.65</b>	<b>131.94</b>	<b>97.87</b>	<b>96.72</b>	<b>411.18</b>
VII	<b>Revenue from Sale of Power</b>	<b>58.78</b>	<b>145.53</b>	<b>42.84</b>	<b>98.70</b>	<b>345.85</b>
VIII	<b>Revenue Gap/(Surplus)</b>	<b>25.86</b>	<b>(13.59)</b>	<b>55.03</b>	<b>(1.98)</b>	<b>65.33</b>
IX	<b>Per unit cost (Rs./kWh)</b>	<b>3.87</b>	<b>3.21</b>	<b>4.84</b>	<b>2.07</b>	<b>3.17</b>

2.2.2 APGCL has claimed Revenue Gap of Rs. 65.33 Crore for FY 2020-21 in the true-up.

### 2.3 Annual Performance Review for FY 2021-22

2.3.1 APGCL has claimed the ARR after APR for FY 2021-22 based on its estimations, as detailed in the table below:

**Table 2: ARR after APR for FY 2021-22 as submitted by APGCL (Rs. Crore)**

Sl. No.	Particulars	NTPS*	LTPS*	KLHEP	LRPP	Total APGCL
<b>I</b>	<b>Power Generation</b>					
1	Gross Generation (MU)	145.21	397.90	390.00	519.40	<b>1,452.51</b>
2	Net Generation (MU)	137.80	368.74	388.05	505.67	<b>1,400.25</b>
3	Auxiliary Consumption (%)	5.10%	7.33%	0.5%	2.64%	<b>3.6%</b>
<b>II</b>	<b>Fixed Charges</b>					
4	Operation & Maintenance Expenditure	24.36	43.73	32.14	22.74	<b>122.97</b>
5	Interest & Finance Charges	0.06	0.18	17.91	2.81	<b>20.95</b>
6	Interest on working Capital	2.21	5.02	2.73	3.38	<b>13.34</b>
7	Depreciation	0.88	11.47	20.26	2.68	<b>35.29</b>
8	Return on Equity	8.53	22.18	10.64	2.44	<b>43.78</b>
9	Income Tax	0.00	0.00	0.00	0.00	<b>0.00</b>
10	Special R&M	0.00	5.00	12.00	0.00	<b>17.00</b>
11	Capacity Building	0.13	0.13	0.13	0.00	<b>0.40</b>
12	Less: Other Income	7.13	9.22	5.75	0.00	<b>22.09</b>
<b>II</b>	<b>Total Fixed Charges</b>	<b>29.03</b>	<b>78.50</b>	<b>90.07</b>	<b>34.05</b>	<b>231.64</b>
III	Fuel Cost	31.67	81.41	-	77.63	<b>190.71</b>
<b>IV</b>	<b>Total Revenue Requirement</b>	<b>60.70</b>	<b>159.91</b>	<b>90.07</b>	<b>111.67</b>	<b>422.34</b>
<b>V</b>	<b>Revenue from Sale of Power</b>	<b>42.24</b>	<b>149.21</b>	<b>91.00</b>	<b>92.82</b>	<b>375.28</b>
<b>VI</b>	<b>Revenue Gap/(Surplus)</b>	<b>18.46</b>	<b>10.70</b>	<b>(0.93)</b>	<b>18.85</b>	<b>47.07</b>

Sl. No.	Particulars	NTPS*	LTPS*	KLHEP	LRPP	Total APGCL
VII	Per unit tariff (Rs./kWh)	4.40	4.34	2.32	2.21	3.02

\*Note: The above ARR claimed by APGCL for NTPS and LTPS is after adjustment on account of effective capacity

2.3.2 APGCL submitted that it has not considered the Revenue Gap for FY 2021-22 in the tariff for FY 2022-23 since the figures for FY 2021-22 are estimated and subjected to True-up. APGCL further submitted that it shall consider the same at the time of True-up Petition for FY 2021-22.

## 2.4 Capital Investment Plan for FY 2022-23 to FY 2024-25

2.4.1 APGCL has proposed the Capital Investment Plan for existing and upcoming projects for the Control Period from FY 2022-23 to FY 2024-25 as detailed in the Table below:

**Table 3: Capital Investment Plan for FY 2022-23 to FY 2024-25 as submitted by APGCL (Rs. Crore)**

Capex	FY 2022-23			FY 2023-24			FY 2024-25		
	Equity	Loan	Grant	Equity	Loan	Grant	Equity	Loan	Grant
<b>Existing Project</b>									
NTPS	0.00	5.97	0.00	0.00	3.17	0.00	0.00	1.93	0.00
LTPS	0.00	33.02	0.00	0.00	42.54	0.00	0.00	38.48	0.00
KLHEP	0.00	32.65	0.00	0.00	17.95	0.00	0.00	13.10	0.00
LRPP	0.00	33.57	0.00	0.00	10.17	0.00	0.00	34.05	0.00
<b>Upcoming projects</b>									
MSHEP	28.29	10.00	83.96	0.00	0.00	0.00	0.00	0.00	0.00
<b>New projects</b>									
Lower Kopili Hydro Electric Project	400.00	56.36	3.50	470.00	90.00	7.00	197.17	35.00	3.50
Borpani Middle-II SHEP	13.47	35.23	0.00	13.87	74.12	0.00	19.17	76.67	0.00
Borpani Middle-I SHEP	13.07	39.43	0.00	18.31	82.4	0.00	20.92	87.38	0.00
Namrup SPP	16.96	67.82	0.00	1.88	7.54	0.00	0.00	0.00	0.00
Majuli SPP	3.98	15.93	0.00	15.93	63.71	0.00	0.00	0.00	0.00
<b>Other projects</b>									
ERP implementation and consultancy services	0.00	0.00	19.98	0.00	0.00	4.43	0.00	0.00	4.48
<b>Total</b>	<b>475.77</b>	<b>329.98</b>	<b>107.44</b>	<b>519.99</b>	<b>391.60</b>	<b>11.43</b>	<b>237.26</b>	<b>286.11</b>	<b>7.98</b>

## 2.5 ARR for MYT Control Period and Tariff for FY 2022-23 for NTPS

2.5.1 APGCL has projected the ARR for the MYT Control Period from FY 2022-23 to FY 2024-25 for NTPS as detailed in the Table below:

**Table 4: ARR for NTPS for MYT Control Period as projected by APGCL (Rs. Crore)**

ARR For NTPS for Effective Capacity				
SI. No.	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
		Projected	Projected	Projected
I	Power Generation			
1	Gross Generation (MU)	195.09	195.09	195.09
2	Net Generation (MU)	186.31	186.31	186.31
3	Auxiliary Consumption (%)	4.50%	4.50%	4.50%
II	Fixed Charges			
4	Operation & Maintenance Expenditure	20.86	21.81	22.80
5	Interest & Finance Charges*	0.05	0.13	0.08
6	Interest on working Capital*	2.45	2.46	2.50
7	Depreciation	0.92	0.95	0.98
8	Return on Equity	8.53	8.53	8.53
9	Special R&M	4.25	1.60	0.80
10	Capacity Building	0.06	0.04	0.04
11	Less: Other Income	7.13	7.13	7.13
II	Total Fixed Charges	29.98	28.38	28.59
III	Fuel Cost*	45.89	45.89	45.90
IV	Total Revenue Requirement	75.87	74.27	74.49
12	Monthly fixed charges (Rs. Crore)	2.50	2.36	2.38
13	Energy charge rate (Rs./ kWh)	2.46	2.46	2.46
14	Total Per unit cost (Rs./ kWh)	4.07	3.99	4.00

**\*Note:** APGCL in data gaps reply has revised its claimed Interest & Finance Charges to Rs.0.17 Crore for FY 2024-25 due to correction of error. APGCL has also revised Interest on working Capital to Rs. 2.46 Crore, Rs. 2.47 Crore and Rs. 2.51 Crore for FY 2022-23 to FY 2024-25. APGCL in data gaps reply has also revised its claimed fuel cost to Rs. 46.43 Crore for each year of Control Period, due to revision in price of gas.

**Table 5: Tariff of NTPS for FY 2022-23 as proposed by APGCL**

Particulars	FY 2022-23
Annual Fixed Charges (Rs. Crore)	29.98
Monthly Fixed Charges (Rs. Crore)	2.50
Energy Charge Rate (Rs. /kWh)	2.46

## 2.6 ARR for MYT Control Period and Tariff for FY 2022-23 for LTPS

2.6.1 APGCL has projected the ARR for the MYT Control Period from FY 2022-23 to FY 2024-25 for LTPS as detailed in the Table below:

**Table 5: ARR for LTPS for MYT Control Period as projected by APGCL (Rs. Crore)**

ARR For LTPS for Effective Capacity				
Sl. No.	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
		Projected	Projected	Projected
I	Power Generation			
1	Gross Generation (MU)	425.74	425.74	425.74
2	Net Generation (MU)	402.32	402.32	402.32
3	Auxiliary Consumption (%)	5.50%	5.50%	5.50%
II	Fixed Charges			
4	Operation & Maintenance Expenditure	42.57	44.51	46.54
5	Interest & Finance Charges	0.35	0.97	1.15
6	Interest on working Capital	6.00	6.30	6.47
7	Depreciation	11.64	11.28	11.53
8	Return on Equity	22.18	22.18	22.18
9	Special R&M	15.00	26.05	28.80
10	Capacity Building	0.13	0.09	0.09
11	Less: Other Income	9.22	9.22	9.22
II	Total Fixed Charges	88.66	102.18	107.55
III	Fuel Cost*	115.80	115.82	115.85
IV	Total Revenue Requirement	204.46	218.00	223.40
12	Monthly fixed charges (Rs Crore)	7.39	8.51	8.96
13	Energy charge rate (Rs./ kWh)	2.88	2.88	2.88
14	Total Per unit cost (Rs./ kWh)	5.08	5.42	5.55

**\*Note:** APGCL in data gaps reply has revised its claimed fuel cost to Rs. 115.74 Crore for each year of Control Period, due to revision in price of gas.

**Table 6: Tariff of LTPS for FY 2022-23 as proposed by APGCL**

Particulars	FY 2022-23
Annual Fixed Charges (Rs. Crore)	88.66
Monthly Fixed Charges (Rs. Crore)	7.39
Energy Charge Rate (Rs. /kWh)	2.88

## 2.7 ARR for MYT Control Period and Tariff for FY 2022-23 for KLHEP

2.7.1 APGCL has projected the ARR for the MYT Control Period from FY 2022-23 to FY

2024-25 for KLHEP as detailed in the Table below:

**Table 7: ARR for KLHEP for MYT Control Period as projected by APGCL (Rs. Crore)**

<b>ARR For KLHEP for Effective Capacity</b>				
<b>Sl. No</b>	<b>Particulars</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>
		<b>Projected</b>	<b>Projected</b>	<b>Projected</b>
<b>I</b>	<b>Power Generation</b>			
1	Gross Generation (MU)	390.00	390.00	390.00
2	Net Generation (MU)	388.05	388.05	388.05
3	Auxiliary Consumption (%)	0.50%	0.50%	0.50%
<b>II</b>	<b>Fixed Charges</b>			
4	Operation & Maintenance Expenditure	31.49	32.93	34.43
5	Interest & Finance Charges*	16.85	16.54	15.81
6	Interest on working Capital	2.69	2.57	2.64
7	Depreciation	20.78	21.28	21.64
8	Return on Equity	10.64	10.64	10.64
9	Special R&M	12.00	-	-
10	Capacity Building	0.13	0.10	0.10
11	Less: Other Income	5.75	5.75	5.75
<b>II</b>	<b>Total Fixed Charges</b>	<b>88.83</b>	<b>78.31</b>	<b>79.51</b>
<b>III</b>	<b>Fuel Cost</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>IV</b>	<b>Total Revenue Requirement</b>	<b>88.83</b>	<b>78.31</b>	<b>79.51</b>
12	Total Capacity charges (Rs crore)	44.41	39.15	39.75
13	Energy charge rate (Rs./ kWh)	1.15	1.01	1.02
14	Total Per unit cost (Rs./ kWh)	2.29	2.02	2.05

*\*Note: APGCL in data gaps reply has revised its claimed Interest & Finance Charges to Rs. 16.53 Crore and Rs.15.79 Crore for FY 2023-24 and FY 2024-25, respectively.*

**Table 8: Tariff of KLHEP for FY 2022-23 as proposed by APGCL**

<b>Particulars</b>	<b>FY 2022-23</b>
Total Fixed Charges (Rs. Crore)	88.83
Total Capacity charges (Rs. Crores)	44.41
Energy Charge Rate (Rs. /kWh)	1.15

## **2.8 ARR for MYT Control Period and Tariff for FY 2022-23 for LRPP**

2.8.1 APGCL has projected the ARR for the MYT Control Period from FY 2022-23 to FY 2024-25 for LRPP as detailed in the Table below:



**Table 9: ARR for LRPP for MYT Control Period as projected by APGCL (Rs. Crore)**

<b>ARR for LRPP for Effective Capacity</b>				
<b>Sl. No.</b>	<b>Particulars</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>
		<b>Projected</b>	<b>Projected</b>	<b>Projected</b>
<b>I</b>	<b>Power Generation</b>			
1	Gross Generation (MU)	519.40	519.40	519.40
2	Net Generation (MU)	501.22	501.22	501.22
3	Auxiliary Consumption (%)	3.50%	3.50%	3.50%
<b>II</b>	<b>Fixed Charges</b>			
4	Operation & Maintenance Expenditure	30.37	31.76	33.20
5	Interest & Finance Charges	2.57	2.34	2.09
6	Interest on working Capital	4.80	4.48	4.97
7	Depreciation	2.70	2.74	2.76
8	Return on Equity	2.44	2.44	2.44
9	Special R&M	32.72	9.37	33.75
10	Capacity Building	0.09	0.07	0.07
11	Less: Other Income	0.00	0.00	0.00
<b>II</b>	<b>Total Fixed Charges</b>	<b>75.69</b>	<b>53.19</b>	<b>79.28</b>
<b>III</b>	<b>Fuel Cost*</b>	94.92	94.94	94.96
<b>IV</b>	<b>Total Revenue Requirement</b>	<b>170.61</b>	<b>148.13</b>	<b>174.24</b>
12	Monthly fixed charges (Rs Crore)	6.31		6.61
13	Energy charge rate (Rs./ kWh)	1.89	1.89	1.89
14	Total Per unit cost (Rs./ kWh)	3.40	2.96	3.48

*\*Note: APGCL in data gaps reply has revised its claimed fuel cost to Rs. 94.87 Crore for each year of Control Period, due to revision in price of gas.*

**Table 10: Tariff of LRPP for FY 2022-23 as proposed by APGCL**

<b>Particulars</b>	<b>FY 2022-23</b>
Total Fixed Charges (Rs. Crore)	75.69
Monthly Fixed charges (Rs. Crores)	6.31
Energy Charge Rate (Rs. /kWh)	1.89

### 3 Summary of Objections raised, Response of APGCL and Commission's Comments

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3.1.1 The Commission received objections/ suggestions from the following three (3) stakeholders on the Petitions filed by APGCL.

Sl. No.	Name of objector
1	Assam Branch of India Tea Association (ABITA)
2.	Federation of Industries and Commerce of North Eastern Region (FINER)
3	Consumer Advocacy Cell (CAC)

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

3.1.3 The Commission considered the objections/suggestions received and notified the objectors to take part in the Hearing process by presenting their views in person before the Commission, if they so desired.

3.1.4 The Commission held Hearing at the Conference Hall of Assam Bidyut Niyamak Bhawan Six Mile, Guwahati on March 02, 2022.

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

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

3.1.7 While all the objections /suggestions have been given due consideration by the Commission, only, major responses/ objections received on the Petitions and also those raised during the course of Hearing have been grouped and addressed issue wise, in order to avoid repetition.

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

### **Stakeholders' Comments**

ABITA submitted that the Commission should allow only the PAF norms specified in the MYT Regulations, 2018. Variations in PAF due to uncontrollable factors may be permitted only under Regulations 11 and 2.1 (33) of the MYT Regulations, 2018 after detailed prudence check. Accordingly, the Commission should allow recovery of fixed charges pro-rata to actual PAF achieved by each generating station.

FINER submitted that the Tariff Norms are normative on the lowest level which the Petitioner should have achieved. Petitioner should make efforts to provide PAF more than the normative norms. The Commission has to adhere to Regulations framed by it in the interest of both consumers and Petitioner.

The consumers are burdened to pay fixed capacity charges towards normative availability as mentioned in the Regulations as well as in Tariff Orders of the Commission despite the fact that the Petitioner has failed to achieve targeted PAF. The Commission is requested to consider the minimum of normative and actual PAF. Further, the gap between normative and actual PAF should be computed for the cost impact which should be disallowed to Petitioner. The allowable fuel costs may be computed considering the normative operating parameters approved in the Tariff Order of March 07, 2020 or efficient norms wherever petitioned by APGCL.

The Petitioner has achieved the target of PAF for LTPS and LRPP, but has miserably failed at NTPS. It is further noted that operation of KLHEP has been severely affected because of lock down imposed due to COVID-19 and landslide incident. The Capacity charges at normative norms of PAF @ 50% for NTPS is Rs 19.66 Crore as approved by the Commission vide its Order dated March 07, 2020 for ARR for FY 2020-21. However, the Petitioner has achieved actual PAF of 33.47% as per SLDC Report, which is only 66.94% of target. Accordingly, the Commission is requested to allow only 66.94% of Rs. 19.66 Crore, i.e., Rs 13.16 Crore only. There should be a disallowance of Rs. 6.50 Crore on this account.

Further, as per SLDC report, KLHEP has only achieved PAF of 34.40%. However, the Petitioner has claimed the actual availability of 85% by citing the reasons of lockdown and occurrence of landslide near the site of plant. The Commission may check the facts and disallow the claim if it is not satisfied by the response of the Petitioner.

### **Response of APGCL**

APGCL submitted that NTPS and KLHEP faced Force Majeure conditions due to grid restrictions and heavy landslide near the dam area, respectively, in FY 2020-21. In accordance with MYT Regulations, 2018, Force Majeure is any event or circumstance, which is not within the reasonable control of, and is not due to an act of omission or commission of that party and hence, APGCL requested the Commission to approve the same as claimed by APGCL in its Petition.

### **Commission's View**

PAF and PLF have been calculated as per provisions in the MYT Regulations, 2018. The performance of APGCL and analysis of the Commission are discussed in the subsequent chapters of this Order.

## **Issue 2: Gross Station Heat Rate (GSHR)**

### **Stakeholders' Comments**

ABITA and FINER requested the Commission not to pass on the performance inefficiencies of APGCL to the end consumers. APGCL has submitted reasons such as lower gas supply, evacuation constraints and aged unit/ auxiliaries that led to higher than normative SHR. ABITA requested the Commission to consider the SHR as per approved norms for FY 2020-21 or actual, whichever is lower.

### **Response of APGCL**

APGCL submitted that other than NTPS, its thermal power stations LTPS and LRPP performed very efficiently with regard to Heat Rate in FY 2020-21. Heat Rate of NTPS is high due to its old machineries and part loading issues. NRPP, the replacement project of NTPS, was commissioned on July 16, 2021 and is performing optimally with regard to Heat Rate as per design. As the Regulations are based on norms, approval of true-up parameters is also based on the same.

### **Commission's Views**

The Commission has approved GSHR as per norms specified in the MYT Regulations, 2018. The details are given in the relevant Chapters of this Order.

### **Issue 3: Auxiliary Power Consumption**

#### **Stakeholders' Comments**

ABITA submitted that auxiliary consumption is defined as a controllable parameter in the MYT Regulations, 2018. Therefore, ABITA requested the Commission to allow the auxiliary consumption as per the norms specified in the MYT Regulations, 2018. Otherwise, unjustified increase in auxiliary consumption would burden the consumers with higher tariff.

FINER also submitted that on comparison of approved auxiliary consumption of the plants with actuals, it is observed that due to slippage on auxiliary consumption, there is excess gross generation required, which cannot be allowed to pass to the consumers.

The Commission is requested to disallow Rs. 2.30 Crore towards auxiliary consumption of NPTS and LPTS, which is higher in violation of norms. However, for LRPP, there is gain of Rs. 95 Lakh of which 1/3<sup>rd</sup> should be passed to consumers. Accordingly, gain of Rs. 33.66 Lakh should be passed on to consumer as a rebate in tariff.

#### **Response of APGCL**

APGCL submitted that auxiliary consumption of NTPS is higher due to old machineries and part loading issues while in case of LTPS, the same is due to part loading as well as the inherent issue of gas compressors. Other than NTPS and LTPS, the other stations of APGCL are performing efficiently with regard to auxiliary consumption. In this regard, APGCL also submitted that any loss due to higher APC is being borne by APGCL itself.

#### **Commission's View**

For the purpose of truing up for FY 2020-21, auxiliary consumption has been approved as per norms specified in the MYT Regulations, 2018. The sharing of efficiency gains/losses has been done in accordance with the MYT Regulations, 2018. Thus, the impact of any inefficiency is not passed on to the consumers in full. The Commission approved normative auxiliary consumption for the MYT period under consideration as specified in the MYT Regulations, 2021. The details are available in the relevant Chapters of this Order.

### **Issue 4: Depreciation**

#### **Stakeholders' Comments**

ABITA submitted that APGCL has estimated depreciation for FY 2021-22 and MYT period after deducting deprecation on grants. ABITA followed the principles as per the

Commission's Orders and computed net depreciation.

### **Response of APGCL**

APGCL submitted that that it has submitted the detailed depreciation calculation to the Commission considering the actual capitalization and depreciation in FY 2020-21. APGCL has further estimated the depreciation from FY 2022-23 to FY 2024-25 considering the revised capital expenditure plan submitted as part of its Petition to the Commission.

APGCL prayed to the Commission to allow the depreciation claimed as part of its Petition.

### **Commission's View**

The Commission has allowed the Depreciation after necessary prudence check and in accordance with the applicable MYT Regulations as discussed in the relevant Chapters of this Order.

## **Issue 5: Interest and Finance Charges**

### **Stakeholders' Comments**

ABITA submitted that APGCL has proposed interest and finance charges for FY 2021-22 and MYT period considering the net normative loan as per the Commission's Order. ABITA has followed the principles adopted by the Commission in the past Orders to arrive at net normative loan and computed the interest and finance charges. Accordingly, ABITA computed the station-wise normative interest and finance charges for FY 2021-22 and MYT period.

FINER submitted that APGCL has claimed Interest & Finance charges of Rs. 21.94 Crore as against approved amount of Rs. 22.41 Crore in the last Tariff Order. As per the Audited Accounts for FY 2020-21, the Petitioner has incurred a penal interest of Rs. 17.13 Crore, which cannot be considered for Interest rate computation.

### **Response of APGCL**

APGCL submitted that it has considered interest on loan capital on normative basis for FY 2021-22 and MYT Period. It has considered normative loan portfolio computed for FY 2020-21, addition to the loan as per Capital Investment Plan submitted for FY 2021-22 and MYT Period. Repayment is considered equal to the depreciation for FY 2021-22 and MYT Period respectively. The interest rate has been considered as the weighted average rate of interest rate that may be applicable to APGCL for FY 2021-22 and MYT Period, respectively.

### **Commission's View**

APGCL as well as the Commission have not considered penal interest in computation of weighted average interest rate for FY 2020-21. The Commission has allowed the Interest and Finance charges after necessary prudence check and in accordance with the applicable MYT Regulations as discussed in the relevant Chapters of this Order.

### **Issue 6: Operation and Maintenance expenses**

#### **Stakeholders' Comments**

ABITA mentioned that APGCL has submitted O&M expenses for true-up based on the MYT Regulations, 2018 as per which there is no separate approval of Employee, A&G and R&M expenses. APGCL has submitted O&M expenses as per Regulation 50.1 of the MYT Regulations, 2018. ABITA has reviewed the O&M expenses and actual numbers as per accounts and considered numbers for true-up of FY 2020-21.

FINER submitted that the Petitioner has claimed Rs. 128.90 Crore towards O&M expenses. It is pertinent to highlight NTPS has miserably failed to achieve its targeted PAF and the performance of KLHEP is also affected due to force majeure conditions and its PAF as per SLDC report is hardly around 33%. This implies that majority of the plants of APGCL have underperformed. As a result, APGCL was only able to supply 12% of power to APDCL as against its requirement of 21% of power purchase requirement. This has also forced APDCL to procure power from short-term markets or through bilateral sources or Power Exchanges at higher tariffs.

However, it is observed that the actual O&M Expenses as per the audited accounts are Rs. 122.39 Crore, which are less than the claims of the Petitioner despite their claims being calculated on effective capacity.

#### **Response of APGCL**

APGCL has claimed approved normative O&M expenses as per the Order of March 07, 2020 on effective capacity. Further, the matter of approving the same is within the discretion of the Commission.

### **Commission's View**

The Commission has allowed O&M expenses after necessary prudence check and in accordance with the MYT Regulations, 2018. The details regarding computation of O&M are discussed in the relevant Chapters of this Order.

## **Issue 7: Interest on Working Capital (IoWC)**

### **Stakeholders' Comments**

ABITA submitted that APGCL has computed interest on working capital considering the projected fuel cost, O&M, Receivables, etc., as per applicable Regulations. ABITA has computed interest on working capital considering the proposed numbers as above.

FINER submitted that APGCL has proposed interest on working capital of Rs. 13.28 Crore as against Rs. 15.13 Crore approved in the Order. It is noted that the Petitioner while considering the maintenance spares of KHLEP has considered 30% of O&M cost, whereas as per Regulation 36 of MYT Regulations 2018, it is 15% of the O&M cost. Based on the revised O&M, receivables, FINER has computed the interest on working capital for FY 2020-21.

### **Response of APGCL**

APGCL submitted that it has claimed normative interest on working capital considering the fuel cost, O&M expense, maintenance spares, receivables and the interest rate as per MYT Regulations, 2018.

### **Commission's View**

The Commission has approved IoWC on normative basis for each Generating Station as per the MYT Regulations, 2018. The detailed ruling of the Commission for IoWC is given in in the relevant chapters.

## **Issue 8: Fuel Cost**

### **Stakeholders' Comments**

APGCL has projected the fuel costs for FY 2021-22 and MYT period considering the estimated fuel price. ABITA observed that the heat rate, GCV, price of gas, etc., parameters are not as approved in the Tariff Order. ABITA has projected the fuel expenses taking into account the normative parameters as per MYT Regulations, 2018, MYT Regulations, 2021 and the Tariff Order for FY 2020-21.

ABITA also requested the Commission to disallow any liabilities arising out of the contractual agreements between the gas suppliers and APGCL or due to inefficiencies in the plant operation so as to contain the inadvertent increase in the Tariff to the consumers.



## **Response of APGCL**

APGCL submitted that it has projected the Fuel Cost considering its actual operating parameters for gross generation, SHR, GCV of gas received and the price of gas paid to the gas suppliers in the first 6 months of FY 2021-22.

APGCL has already highlighted its operating challenges as part of its earlier submission on Operating Parameters for APR and MYT Petitions.

The apparent error claimed by ABITA in computation for total fuel cost by APGCL for NTPS, LTPS and LRPP in the column "FY 22" of its objections is due to the issue of gas price being considered for October 2021 – March 2022. APGCL has considered the gas price for October 2021 for projection of gas price for October 2021 – March 2022.

APGCL submitted to the Commission to consider the individual fuel costs claimed by the NTPS, LTPS and LRPP for the periods (April – September on actual) and October- March (estimated) as already mentioned in its Petition.

## **Commission's View**

The Commission has approved Fuel Cost based on approved performance parameters in this Order and GCV and fuel prices as submitted by APGCL for estimation of fuel cost in APR and MYT period. The details are discussed in the subsequent Chapters.

## **Issue 9: Capital Cost**

### **Stakeholders' Comments**

FINER mentioned that the Petitioner in the instant Petition has claimed the additional capital expenditure to the tune of Rs. 16.41 Crore cumulatively for all the plants as part of additional capitalisation of plants. Before additional capitalisation of any amount, the Petitioner has to seek approval of the Commission as per MYT Regulations, 2018. Petitioner has not provided the provisions of the Regulations under which it has claimed additional capitalisation for FY 2021-22. Also, the Petitioner has not provided any proper justification or documentary evidence for claiming the additional capitalisation as per the MYT Regulations, 2018 and has put the onus of the Commission to decide and undertake analysis of claims. However, the Objector has not found any details of such approval from the Commission in the Petition and accordingly, the additional capitalisation as sought by the Petitioner deserves to be disallowed.

It is submitted that the Petitioner has not provided the scheme-wise details of additional capital expenditure in order to identify whether it is under original Scope of Work as approved by the Commission or not.

The Objector submitted that in most of the heads of additional capital expenditure for each generator provided in the Petition, the Petitioner has not provided detailed reasoning for claiming such expenditure in the instant Petition and has provided limited information in the Tariff forms. It is submitted that the Petitioner ought to have submitted a proper Detailed Project Report (DPR) along with cost benefit analysis and taken prior approval from the Commission before expenditure and claiming directly under true-up.

### **Response of APGCL**

APGCL has submitted the detailed calculation sheet to the Commission including additional capitalisation amount in the Depreciation, Interest on Loan Capital and overall ARR computations. Detailed breakup and justification of new works proposed to be undertaken for its power stations has been submitted as part of its Petition as well as response to the additional queries sought by the Commission. APGCL requested the Commission to approve the additional capitalisation as submitted in the Petition.

### **Commission's views**

The Commission has carried out due prudence check of the capital investment plans. The details are provided in the relevant Chapters.

## **Issue 10: Non-Tariff Income**

### **Stakeholders' Comments**

FINER submitted that the Other Income is to the tune of Rs. 35.99 Crore in FY 2020-21 excluding one-time income of Rs. 51.72 Crore towards sundry creditors liability towards GPF written off. As against this, the Petitioner has projected other income to be Rs. 22.10 Crore in FY 2021-22. The Petitioner has projected the same Non-Tariff Income as approved by Commission in its Order of February 2021, which is very low as compared with actual Other Income as per the audited books of the Petitioner.

### **Response of APGCL**

The Other Income mostly includes interest on FDs. The interest rates offered by banks on FDs were subsequently reduced from 5.5%-6.5% to 3.0%-3.5% post COVID-19 pandemic.

APGCL submitted that the Non-Tariff Income is considered at normative levels approved by the Commission in Tariff Order of February 2021. APGCL will submit the actual Non-Tariff Income for FY 2021-22 to FY 2024-25 during True up.

**Commission’s views**

The Commission noted the views of the respondents as well as replies of the Petitioner. The Commission has discussed the same in the relevant Chapter while allowing Non-Tariff Income.

**Issue 11: Audited Balance Sheet and Revenue from Sale of Power**

**Stakeholders’ Comments**

CAC submitted that the audited balance sheet of APGCL for the relevant year shows a loss of Rs. 25.95 Crore against no loss or gain in the ARR for true up of FY 2020-21.

Total income from sale of power was Rs. 440.33 Crore against expenses of Rs. 466.28 Crore in the audited account whereas in the true up accounts the expenses are shown as Rs 66.09 Crore against a revenue collection of the same amount. Therefore, the Commission should scrutinize the above figures and may ask APGCL to clarify, why such abnormalities and departures of figures have been shown vis-à-vis the true up account and the audited balance sheet.

**Response of APGCL**

APGCL submitted that it has submitted the reconciliation of its head wise and plant wise expenditure and revenue to the Commission as part of its Petition and additional submissions. Further, APGCL has claimed the expenditure and revenue as per norms specified by the Commission factoring in the operating difficulties faced by APGCL for its old units. APGCL further submitted that plant-wise Revenue Gap/Surplus on ARR has been submitted to the Commission in its True Up Petition.

**Commission’s views**

The Commission has allowed the Revenue from the Sale of Power after necessary prudence check and in accordance with the MYT Regulations, 2018 as discussed in the relevant Chapters of this Order.

## **Issue 12: Overall Performance of NTPS**

### **Stakeholders' Comments**

CAC submitted that in the matter of energy generation, NTPS has surpassed the quantum set by the Commission by a margin of 57.25 MU, although the auxiliary consumption limit has been exceeded by 0.65%. However, availability factor of 50% and PLF of 45.59% could not be achieved by the plant.

The gas price has come down significantly from the approved value during the period although gross station heat rate has exceeded by 419.79 kcal/kWh from the norms specified by the Commission.

NRPP was yet to be commissioned. The quantum of generation has been achieved by the old machines for which the efficiency is much on the lower side. Yet the overall cost of power from the plant is still much on the lower side vis-a vis the imported power. Future planning of generation from NTPS at this point needs to be taken into consideration.

### **Response of APGCL**

APGCL submitted that NTPS is an old unit and its Heat Rate is high due to its old machineries and part loading issues. NRPP, the replacement project of NTPS, was commissioned on July 16, 2021 and is performing optimally as per its design parameters. The units of NTPS are presently operating on standby basis depending on availability of gas. APGCL is at this point preparing for NRPP Phase-II. It envisages that if gas linkage to the project is secured then NRPP Phase-II will be completed in the upcoming years.

### **Commission's views**

Noted.

## **Issue 13: Overall Performance of LTPS**

### **Stakeholders' Comments**

CAC submitted that energy generation as planned has been achieved. Despite consuming more auxiliary power, which needs to be looked into, the gross station heat is lesser than anticipated, which indicates better thermal efficiency of the plant.

LTPS has enjoyed lower price of gas than estimated. Therefore, price of power should have been lower than estimated. However, as all the claims have been made on the normative basis, the actual performance is never reflected in the accounts submitted for

true up. Therefore, a scrutiny of the actual performance of every plant has become necessary.

The cost of power from LTPS should have been lower based on the above logic. Therefore, scrutiny of performance of the plant in terms of cost of generation and comparing the same with the previous years could sensitize the responsible persons with competitive spirit to be better in the near future. Such practice needs to be followed for the best interest of APGCL and its consumers.

### **Response of APGCL**

APGCL submitted that it has claimed the fuel cost for LTPS for FY 2020-21 at Rs. 69.97 Crore against the approved amount of Rs. 124.91 Crore by the Commission for FY 2020-21. APGCL has claimed its fuel cost based on actual generation (which was higher than approved values by 21.83 MU), actual SHR (which was lower at 2,501.94 kcal/kWh against approved 3,200 kcal/kWh) and the actual price of gas (which was Rs. 5,799.31/ 1000 SCM against approved Rs.8553.56 / 1000 SCM). APGCL requested the Commission to approve its fuel cost claim for LTPS.

### **Commission's views**

The Commission has approved the fuel cost of NTPS for FY 2020-21 based on normative performance parameters, as discussed in the relevant Chapters of this Order.

## **Issue 14: Overall Performance of KLHEP**

### **Stakeholders' Comments**

CAC submitted that a long list of justification for loss of generation has been given to exonerate oneself from the burden. Due to COVID-19 situation, a delay in overhauling of Unit 1 was caused (as stated) because the Japanese experts could not come for supervision. However, the Indian counterpart engaged to carry out the overhauling could very well be used to carry out the work during the COVID-19 situation with remote supervision by the Japanese experts, had planning been made right in March 2020 as the situation began to turn from bad to worse from this period. Ultimately, exactly this happened, causing a lot of delay and consequent loss of generation.

### **Response of APGCL**

APGCL submitted that there was a national lockdown in March 2020, which led to complete restrictions on domestic and international travel for experts in India. APGCL

made all earnest efforts for the safety of its employees. APGCL prayed to the Commission to consider the above while approving its claim for KLHEP.

### **Commission's views**

The Commission has approved the net generation for KLHEP after a proper prudence check of all the technical parameters as per the MYT Regulations, 2018. The detailed ruling of the Commission for generation loss for KLHEP is given in in the relevant Chapters.

## **Issue 14: Overall Performance of LRPP**

### **Stakeholders' Comments**

CAC submitted that the data related to LRPP substantiates that the Units have better thermal efficiency, and the cost of generation should be optimum from these Units. However, despite a lower auxiliary consumption in this Unit, the net generation is lower than the estimated one approved by the Commission. This point needs to be taken into account. Since the true up account has been submitted as per MYT Regulations, the figures are a matter of scrutiny for calculation errors only without any semblance with the actual technical and financial performance of APGCL.

### **Response of APGCL**

APGCL submitted that similar to LTPS, LRPP's fuel cost claim reflects the operational efficiency of the Units for FY 2020-21. APGCL has claimed a fuel cost of Rs. 64.45 Crore for LRPP in FY 2020-21 compared to the approved value of Rs. 102.39 Crore by the Commission as per Order of March 07, 2020.

Further, generation of LRPP and LTPS depends on factors like load restrictions from SLDC, optimal operation of both LRPP and LTPS (which depend on each other despite priority being given to LRPP based on its efficiency), etc. Sometimes the load at LRPP has to be restricted so that gas turbines of LTPS can be operated to run the waste heat unit for optimal utilisation of the available gas. These operational limitations may sometimes impact the generation of both LRPP and LTPS as both the stations rely on the gas from the same sources.

### **Commission's views**

Noted.

## 4 Truing up of ARR for FY 2020-21

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### 4.1 Methodology for Truing Up

- 4.1.1 The Commission approved the ARR for existing Generating Stations, viz., NTPS, LTPS, KLHEP and LRPP for FY 2021-22 vide Order dated February 15, 2021.
- 4.1.2 APGCL has submitted Truing-up Petition for FY 2020-21 based on audited Annual Accounts and provisions of MYT Regulations, 2018. APGCL has sought true-up for FY 2020-21, with the Revenue Gap/(Surplus) to be recovered from APDCL during FY 2022-23.
- 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, 2018. 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 Truing up for FY 2020-21 for existing Generating Stations, i.e., NTPS, LTPS, KLHEP and LRPP, based on the submissions of APGCL, audited Annual Accounts for FY 2020-21 and provisions of the MYT Regulations, 2018. Apart from the audited Accounts, APGCL, in its additional submission, submitted Station-wise reconciliation of expenses claimed in the Petition with audited Accounts for FY 2020-21 and the same has been considered for Truing up purposes.
- 4.1.7 In this Chapter, the Commission has analysed all the elements of actual expenditure and revenue of APGCL for FY 2020-21 and undertaken the truing-up of expenses and revenue in accordance with Regulation 9.1 of the MYT Regulations, 2018. The Commission has approved the sharing of gains and losses on account of controllable

factors between APGCL and its sole beneficiary, viz., APDCL, in accordance with Regulation 12 of the MYT Regulations, 2018.

## 4.2 Installed and Effective Capacity of FY 2020-21

4.2.1 APGCL submitted the following installed and effective capacity for FY 2020-21.

**Table 11: Installed and Effective Capacity for FY 2020-21 (MW)**

Station	Installed Capacity	No. of Units	Units Decommissioned	Units Available for Generation & Capacity	Effective Capacity
NTPS	119.50	6	1,4,5 (w.e.f. August 20, 2020)	2, 3 (21 MW), 6 (22.50 MW-WHRU)	78.12
LTPS	142.20	8	1,2,3,4	5,6,7 (20 MW Each), 8 (37.20 MW-WHRU)	97.20
KLHEP	100.00	2	0	1 (50), 2(50)	100.00
LRPP	69.75	7	0	1-7 (9.965 each)	69.75

4.2.2 The Commission has verified the decommissioning of Units, based on documentary evidence submitted by APGCL. The Commission has considered the effective capacity for FY 2020-21 as submitted by APGCL in the above Table. The Commission has accordingly reduced the fixed cost derived after Truing-up of FY 2020-21 to the extent of effective capacity with respect to the installed capacity of each of the above Stations, in subsequent section of this Chapter.

## 4.3 Plant Availability Factor (PAF)/Capacity Index

4.3.1 The Actual PAF/Capacity Index for NTPS, LTPS, KLHEP and LRPP for FY 2020-21, as submitted by APGCL are shown in the Table below:

**Table 12: Actual PAF/Capacity Index as submitted by APGCL**

Station	Actual
NTPS	40.28%
LTPS	55.63%
KLHEP	85.00%
LRPP	87.19%

4.3.2 APGCL submitted that it has considered 40.28% PAF for NTPS. APGCL submitted the



following reasons for loss of generation impacting the PAF:

- a) During FY 2020-21, it has lost the opportunity to generate 7.37 MU of electricity due to Grid unavailability and Grid disturbance.
- b) The generation loss of 0.47 MU was due to breakdown of various transmission lines and other grid disturbance from time to time during FY 2020-21.
- c) Generation loss of 6.90 MU was on account of evacuation constraints faced due to issues with the auto transformers used for evacuation of power from NTPS.

4.3.3 The above events being uncontrollable in nature, APGCL has claimed availability lost for NTPS in FY 2020-21 due to these events. APGCL has also provided the SLDC certificate on generation loss of NTPS due to Grid Restrictions and Auto Transformer Constraints.

4.3.4 KLHEP has achieved lower generation, availability, and load factor due to Force Majeure conditions in the form of Covid-19 and landslide. APGCL submitted the following reasons for not achieving the targeted PAF:

- a) **Estimated generation loss due to overhauling work of Penstock Butterfly Valve for KLHEP plant:** During the period of major overhauling of Unit I of KLHEP, overhauling of penstock work was also carried out from February 10, 2020 to May 08, 2020 (89 Days) simultaneously. So, both Units were shut down during the period.
- b) **Estimated generation loss due to occurrence of major overhauling of Unit I of KLHEP Plant:** The work of major overhauling of Unit I of 2\*50 MW KLHEP was started from February 17, 2020 for 68 days and was scheduled to be completed by April 26, 2020. Due to COVID-19, there was continuous lockdown in Assam from March 22, 2020. Hence, APGCL has taken special permission on the ground of essential services from the local authorities, so that works of dismantling and box-up could be completed by 2<sup>nd</sup> week of May 2020. However, the commissioning of Unit I could not be completed as the Fuji supervisors from Japan were not able to visit the site as International flight was not able to available due to COVID-19 restrictions in the country. Voith Hydro, Noida vide e-mail dated August 09, 2020 informed that Voith Fuji supervisors will not be able to travel to the site for next couple of months because of prevailing COVID-19 restrictions. Hence, it was decided that Voith Fuji team will continue their commissioning operation remotely in order to commission the Unit I at the earliest. Engineers from Voith Hydro Pvt. Ltd. Reached KLHEP on December 21, 2020 in order to complete the remaining

commissioning works of the 50 MW Unit 1. Voith Fuji confirmed that the commissioned Unit (No. 1) is fit for generation vide confirmation letter dated February 16, 2021. Hence, Unit I was non-operational from February 17, 2020 to February 16, 2021 due to major overhauling works.

- c) **Estimated generation loss due to landslides occurrence on KLHEP Dam Site:** Landslides occurred on September 24, 2020, wherein large quantity of mud and boulders along with huge rocks got deposited on the road, blocking it completely. The debris got deposited on the approach road leading to the dam site and a huge portion of abutment hill flank around 3.14 hectares slides along a crack zone leading to settlement and destruction of road and development of cracks along slip surface. Thus, the site was completely inaccessible, and assessment of actual damage was not possible at that time. Geo Technical expert deputed by APGCL had suggested to wait until the completion of monsoon season because landslides was suspected to resume. For carrying out necessary restoration works in order to make the site accessible, the road to dam was realigned and constructed, which took considerable time. Due to upsurge of COVID-19 cases in India, lockdown was imposed leading to restriction in inter and intra-State movement due to which, there was extreme difficulty in carrying out assessment of damage of property. Hence, both Units I and II were shutdown from September 24, 2020 and Unit II resumed operation from December 27, 2020.

4.3.5 APGCL submitted the plant availability and load factor for KLHEP after considering the effects of above-mentioned uncontrollable factors for FY 2020-21 in below table:

**Table 13: Computation of PAF and PLF for KLHEP considering Uncontrollable Factor as submitted by APGCL**

Particulars	From	To	Days
Both Unit Shutdown	01/04/2020	08/05/2020	37
Both Unit Shutdown	24/09/2020	27/12/2020	94
Unit 1 Operational	16/02/2021	31/03/2021	43
Unit 2 operational for FY 2020-21			233
Weighted effective capacity (MW)			59.23
Particulars	Target as per Regulations	On the basis of Installed Capacity (100 MW)	At effective Capacity (59.23 MW) considering uncontrollable factor
PAF	85%	34%	85%
PLF	44.5%	23%	61%

- 4.3.6 Based on historical data of PAF and PLF, APGCL submitted that if KLHEP was not affected by natural calamities, then it would have been able to achieve its normative PAF and PLF as per norms specified in the Regulations.
- 4.3.7 For LTPS and LRPP, the availability has been higher than the normative availability specified in the Regulations. Accordingly, recovery of full fixed charges has been claimed by APGCL for FY 2020-21 for these stations.

### **Commission's Analysis**

- 4.3.8 In accordance with Regulations 47.1 and 49.1 of the MYT Regulations, 2018, the Target PAF / Capacity Index for recovery of full Fixed Charges are 50% for NTPS and LTPS, and 85% for KLHEP. Regarding LRPP, the Regulation specifies the normative availability of 85%.
- 4.3.9 As regards NTPS, SLDC has certified PAF of 39.15%. The difference of 1.13% in PAF between 40.28% claimed by APGCL and 39.15% certified by SLDC has been sought by APGCL on the basis of "uncontrollable factors" like grid disturbance, grid unavailability and breakdown of various Transmission lines.
- 4.3.10 APGCL submitted that NTPS had suffered due to frequent shutdowns of the old Units and auxiliaries of NTPS in FY 2020-21. On scrutiny of the Petition as well as the replies to the queries, the Commission observes the following:
- a) APGCL has submitted SLDC certificate, which shows that there is a loss of 6.90 MU due to auto transformer constraints against NTPS for FY 2020-21.
  - b) APGCL has claimed loss of 0.47 MU pertaining to Grid disturbance and SLDC certificate confirms the same.
- 4.3.11 The Commission in its Order dated February 15, 2021 has opined that APGCL is responsible for delay in commissioning of NRPP, which had led to the loss of generation due to auto transformer constraint. Hence, this loss of generation cannot be termed as 'uncontrollable' in nature and is therefore, attributable to APGCL.
- 4.3.12 Based on the above analysis, the Commission has considered only 0.47 MU generation loss due to evacuation constraint, which translates to around 0.07% availability loss. Accordingly, Commission has considered actual availability of NTPS as 39.22% in FY 2020-21.
- 4.3.13 As regards KLHEP, SLDC has certified PAF of 34.40%. The difference of 50.60% in PAF between 85.00% claimed by APGCL and 34.40% certified by SLDC has been sought by APGCL on the basis of "uncontrollable factors" like generation loss due to

overhauling work of Penstock Butterfly Valve for KLHEP Plant, occurrence of major overhauling of Unit I of KLHEP Plant and landslides occurrence on September 24, 2020 at KLHEP Dam Site.

4.3.14 As regards higher PAF claimed by APGCL for KLHEP, the Commission sought SLDC certificate showing generation loss due to various factors submitted by APGCL. In reply, APGCL submitted SLDC certificate, which states that APGCL has informed that KLHEP suffered generation loss due to various reasons and based on PAF of past years, APGCL would have achieved PAF of 85% in FY 2020-21 without any force majeure incidents.

4.3.15 On scrutiny of the Petition as well as the replies to the queries, the Commission observed that APGCL has not quantified the generation loss for KLHEP for FY 2020-21 due to various factors submitted by APGCL. The Commission notes that APGCL started the work of major overhauling of Unit I from February 17, 2020 for 68 days and it was scheduled to be completed by April 26, 2020. APGCL has submitted that since there was continuous lockdown in Assam from March 22, 2020 due to COVID-19, overhauling of Unit I was not completed in time. However, the Commission in Section 4.6.3 of the MYT Order dated March 01, 2019 had ruled that the planned shutdown for Major Overhaul should not take more than 25 days as per industry practice. Therefore, major overhauling of Unit I should have been completed by March 13, 2020 considering time of 25 days. It shows that major overhauling of Unit I should have been completed before the impact of COVID-19 started and continuous lockdown was imposed in the State of Assam. Thus, there is no merit in the claim of higher PAF on account of impact of COVID-19 on major overhauling of Unit I of KLHEP. The Commission is of the view that the generation loss for KLHEP on account of overhauling work cannot be termed as 'uncontrollable' in nature and is therefore, attributable to APGCL. Therefore, the Commission has only considered the generation loss for 94 days in FY 2020-21 due to landslides occurrence on at KLHEP Dam Site as 'uncontrollable' in nature.

4.3.16 Based on the above analysis, the Commission has considered generation loss of 52.18 MU due to landslides, which translates to around 8.86% of availability loss. Accordingly, Commission allows availability of 43.26% for KLHEP.

4.3.17 The Commission generally considers the PAF/Capacity Index as per SLDC Certificate for the purpose of Truing up. The Commission notes that PAF/Capacity Index submitted in the Petition by APGCL tallies with the PAF/Capacity Index certified by

SLDC for LTPS and LRPP. The Commission approves the actual availability for LTPS and LRPP as per SLDC certificate.

4.3.18 The Commission has approved the actual PAF/Capacity Index for FY 2020-21 as shown in the following Table:

**Table 14: PAF/Capacity Index as approved by the Commission for FY 2020-21**

Station	Target Availability/Capacity Index (NAPAF) (%)	Approved (%)
NTPS	50%	39.22%
LTPS	50%	55.63%
KLHEP	85%	43.26%
LRPP	85%	87.19%

4.3.19 Regulation 51.1 (b) of the MYT Regulations, 2018 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 are lower than NAPAF, the reduction of fixed charges for NTPS and KLHEP have been considered in subsequent Sections.

4.3.20 Further, actual availability of other Generating Stations is higher than normative, hence, full recovery of fixed charges for FY 2020-21 is allowed for these stations.

#### **4.4 Plant Load Factor (PLF)**

4.4.1 APGCL submitted that as per Regulation 47.2 of the MYT Regulations, 2018, the Normative PLF for FY 2020-21 is 50% and 66% for NTPS and LTPS, respectively. Against this, the actual PLF has been 33.47% and 51.03% for NTPS and LTPS, respectively.

4.4.2 Regulation 49 of the MYT Regulations, 2018 specifies normative PLF for KLHEP as 44.5% for FY 2020-21. The actual PLF for FY 2020-21 has been 23.18%; however, APGCL has claimed PLF of 44.5% on account of various 'uncontrollable' factors as mentioned in earlier section. In case of LRPP, Regulation 47.2 of the Tariff Regulations, 2018 specifies the Normative PLF at 90% for newly commissioned plants. The actual PLF for LRPP has been 79.27%.

#### **Commission's Analysis**

4.4.3 The Commission has computed the actual PLF for each of the stations of APGCL considering the gross generation as certified by SLDC and the effective capacity

submitted by APGCL during FY 2020-21.

4.4.4 The Commission, therefore, approves the actual PLF of 33.77% for NTPS, 52.56% for LTPS, 23.13% for KLHEP and 78.07% for LRPP for FY 2020-21, after truing up.

4.4.5 As per Regulation 47.2(i) of the MYT Regulations 2018, the target PLF for eligibility of incentive is 50% for NTPS and 66% for LTPS. As per Regulation 47.2 (ii) of the MYT Regulations 2018, the target PLF for eligibility of incentive is 90% for LRPP. The Commission notes that actual PLF for NTPS, LTPS and LRPP for FY 2020-21 are lower than normative; hence, they are not eligible for generation incentive.

4.4.6 The generation of KLHEP is also less than design energy; hence, it is not eligible for incentive.

#### 4.5 Auxiliary Consumption

4.5.1 APGCL submitted the actual Auxiliary Consumption for FY 2020-21 and Auxiliary Consumption approved by the Commission in the Tariff Order dated March 07, 2020 as shown in the following Table:

**Table 15: Auxiliary Consumption for FY 2020-21 as submitted by APGCL**

Sl. No.	Station	Tariff Order dated March 07, 2020	Actual submitted by APGCL
1	NTPS	4.50%	5.35%
2	LTPS	5.50%	8.26%
3	KLHEP	0.50%	0.28%
4	LRPP	3.50%	2.03%

4.5.2 APGCL submitted that the Auxiliary Consumption of NTPS is higher than the approved Auxiliary Consumption in FY 2020-21 due to part loading of Units. APGCL requested the Commission to approve the actual Auxiliary Consumption as it has increased due to uncontrollable factors.

4.5.3 APGCL further submitted that Auxiliary Consumption of LTPS is higher than approved due to low gas pressure in supply of gas, which resulted in higher usage of gas compressors and hence, higher Auxiliary Consumption. The Auxiliary Consumption of LTPS is also higher due to part loading of Units. Further, the lower gas supply constrains simultaneous operations of all 3 GTs most of the time. As the WHRU is designed to run with 3 Heat Recovery Steam Generators (HRSG), non-availability of one HRSG increases the percentage of Auxiliary Consumption as same number of

auxiliaries have to be run to operate the WHRU.

4.5.4 In case of KLHEP and LRPP, the actual Auxiliary Consumption has been lower than the normative Auxiliary Consumption as specified in the Regulations.

### Commission's Analysis

4.5.5 The Commission notes that actual Auxiliary Consumption for NTPS and LTPS are higher than the approved norms. APGCL, in its Petition, has submitted that Auxiliary Consumption of NTPS is higher due to part loading of Units resulting from low/non-availability of gas. Further, APGCL, in its Petition, has mentioned that the Auxiliary Consumption of LTPS is higher than approved primarily due to low gas pressure in supply of gas.

4.5.6 The Commission observes that the deviation in Auxiliary Consumption of NTPS and LTPS with respect to normative Auxiliary Consumption is on account of lower supply of gas and low gas pressure from its various sources. The Commission, in its previous Tariff Orders, has already ruled that any inefficiency due to insufficient supply of gas shall be on account of APGCL. The Commission has therefore, not considered any relaxation in normative Auxiliary Consumption for NTPS and LTPS as claimed by APGCL.

4.5.7 For the purpose of truing up, the Commission has approved the Auxiliary Consumption for FY 2020-21 at the same level as approved in the Tariff Order dated March 07, 2020. As Auxiliary Consumption is a controllable parameter, the sharing of gains/losses on account of Auxiliary Consumption has been undertaken in subsequent Section in this Chapter.

4.5.8 The Auxiliary Consumption approved by the Commission for the Truing Up of FY 2020-21 is shown in the Table below:

**Table 16: Auxiliary Consumption (%) as approved by the Commission in the truing up for FY 2020-21**

Sl. No.	Station	Tariff Order dated March 7 2020	Approved after Truing up
1	NTPS	4.50%	4.50%
2	LTPS	5.50%	5.50%
3	LRPP	3.50%	3.50%
4	KLHEP	0.50%	0.50%

## 4.6 Gross Generation and Net Generation

4.6.1 The actual Gross Generation and Net Generation submitted by APGCL for FY 2020-21 is shown in the following Table:

**Table 17: Actual Gross and Net Generation for FY 2020-21 as submitted by APGCL (MU)**

Sl. No.	Station	Actual Gross Generation	Actual Net Generation
1	NTPS	231.08	218.73
2	LTPS	447.57	410.61
3	LRPP	477.07	467.41
	<b>Total Thermal</b>	<b>1155.73</b>	<b>1096.75</b>
4	KLHEP	202.62	202.05
	<b>Total APGCL</b>	<b>1,358.34</b>	<b>1298.80</b>

### Commission's Analysis

4.6.2 The Commission notes that actual Gross Generation and Net Generation submitted by APGCL for FY 2020-21 corresponds to the Gross and Net Generation as certified by SLDC.

4.6.3 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.

4.6.4 The Gross Generation and Net Generation approved by the Commission for FY 2020-21 is shown in the following Table:

**Table 18: Gross and Net Generation for FY 2020-21 as approved by the Commission**

Sl. No.	Station	Gross Generation (MU)	Net Generation (MU)
1	NTPS	231.08	220.68
2	LTPS	447.57	422.96
3	LRPP	477.07	460.38
	<b>Total Thermal</b>	<b>1155.73</b>	<b>1104.01</b>
4	KLHEP	202.62	201.60
	<b>Total APGCL</b>	<b>1358.34</b>	<b>1305.62</b>



## 4.7 Station Heat Rate (SHR)

- 4.7.1 APGCL submitted that the Commission in the Tariff Order dated March 07, 2020 had approved SHR for NTPS, LTPS and LRPP as 4300 kcal/kWh (O.C)/3900 kcal/kWh (C.C), 3900 kcal/kWh (O.C.) /3200 kcal/kWh (C.C.), and 2150 kcal/kWh, respectively.
- 4.7.2 The actual SHR was 4320 kcal/kWh for NTPS, 2502 kcal/kWh for LTPS, and 2143 kcal/kWh for LRPP as submitted by APGCL in its Petition.

### Commission's Analysis

- 4.7.3 The Commission notes that actual SHR for NTPS is higher than the approved norms for FY 2020-21. APGCL submitted that this is because of part loading of Units resulting due to lower gas supply and evacuation constraints and old nature of the plant and equipment. However, the arrangement of gas is the responsibility of APGCL, hence, the relaxation in normative SHR on account of lower supply of gas cannot be allowed.
- 4.7.4 Further, deterioration of SHR is due to running of old plant and equipment, which is also attributable to APGCL, since it has not commissioned NRPP as per schedule. Therefore, relaxation in SHR on account of these issues cannot be allowed by the Commission.
- 4.7.5 Regulation 47.4 provides for weighted average SHR for NTPS and LTPS based on its operation in Open Cycle (OC) and Closed Cycle (CC) mode. In this regard, the Commission directed APGCL to submit the information of operation of NTPS and LTPS in OC and CC mode.
- 4.7.6 APGCL, in its replies, submitted that NTPS has been operational in OC mode for 73 days and in CC mode for balance days of FY 2020-21 as per the planned shutdown schedule in FY 2020-21. Similarly, LTPS has been operational in OC mode for only 25 days and in CC mode for balance days of FY 2020-21.
- 4.7.7 As regards major overhauling and planned shutdown, the Commission in Section 4.6.3 of the MYT Order dated March 01, 2019 had ruled as under:

*“The Commission is of the view that the planned shutdown for Major Overhaul should not take more than 25 days as per industry practice. APGCL has also considered outage of 25 days for Major Overhaul in its proposal for FY 2019-20. Accordingly, impact of the same is passed through, by revising the normative SHR to 3248 kcal/kwh, by considering 25 days of operation under Open Cycle and 340 days of operation under Closed Cycle”*

4.7.8 In line with the above ruling, the Commission has considered the planned shutdown of 25 days for NTPS during FY 2020-21 and has accordingly computed the SHR considering its operation in OC mode in line with the Regulations.

4.7.9 The Commission has considered the normative SHR as approved in Tariff Order dated March 07, 2020 for LRPP. The Commission has considered the SHR for LTPS same as submitted by APGCL, as the OC mode of operations has been limited to 25 days on account of planned shutdown. Being a controllable factor, the sharing of gains/losses has been computed in a subsequent Section of this Chapter.

4.7.10 The SHR approved by the Commission for NTPS, LTPS and LRPP in the truing up for FY 2020-21 is shown in the following Table:

**Table 19: Station Heat Rate (kcal/kWh) for FY 2020-21 as approved by the Commission**

Sl. No.	Station	Tariff Order dated March 07, 2020	Actual submitted by APGCL	Approved after Truing up
1	NTPS	3900	4320	3927
2	LTPS with WHRU	3200	2502	2502
3	LRPP	2150	2143	2150

*\*Note: The above SHR is approved by the Commission after considering the open cycle and closed cycle operating days.*

## 4.8 Fuel Cost

4.8.1 APGCL submitted that the Commission in the Tariff Order dated March 07, 2020, had approved Fuel Cost of Rs. 46.42 Crore for NTPS, Rs. 124.91 Crore for LTPS, and Rs. 102.39 Crore for LRPP. As against this, APGCL has incurred actual fuel cost of Rs. 43.88 Crore for NTPS, Rs. 69.97 Crore for LTPS, and Rs. 64.45 Crore for LRPP. APGCL has submitted the copies of month-wise fuel bills raised by APGCL's suppliers for FY 2020-21 in its quarterly FPA reports.

### Commission's Analysis

4.8.2 Since, gas supply is common for LTPS and LRPP, the Commission has considered the same values of Gross Calorific Value (GCV) of gas and Price of gas for LTPS and LRPP for the purpose of truing up.

4.8.3 The Commission has verified the actual fuel price and GCV of fuels from the actual fuel bills submitted by APGCL. Based on the detailed scrutiny of the fuel bills, the APGCL MYT Order for FY 2022-23 to FY 2024-25

Commission has considered the actual price of fuel and GCV for NTPS, LTPS and LRPP.

4.8.4 The Commission has computed the weighted average price of gas and weighted average GCV of gas for NTPS and LTPS and LRPP based on actual month-wise quantity of gas received, month-wise GCV of gas received and month-wise fuel cost.

4.8.5 The Commission observed that there is no change in the weighted average GCV of LTPS and LRPP as compared to the average GCV submitted by APGCL in its Petition. The gas prices are also in line with the gas prices submitted by APGCL for FY 2020-21 for NTPS, LTPS and LRPP.

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

**Table 20: Actual Weighted Average GCV and Landed Price of Gas for FY 2020-21 considered by the Commission**

Station	Wt. Avg. Gross Calorific Value of Gas (kcal/SCM)		Wt. Avg. Landed Price of Gas (Rs. /1000 SCM)	
	As submitted by APGCL	As considered by Commission	As submitted by APGCL	As considered by Commission
NTPS	9,149.49	9,149.49	4,022.24	4,022.24
LTPS	9,281.86	9,281.86	5,799.31	5,799.31
LRPP	9,281.86	9,281.86	5,851.16	5,851.16

4.8.7 The Commission has tried up the Fuel Cost based on the approved performance parameters and actual fuel price and GCV for FY 2020-21. The Commission has approved the Gross Generation for NTPS, LTPS and LRPP 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 approved performance parameters as shown in the following Table:

**Table 21: Normative Fuel Cost for FY 2020-21 as computed by the Commission**

Sr. No.	Particulars	Derivation	Unit	NTPS	LTPS	LRPP
1	Gross Generation	A	MU	231.08	447.57	477.07
2	Heat Rate	B	kcal/kWh	3927	2502	2150.00
3	GCV of gas	C	kcal/SCM	9149.49	9281.86	9281.86
4	Overall Heat	D=AxB	G. cal.	9,07,521.73	1119800.66	1025706.95

Sr. No.	Particulars	Derivation	Unit	NTPS	LTPS	LRPP
5	Gas consumption	E=D/C	M. SCM	99.19	120.64	110.51
6	Price of Gas	F	Rs./1000 SCM	4022.24	5799.31	5851.16
7	Total cost of Gas	G=ExF/100	Rs. Crore	39.90	69.97	64.66
	<b>Total Cost</b>			<b>39.90</b>	<b>69.97</b>	<b>64.66</b>

4.8.8 On the above basis, normative Fuel Cost and actual Fuel Cost for FY 2020-21 for different thermal stations corresponding to actual gross generation are given in the Table below:

**Table 22: Fuel Cost approved by the Commission in truing up for FY 2020-21 (Rs. Crore)**

Station	Actual Fuel Cost submitted by APGCL	Normative Fuel Cost approved by Commission
NTPS	43.88	39.90
LTPS	69.97	69.97
LRPP	64.45	64.66

4.8.9 The sharing of efficiency gains and losses on account of fuel cost has been discussed in a subsequent Section of this Chapter.

#### **4.9 Incentive for Generation**

4.9.1 APGCL submitted that Regulation 53.6 of the MYT Regulations, 2018 specifies that for a hydro power station, if the actual saleable energy in a year exceeds Design Energy, the Energy Charge for such energy is billed equal to the lowest variable charges of the Central Sector thermal power generating stations in the North-Eastern Region. In addition to the above incentive, Regulation 53.2 provides for incentive to be payable to hydro power plants for achieving higher availability than normative availability

4.9.2 APGCL has not claimed incentive towards secondary charge and plant availability for KLHEP.

#### **Commission's Analysis**

4.9.3 As per the MYT Regulations, 2018, Hydro Generating Stations are eligible for Incentive on account of higher Generation than Design Energy and on account of higher

Capacity Index than normative Capacity Index.

4.9.4 The Commission notes that actual Net Generation of KLHEP for FY 2020-21 is 202.06 MU, which is lesser than Net Design Energy of 388.05 MU. Hence, KLHEP is not eligible for secondary Charge Incentive on account of higher generation.

4.9.5 Further, it is noted that Actual Capacity Index for KLHEP is lower than normative. Therefore, the Commission has not approved Availability Incentive for KLHEP.

#### 4.10 O&M Expenses

4.10.1 As against the normative O&M expenses, the actual O&M expenses and APGCL's claim for O&M expenses for FY 2020-21 are as shown in the Table below:

**Table 23: O&M expenses for FY 2020-21 as claimed by APGCL (Rs. Crore)**

Station	Tariff Order dated 07 March, 2020	Approved considering effective installed capacity in Order of March 2020	As per audited accounts of FY 2020-21	Amount considered in True up for FY 2020-21
NTPS	55.17	20.08	29.82	36.07
LTPS	60.26	24.31	39.91	41.19
KLHEP	30.34	30.34	30.72	30.34
LRPP	21.30	21.30	21.94	21.30
<b>Total</b>	<b>167.07</b>	<b>96.03</b>	<b>122.38</b>	<b>128.90</b>

4.10.2 The Station-wise details of head-wise actual O&M expenses (excluding O&M expenses of MSHEP of Rs. 0.67 Crore, Capacity Building of Rs. 0.009 Crore, and special R&M of Rs. 24.24 Crore) claimed for FY 2020-21 by APGCL are given in the Table below:

**Table 24: Details of O&M expenses claimed by APGCL for FY 2020-21 (Rs. Crore)**

Station	Employee Cost	R&M	A&G	Total
NTPS	25.32	2.80	1.69	29.82
LTPS	27.19	8.68	4.03	39.91
KLHEP	21.85	5.05	3.81	30.72
LRPP	14.22	6.64	1.08	21.94
<b>Total</b>	<b>88.59</b>	<b>23.17</b>	<b>10.62</b>	<b>122.38</b>

#### Commission's Analysis

APGCL MYT Order for FY 2022-23 to FY 2024-25

4.10.3 In the Tariff Order dated March 07, 2020, the Commission had approved O&M Expenses for FY 2020-21 on normative basis as specified in Regulation 50.1 of MYT Regulations, 2018. In the Tariff Order, the Commission had had computed normative O&M expenses for FY 2020-21 by applying escalation factor of 6.30%, on normative O&M Expenses for FY 2019-20 approved in the APR.

4.10.4 The Commission has considered the normative O&M expenses for FY 2020-21 as that approved in the Tariff Order dated March 07, 2020. The following Table shows the normative O&M expenses approved for FY 2020-21:

**Table 25: Normative O&M Expenses approved for FY 2020-21 (Rs. Crore)**

<b>Station</b>	<b>Normative O&amp;M Expenses approved in True-up</b>
NTPS	55.17
LTPS	60.26
KLHEP	30.34
LRPP	21.30

4.10.5 In the Petition, APGCL submitted a reconciliation statement of O&M expenses claimed in the Petition with respect to the expenses reflecting in its Audited Accounts. APGCL has claimed O&M expenses of Rs. 122.38 Crore after excluding O&M expenses of MSHEP of Rs. 0.67 Crore, Capacity Building of Rs. 0.009 Crore, and special R&M of Rs. 24.24 Crore, which were included in the Audited Accounts of FY 2020-21. APGCL has claimed special R&M under separate head in the Petition.

4.10.6 APGCL further submitted that the O&M expenses claimed in each of the Stations is on the basis of actual expenses booked in Trial Balance of each individual station. Further, the common Employee Expenses, A&G Expenses, and R&M Expenses are allocated between stations on the basis of installed capacity.

4.10.7 In reply to data gaps, APGCL submitted that the other charitable expenses of Rs. 32.03 Lakh have been included in the actual O&M expense. APGCL has not submitted station-wise other charitable expenses for FY 2020-21. Therefore, the Commission has derived station-wise other charitable expenses based on share of station-wise A&G expenses in the total A&G expenses for FY 2020-21 as shown in the Table below:

**Table 26: Other Charitable Expenses for FY 2020-21 (Rs. Crore)**

<b>Station</b>	<b>Other Charitable Expenses</b>
NTPS	0.05
LTPS	0.12
KLHEP	0.11
LRPP	0.03
<b>Total</b>	<b>0.32</b>

4.10.8 The Commission is of the view that the Company is free to make any donations for worthwhile causes from its profits. Hence, the Commission has not considered Other Charitable expenses under actual expenses, after prudence check.

4.10.9 Accordingly, the Commission, after scrutiny of the O&M expenses, approves the actual O&M expenses as claimed by APGCL in the True-up Petition, after excluding the expenses towards Other Charitable expenses, as shown in the Table below:

**Table 27: Actual O&M Expenses approved for FY 2020-21 (Rs. Crore)**

<b>Station</b>	<b>Tariff Order dated March 07, 2020</b>	<b>Actual amount claimed by APGCL for True up of FY 2020-21</b>	<b>Actual approved by the Commission for Sharing of (Gains) /Losses on account of controllable factors</b>
NTPS	55.17	29.82	29.77
LTPS	60.26	39.91	39.79
KLHEP	30.34	30.72	30.60
LRPP	21.30	21.94	21.91
<b>Total</b>	<b>167.07</b>	<b>122.38</b>	<b>122.06</b>

4.10.10 The Commission has considered the above actual O&M expenses (excluding Special R&M) for computation of sharing of (Gains)/Losses on account of O&M expenses, which is a controllable factor as specified in the Regulations.

#### **4.11 Capitalisation**

4.11.1 The following Table shows the Capitalisation as claimed by APGCL for FY 2020-21 in its True-up Petition:

**Table 28: Capitalisation claimed for FY 2020-21 (Rs. Crore)**

<b>Station</b>	<b>Capitalisation claimed by APGCL</b>
NTPS	1.65
LTPS	14.73
KLHEP	0.03
LRPP	0.00
<b>Total</b>	<b>16.41</b>

### **Commission's Analysis**

4.11.2 The Commission has scrutinized the amount of capitalization claimed by APGCL against each of the stations. The total capitalization of Rs. 16.41 Crore is also reflecting in the Audited Accounts of APGCL for FY 2020-21. The Commission, hence, approves the following capitalisation as claimed by APGCL for FY 2020-21:

**Table 29: Capitalisation approved for FY 2020-21 (Rs. Crore)**

<b>Station</b>	<b>Capitalisation claimed by APGCL</b>	<b>Capitalisation approved by Commission</b>
NTPS	1.65	1.65
LTPS	14.73	14.73
KLHEP	0.03	0.03
LRPP	0.00	0.00
<b>Total</b>	<b>16.41</b>	<b>16.41</b>

### **4.12 Funding of Capitalisation**

4.12.1 APGCL submitted that the capitalisation of NTPS, LTPS, KLHEP and LRPP is funded entirely through loans. Hence, no equity additions have been claimed by APGCL for FY 2020-21 against these stations.

### **Commission's Analysis**

4.12.2 The Commission has considered the funding of approved capitalisation through loans for NTPS, LTPS, KLHEP and LRPP as submitted by APGCL. The following Table shows the funding of capitalisation approved for FY 2020-21:



**Table 30: Funding of Capitalisation approved for FY 2020-21 (Rs. Crore)**

Station	Capitalisation approved by Commission	Loan	Equity	Grant
NTPS	1.65	1.65	0.00	0.00
LTPS	14.73	14.73	0.00	0.00
KLHEP	0.03	0.03	0.00	0.00
LRPP	0.00	0.00	0.00	0.00
<b>Total</b>	<b>16.41</b>	<b>16.41</b>	<b>0.00</b>	<b>0.00</b>

### 4.13 Depreciation

4.13.1 APGCL submitted that it has computed the Depreciation as per MYT Regulations, 2018 and considering Capital Cost of the asset admitted by the Commission with 10% salvage value. The depreciation on grants has been subtracted. The Table below summarizes the plant-wise Depreciation claimed by APGCL in the True-up for FY 2020-21:

**Table 31: Details of Depreciation claimed by APGCL for FY 2020-21 (Rs. Crore)**

Station	Particulars	Approved as per Order of March 07, 2020	True up Petition for FY 2020-21
NTPS	Depreciation	2.08	1.56
	Less: Depreciation on assets funded by Grants	0.2	0.11
	Net Depreciation	1.87	1.45
	Net Depreciation for Effective Capacity	0.68	
LTPS	Depreciation	18.52	13.2
	Less: Depreciation on assets funded by Grants	2.5	1.75
	Net Depreciation	15.97	11.45
	Net Depreciation for Effective Capacity	10.92	
KLHEP	Depreciation	24.83	23.65
	Less: Depreciation on assets funded by Grants	2.64	2.51
	Net Depreciation	22.19	21.14

Station	Particulars	Approved as per Order of March 07, 2020	True up Petition for FY 2020-21
	Net Depreciation for Effective Capacity	22.19	
LRPP	Depreciation	12.23	13.7
	Less: Depreciation on assets funded by Grants	9.89	11.02
	Net Depreciation	2.34	2.68
	Net Depreciation for Effective Capacity	2.34	

### Commission's Analysis

4.13.2 For the purpose of Truing up, the Commission has considered the approved Station-wise Closing GFA of FY 2019-20 as the opening GFA for FY 2020-21.

4.13.3 The Commission has considered the actual capitalisation for NTPS, LTPS, KLHEP and LRPP based on audited accounts for FY 2020-21.

4.13.4 The Commission has computed depreciation as per scheduled rates specified in the Tariff Regulations, 2018. As per Regulation 32 of the MYT Regulations, 2018, 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.

4.13.5 In line with the approach adopted in the previous Orders and as specified in Regulation 32 of the MYT Regulations, 2018, the Commission has not considered the depreciation on assets funded through grants or capital subsidy, for FY 2020-21.

4.13.6 The station-wise depreciation approved by the Commission in the True-up for FY 2020-21 is shown in the following table:

**Table 32: Depreciation for FY 2020-21 as approved by the Commission (Rs. Crore)**

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	Approved after True up
NTPS	Depreciation	2.08	1.56	1.66

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	Approved after True up
	Less: Depreciation on assets funded by Grants	0.2	0.11	0.12
	<b>Net Depreciation</b>	<b>1.87</b>	<b>1.45</b>	<b>1.54</b>
LTPS	Depreciation	18.52	13.20	17.98
	Less: Depreciation on assets funded by Grants	2.5	1.75	2.44
	<b>Net Depreciation</b>	<b>15.97</b>	<b>11.45</b>	<b>15.54</b>
KLHEP	Depreciation	24.83	23.65	23.61
	Less: Depreciation on assets funded by Grants	2.64	2.51	2.53
	<b>Net Depreciation</b>	<b>22.19</b>	<b>21.14</b>	<b>21.08</b>
LRPP	Depreciation	12.23	13.70	13.72
	Less: Depreciation on assets funded by Grants	9.89	11.02	11.04
	<b>Net Depreciation</b>	<b>2.34</b>	<b>2.68</b>	<b>2.68</b>

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

#### 4.14 Interest on Loan Capital

4.14.1 APGCL submitted that it has computed the Interest on long-term Loan for FY 2020-21 on normative basis. APGCL has considered the normative loan portfolio and the repayment has been considered equal to the depreciation for FY 2020-21. The interest rate has been considered as the weighted average actual interest rate applicable to APGCL at the beginning of FY 2020-21.

4.14.2 Accordingly, APGCL has claimed the Interest and Finance Charges of Rs. 21.95 Crore for FY 2020-21, which includes Interest and Charges of Rs. 0.10 Crore for NTPS, Rs. 0.18 Crore for LTPS, Rs. 18.78 Crore for KLHEP and Rs. 2.89 Crore for LRPP, as shown in the following Table:

**Table 33: Interest Charges as submitted by APGCL for FY 2020-21 (Rs. Crore)**

Station	Particulars	Approved as per Order of March 07, 2020	True up Petition for FY 2020-21
NTPS	Net Normative Opening Loan	4.04	0.77
	Addition of normative loan during the year	3.04	1.65
	Normative Repayment during the year	1.87	1.45
	Net Normative Closing Loan	5.21	0.96
	Avg. Normative Loan	4.63	0.87
	Interest Rate	10.34%	10.16%
	Interest on Loan Capital	0.48	0.09
	Add: Bank Charges	0.00	0.01
	<b>Net Interest on Loan Capital</b>	<b>0.48</b>	<b>0.10</b>
	Net Interest on Loan Capital for Effective Capacity	0.17	
LTPS	Net Normative Opening Loan	0.00	0.00
	Addition of normative loan during the year	20.91	14.73
	Normative Repayment during the year	15.97	11.45
	Net Normative Closing Loan	4.94	3.29
	Avg. Normative Loan	2.47	1.64
	Interest Rate	10.34%	10.16%
	Interest on Loan Capital	0.26	0.17
	Add: Bank Charges	0.00	0.01
	<b>Net Interest on Loan Capital</b>	<b>0.26</b>	<b>0.18</b>
	Net Interest on Loan Capital for Effective Capacity	0.17	
KLHEP	Net Normative Opening Loan	204.2	195.3
	Addition of normative loan during the year	20.9	0.03
	Normative Repayment during the year	22.19	21.14
	Net Normative Closing Loan	202.91	174.19
	Avg. Normative Loan	203.56	184.75
	Interest Rate	10.34%	10.16%
	Interest on Loan Capital	21.05	18.77
	Add: Bank Charges	0.00	0.01
	<b>Net Interest on Loan Capital</b>	<b>21.05</b>	<b>18.78</b>
	Net Interest on Loan Capital for Effective Capacity	21.05	
LRPP	Net Normative Opening Loan	30.66	29.78
	Addition of normative loan during the year	0.00	0.00
	Normative Repayment during the year	2.34	2.68

Station	Particulars	Approved as per Order of March 07, 2020	True up Petition for FY 2020-21
	Net Normative Closing Loan	28.32	27.1
	Avg. Normative Loan	29.49	28.44
	Interest Rate	10.34%	10.16%
	Interest on Loan Capital	3.05	2.89
	Add: Bank Charges	0.00	0.00
	<b>Net Interest on Loan Capital</b>	<b>3.05</b>	<b>2.89</b>
	Net Interest on Loan Capital for Effective Capacity	3.05	

### Commission's Analysis

4.14.3 In the Tariff Order dated March 07, 2020, the Commission approved the Interest on Loan Capital on normative basis as per Regulation 34 of the MYT Regulations, 2018. In the said Order, the Commission has approved the Station-wise Interest on loan capital by considering the Station-wise normative loan.

4.14.4 As per the above said Regulation, normative loan outstanding as on April 1, 2020, shall be computed by deducting the cumulative repayment as admitted by the Commission up to March 31, 2020, from the gross normative loan. Accordingly, the Commission has computed the normative loan outstanding as on April 1, 2020 as shown in the following Table:

**Table 34: Computation of Normative loan outstanding as on April 1, 2020 (Rs. Crore)**

Particulars	NTPS	LTPS	KLHEP
Gross Normative Loan	8.56	272.31	391.40
Less: Cumulative repayment (equal to accumulated depreciation)	7.79	294.98	196.10
<b>Net Normative loan</b>	<b>0.77</b>	<b>0.00</b>	<b>195.30</b>

4.14.5 The loan addition has been considered equal to debt portion of capitalized works as approved by the Commission in this Order. The loan repayment has been considered equivalent to depreciation approved in this Order.

4.14.6 The Commission has scrutinised the actual loan details and actual interest amount as submitted by APGCL. The Commission has considered weighted average rate of

interest of 10.16% for the purpose of truing up.

4.14.7 The interest on loan capital as approved by the Commission after true-up for FY 2020-21 is shown in the following Table:

**Table 35: Interest on Loan Capital for FY 2020-21 as approved by the Commission (Rs. Crore)**

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	Approved after Truing up
NTPS	Net Normative Opening Loan	4.04	0.77	0.77
	Addition of normative loan during the year	3.04	1.65	1.65
	Normative Repayment during the year	1.87	1.45	1.54
	Net Normative Closing Loan	5.21	0.96	0.87
	Interest Rate	10.34%	10.16%	10.16%
	Interest on Loan Capital	0.48	0.09	0.08
	Interest and Finance Charges	0.00	0.01	0.01
	<b>Total Interest Expenses</b>	<b>0.48</b>	<b>0.10</b>	<b>0.09</b>
LTPS	Net Normative Opening Loan	0.00	0.00	0.00
	Addition of normative loan during the year	20.91	14.73	14.73
	Normative Repayment during the year	15.97	11.45	15.54
	Net Normative Closing Loan	4.94	3.29	0.00
	Interest Rate	10.34%	10.16%	10.16%
	Interest on Loan Capital	0.26	0.17	0.00
	Interest and Finance Charges	0.00	0.01	0.00
	<b>Total Interest Expenses</b>	<b>0.26</b>	<b>0.18</b>	<b>0.00</b>
KLHEP	Net Normative Opening Loan	204.2	195.3	195.30
	Addition of normative loan during the year	20.9	0.03	0.03
	Normative Repayment during the year	22.19	21.14	21.08
	Net Normative Closing Loan	202.91	174.19	174.25
	Interest Rate	10.34%	10.16%	10.16%
	Interest on Loan Capital	21.05	18.77	18.77
	Interest and Finance Charges	0.00	0.01	0.01
	<b>Total Interest Expenses</b>	<b>21.05</b>	<b>18.78</b>	<b>18.79</b>
LRPP	Net Normative Opening Loan	30.66	29.78	29.78
	Addition of normative loan during the year	0.00	0.00	0.00
	Normative Repayment during the year	2.34	2.68	2.68
	Net Normative Closing Loan	28.32	27.1	27.10
	Interest Rate	10.34%	10.16%	10.16%

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	Approved after Truing up
	Interest on Loan Capital	3.05	2.89	2.89
	Interest and Finance Charges	0.00	0.00	0.00
	<b>Total Interest Expenses</b>	<b>3.05</b>	<b>2.89</b>	<b>2.89</b>

#### 4.15 Return on Equity (RoE)

4.15.1 APGCL submitted that the Commission in the Tariff Order dated March 07, 2020 approved RoE separately for each Generating Station for FY 2020-21. Since, there has been no variation in the Equity for NTPS, LTPS, KLHEP and LRPP; APGCL has claimed the same amount in the True-up for FY 2020-21 as approved in Tariff Order dated March 07, 2020. APGCL has claimed RoE of Rs. 8.53 Crore for NTPS, Rs. 22.18 Crore for LTPS, Rs. 10.64 Crore for KLHEP, and Rs 2.44 Crore for LRPP.

#### Commission's Analysis

4.15.2 The Commission has approved the RoE in accordance with Regulation 33 of the MYT Regulations, 2018.

4.15.3 The Commission has considered the opening Equity for each of the Stations in line with the closing Equity approved in the Truing-up of FY 2019-20. The addition to Equity has been considered in line with the equity approved in funding of capitalisation, as elaborated in this Chapter.

4.15.4 The Commission has considered the rate of Return on Equity at 15.5% as specified in Regulation 33.2 of MYT Regulations, 2018.

**Table 36: Return on Equity approved by the Commission for FY 2020-21 (Rs. Crore)**

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	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%
	<b>Return on Equity</b>	<b>8.53</b>	<b>8.53</b>	<b>8.53</b>
LTPS	Opening Equity	143.08	143.08	143.08
	Closing equity	143.08	143.08	143.08

Station	Particulars	Tariff Order dated March 07, 2020	APGCL's Petition	Approved after Truing up
	Rate of Return (%)	15.50%	15.50%	15.50%
	<b>Return on Equity</b>	<b>22.18</b>	<b>22.18</b>	<b>22.18</b>
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%
	<b>Return on Equity</b>	<b>10.64</b>	<b>10.64</b>	<b>10.64</b>
LRPP	Opening Equity	15.31	15.74	15.74
	Closing equity	15.31	15.74	15.74
	Rate of Return (%)	15.50%	15.50%	15.50%
	<b>Return on Equity</b>	<b>2.37</b>	<b>2.44</b>	<b>2.44</b>

#### 4.16 Interest on Working Capital (IoWC)

4.16.1 APGCL submitted that the Commission in the Tariff Order dated March 07, 2020 approved IoWC of Rs.15.34 Crore for FY 2020-21. As against this, APGCL has claimed normative IoWC of Rs. 13.28 Crore for FY 2020-21 in accordance with MYT Regulations, 2018. APGCL has considered the interest rate of 10.00% as per MYT Regulations, 2018.

4.16.2 APGCL has claimed IoWC of Rs. 3.16 Crore for NTPS, Rs. 4.36 Crore for LTPS, Rs. 2.79 Crore for KLHEP, and Rs 2.97 Crore for LRPP.

#### Commission's Analysis

4.16.3 The Commission has computed IoWC in accordance with Regulation 36.1 of the MYT Regulations, 2018. For computation of working capital requirement, the Commission has considered the normative fuel cost and normative O&M Expenses.

4.16.4 Regulation 36.1 (d) provides for rate of IoWC to be considered equivalent to normative interest rate of three hundred (300) basis points above the average State Bank of India (SBI) Marginal Cost of Lending Rate (MCLR) (One-Year Tenor).

4.16.5 The average SBI MCLR for FY 2020-21 has been 7.05%. Hence, the Commission has accordingly considered the interest rate of 10.05% (7.05% +3.00%) for computation of IoWC. The IoWC approved by the Commission after true-up for FY 2020-21 is shown in the following Table:



Table 37: IoWC as approved by the Commission for FY 2020-21 (Rs. Crore)

Station	Particulars	Approved as per order of March 07, 2020	True up Petition for FY 2020-21	Approved after True-up
NTPS	Fuel Cost for one month	4.24	3.66	4.92
	O&M Expenses for one month	1.67	3.01	4.60
	Maintenance Spares-30% of O&M	6.02	10.82	16.55
	Receivables for two months	11.76	14.11	16.62
	Total Working Capital Requirement	23.69	31.59	42.69
	Rate of interest	11.22%	10.00%	10.05%
	<b>Interest on Working capital</b>	<b>2.66</b>	<b>3.16</b>	<b>4.29</b>
LTPS	Fuel Cost for one month	10.41	5.83	5.55
	O&M Expenses for one month	2.03	3.43	5.02
	Maintenance Spares-30% of O&M	7.29	12.36	18.08
	Receivables for two months	30.84	21.99	24.16
	Total Working Capital Requirement	50.57	43.61	52.80
	Rate of interest	11.22%	10.00%	10.05%
	<b>Interest on Working capital</b>	<b>5.67</b>	<b>4.36</b>	<b>5.31</b>
KLHEP	O&M Expenses for one month	2.53	2.53	2.53
	Maintenance Spares-15% of O&M	4.55	9.1	4.55
	Receivables for two months	16.04	16.31	8.20
	Total Working Capital Requirement	23.12	27.94	15.28
	Rate of interest	11.22%	10.00%	10.05%
	<b>Interest on Working capital</b>	<b>2.59</b>	<b>2.79</b>	<b>1.54</b>
LRPP	Fuel Cost for one month	8.53	5.37	5.87
	O&M Expenses for one month	1.78	1.78	1.78
	Maintenance Spares-30% of O&M	6.39	6.39	6.39
	Receivables for two months	22.64	16.12	17.22
	Total Working Capital Requirement	39.34	29.66	31.25
	Rate of interest	11.22%	10.00%	10.05%
	<b>Interest on Working capital</b>	<b>4.41</b>	<b>2.97</b>	<b>3.14</b>

#### 4.17 Capacity Building

4.17.1 APGCL submitted that the Commission had approved Capacity Building expenses of Rs. 0.30 Crore for FY 2020-21 in the Tariff Order dated March 07, 2020 for its employees. The Commission had approved Rs 0.10 Crore for NTPS, LTPS and KLHEP, totalling Rs. 0.30 Crore.

4.17.2 APGCL has claimed Capacity Building Expenses of Rs. 0.009 Crore, i.e., Rs. 0.004 Crore each for NTPS and LTPS along with 0.002 Crore for KLHEP in the Truing-up for FY 2020-21.

**Table 38: Capacity building submitted by APGCL for Truing-up of FY 2020-21 (Rs. Crore)**

Station	Approved in Tariff Order dated March 07, 2020	APGCL Submission
NTPS	0.10	0.004
LTPS	0.10	0.004
KLHEP	0.10	0.002
LRPP	-	-
<b>Total</b>	<b>0.30</b>	<b>0.009</b>

### Commission's Analysis

4.17.3 APGCL submitted the detailed list of activities undertaken by APGCL for capacity building during FY 2020-21 and claimed expenses of Rs. 0.009 Crore.

4.17.4 The capacity building charges were additionally approved in the MYT Order dated March 01, 2019 for the Control Period FY 2019-20 to FY 2021-22, over and above the regular capacity building that was required to be undertaken by APGCL, within A&G expenses.

4.17.5 The Commission therefore, approves the actual capacity building charges of Rs. 0.009 Crore as submitted by APGCL, i.e., Rs. 0.004 crore each for LTPS, NTPS and Rs. 0.002 Crore for KLHEP.

### 4.18 Special R&M Expenses

4.18.1 APGCL submitted that Special R&M works were undertaken in FY 2020-21 as shown in the Table below:

**Table 39: Special R&M Expenses incurred by APGCL in FY 2020-21 (Rs. Crore)**

Work Name	Approved as per Tariff Order March 07, 2020	Claimed in FY 2020-21	Remarks
Capital Overhauling of 50 MW Francis type Fuji make	15.10	0.00	The Overhauling of Unit 2 has been shifted in FY 2021-22. Hence, APGCL has not claimed any amount in True Up for FY 2020-21

Work Name	Approved as per Tariff Order March 07, 2020	Claimed in FY 2020-21	Remarks
Generator Turbine Unit-II – KLHEP			
Overhauling of LTPS Unit -7 in FY 2021-22	13.00	0.00	No Claim. After receiving approval from the Commission for overhauling of LTPS Gas Turbine #7, the same was placed before GoA for FY 2021-22 (State Plan). Because of financial constraint caused by Covid-19, GoA did not approve the same. Subsequently, it was decided to execute the work from APGCL's own fund. After surveying the spares for the overhauling work, OEM M/s BGGTS had submitted the budgetary offer, which was found at the higher side. Negotiation is under process. Overhauling of Unit# 7 has been shifted in FY 2022-23.
Major Overhauling of KLHEP – Unit 1	0.00	24.24	The work of major overhauling of Unit I of 2*50 MW KLHEP was started from 17-02-2020 for 68 Days and was about to be completed by 26-04-2020. However, due to Covid-19 there was continuous lockdown in Assam from 22 <sup>nd</sup> March 2020. APGCL had taken special permission on the ground of essential services from the local authority so work of dismantling and box-up was completed by 2 <sup>nd</sup> week of May 2020. However, the commissioning of Unit I could not be completed as the Fuji supervisor from Japan was not able to visit the site as international flight was not available due to Covid-19. Voith Hydro Noida vide e-mail dated 09-08-2020 informed that Voith Fuji supervisors were not able to travel for next couple of months because of Covid-19. Hence, it has been decided that Voith Fuji team will continue their operation remotely in order to commission the Unit I. Engineers from Voith Hydro Pvt Ltd reached KLHEP on 21 <sup>st</sup> December 2020 for completing the major overhauling of 50 MW Unit 1. Voith Fuji confirmed that the Unit is fit for generation vide confirmation letter dated 16 <sup>th</sup> February 2021. Hence, APGCL has claimed actual expenditure of Rs. 24.24 Crore in the True Up for FY 2020-21.

### Commission's Analysis

4.18.2 The Commission observed that Special R&M Expenses for KLHEP Unit II has been shifted to FY 2021-22. The overhauling of LTPS Unit 7 is proposed to be carried out in

FY 2021-22. The Commission in the Tariff Order for FY 2018-19 dated March 19, 2018, had approved Special R&M expenses of Rs. 25.90 Crore for overhauling of KLHEP Unit I. However, APGCL could not complete the overhauling of KLHEP Unit I in FY 2018-19 and FY 2019-20. APGCL submitted that overhauling of KLHEP Unit I was completed in FY 2020-21 and hence, it has claimed an amount of Rs 24.24 Crore.

4.18.3 The Commission has therefore, considered Special R&M Expenses of Rs 24.24 Crore on account of overhauling of KLHEP Unit I for FY 2020-21.

#### 4.19 Non-Tariff Income

4.19.1 APGCL submitted that the Commission in the Tariff Order dated March 07, 2020 approved Non-Tariff Income of Rs. 22.10 Crore. As against this, APGCL has claimed Non-Tariff Income of Rs. 35.99 Crore as per audited accounts for the purpose of True-up. As per audited accounts for FY 2020-21, the total other income appeared as Rs. 87.71 Crore. However, due to written off amount of sundry credit balances relating to GPF liabilities and provision for liabilities for expenses of Rs. 51.72 Crore, APGCL has claimed Rs. 35.99 crore as NTI for FY 2020-21.

4.19.2 The Station-wise Non-Tariff Income submitted by APGCL is shown in the following Table:

**Table 40: Non-Tariff Income as claimed by APCGL for True-up for FY 2020-21 (Rs. Crore)**

Station	Approved as per Tariff Order March 07, 2020	As per Audited Accounts for FY 2020-21	True up Petition for FY 2020-21
NTPS	7.13	8.54	8.54
LTPS	9.22	17.38	17.38
KLHEP	5.75	10.07	10.07
LRPP	0.00	0.00	0.00
<b>Total</b>	<b>22.1</b>	<b>35.99</b>	<b>35.99</b>

#### Commission's Analysis

4.19.3 For the purpose of Truing up for FY 2020-21, the Commission has considered the actual Non-Tariff Income of Rs. 35.99 Crore as per audited accounts, as submitted by APGCL. Accordingly, the Commission approves Non-Tariff Income of Rs. 8.54 Crore for NTPS, Rs. 17.38 Crore for LTPS, and Rs. 10.07 Crore for KLHEP in the Truing-up

of FY 2020-21.

## 4.20 Sharing of Gains and Losses

4.20.1 Regulation 10.2 of the MYT Regulations, 2018 specifies the controllable factors for Generating Stations and Regulation 12 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

4.20.2 Regulation 10.2 of the MYT Regulations, 2018 specifies O&M Expenses as a controllable factor.

4.20.3 The sharing of (Gains)/Losses on account of O&M Expenses is shown in the following Table:

**Table 41: Sharing of (Gains)/Losses for O&M Expenses for FY 2020-21 (Rs. Crore)**

Particulars	Revised Normative	Actual	(Gains)/ Losses	Sharing of (Gains)/ Losses	Net Entitlement
NTPS	55.17	29.77	(25.40)	(8.47)	46.70
LTPS	60.26	39.79	(20.47)	(6.82)	53.44
KLHEP	30.34	30.60	0.26	0.09	30.43
LRPP	21.30	21.91	0.60	0.20	21.50
<b>Total</b>	<b>167.07</b>	<b>122.06</b>	<b>(45.01)</b>	<b>(15.00)</b>	<b>152.07</b>

### Fuel Cost

4.20.4 Sharing of (gains)/losses on account of performance parameters and Fuel Cost in the True-up for FY 2020-21 is shown in the Table below:

**Table 42: Sharing of (Gains)/Loss on account of Fuel Parameters as approved by the Commission in the True-up for FY 2020-21 (Rs. Crore)**

Station	Normative Cost	Actual Cost	(Gains)/ Losses	Sharing of (Gains)/ Losses	Net Entitlement
NTPS	39.90	43.88	3.99	1.33	41.22
LTPS	69.97	69.97	(0.00)	(0.00)	69.97
LRPP	64.66	64.45	(0.21)	(0.07)	64.59

### Auxiliary Consumption

4.20.5 As per MYT Regulations, 2018, Auxiliary Consumption is considered as a controllable parameter. Sharing of (gains)/losses on account of Auxiliary Consumption in the True-up for FY 2021-22 is shown in the Table below:

**Table 43: Sharing of (Gain)/Loss on account of Auxiliary Consumption as approved by the Commission in the True-up for FY 2020-21**

Station	Net Normative Generation (MU)	Net Actual Generation (MU)	ECR (Rs./kWh)	(Gains)/ Losses (MU)	(Gains)/ Losses (Rs. Crore)	Sharing of (Gains)/ Losses
NTPS	220.68	218.73	1.81	(1.95)	(0.35)	(0.12)
LTPS	422.96	410.61	1.65	(12.34)	(2.04)	(0.68)
LRPP	460.38	467.41	1.39	7.03	0.99	0.33

4.20.6 The total sharing of Gains and Losses for FY 2020-21 has been summarised in the following Table:

**Table 44: Total Sharing of (Gain)/Loss approved by the Commission in the True-up for FY 2020-21 (Rs. Crore)**

Particulars	NTPS	LTPS	KLHEP	LRPP
(Gains)/ Losses passed to beneficiary for O&M Expenses	(8.47)	(6.82)	0.09	0.20
(Gains)/ Losses passed to beneficiary for Fuel Cost	1.33	(0.00)	-	(0.07)
(Gains)/Losses passed to beneficiary for Auxiliary Consumption	(0.12)	(0.68)	-	0.33
<b>Grand Total</b>	<b>(7.26)</b>	<b>(7.51)</b>	<b>0.09</b>	<b>0.46</b>

## **4.21 Reduction in Annual Fixed Charges**

4.21.1 As discussed earlier, the actual PAF considered by the Commission for NTPS is 39.22% compared to normative PAF of 50.00%. Similarly, the Commission has approved actual PAF of 43.26% for KLHEP against normative PAF of 85.00%. Since, the actual PAF for NTPS and KLHEP are lower than the normative PAF, the Annual

Fixed Charges are to be disallowed on pro-rata basis as shown in the following Table:

**Table 45: Reduction of fixed costs as approved by the Commission for True-up for FY 2020-21  
(Rs. Crore)**

<b>Particulars</b>	<b>PAF (%) – Normative</b>	<b>PAF (%) – Actual</b>	<b>AFC (Rs. Crore)</b>	<b>Allowable AFC (Rs. Crore)</b>	<b>Disallowed AFC (Rs. Crore)</b>
NTPS	50.00%	39.22%	61.08	47.92	(13.17)
LTPS	50.00%	55.63%	85.91	85.91	0.00
KLHEP	85.00%	43.26%	96.56	49.14	(47.42)
LRPP	85.00%	87.19%	32.45	32.45	0.00

## **4.22 Summary of True-up for FY 2020-21**

4.22.1 The Summary of true-up for FY 2020-21 is shown in the following Table:

**Table 46: True-up ARR for Existing Generating Stations for FY 2020-21 as approved by the Commission (Rs. Crore)**

Sr. No.	Particulars	NTPS			LTPS			KLHEP			LRPP		
		Tariff Order dated March 7, 2020	APGCL's Petition	Approved after Truing up	Tariff Order dated March 7, 2020	APGCL's Petition	Approved after Truing up	Tariff Order dated March 7, 2020	APGCL's Petition	Approved after Truing up	Tariff Order dated March 7, 2020	APGCL's Petition	Approved after Truing up
<b>A</b>	<b>Annual Fixed Charges</b>												
1	O&M expenses	20.08	36.07	55.17	24.31	41.19	60.26	30.34	30.34	30.34	21.30	21.30	21.30
2	Special R&M Expenses	0.00	0.00	0.00	13.00	0.00	0.00	15.10	24.24	24.24	0.00	0.00	0.00
3	Depreciation	0.68	1.45	1.54	10.92	11.45	15.54	22.19	21.14	21.08	2.34	2.68	2.68
4	Interest on Loans	0.17	0.10	0.09	0.17	0.18	0.00	21.05	18.78	18.79	3.05	2.89	2.89
5	Return on Equity	3.10	8.53	8.53	15.16	22.18	22.18	10.64	10.64	10.64	2.37	2.44	2.44
6	Interest on WC	2.66	3.16	4.29	5.67	4.36	5.31	2.59	2.79	1.54	4.41	2.97	3.14
7	Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Capacity Building	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
9	Less: Non-Tariff Income	7.13	8.54	8.54	9.22	17.38	17.38	5.75	10.07	10.07	0.00	0.00	0.00
<b>10</b>	<b>Fixed Cost</b>	<b>19.67</b>	<b>40.76</b>	<b>61.08</b>	<b>60.11</b>	<b>61.98</b>	<b>85.91</b>	<b>96.26</b>	<b>97.87</b>	<b>96.56</b>	<b>33.47</b>	<b>32.28</b>	<b>32.45</b>
<b>B</b>	<b>Fuel Cost</b>	<b>46.42</b>	<b>43.88</b>	<b>39.90</b>	<b>124.91</b>	<b>69.97</b>	<b>69.97</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>102.39</b>	<b>64.45</b>	<b>64.66</b>
<b>C</b>	<b>Total ARR</b>	<b>66.09</b>	<b>84.65</b>	<b>100.98</b>	<b>185.02</b>	<b>131.94</b>	<b>155.87</b>	96.26	<b>97.87</b>	<b>96.56</b>	<b>135.86</b>	<b>96.72</b>	<b>97.11</b>
D	Incentive for Generation		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
E	Sharing of (Gains)/ Losses		0.00	(7.26)		0.00	(7.51)		0.00	0.09		0.00	0.46
F	Reduction in Fixed Cost on Account of PAF			(13.17)			0.00			(47.33)			0.00
<b>G</b>	<b>Net ARR</b>	<b>66.09</b>	<b>84.65</b>	<b>80.56</b>	<b>185.02</b>	<b>131.94</b>	<b>148.37</b>	<b>96.26</b>	<b>97.87</b>	<b>49.23</b>	<b>135.86</b>	<b>96.72</b>	<b>97.57</b>



#### 4.23 Net ARR for Effective Capacity

4.23.1 The Commission has considered the Net ARR computed on the effective capacity of NTPS and LTPS based on the actual retirement of Units as submitted by APGCL.

4.23.2 The Commission has considered the effective capacity of 78.12 MW for NTPS. Further, Unit 1,2,3 & 4 of LTPS are de-commissioned. Accordingly, the effective capacity has been considered as 97.20 MW for LTPS. Accordingly, the Commission has computed the Net ARR at effective capacity.

4.23.3 The following Table shows the Net ARR of NTPS and LTPS to be considered for FY 2020-21 after adjusting for effective capacity:

**Table 47: True-up ARR for Existing Generating Stations for FY 2020-21 as approved by the Commission at Effective Capacity (Rs. Crore)**

Particulars	NTPS	LTPS
<b>Total Fixed Cost Approved on Installed Capacity</b>	<b>69.62</b>	<b>103.29</b>
Reduction of Fixed cost due to Decommissioning	24.11	32.69
Total Fixed Cost approved at effective Capacity	45.51	70.60
Add: Capacity Building Charges	0.00	0.00
Less: Non-Tariff Income	8.54	17.38
<b>Total Fixed Cost approved for effective capacity</b>	<b>36.97</b>	<b>53.22</b>
Add: Fuel Cost	39.90	69.97
Add: Sharing of (gains)/loss	(7.26)	(7.51)
Add: Reduction in Fixed Cost on Account of PAF	(13.17)	0.00
<b>Net ARR approved for effective capacity</b>	<b>56.45</b>	<b>115.68</b>

#### 4.24 Revenue from Sale of Power

4.24.1 APGCL submitted the Station-wise revenue from sale of power for FY 2020-21 as shown in the Table below, as per Audited Accounts:

**Table 48: Revenue from Sale of Power as claimed by APGCL (Rs. Crore)**

Particulars	Fixed/ Capacity charges	Variable charges	Total Revenue as per Accounts of FY 2020-21	Approved as per order of March 2020	Total Revenue claimed in True up for FY 2020-21
NTPS	19.68	39.10	58.78	66.09	58.78
LTPS	60.12	85.41	145.53	185.02	145.53

Particulars	Fixed/ Capacity charges	Variable charges	Total Revenue as per Accounts of FY 2020-21	Approved as per order of March 2020	Total Revenue claimed in True up for FY 2020-21
LRPP	17.84	25.00	42.84	96.26	42.84
KLHEP	33.48	65.22	98.70	135.86	98.70
MSHEP	0.00	6.77	6.77	0.00	0.00
<b>Total</b>	<b>131.12</b>	<b>221.50</b>	<b>352.62</b>	<b>483.23</b>	<b>345.85</b>

4.24.2 APGCL submitted that the above revenue does not include Rs. 6.77 Crore recovered on account of MSHEP, which is reflecting in the Audited Accounts of FY 2020-21.

#### **Commission's Analysis**

4.24.3 The Commission has considered the actual revenue of Rs. 345.85 Crore billed in FY 2020-21 for truing up, based on the audited accounts.

## 5 Annual Performance Review for FY 2021-22

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### 5.1 Methodology for Annual Performance Review

5.1.1 The Commission had approved the revised ARR for FY 2021-22 for existing Generating Stations in the Tariff Order dated February 15, 2021.

5.1.2 Regulation 9.3 of the MYT Regulations, 2018 specifies that the Commission shall undertake the APR and True-up for the respective years of the Control Period from FY 2019-20 to FY 2021-22, as reproduced below:

*“9.3 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:...*

*....**Annual Performance Review: a comparison of the performance targets estimated to be achieved for the current financial year (based on 6 months actual data) with the approved forecast for that financial year including adjusting trajectories of uncontrollable if needed....”.**(Emphasis Added)*

5.1.3 APGCL submitted the APR Petition for FY 2021-22, supported by actual information available till September 2021 and estimated values for the next six months.

5.1.4 From the above said Regulation, the main objective of the APR is to compare the performance targets for FY 2021-22 vis-à-vis forecast approved in the Tariff Order for FY 2021-22. The Revenue Gap/(Surplus) arising out of APR for FY 2021-22 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 values approved in the Tariff Order for FY 2021-22. The Commission has computed the Revenue Gap/(Surplus) as an indication of the performance in FY 2021-22. 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 2021-22.

### 5.2 Installed and Effective Capacity of FY 2021-22

5.2.1 APGCL submitted the following installed and effective capacity for FY 2021-22.

**Table 49: Installed and Effective Capacity for FY 2021-22**

APGCL MYT Order for FY 2022-23 to FY 2024-25

Station	Installed Capacity (MW)	No. of Units	Units decommissioned	Units Available for Generation & Capacity in MW	Effective Capacity (MW)
NTPS	119.50	6	1,4,5	2, 3 (21 MW), 6 (22.50 MW-WHRU)- (1 <sup>st</sup> April 2021 – 15 <sup>th</sup> July 2021)  2 or 3, 6 – (16 <sup>th</sup> July 2021 – 31 <sup>st</sup> March 2022)	64.5 MW (1 <sup>st</sup> April 2021 – 15 <sup>th</sup> July 2021)  43.5 MW (16 <sup>th</sup> July 2021 – 31 <sup>st</sup> March 2022)  Total Weighted Average Effective Installed Capacity = 49.60 MW
LTPS	142.20	8	1,2,3,4	5,6,7 (20 MW Each),8 (37.20 MW-WHRU)	97.20
KLHEP	100.00	2	-	1 (50), 2 (50)	100.00
LRPP	69.76	7	-	1-7 (9.965 each)	69.76

5.2.2 The Commission has considered the effective capacity for FY 2021-22 as submitted by APGCL in the above Table. The Commission has accordingly reduced the fixed cost derived after APR of FY 2021-22 to the extent of effective capacity with respect to the installed capacity of each of the above Stations in subsequent section of this Chapter.

5.2.3 The impact of reduction of fixed cost with respect to effective capacity can be seen only in NTPS and LTPS as some of their Units have been decommissioned till date. There is no impact of reduction in fixed cost due to effective capacity for KLHEP and LRPP as none of their Units are decommissioned/proposed to be decommissioned in FY 2021-22.

### 5.3 Plant Availability Factor (PAF)/Capacity Index

5.3.1 APGCL submitted that as per Regulation 47.1 of the MYT Regulations, 2018, the NAPAF for recovery of full fixed charges is 50% for NTPS. However, due to the problem of low gas supply and frequent forced shutdown of the aged Units/auxiliaries, NAPAF may not be achieved. APGCL estimated availability of 47% for NTPS for FY 2021-22.

5.3.2 APGCL submitted that NAPAF for recovery of full fixed charges is 50% for LTPS. APGCL estimated availability of 50.6% for FY 2021-22.

5.3.3 Further, Regulation 49 of MYT Regulations, 2018 specifies NAPAF for KLHEP as 85%

for FY 2021-22. However, APGCL estimated availability of 90.06% for FY 2021-22.

5.3.4 APGCL submitted that it expected to achieve the Plant Availability Factor of 87.71% for LRPP for FY 2021-22.

5.3.5 APGCL requested the Commission to approve the revised estimated Availability for FY 2021-22 as shown in the Table below:

**Table 50: Availability as submitted by APGCL for FY 2021-22**

Sl. No.	Station	Tariff Order dated February 15, 2021	Apr-Sept (actual)	Oct-March (estimated)	Estimated total
1	NTPS	50.00%	44.89%	50.00%	47.00%
2	LTPS	50.00%	51.13%	50.00%	50.60%
3	KLHEP	85.00%	95.12%	85.00%	90.06%
4	LRPP	85.00%	90.42%	85.00%	87.71%

### Commission's Analysis

5.3.6 The Commission notes that APGCL has projected the availability for NTPS lower than NAPAF due to the problem of low gas supply and frequent forced shutdown of the aged Units/auxiliaries.

5.3.7 The Commission notes that the supply of gas was lower during FY 2021-22 (H1) for NTPS. The arrangement of fuel is the responsibility of the Generator and therefore, lower availability cannot be allowed for insufficient gas supply.

5.3.8 In accordance with the MYT Regulations, 2018, APGCL shall be eligible to recover full fixed charges if NAPAF is achieved as specified in MYT Regulations, 2018. Accordingly, the Commission approves NAPAF as per MYT Regulations, 2018 as shown in the following Table:

**Table 51: Target PAF/Capacity Index for recovery of full fixed Charges**

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

## 5.4 Plant Load Factor (PLF)

- 5.4.1 APGCL submitted that as per Regulation 47.2 of the MYT Regulations, 2018, the NAPLF is 50% for NTPS. APGCL submitted that due to the lower gas supply, grid constraints and issues of ageing and frequent forced shutdowns, the plant has not been able to achieve NAPLF.
- 5.4.2 As per MYT Regulations, 2018, NAPLF for availing incentive for LTPS is specified as 66% for FY 2020-21. APGCL has estimated NAPLF of 45.80% for FY 2021-22.
- 5.4.3 APGCL submitted the estimated PLF of 52.08% for KLHEP, which is higher than the approved NAPLF of 44.5%.
- 5.4.4 APGCL requested the Commission to approve the revised estimated PLF for FY 2021-22 as shown in the Table below:

**Table 52: Plant Load Factor submitted by APGCL for FY 2021-22**

Sl. No.	Station	Tariff Order dated February 15, 2021	Apr-Sep (actual)	Oct-March (estimated)	Estimated total
1	NTPS	50.00%	39.26%	50.00%	45.84%
2	LTPS	66.00%	41.67%	50.00%	45.80%
3	KLHEP	44.50%	59.67%	44.5%	52.08%
4	LRPP	90.00%	87.03%	90.00%	88.52%

## Commission's Analysis

- 5.4.5 The Commission notes that APGCL has projected lower than NAPLF for NTPS and LTPS on account of the same reasons as discussed in the above Section of NAPAF.
- 5.4.6 APGCL shall be eligible for incentive only if actual PLF is higher than NAPLF specified in MYT Regulations, 2018. For the purpose of APR, the Commission has considered Gross Generation as submitted by APGCL and accordingly PLF. However, the incentive shall be allowed with respect to NAPLF specified in the MYT Regulations, 2018.

## 5.5 Auxiliary Consumption

- 5.5.1 APGCL submitted that the Auxiliary Consumption of NTPS is estimated to be higher than the approved Auxiliary Consumption in FY 2021-22 due to part loading of Units

resulting from low/non-availability of gas, which is an uncontrollable factor.

5.5.2 For LTPS, APGCL submitted that the Auxiliary Consumption is expected to be higher than the approved values due to low gas pressure in supply of gas, due to which the usage of gas compressors increases, resulting in high Auxiliary Consumption, which is an uncontrollable factor.

5.5.3 APGCL estimated the Auxiliary Consumption of 5.10% for NTPS, 7.3% for LTPS, 0.50% for KLHEP, and 2.64% for LRPP in the APR of FY 2021-22.

### Commission's Analysis

5.5.4 The Commission notes that there is a variation in Auxiliary Consumption that has been estimated by APGCL based on actual performance of H1 of FY 2021-22 vis-à-vis Auxiliary Consumption approved in the Tariff Order dated February 15, 2021 for FY 2021-22. The Commission is of the view that the availability of gas in the required quantity and at desired pressure is the responsibility of APGCL only, and no relaxation can be given on account of lower gas availability or lower gas pressure.

5.5.5 The Commission considers the Auxiliary Consumption for existing Generating Stations as per MYT Regulations, 2018, for the purpose of APR, as shown in the following Table:

**Table 53: Auxiliary Consumption considered by the Commission for FY 2021-22**

Sl. No.	Station	Tariff Order dated February 15, 2021	Estimated by APGCL	Approved for APR
1	NTPS	4.50%	5.10%	4.50%
2	LTPS	5.50%	7.3%	5.50%
3	KLHEP	0.50%	0.50%	0.50%
4	LRPP	3.50%	2.64%	3.50%

### 5.6 Gross Generation and Net Generation

5.6.1 The Gross Generation and Net Generation estimated by APGCL for FY 2021-22 is shown in the following Table:

**Table 54: Gross and Net Generation as submitted by APGCL for FY 2021-22**

Sl. No.	Station	Gross Generation (MU)	Net Generation (MU)
1	NTPS	145.21	137.80
2	LTPS	397.90	368.74
3	LRPP	519.40	505.67
4	KLHEP	390.00	388.05

### Commission's Analysis

5.6.2 The Commission observed that during the first half of FY 2021-22, the availability of the gas was lower than the 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 FY 2021-22 as submitted by APGCL. The Commission has also considered the Net Generation after considering the approved auxiliary consumption of the respective plants in the APR of FY 2021-22.

5.6.3 As regards KLHEP, it is observed that APGCL has estimated generation from KLHEP same as that approved in the Tariff Order February 15, 2021. For the purpose of APR, the Commission has considered the gross generation for KLHEP as submitted by APGCL.

5.6.4 The Commission has computed the Net Generation based on above estimated Gross Generation and approved Auxiliary Consumption for FY 2021-22. The Gross Generation and Net Generation approved by the Commission in the APR for FY 2021-22 are shown in the following Table:

**Table 55: Gross Generation and Net Generation considered by the Commission in the APR for FY 2021-22**

Sl. No.	Station	Gross Generation (MU)	Net Generation (MU)
1	NTPS	145.21	138.68
2	LTPS	397.90	376.01
3	LRPP	519.40	501.22
4	<b>Total Thermal</b>	<b>1062.51</b>	<b>1015.91</b>
5	KLHEP	390.00	388.05
6	<b>Total APGCL</b>	<b>1452.51</b>	<b>1403.96</b>



## 5.7 Station Heat Rate

- 5.7.1 APGCL submitted that the SHR of NTPS is estimated to be higher than the approved SHR in FY 2021-22 due to part loading of Units resulting from low/non-availability of gas along with evacuation constraints and old nature of the plant equipment.
- 5.7.2 As per Regulation 47.4 of the MYT Regulations, 2018, the normative SHR is 3200 kcal/kWh for FY 2021-22 for LTPS in partial CC mode of operation. The actual SHR of LTPS in the first six (6) months has been lower than normative. APGCL has considered SHR at actual for the first 6 months and normative for rest of the year.
- 5.7.3 APGCL submitted that the SHR of LRPP in the first six (6) months has been higher than the normative. APGCL has considered SHR at actual for the first 6 months and normative for rest of the year.
- 5.7.4 The SHR approved by the Commission and as submitted by APGCL for FY 2021-22 is shown in the following Table:

**Table 56: Gross Station Heat Rate (kcal/kWh) as projected by APGCL for FY 2021-22**

Sl. No.	Station	Tariff Order dated February 15, 2021	APGCL's submission
1	NTPS	3900	4438
2	LTPS	3200	2789
3	LRPP	2150	2163

### Commission's Analysis

- 5.7.5 The Commission observed that the SHR claimed for NTPS has been higher than the normative SHR specified in the Regulations. For the purpose of APR, the Commission has considered the Normative SHR of NTPS.
- 5.7.6 The Commission observed that the SHR claimed for LTPS has been lower than the normative SHR specified in the Regulations. For the purpose of APR, the Commission has considered the Normative SHR of LTPS. However, the Commission shall be considering the normative SHR at the time of Truing-up of FY 2021-22 and accordingly shall be working out the sharing of losses/(gains) on account of higher/lower SHR with respect to the normative.
- 5.7.7 The Commission has considered normative SHR for LRPP in FY 2020-21 since the

SHR estimated by APGCL for LRPP is slightly on higher side in comparison with the normative SHR. The following Table shows the SHR approved by the Commission for APR of FY 2021-22:

**Table 57: Gross Station Heat Rate (kcal/kWh) considered in APR for FY 2021-22**

Sl. No.	Station	Tariff Order dated February 15, 2021	APGCL's submission	Approved in APR
1	NTPS	3900	4438	3900
2	LTPS	3200	2789	3200
3	LRPP	2150	2163	2150

## 5.8 Fuel Cost

5.8.1 APGCL submitted that as per Regulation 11 of the MYT Regulations, 2018, Fuel Price and GCV are uncontrollable items. The actual Fuel Price and GCV are shown in the table below:

**Table 58: Actual Plant-wise GCV and Price as submitted by APGCL for FY 2021-22**

Sl. No.	Station	Wtd. Avg. GCV of gas (kcal/SCM)	Actual Wtd. Avg. Price of gas (Rs./1000 SCM) (Apr-Sep)	Estimated Wtd. Avg. Price of gas (Rs./1000 SCM) (Oct-Mar)	Wtd. Avg. Price of gas (Rs./1000 SCM)
1	NTPS	9204.80	3781.73	5621.90	4701.82
2	LTPS	9337.66	5010.53	7935.55	6473.04
3	LRPP	9337.66	5013.08	7935.55	6474.31

5.8.2 APGCL submitted that for H1 of FY 2021-22, it has considered the weighted average GCV and price of gas on the basis of actuals, while for projecting fuel cost of H2 of FY 2021-22, the actual fuel price for October 2021 has been considered.

5.8.3 Accordingly, APGCL estimated the fuel cost of Rs.31.67 Crore for NTPS for FY 2021-22 as shown in the following Table:

**Table 59: Total Fuel Cost for NTPS for FY 2021-22 as submitted by APGCL (Rs. Crore)**

Particulars	Unit	Approved as per Order of February 15, 2021	April – Sep (Actual)	Oct - March (Estimated)	FY 2021-22 (Estimated)
Gross Generation	MU	145.21	86.45	58.76	145.21

Particulars	Unit	Approved as per Order of February 15, 2021	April – Sep (Actual)	Oct - March (Estimated)	FY 2021-22 (Estimated)
Heat Rate	kcal/kWh	3,900.00	4,975.72	3,900.00	4,437.86
GCV of gas	kcal/SCM	9,147.27	9,204.80	9,204.80	9,204.80
Overall Heat	G. cal.	5,66,319.00	4,30,155.64	2,29,160.10	6,44,421.37
Gas consumption	M. SCM	61.91	46.73	24.90	70.01
Price of Gas	Rs./1000 SCM	3,537.22	3,781.73	5,621.90	4,701.82
<b>Total cost of Gas</b>	<b>Rs. Crore</b>	<b>21.90</b>	<b>17.67</b>	<b>14.00</b>	<b>31.67</b>

5.8.4 Similarly, APGCL estimated the fuel cost of Rs. 81.41 Crore for LTPS and Rs. 77.63 Crore for LRPP for FY 2021-22 as shown in the following Tables:

**Table 60: Total Fuel Cost for LTPS for FY 2021-22 as submitted by APGCL (Rs. Crore)**

Particulars	Unit	Approved as per order of February 15 2021	April – Sep (Actual)	Oct - March (Estimated)	FY 2021-22 (Estimated)
Gross Generation	MU	425.74	185.61	212.28	397.90
Heat Rate	kcal/kWh	3,200.00	2,377.79	3,200.00	2,788.90
GCV of gas	kcal/SCM	9,419.27	9,337.66	9,337.66	9,337.66
Overall Heat	G. cal.	13,62,368.00	4,41,350.69	6,79,311.36	11,09,697.45
Gas consumption	M. SCM	144.64	47.27	72.75	118.84
Price of Gas	Rs./1000 SCM	4,923.31	5,010.53	7,935.55	6,473.04
<b>Total cost of Gas</b>	<b>Rs. Crore</b>	<b>71.21</b>	<b>23.68</b>	<b>57.73</b>	<b>81.41</b>

**Table 61: Total Fuel Cost for LRPP for FY 2021-22 as submitted by APGCL (Rs. Crore)**

Particulars	Unit	Approved as per order of February 15 2021	April – Sep (actual)	Oct - March (estimated)	FY 2021-22 (estimated)
Gross Generation	MU	519.40	262.02	257.38	519.40
Heat Rate	kcal/kWh	2,150.00	2,175.14	2,150.00	2,162.57
GCV of gas	kcal/SCM	9,419.27	9,337.66	9,337.66	9,337.66
Overall Heat	G. cal.	11,16,710.00	5,69,938.63	5,53,359.91	11,23,240.12
Gas consumption	M. SCM	118.56	61.04	59.26	120.29
Price of Gas	Rs./1000 SCM	4,923.31	5,013.08	7,935.55	6,474.31
<b>Total cost of Gas</b>	<b>Rs. Crore</b>	<b>58.37</b>	<b>30.60</b>	<b>47.03</b>	<b>77.63</b>

## Commission's Analysis

- 5.8.5 The Commission in Tariff Order dated February 15, 2021 had approved the Fuel Cost for NTPS, LTPS and LRPP for FY 2021-22 based on approved performance parameters and latest GCV and price of Fuels available at that time.
- 5.8.6 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.
- 5.8.7 The Commission has verified the weighted average GCV and price of gas as per fuel bills submitted by APGCL for April 2021 to September 2021. The Commission observed that the GCV and fuel price is in line with the submission of APGCL for H1 of FY 2021-22. Accordingly, the Commission has considered the GCV and fuel prices as submitted by APGCL for estimation of fuel cost in APR of FY 2021-22.
- 5.8.8 The GCV and landed price of gas considered by the Commission for projection of fuel cost is shown in the following Table:

**Table 62: GCV and Landed Price of Gas for FY 2021-22 considered by the Commission**

Station	Particulars	Approved for APR
NTPS	GCV of Gas (kcal/SCM)	9,204.80
	Price of Gas (Rs. /1000SCM)	4,699.56
LTPS and LRPP	GCV of Gas (kcal/SCM)	9,337.66
	Price of Gas (Rs. /1000SCM)	6,471.61

- 5.8.9 The Commission has estimated the fuel cost for NTPS, LTPS and LRPP based on approved performance parameters and GCV of gas and landed price of gas as discussed in the above Section. The fuel cost provisionally approved by the Commission for NTPS, LTPS and LRPP for FY 2021-22 for APR purposes is shown in the following Table:

**Table 63: Fuel Cost considered by the Commission in APR for FY 2021-22**

Sl. No.	Particulars	Unit	NTPS	LTPS	LRPP
1	Gross Generation	MU	145.21	397.90	519.40
2	Heat Rate	kcal/kWh	3,900.00	3200.00	2150.00

Sl. No.	Particulars	Unit	NTPS	LTPS	LRPP
3	Overall Heat	Giga cal.	5,66,319.00	12,73,275.26	11,16,710.00
4	GCV of gas	kcal/SCM	9,204.80	9,337.66	9,337.66
5	Gas consumption	M. SCM	61.52	136.36	119.59
6	Price of Gas	Rs./1000 SCM	4,699.56	6,471.61	5,013.08
7	Total Cost of Gas	Rs. Crore	28.91	88.25	59.95

## 5.9 O&M Expenses

5.9.1 APGCL submitted that the Commission in the Tariff Order dated February 15, 2021 had approved O&M expenses of Rs. 58.44 Crore for NTPS, Rs 63.83 Crore for LTPS, Rs. 32.14 Crore for KLHEP and Rs. 22.64 Crore for LRPP for FY 2021-22, which works out to a total of Rs. 177.05 Crore.

5.9.2 Based on the effective capacity, APGCL claimed the O&M Expenses of Rs. 24.26 Crore for NTPS, Rs. 43.63 Crore for LTPS, Rs. 32.14 Crore for KLHEP and Rs. 22.64 Crore for LRPP, which works out to a total of Rs. 122.67 Crore.

5.9.3 In addition to above, APGCL has claimed amount of Rs. 0.10 Crore for NTPS, LTPS and LRPP towards increase in AERC Tariff Filing Fees.

### Commission's Analysis

5.9.4 The Commission in the Tariff Order dated February 15, 2021 has computed O&M expenses on normative basis as per MYT Regulations, 2018 for FY 2021-22. The Commission had considered an escalation of 6.30% on approved values of FY 2020-21.

5.9.5 The Commission in the APR for FY 2021-22 has computed the normative O&M Expenses in accordance with Regulation 51 of the MYT Regulations, 2018. The normative O&M expenses approved in the True-up of FY 2020-21 have been escalated by 6.30% to compute the normative O&M expenses for FY 2021-22 as shown in the table below:

**Table 64: Normative O&M expenses for FY 2021-22 considered in APR (Rs. Crore)**

Station	Tariff Order dated February 15, 2021	Tariff Order dated February 15, 2021 considering effective capacity	APGCL's Submission (Effective capacity)	Approved Normative O&M (Full capacity)
NTPS	58.44	21.27	24.26	58.65
LTPS	63.83	43.63	43.63	64.06
KLHEP	32.14	32.14	32.14	32.25
LRPP	22.64	22.64	22.64	22.64

5.9.6 The O&M expenses for LRPP have been estimated based on the O&M norm of Rs. 32.46 Lakh/MW, which has been derived after escalating O&M norm of Rs. 30.54 Lakh/MW considered in Truing-up of FY 2020-21 by 6.30% as specified in the MYT Regulations, 2018. The total O&M expenses for LRPP works out to Rs 22.64 Crore for FY 2021-22.

5.9.7 In addition to above, the Commission has approved amount of Rs. 0.10 Crore for NTPS, LTPS and LRPP towards increase in AERC Tariff Filing Fees as submitted by APGCL (shown separately in ARR Tables in subsequent sections).

## 5.10 Capital Expenditure and Capitalisation

5.10.1 APGCL has claimed the following Capital Expenditure and Capitalisation in the APR for FY 2021-22:

**Table 65: Capital Expenditure and Capitalisation as submitted by APGCL for FY 2021-22 (Rs. Crore)**

Station	Particulars	APGCL's submission
NTPS	Capital Expenditure	0.00
	Capitalisation	0.00
LTPS	Capital Expenditure	0.00
	Capitalisation	0.00
KLHEP	Capital Expenditure	0.29
	Capitalisation	0.29
LRPP	Capital Expenditure	0.00
	Capitalisation	0.00

## Commission's Analysis

5.10.2 The Commission in the Tariff Order dated February 15, 2021 had approved the capital expenditure and capitalisation for the existing generating stations for FY 2021-22. APGCL has not proposed any Capital Expenditure and Capitalisation for NTPS, LTPS and LRPP in FY 2021-22. The Commission has therefore, not considered any capitalisation for NTPS, LTPS and LRPP in FY 2021-22.

5.10.3 For the purpose of the APR, the Commission has provisionally considered the Capital Expenditure and Capitalisation as submitted by APGCL for KLHEP. The Commission shall however, revisit the Capital Expenditure for approval at the time of Truing-up of FY 2021-22.

**Table 66: Capital Expenditure and Capitalisation as considered by the Commission for FY 2021-22 (Rs. Crore)**

Particulars	NTPS	LTPS	KLHEP*	LRPP
Capital Expenditure	0.00	0.00	0.29	0.00
Capitalisation	0.00	0.00	0.29	0.00

5.10.4 As regards the funding of Capitalisation for KLHEP, the Commission has considered funding as proposed by APGCL. The following Table shows the funding of above capitalisation as proposed by APGCL:

**Table 67: Funding of Capitalisation as considered by the Commission for FY 2021-22 (Rs. Crore)**

Particulars	NTPS	LTPS	KLHEP	LRPP
Loan	0.00	0.00	0.29	0.00
Equity	0.00	0.00	0.00	0.00
Grant	0.00	0.00	0.00	0.00
<b>Total Capitalisation</b>	<b>0.00</b>	<b>0.00</b>	<b>0.29</b>	<b>0.00</b>

## 5.11 Depreciation

5.11.1 APGCL submitted the Depreciation considering Capital Cost of the asset admitted by the Commission with 10% salvage value. Also, depreciation on grants has been subtracted. APGCL submitted the Depreciation of Rs. 0.88 Crore for NTPS, Rs. 11.47 Crore for LTPS, Rs. 20.26 Crore for KLHEP, and Rs. 2.68 Crore for LRPP for FY 2021-

22.

### Commission's Analysis

5.11.2 The Commission has considered the opening GFA for FY 2021-22 equivalent to the closing GFA for FY 2020-21 as approved in this Order. The Commission has computed depreciation as per scheduled rates specified in the MYT Regulations, 2018.

5.11.3 As per Regulation 32 of the MYT Regulations, 2018, 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.

5.11.4 Further, in accordance with Regulation 32 of the MYT Regulations, 2018, the Commission has not considered the depreciation on assets funded through grants or capital subsidy for FY 2021-22.

5.11.5 The depreciation provisionally approved in the APR for FY 2021-22 is given in the Table below:

**Table 68: Station-wise depreciation considered for APR for FY 2021-22 (Rs. Crore)**

Station	Particulars	Approved as per Order of February 15, 2021	APGCL's submission	Approved after APR
NTPS	Depreciation	1.64	0.94	1.65
	Less: Depreciation on assets funded by Grants	0.16	0.07	0.12
	<b>Net Depreciation</b>	<b>1.48</b>	<b>0.88</b>	<b>1.53</b>
LTSP	Depreciation	18.10	13.20	18.36
	Less: Depreciation on assets funded by Grants	2.68	1.73	2.45
	<b>Net Depreciation</b>	<b>15.43</b>	<b>11.47</b>	<b>15.91</b>
KLHEP	Depreciation	24.32	22.67	23.61
	Less: Depreciation on assets funded by Grants	2.84	2.41	2.53
	<b>Net Depreciation</b>	<b>21.48</b>	<b>20.26</b>	<b>21.08</b>
LRPP	Depreciation	13.72	13.70	13.72
	Less: Depreciation on assets funded by Grants	11.04	11.02	11.04
	<b>Net Depreciation</b>	<b>2.68</b>	<b>2.68</b>	<b>2.68</b>



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

## 5.12 Interest on Loan Capital

5.12.1 APGCL submitted that it has computed the Interest on long-term loan on normative basis for FY 2021-22. The Petitioner has considered normative loan portfolio and the repayment shown is considered equal to the depreciation for FY 2021-22. The interest rate has been considered as the expected weighted average rate of interest for FY 2021-22. APGCL has claimed the Interest on Loan of Rs. 0.06 Crore for NTPS, Rs. 0.18 Crore for LTPS, Rs. 17.86 Crore for KLHEP, and Rs. 2.81 Crore for LRPP for FY 2020-21.

### Commission's Analysis

5.12.2 In the Tariff Order dated March 15, 2021, the Commission has approved Interest and finance charges on normative basis for FY 2021-22 as per MYT Regulations, 2018. For the APR, the Commission has considered the same approach and provisionally approved the Interest and finance charges on normative basis.

5.12.3 The closing net normative loan for FY 2020-21 as approved in this Order has been considered as opening net normative loan for FY 2021-22. 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, 2018, weighted average rate of interest shall be computed based on actual outstanding loan as on April 1, 2021. The Commission has computed the weighted average interest rate of 10.91% for FY 2021-22.

5.12.4 The Interest on loan capital provisionally approved by the Commission for FY 2021-22 is shown in the following Table:

**Table 69: Interest on Loan Capital considered for APR for FY 2021-22 (Rs. Crore)**

Station	Particulars	Approved as per Order of February 15, 2021	APGCL Submission	Approved in APR
NTPS	Net Normative Opening Loan	0.73	0.96	0.87
	Addition of normative loan during the year	1.90	0.00	0.00
	Normative Repayment during the year	1.48	0.88	1.53
	Net Normative Closing Loan	1.16	0.09	0.00

Station	Particulars	Approved as per Order of February 15, 2021	APGCL Submission	Approved in APR
	Interest Rate*	10.15%	10.90%	10.91%
	Interest on Loan Capital	0.10	0.06	0.05
	Add: Bank Charges	0.00	0.00	0.00
	<b>Total Interest on Loan Capital</b>	<b>0.10</b>	<b>0.06</b>	<b>0.05</b>
LTPS	Net Normative Opening Loan	0.00	3.29	0.00
	Addition of normative loan during the year	7.10	0.00	0.00
	Normative Repayment during the year	15.43	11.47	15.91
	Net Normative Closing Loan	0.00	0.00	0.00
	Interest Rate*	10.15%	10.90%	10.91%
	Interest on Loan Capital	0.00	0.18	0.00
	Add: Bank Charges	0.00	0.00	0.00
	<b>Total Interest on Loan Capital</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
KLHEP	Net Normative Opening Loan	187.89	174.19	174.25
	Addition of normative loan during the year	2.10	0.29	0.29
	Normative Repayment during the year	21.48	20.26	21.08
	Net Normative Closing Loan	168.51	154.23	153.46
	Interest Rate*	10.15%	10.90%	10.91%
	Interest on Loan Capital	18.09	17.91	17.87
	Add: Bank Charges	0.00	0.00	0.00
	<b>Total Interest on Loan Capital</b>	<b>18.09</b>	<b>17.91</b>	<b>17.87</b>
LRPP	Net Normative Opening Loan	27.10	27.10	27.10
	Addition of normative loan during the year	0.00	0.00	0.00
	Normative Repayment during the year	2.68	2.68	2.68
	Net Normative Closing Loan	24.42	24.42	24.43
	Interest Rate*	10.15%	10.90%	10.91%
	Interest on Loan Capital	2.61	2.81	2.81
	Add: Bank Charges	0.00	0.00	0.00
	<b>Total Interest on Loan Capital</b>	<b>2.61</b>	<b>2.81</b>	<b>2.81</b>

*\*Note: APGCL in data gaps reply has revised the interest rates for all stations to 10.91%*

## 5.13 Return on Equity (RoE)

5.13.1 APGCL submitted the RoE at a rate of 15.5% in accordance with the MYT Regulations, 2018. APGCL submitted that there has been no addition in Equity in FY 2021-22. Further, it submitted that the actual Tax paid is being claimed separately. APGCL has estimated the RoE for FY 2021-22 same as approved in Tariff Order February 15, 2021. APGCL claimed RoE of Rs. 8.53 Crore for NTPS, Rs. 22.18 Crore for LTPS, Rs.

10.64 Crore for KLHEP, and Rs. 2.44 Crore for LRPP for FY 2021-22 for the purpose of APR.

### Commission's Analysis

5.13.2 The Commission has approved the RoE in accordance with Regulation 33 of the MYT Regulations, 2018. The Commission has not considered any addition of equity for capitalised works as approved in this Order. Therefore, the approved RoE at 15.50% is shown in the Table below:

**Table 70: Return on Equity considered by the Commission for FY 2021-22 (Rs. Crore)**

Station	Particulars	Approved as per Order of February 15, 2021	APGCL's submission	Approved in 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%
	<b>Return on Equity</b>	<b>8.53</b>	<b>8.53</b>	<b>8.53</b>
LTSP	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%
	<b>Return on Equity</b>	<b>22.18</b>	<b>22.18</b>	<b>22.18</b>
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%
	<b>Return on Equity</b>	<b>10.64</b>	<b>10.64</b>	<b>10.64</b>
LRPP	Opening Equity	15.74	15.74	15.74
	Closing Equity	15.74	15.74	15.74
	Rate of Return	15.50%	15.50%	15.50%
	<b>Return on Equity</b>	<b>2.44</b>	<b>2.44</b>	<b>2.44</b>

### 5.14 Interest on Working Capital (IoWC)

5.14.1 APGCL submitted that the Commission in Tariff Order dated February 15, 2021 had approved IoWC of Rs.11.88 Crore for FY 2021-22. As against this, APGCL has estimated IoWC of Rs. 13.34 Crore for FY 2021-22 based on the revised parameters. APGCL has considered the Rate of Interest of 10.00%, which is equal to the normative interest rate of three hundred (300) basis points above the average SBI MCLR (One-Year Tenor) prevalent during the last available six months.

## Commission's Analysis

5.14.2 The Commission has computed IoWC in accordance with Regulation 36 of the MYT Regulations, 2018. For computation of working capital requirement, the Commission has considered the fuel cost and O&M Expenses on normative basis.

5.14.3 The rate of Interest has been considered equivalent to normative interest rate of three hundred (300) basis points above the average SBI MCLR (One-year tenor) prevalent during the last available six months for the determination of tariffs, i.e, interest rate has been considered as 10.00%.

5.14.4 For the purpose of APR, IoWC provisionally approved by the Commission for FY 2021-22 is shown in the following Table:

**Table 71: Interest on Working Capital considered for APR for FY 2021-22 (Rs. Crore)**

Station	Particulars	Approved as per order of February 15 2021	APGCL's submission	Approved in APR
NTPS	Fuel Cost for one month	6.58	2.64	3.60
	O&M Expenses for one month	4.87	2.03	4.89
	Maintenance Spares-30% of O&M	17.53	7.31	17.59
	Receivables for two months	24.32	10.12	18.26
	Total Working Capital Requirement	53.30	22.09	44.34
	Rate of interest	10.00%	10.00%	10.00%
	<b>Interest on Working capital</b>	<b>5.33</b>	<b>2.21</b>	<b>4.43</b>
LTPS	Fuel Cost for one month	8.68	6.78	7.87
	O&M Expenses for one month	5.32	3.64	5.34
	Maintenance Spares-30% of O&M	19.15	13.12	19.22
	Receivables for two months	36.94	26.65	33.19
	Total Working Capital Requirement	70.09	50.20	65.61
	Rate of interest	10.00%	10.00%	10.00%
	<b>Interest on Working capital</b>	<b>7.01</b>	<b>5.02</b>	<b>6.56</b>
KLHEP	O&M Expenses for one month	2.68	2.68	2.69
	Maintenance Spares-15% of O&M	4.82	9.64	4.84
	Receivables for two months	15.17	15.01	15.08
	Total Working Capital Requirement	22.67	27.33	22.61
	Rate of interest	10.00%	10.00%	10.00%
	<b>Interest on Working capital</b>	<b>2.27</b>	<b>2.73</b>	<b>2.26</b>
LRPP	Fuel Cost for one month	4.86	6.47	5.00
	O&M Expenses for one month	1.89	1.90	1.89

Station	Particulars	Approved as per order of February 15 2021	APGCL's submission	Approved in APR
	Maintenance Spares-30% of O&M	6.79	6.82	6.79
	Receivables for two months	15.29	18.61	15.59
	Total Working Capital Requirement	28.83	33.80	29.27
	Rate of interest	10.00%	10.00%	10.00%
	<b>Interest on Working capital</b>	<b>2.88</b>	<b>3.38</b>	<b>2.93</b>

## 5.15 Non-Tariff Income

5.15.1 APGCL submitted that the Commission had approved Non-Tariff Income of Rs. 22.09 Crore for FY 2021-22 in the Tariff Order dated February 15, 2021. APGCL submitted the Non-Tariff Income of Rs. 7.13 Crore for NTPS, Rs. 9.22 Crore for LTPS and Rs. 5.75 Crore for KLHEP and Nil for LRPP, totalling to Rs. 22.09 crore.

### Commission's Analysis

5.15.2 For the purpose of APR, the Commission provisionally approves the Non-Tariff income for FY 2021-22 as submitted by APGCL, as shown in the following Table:

**Table 72: Non-Tariff Income considered for APR for FY 2021-22 (Rs. Crore)**

Station	Tariff Order dated 15 February 2021	APGCL's submission	Approved in APR
NTPS	7.13	7.13	7.13
LTPS	9.22	9.22	9.22
KLHEP	5.75	5.75	5.75
LRPP	0.00	0.00	0.00
<b>Total</b>	<b>22.09</b>	<b>22.09</b>	<b>22.09</b>

## 5.16 Other Expenses

### 5.16.1 Special R&M Expenses

5.16.1.1 APGCL submitted that the Commission in its Order dated 15 February, 2021, had approved Rs. 15 Crore for Special R&M of LTPS Unit 7. APGCL submitted that overhauling of Unit 7 has been shifted to FY 2022-23. For overhauling of Unit 6 of LTPS, APGCL has claimed an additional amount of Rs. 2 Crore as against approved amount of Rs. 3 Crore. The Commission, in its Order dated February 15, 2021 had

approved Rs. 12 Crore for Unit II of KLHEP. However, no work has been undertaken in FY 2021-22. APGCL submitted that overhauling has been shifted to FY 2022-23. APGCL has claimed Rs. 12 Crore for additional Capital Investment for R&M work of damaged assets due to landslide.

### Commission's Analysis

5.16.1.2 For overhauling of Unit 6 of LTPS, the Commission has approved Rs. 3 Crore. However, APGCL has claimed an additional amount of Rs. 2 Crore due to increase in prices of material. For R&M work of damaged assets due to landslide, APGCL has also claimed Rs. 12 Crore of additional Capital Investment. For the purpose of APR, the Commission has considered the Special R&M for LTPS and KLHEP during FY 2021-22 in line with the submission of APGCL.

### 5.16.2 Capacity Building

5.16.2.1 APGCL submitted that the Commission had approved Capacity Building expenses of employees of Rs. 0.40 Crore for FY 2021-22 in the Tariff Order dated February 15, 2021. APGCL has considered the Capacity Building expenses of employees of Rs. 0.13 Crore for NTPS, Rs. 0.13 Crore for LTPS and Rs. 0.13 Crore for KLHEP, totalling to Rs. 0.40 Crore.

**Table 73: Other expenses submitted by APGCL for APR for FY 2020-21 (Rs. Crore)**

Other expenses	Tariff Order		Estimated for APR	
	Special R&M	Capacity Building	Special R&M	Capacity Building
NTPS	0.00	0.13	0.00	0.13
LTPS	18.00	0.13	5.00	0.13
KLHEP	12.00	0.13	12.00	0.13
LRPP	0.00	0.00	0.00	0.00

### Commission's Analysis

5.16.3 Since the amount claimed by APGCL is in line with the amount approved in Tariff Order dated February 15, 2021, the Commission has allowed the capacity building charges of Rs 0.40 Crore in APR for FY 2021-22.

## 5.17 Summary of APR for FY 2021-22

5.17.1 The summary of station-wise ARR after APR for FY 2021-22 is shown in the following Table:

**Table 74: ARR for Existing Generation Stations for FY 2021-22 considered by the Commission in APR (Rs. Crore)**

Sr. No.	Particulars	NTPS			LTPS			KLHEP			LRPP		
		Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved for APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR
<b>A</b>	<b>Annual Fixed Charges</b>												
1	Operation & Maintenance Expenditure	21.27	24.36	58.65	43.63	43.63	64.06	32.14	32.14	32.25	22.64	22.64	22.64
2	Special R&M	0.00	0.00	0.00	18.00	5.00	5.00	12.00	12.00	12.00	0.00	0.00	0.00
3	Increase in AERC Tariff Filing Fees	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.10	0.10	0.10
4	Depreciation	0.54	0.88	1.53	10.54	11.47	15.91	21.48	20.26	21.08	2.68	2.68	2.68
5	Interest & Finance Charges	0.03	0.06	0.05	0.00	0.18	0.00	18.09	17.92	17.87	2.62	2.81	2.81
6	Return on Equity	3.11	8.53	8.53	15.16	22.18	22.18	10.64	10.64	10.64	2.44	2.44	2.44
7	Interest on working Capital	1.94	2.21	4.43	4.79	5.02	6.56	2.27	2.73	2.26	2.88	3.38	2.93
8	Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Capacity Building	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.00	0.00	0.00

Sr. No.	Particulars	NTPS			LTPS			KLHEP			LRPP		
		Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved for APR	Tariff Order dated 15 Feb 2021	APGCL's Submission	Approved in APR
10	Less: Other Income	7.13	7.13	7.13	9.22	9.22	9.22	5.75	5.75	5.75	0.00	0.00	0.00
11	<b>Total Fixed Charges</b>	<b>19.99</b>	<b>29.03</b>	<b>66.29</b>	<b>83.14</b>	<b>78.50</b>	<b>104.73</b>	<b>91.00</b>	<b>90.08</b>	<b>90.49</b>	<b>33.36</b>	<b>34.06</b>	<b>33.60</b>
12	<b>Fuel Cost</b>	<b>21.90</b>	<b>31.66</b>	<b>28.91</b>	<b>71.21</b>	<b>81.39</b>	<b>88.25</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>58.37</b>	<b>77.61</b>	<b>59.95</b>
13	<b>Total Revenue Requirement</b>	<b>41.89</b>	<b>60.68</b>	<b>95.20</b>	<b>154.35</b>	<b>159.89</b>	<b>192.97</b>	<b>91.00</b>	<b>90.08</b>	<b>90.49</b>	<b>91.73</b>	<b>111.66</b>	<b>93.55</b>
14	<b>Net Revenue Requirement</b>	<b>41.89</b>	<b>60.68</b>	<b>95.20</b>	<b>154.35</b>	<b>159.89</b>	<b>192.97</b>	<b>91.00</b>	<b>90.08</b>	<b>90.49</b>	<b>91.73</b>	<b>111.66</b>	<b>93.55</b>



## 5.18 Net ARR for Effective Capacity

5.18.1 The Commission has considered the Net ARR computed on the effective capacity of NTPS and LTPS based on the actual retirement of Units as submitted by APGCL.

5.18.2 The Commission has considered the effective capacity of 49.60 MW for NTPS on account of retirement of Units 1,4 and 5. Further, the effective capacity of LTPS has been considered at 97.20 MW in line with the effective capacity considered in FY 2020-21. Accordingly, the Commission has computed the Net ARR at effective capacity.

5.18.3 The Commission has computed the Net ARR for APR of FY 2021-22 after adjusting for effective capacity for NTPS and LTPS, as shown in the following Table:

**Table 75: APR for Existing Generating Stations for FY 2021-22 as approved by the Commission at Effective Capacity (Rs. Crore)**

Particulars	NTPS	LTPS
<b>Total Fixed Cost approved on installed capacity</b>	73.18	108.71
Reduction in fixed cost due to Decommissioning	42.81	34.40
<b>Total Fixed Cost approved at effective Capacity</b>	30.38	74.31
Add: Capacity Building Charges	0.13	0.13
Add: AERC Filing Fees	0.10	0.10
Add: Special R&M	0.00	5.00
Less: Non-Tariff Income	7.13	9.22
<b>Total Fixed Cost approved for effective capacity</b>	<b>23.48</b>	<b>70.33</b>
Add: Fuel Cost	28.91	88.25
<b>Net ARR approved for effective capacity</b>	<b>52.39</b>	<b>158.57</b>

## 5.19 Revenue from Sale of Power

5.19.1 APGCL has estimated total Revenue from Sale of Power for APR as Rs. 375.28 Crore for NTPS, LTPS, KLHEP and LRPP stations for FY 2021-22. The revenue projected by APGCL is based on the actual revenue earned during H1 of FY 2021-22 and revenue estimated in H2 of FY 2021-22. APGCL has also considered the adjustments made in fuel purchase bills during H1 of FY 2021-22.

### Commission's Analysis

5.19.2 For the purpose of APR for FY 2021-22, the Commission has considered the revenue from Fixed Charges equal to Fixed Charges approved by the Commission for FY 2021-22 in the Tariff Order dated February 15, 2021. Accordingly, the Commission has

considered the revenue from Fixed Charges of Rs. 19.99 Crore for NTPS, Rs. 83.14 Crore for LTPS, Rs. 45.50 Crore for KLHEP, and Rs. 33.36 Crore for LRPP, which works out to total revenue from Fixed Charges of Rs. 181.99 Crore for FY 2021-22.

5.19.3 As regards the revenue from Energy Charges, the Commission has considered energy charge per unit as approved in Tariff Order dated February 15, 2021 for each of the stations. The Commission has, based on the net generation considered in APR of FY 2021-22, computed the energy charges to be recovered in FY 2021-22. Accordingly, revenue from Energy Charges works out to Rs. 192.01 Crore for FY 2021-22.

5.19.4 Thus, the Commission has worked out revenue of Rs. 374.00 Crore for FY 2021-22 for the purpose of APR.

## 5.20 Revenue Gap/(Surplus) for FY 2021-22

5.20.1 APGCL has estimated Revenue Gap of Rs. 47.07 Crore for FY 2021-22. APGCL submitted that since the figures for FY 2021-22 are estimated and are subject to True-up, it has not considered the Revenue Gap/(Surplus) for recovery during FY 2022-23, as the same shall be considered at the time of True-up of FY 2021-22.

### Commission's Analysis

5.20.2 For computation of Revenue Gap/(Surplus), the Commission has considered the ARR at effective capacity for NTPS and LTPS as derived in the previous Section of this Chapter. For KLHEP and LRPP, entire fixed costs have been considered for computation of Revenue Gap/(Surplus).

5.20.3 Accordingly, the Commission has computed the Revenue Gap/(Surplus) for FY 2021-22 as shown in the following Table:

**Table 76: Revenue Gap/Surplus after APR for FY 2021-22 (Rs. Crore)**

Sr. No.	Particulars	Approved in APR
1	ARR for NTPS	52.39
2	ARR for LTPS	158.57
3	ARR for KHEP	90.49
4	ARR for LRPP	93.55
<b>5</b>	<b>Combined ARR</b>	<b>395.01</b>
6	Less: Revenue from sale of Power	374.00
<b>7</b>	<b>Revenue Gap/(Surplus)</b>	<b>21.01</b>

5.20.4 The APR reveals a Revenue Gap of Rs. 21.01 Crore for FY 2021-22. It is only indicative in the absence of Audited Annual Accounts for FY 2021-22. Hence, this is not carried forward. It will be considered only after Truing up process for FY 2021-22, after the Audited Annual Accounts are made available.

## 6 CAPITAL INVESTMENT PLAN FOR THE MYT CONTROL PERIOD FROM FY 2022-23 to 2024-2025

### 6.1 Upcoming Projects

6.1.1 APGCL has submitted the Capital Investment Plan (CIP) for the Control Period from FY 2022-23 to FY 2024-25 for Upcoming Projects under three major heads, viz.,(a) Ongoing Projects; (b) New Projects; and (c) Projects in Pipeline.

6.1.2 APGCL submitted that with the objective of increasing its generation capacity, APGCL is planning to implement several power projects, out of which one is ongoing project, and others are new projects and projects in pipeline, as summarised in the Table below:

**Table 77: Upcoming Projects as submitted by APGCL (Rs. Crore)**

Capex	Capacity (MW)	Energy Source	Expected Date of Commissioning
<b>Ongoing Projects</b>			
MSHEP	13.50	Hydro	Mar-22
<b>New Projects</b>			
Lower Kopili HEP	120.00	Hydro	Aug-24
Borpani Middle II SHEP	24.00	Hydro	Nov-25
Borpani Middle I SHEP	22.50	Hydro	Beyond MYT Period
<b>New Solar Projects</b>			
Namrup Solar PV Project	20.00	Solar	Dec-22
Sonabeel Floating Solar Project	60.00	Solar	Dec-23
Majuli Solar PV Project	20.00	Solar	Dec-23
<b>Projects in Pipeline</b>			
Borpani Upper Stage SHEP	60.00	Hydro	Beyond MYT Period
Margherita Thermal Power Project (Proposed to be in JV Mode)	660.00	Thermal	Beyond MYT Period
30 MW Namrup Thermal Gas Engine based Project	100.00	Gas	Dec-25
100 MW NRPP Ph-II	100.00	Gas	Dec-24
<b>Depending on availability of Gas from Gas Grid*</b>			
Gas Engine based power project at Chandrapur in Kamrup District	250.00	Gas	Beyond MYT Period
Gas Turbine Combined Cycle Power project at Lower Assam	2 x 725	Gas	Beyond MYT Period

Capex	Capacity (MW)	Energy Source	Expected Date of Commissioning
Gas Turbine Combined Cycle Power project at Amguri in Sivsagar District	725	Gas	Beyond MYT Period

**Note:** \* Projects are under consideration depending on various factors

- 6.1.3 APGCL submitted that it has considered the ongoing and new projects from the above Table in the CIP for FY 2022-23 to 2024-25 based on the present status of the projects. APGCL added that the projects in the pipeline are in line with APGCL's capacity addition plan, however, the same has not been considered in this CIP for investment based on their present status.
- 6.1.4 APGCL Submitted that for Myntriang Stage I, Unit I, commissioning is going on and expected date of COD is in March 2022. Unit II COD is completed on February 15, 2019 but handover to APGCL is under process. The overhauling of the unit is being done by the EPC Contractor. Unit III is commissioned on February 16, 2019. For Stage II, 1.5 x3 was commissioned on May 18, 2018. APGCL mentioned that expected COD of the entire project (13.5 MW Stage I and II) is expected by end of March 2022.
- 6.1.5 APGCL submitted that the main concern for APGCL's thermal projects in the pipeline is fuel linkage. APGCL is continuously pressing hard to obtain the required gas linkages for these projects.
- 6.1.6 APGCL submitted that hydro projects in Assam face significant delay due to land acquisition issues, delay in various statutory clearances and local problems like bandhs, etc. These issues may also hamper the project schedule of the upcoming hydro projects. APGCL stated that the new Hydro projects that have been considered for investment in this Business Plan are Lower Kopili Hydro Electric Project, Borpani Middle – I Small Hydro Electric Project and Borpani Middle- II Small Hydro Electric Project.
- 6.1.7 APGCL has also proposed three Solar PV projects of 20 MW in Namrup, 20 MW in Majuli and 60 MW Sonabeel Floating Solar Park. DPR of Namrup Solar and Majuli Solar has been prepared. Sonabeel Solar Floating Project is still in planning stage.
- 6.1.8 The summary of CIP submitted by APGCL for Upcoming Projects is given in the following Table:

**Table 78: Capital Investment Plan for Upcoming projects for FY 2022-23 to FY 2024-25 (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
Lower Kopili Hydro Electric Project	459.86	567.00	235.67
Borpani Middle-II SHEP	48.70	87.99	95.84
Borpani Middle-I SHEP	52.50	100.71	108.30
Namrup Solar PV Project	84.78	9.42	0.00
Amguri Solar Park	19.91	79.64	0.00

6.1.9 The Funding Pattern of the upcoming projects for the proposed CIP for the Control Period from FY 2022-23 to FY 2024-25 is given in the Table below:

**Table 79: Funding Pattern for CIP for FY 2022-23 to FY 2024-25 (Rs. Crore)**

Name of the Scheme	FY 2022-23			FY 2023-24			FY 2024-25		
	Equity	Loan	Grant	Equity	Loan	Grant	Equity	Loan	Grant
Lower Kopili Hydro Electric Project	400.00	56.36	3.50	470.00	90.00	7.00	197.17	35.00	3.50
Borpani Middle-II SHEP	13.47	35.23	0.00	13.87	74.12	0.00	19.17	76.67	0.00
Borpani Middle-I SHEP	13.07	39.43	0.00	18.31	82.40	0.00	20.92	87.38	0.00
Namrup Solar PV Project	16.96	67.82	0.00	1.88	7.54	0.00	0.00	0.00	0.00
Majuli Solar Park	3.98	15.93	0.00	15.93	63.71	0.00	0.00	0.00	0.00

### Commission's Analysis

6.1.10 Several of the new Projects are expected to be commissioned during the MYT Control Period from FY 2022-23 to FY 2024-25. Generally, investment decision related to Generation Projects lies with the Generating Company. For all future Generation Projects, APGCL is required to approach the Commission at the appropriate time, for obtaining approval for the Capital Cost and Tariff, in accordance with the applicable MYT Regulations, for sale of power within the State.

## 6.2 Renovation & Modernisation Plan for Existing Stations

6.2.1 APGCL submitted that in continuation of successful execution of earlier Renovation & APGCL MYT Order for FY 2022-23 to FY 2024-25

Modernisation schemes, it proposes implementation of comprehensive Renovation & Modernisation schemes for LTPS, NTPS, KLHEP, and LRPP covering the period from FY 2022-23 to FY 2024-25. These Renovation & Modernisation schemes have been necessitated to ensure maximum reliability and availability of the existing old Units of both LTPS, NTPS and KLHEP to maximize generation. The Renovation & Modernisation of power stations has been considered to be the most attractive economic option for the Company. Renovation & Modernisation schemes are aimed at reducing auxiliary power consumption, and improving generation and availability of generating units, resulting in fuel cost reduction by sustaining an efficient and smooth operation of plants.

### **6.3 Renovation & Modernisation Plan for NTPS**

6.3.1 APGCL submitted a detailed scheme-wise list of Renovation & Modernisation activities proposed to be undertaken at NTPS, under the following heads:

- a) Electro-mechanical Works
- b) Laboratory Equipment

6.3.2 APGCL projected total expenditure against Renovation & Modernisation at NTPS as Rs. 1.72 Crore, Rs. 1.57 Crore, and Rs. 1.13 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

6.3.3 Further, APGCL mentioned that after commissioning of NRPP, APGCL can run its one Unit, either Unit 2 or Unit 3 along with the waste heat recovery unit, i.e, Unit 6. The generation capacity of those two Units is 43.5 MW.

#### **Commission's Analysis**

6.3.4 The Commission notes that APGCL has proposed Renovation & Modernisation under the following nature of schemes:

- a) Procurement of equipment to replace obsolete equipment;
- b) Procurement of Laboratory Equipment and maintenance spares.

6.3.5 The Commission has analysed the individual schemes in detail and sought justification and additional details from APGCL on proposed expenses. As regards the proposed Renovation & Modernisation schemes for NTPS, the Commission asked APGCL to clarify whether the proposals are in sync with the earlier stated approach of undertaking minimal expenditure at this Station, in view of the very old age of this Plant,

scheduled de-commissioning, and lower priority of gas allocation vis-à-vis NTPS and NRPP, respectively. In reply, APGCL confirmed that it has proposed the Renovation & Modernisation schemes of NTPS in sync with the earlier stated approach of the Commission. APGCL submitted that it has only proposed the most essential capital cost for NTPS to ensure optimal utilization and operations of the plant.

- 6.3.6 As regards the high amount of Renovation & Modernisation proposed for old Units of NTPS, the Commission asked APGCL clarify whether all these expenses are necessary and regarding the retirement philosophy for these Units of NTPS. In reply, APGCL submitted that presently, the Units of NTPS are in operation as and when gas is available. As the Units are already available and no new project has been constructed to utilise the excess gas not required by NRPP, it is proposed to procure the minimum spares required to do a minimum level of overhaul to prevent any predictable breakdown. Also, if one Unit breaks down, the other Unit can act as a standby to run till the first one is repaired if possible. Further, at the time of planned maintenance of NRPP, both the Units can be utilised to supply a certain quantum of power to APDCL utilising the available gas.
- 6.3.7 APGCL also submitted that it is doing manpower planning keeping a view of the near future and NTPS together. As the O&M budget of all the stations of APGCL are exhausted and NTPS and NRPP together has a sizable manpower strength, APGCL is looking at the options of accommodating the excess manpower of NTPS and NRPP combined. Being a Government undertaking, APGCL has a liability towards its employees, and it is at the moment looking for the best possible solution to handle the situation.
- 6.3.8 The Commission analysed the information submitted by APGCL in its replies for the individual schemes in detail and has accordingly approved Renovation & Modernisation Schemes. The Commission has not allowed some of the proposed Renovation & Modernisation works for NTPS, which are not necessary at this stage for these old Units, which have outlived their useful life, like upgradation of Chemical Laboratory building. The Commission has also disallowed some Renovation & Modernisation expenditure where APGCL has not submitted any justification and where documentary evidence from OEM regarding non-availability of spare parts is not submitted. The Commission has also disallowed proposed expenditure for procurement of new Testing equipment considering that use of present equipment may be continued and old age of Units that have outlived their useful life.



6.3.9 The Commission has only allowed minimum Renovation & Modernisation expenses, which are necessary for efficient operation of the NTPS. The Commission has approved Renovation & Modernisation expenses for NTPS as Rs. 0.66 Crore, Rs. 0.94 Crore, and Rs. 0.44 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively, as detailed in **Annexure 3**.

## **6.4 Renovation & Modernisation Plan for LTPS**

6.4.1 APGCL submitted a detailed scheme-wise list of Renovation & Modernisation activities proposed to be undertaken at LTPS, under the following heads:

- a) Electro-mechanical Works;
- b) Civil Works.

6.4.2 APGCL projected total expenditure against Renovation & Modernisation at LTPS as Rs. 18.02 Crore, Rs. 16.49 Crore, and Rs. 9.68 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

### **Commission's Analysis**

6.4.3 The Commission notes that APGCL has proposed Renovation & Modernisation under the following nature of schemes:

- a) Procurement of equipment to replace obsolete equipment;
- b) Procurement of maintenance spares;
- c) Civil Works.

6.4.4 The Commission analysed the individual schemes in detail and sought justification and additional details from APGCL on proposed expenses. As regards the high amount of Renovation & Modernisation proposed for old Units of LTPS, the Commission asked APGCL to clarify whether all these expenses are necessary and regarding the retirement philosophy for these Units of LTPS. In reply, APGCL submitted that although the GT Units 5-6 and 7 were commissioned in the years 1994 and 1999, respectively, and more than 27 years have passed from the commissioning of Units 5-6 and 23 years have passed for Unit 7, the waste heat Unit 8 of LTPS was commissioned in the year 2012 and its loan liability will continue till the year 2027. Additionally, any replacement project of the LTPS Phase-II may take another 5 years beginning with the preparation of the DPR to arranging the funds to completing the bidding process till the completion of the project. In view of this, it has been assumed that the Units of LTPS Phase-II will continue to run for another about 10 years.

- 6.4.5 The Commission also analysed the information submitted by APGCL in its replies for the individual schemes in detail and has accordingly approved Renovation & Modernisation expenses. Since Units 5, 6 and 7 have already completed Useful life, the Commission has allowed Renovation & Modernisation only for Units that are proposed to continue, and disallowed Renovation & Modernisation against Units that have been proposed to be retired. Since the field instruments are proposed to be purchased as spares to maintain stock level, the Commission has disallowed such expenses. The Commission has also disallowed expenses for procurement of spares, where APGCL has not submitted the present status of spares vis-à-vis prudent spares level. The Commission has also disallowed proposed expenditure for procurement of new Testing equipment considering that use of present equipment may be continued. The Commission has disallowed expenses of Rs. 0.55 Crore proposed by APGCL for overhauling of one 7.5 MVA station transformers as APGCL has dropped this work.
- 6.4.6 The Commission has allowed Renovation & Modernisation expenses, which are necessary for efficient operation of LTPS. The Commission has approved Renovation & Modernisation expenses for LTPS as Rs. 13.67 Crore, Rs. 12.31 Crore, and Rs. 5.88 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively, as detailed in **Annexure 3**.

## **6.5 Renovation & Modernisation Plan for KLHEP**

- 6.5.1 APGCL submitted a detailed scheme-wise list of Renovation & Modernisation activities proposed to be undertaken at KLHEP, under the following heads:
- a) Electro-mechanical Works;
  - b) Civil Works.
- 6.5.2 APGCL projected total expenditure against Renovation & Modernisation at KLHEP as Rs. 20.65 Crore, Rs. 17.95 Crore, and Rs. 13.10 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

### **Commission's Analysis**

- 6.5.3 The Commission notes that APGCL has proposed Renovation & Modernisation under the following nature of schemes:
- a) Procurement of equipment to replace obsolete equipment;
  - b) Procurement of maintenance spares;
  - c) Improvement of the colony associated with the Generating Station.

- 6.5.4 The Commission analysed the individual schemes in detail and sought justification and additional details from APGCL on proposed expenses. The Commission also analysed the information submitted by APGCL in its replies for the individual schemes in detail and has accordingly approved Renovation & Modernisation expenses. The Commission has disallowed proposed expenses of Rs. 1.00 Crore for each year of Control Period for repairing of 220 KV GTR/33 KV DTR/ 11 KV DTR/ LT DTR since such repairing should come under R&M and not under Capex. As regards proposed work of replacement of existing FCB with Trip Coil monitoring provision for 50 MW Unit-1 for Rs. 2.00 Crore in FY 2023-24, the Commission is of the view that APGCL should first install the FCB ordered in year 2015 and the need for another FCB for Unit 1 may be assessed later. Further, against expenses of Rs. 3 Crore proposed on water supply system for valve house, beautification of valve house, etc., in FY 2024-25, expenses on beautification are not considered necessary. Since, exact breakup for the same is not provided by APGCL, the Commission has disallowed 50% of proposed cost for beautification of valve house.
- 6.5.5 The Commission has analysed the individual schemes in detail and has approved Renovation & Modernisation expenses for KLHEP as Rs. 19.40 Crore, Rs. 14.95 Crore, and Rs. 11.75 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively, as detailed in **Annexure 3**.

## **6.6 Renovation & Modernisation Plan for LRPP**

6.6.1 APGCL submitted a detailed scheme-wise list of Renovation & Modernisation activities proposed to be undertaken at LTPS, under the following heads:

- a) Electro-mechanical Works;
- b) Civil Works.

6.6.2 APGCL projected total expenditure against Renovation & Modernisation at LRPP as Rs. 0.85 Crore, Rs. 0.80 Crore, and Rs. 0.30 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

### **Commission's Analysis**

6.6.3 The Commission notes that APGCL has proposed Renovation & Modernisation under the following nature of schemes:

- a) LED illumination for LRPP power house;
- b) Procurement of 11 KV and 3.3 KV VCB Breaker;

c) Civil Works.

- 6.6.4 The Commission analysed the individual schemes in detail and sought justification and additional details from APGCL on proposed expenses. As regards the high amount of Renovation & Modernisation proposed for LRPP, the Commission asked APGCL justify such high capex for LRPP considering that it is a new plant. In reply, APGCL submitted that LRPP is a gas engine based thermal project and the capex of LRPP for the Control Period has been proposed as per the OEM manuals and cost of OEM spares, which includes a major portion of overseas spares. These spares are necessary for the health of the engines and without timely maintenance as per the OEM manuals, the station can suffer immediately as these engines have been designed as per a certain quality of the gas and whenever there is a deviation in the quality in the form of rich gas, the operation of the engines suffer and wear and tear of various parts of the machines happen. O&M of gas engines are costlier than gas turbines. APGCL requested the Commission to approve the proposed Renovation & Modernisation expenditure of LRPP.
- 6.6.5 The Commission has analysed the information submitted by APGCL in its replies for the individual schemes in detail and accordingly approved Renovation & Modernisation expenses. As regards expenses of Rs. 0.20 Crore proposed in FY 2022-23 for LED illumination for LRPP power house, the Commission is of the view that LRPP being a new plant, there is no need to replace recently installed lighting system. The Commission has allowed only one no. of spares out of two no. of spares proposed by APGCL against procurement of 11 KV and 3.3 KV VCB Breaker for Rs. 0.50 Crore in FY 2023-24. The Commission has allowed other Renovation & Modernisation expenses as proposed by APGCL. The approved Renovation & Modernisation expenses for LRPP are Rs. 0.65 Crore, Rs. 0.55 Crore, and Rs. 0.30 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively, as detailed in **Annexure 3**.

## 6.7 ERP Implementation and Consultancy

- 6.7.1 APGCL submitted that as part of ERP implementation with the funding of ADB, ERP Consultancy Services project is also going on. Work has been allotted to M/S Accenture Solutions Pvt. Ltd. And actual work has been started from October 2019.
- 6.7.2 APGCL submitted the station-wise allocation of ERP implementation for the Control Period as shown below:

**Table 80: Capital Investment for ERP implementation as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23			FY 2023-24			FY 2024-25		
	Loan	Equity	Grant	Loan	Equity	Grant	Loan	Equity	Grant
NTPS			2.80			0.62			0.63
LTPS			6.26			1.39			1.40
KLHEP			6.44			1.43			1.44
LRPP			4.49			1.00			1.01

### **Commission's Analysis**

- 6.7.3 The Commission in Order dated March 01, 2019 had approved expenses proposed by APGCL against Asset Valuation and ERP Implementation for the period FY 2019-20 to FY 2021-22. Implementation of the ERP Project was expected to be started by the end of FY 2018-19. APGCL had estimated the expenses against ERP implementation as Rs. 21.07 Crore, Rs. 4.05 Crore, and Rs. 4.05 Crore for FY 2019-20, FY 2020-21, and FY 2021-22, respectively, totalling Rs. 29.17 Crore. The Commission observes the delay in implementation of ERP. However, the Commission is of the view that expenses proposed by APGCL against ERP Implementation are necessary. Hence, the commission approves expenses proposed by APGCL for implementation of the ERP Project as part of CIP. APGCL should incur the expenses on ERP implementation as per the revised scope of work.
- 6.7.4 The Commission notes that though APGCL has proposed capex for ERP implementation and consultancy services, it has not considered capitalization/addition to GFA for the Control Period. In reply to query, APGCL submitted that the proposed capex for ERP implementation is for APGCL as a whole and hence, the addition to GFA is not apportioned to stations and it shall be claimed at the time of true up. Accordingly, no capitalisation has been considered in the Control Period in line with submission of APGCL.

### **6.8 Summary of Capital Investment Plan**

- 6.8.1 Based on the scheme-wise analysis of Capital Investment proposed by APGCL for existing stations for the Control Period, the summary of Station-wise Capital Investment approved by the Commission for the Control Period is given in the Table below:

**Table 81: Capitalisation approved by the Commission for Control Period (Rs. Crore)**

Station	FY 2022-23		FY 2023-24		FY 2024-25	
	Proposed	Approved	Proposed	Approved	Proposed	Approved
<b>NTPS</b>						
Renovation & Modernisation Plan	1.72	0.66	1.57	0.94	1.13	0.44
ERP implementation and consultancy services	2.80	2.80	0.62	0.62	0.63	0.63
<b>Total</b>	<b>4.52</b>	<b>3.46</b>	<b>2.19</b>	<b>1.56</b>	<b>1.76</b>	<b>1.07</b>
<b>LTPS</b>						
Renovation & Modernisation Plan	18.02	13.67	16.49	12.31	9.68	5.88
ERP implementation and consultancy services	6.26	6.26	1.39	1.39	1.40	1.40
<b>Total</b>	<b>24.28</b>	<b>19.93</b>	<b>17.88</b>	<b>13.70</b>	<b>11.08</b>	<b>7.28</b>
<b>KLHEP</b>						
Renovation & Modernisation Plan	20.65	19.40	17.95	14.95	13.10	11.75
ERP implementation and consultancy services	6.44	6.44	1.43	1.43	1.44	1.44
<b>Total</b>	<b>27.09</b>	<b>25.84</b>	<b>19.38</b>	<b>16.38</b>	<b>14.54</b>	<b>13.19</b>
<b>LRPP</b>						
Renovation & Modernisation Plan	0.85	0.65	0.80	0.55	0.30	0.30
ERP implementation and consultancy services	4.49	4.49	1.00	1.00	1.01	1.01
<b>Total</b>	<b>5.34</b>	<b>5.14</b>	<b>1.80</b>	<b>1.55</b>	<b>1.31</b>	<b>1.31</b>

6.8.2 It is to be noted that the Commission has approved the Renovation & Modernisation expenses for individual schemes for NTPS, LTPS, KLHEP and LRPP during the Control Period. Therefore, at the time of true up of respective years, APGCL should submit the actual R&M expenses incurred for such individual schemes approved by the Commission for existing stations.

## 7 ARR for MYT Control Period from FY 2022-23 to FY 2024-25

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### 7.1 Introduction

- 7.1.1 This Chapter deals with the determination of ARR for existing Stations of APGCL for the MYT Control Period from FY 2022-23 to FY 2024-25 in accordance with the provisions of MYT Regulations, 2021 based on analysis of submissions made by APGCL.
- 7.1.2 APGCL has a Petition for approval of ARR for the Control Period for existing stations, i.e., NTPS, LTPS, KLHEP and LRPP. For NTPS, APGCL in data gaps reply has revised its claimed Interest & Finance Charges to Rs.0.17 Crore for FY 2024-25 due to correction of error. APGCL has also revised Interest on Working Capital to Rs. 2.46 Crore, Rs. 2.47 Crore, and Rs. 2.51 Crore for FY 2022-23 to FY 2024-25. APGCL in data gaps reply has also revised its claimed fuel cost to Rs. 46.43 Crore for each year of Control Period, due to revision in price of gas. Thus, APGCL has revised ARR for FY 2022-23 to FY 2024-25 for NTPS to Rs. 76.42 Crore, Rs. 74.83 Crore and Rs. 75.13 Crore, respectively.
- 7.1.3 For LTPS, APGCL in data gaps reply has revised its claimed fuel cost to Rs. 115.74 Crore for each year of Control Period, due to revision in price of gas. Thus, APGCL has revised ARR for FY 2022-23 to FY 2024-25 for LTPS to Rs. 204.39 Crore, Rs. 217.91 Crore and Rs. 223.29 Crore, respectively.
- 7.1.4 For KLHEP, APGCL in data gaps reply has revised its claimed Interest & Finance Charges to Rs. 16.53 Crore and Rs.15.79 Crore for FY 2023-24 and FY 2024-25, respectively. Thus, APGCL has revised ARR for FY 2022-23 to FY 2024-25 for KLHEP to Rs. 88.82 Crore, Rs. 78.29 Crore and Rs. 79.50 Crore, respectively.
- 7.1.5 For LRPP, APGCL in data gaps reply has revised its claimed fuel cost to Rs. 94.87 Crore for each year of Control Period, due to revision in price of gas. Thus, APGCL has revised ARR for FY 2022-23 to FY 2024-25 for LRPP to Rs. 170.56 Crore, Rs. 148.06 Crore and Rs. 174.15 Crore, respectively.
- 7.1.6 The Commission has considered the revised submission of APGCL while approving the ARR for FY 2022-23 to FY 2024-25. The Commission has determined the Station-wise ARR for NTPS, LTPS, KLHEP and LRPP for the Control Period in line with MYT

Regulations, 2021 as discussed in subsequent sections of this Chapter.

## 7.2 Year-Wise Capacity for the Control Period

- 7.2.1 APGCL submitted that considering the commissioning date of ongoing projects, the project schedules of new projects, and the present status of ongoing and new projects, it has projected the generation capacity from existing Stations for the Control Period.
- 7.2.2 APGCL submitted that it is expected that only two Units totalling 43.5 MW of NTPS will run post commissioning of NRPP, based on availability of fuel with one 21 MW GT (either Unit 2 or 3) and 22.5 MW Unit-6 of NTPS.
- 7.2.3 APGCL submitted that post commissioning of LRPP on 26<sup>th</sup> April 2018, only 4 Units of Phase II LTPS totalling 97.2 MW are running.
- 7.2.4 APGCL also submitted that during the MYT period, LRPP and KLHEP will run at full load capacity, i.e., 69.76 MW and 100 MW, respectively.

### Commission's Analysis

- 7.2.5 The Commission has considered that after commissioning of NRPP, only Unit 2 (21 MW) or Unit 3 (21 MW) and Unit 6 (22.50 MW) of NTPS would remain operational based on availability of gas.
- 7.2.6 After commissioning of LRPP on April 26, 2018, Units 5, 6, 7 and 8 of LTPS are operational based on gas availability. The Commission has considered that LRPP and KLHEP will run at full load capacity, i.e., 69.76 MW and 100 MW, respectively.

## 7.3 Projection of ARR for Existing Stations

### 7.3.1 Plant Availability Factor (PAF) (%)

APGCL, in its Petition, has submitted the Availability for existing Stations for the Control Period as shown in the following Table:

**Table 82: Plant Availability Factor for Control Period as submitted by APGCL**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	50%	50%	50%
LTPS + WHRU	50%	50%	50%
KLHEP	85%	85%	85%
LRPP	85%	85%	85%



### Commission's Analysis

Regulation 48.1 of MYT Regulations, 2021 specifies the NAPAF for recovery of full fixed charges, as 50% for both NTPS and LTPS and 85% for LRPP. The Commission notes that APGCL has projected the Availability for NTPS, LTPS and LRPP as per Regulations. Further, APGCL has projected the Availability of KLHEP as 85%, in accordance with the NAPAF specified in Regulation 50.1 of the MYT Regulations, 2021.

In accordance with the MYT Regulations, 2021, APGCL shall be eligible to recover full fixed charges if actual availability is higher or equal to the NAPAF specified in MYT Regulations, 2021.

#### 7.3.2 Plant Load Factor (%)

APGCL submitted the PLF for existing Stations for the Control Period as shown in the following Table:

**Table 83: Plant Load Factor for Control Period as submitted by APGCL**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	50%	50%	50%
LTPS + WHRU	66%	66%	66%
KLHEP	44.5%	44.5%	44.5%
LRPP	90%	90%	90%

### Commission's Analysis

Regulation 48.2 (a) and (b) of MYT Regulations, 2021 specifies the Normative Plant Load factor as 50% for NTPS, 66% for LTPS, and 90% for LRPP for incentive. Also, Regulation 50.1 of MYT Regulations, 2021 specifies the PLF of 44.5% for KLHEP for incentive. Hence, the Commission approves PLF for Incentive for NTPS, LTPS, LRPP and KLHEP, as specified in MYT Regulations, 2021.

#### 7.3.3 Auxiliary Consumption

APGCL submitted the Auxiliary Consumption for existing Stations for the Control Period as shown in the following Table:

**Table 84: Auxiliary Consumption for Control Period as submitted by APGCL**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	4.5%	4.5%	4.5%
LTPS + WHRU	5.5%	5.5%	5.5%
KLHEP	0.5%	0.5%	0.5%
LRPP	3.5%	3.5%	3.5%

**Commission’s Analysis**

Regulation 48.3 (a) and (b) of the MYT Regulations, 2021 specifies the Auxiliary Consumption of 4.50% for NTPS, 5.50% for LTPS and 3.5% for LRPP.

Further, Regulation 50.1 of MYT Regulations, 2021 specifies the Auxiliary Consumption of 0.50% for KLHEP for the Control Period. The Commission notes that APGCL has also projected the Auxiliary Consumption of 0.50% for KLHEP.

The Commission approves the Auxiliary Consumption for the Control Period as specified in the MYT Regulations, 2021 as shown in the following Table:

**Table 85: Auxiliary Consumption for Control Period as approved by the Commission**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	4.5%	4.5%	4.5%
LTPS + WHRU	5.5%	5.5%	5.5%
KLHEP	0.5%	0.5%	0.5%
LRPP	3.5%	3.5%	3.5%

**7.3.4 Gross Generation and Net Generation**

APGCL submitted the Gross Generation and Net Generation for existing Stations for the Control Period as shown in the following Table:

**Table 86: Gross Generation and Net Generation for Control Period as submitted by APGCL (MU)**

Station	Gross Generation			Net Generation		
	FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	195.09	195.09	195.09	186.31	186.31	186.31
LTPS	425.74	425.74	425.74	402.32	402.32	402.32
KLHEP	390.00	390.00	390.00	388.05	388.05	388.05

Station	Gross Generation			Net Generation		
	FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
LRPP	519.40	519.40	519.40	501.22	501.22	501.22

### Commission's Analysis

APGCL submitted that availability of NTPS Unit 3 depends on availability of Gas for the tenure. Based on the gas availability, first priority is given to NRPP, and balance gas is utilised for NTPS. As only one gas turbine of NTPS can be operated with the balance gas left from the contracted quantity of 0.66 MMSCMD after consumption by NRPP, it is expected that one gas turbine Unit of NTPS with Unit 6 (WHRU) would be operational based on the gas availability. APGCL is keeping the other gas turbine as standby. Further, gas turbines of LTPS can be operated with the balance gas left after the consumption by LRPP.

The Commission notes that after commissioning of NRPP, the available gas, after consumption of gas for NRPP, will be used for NTPS. The Commission also notes that the position of gas availability prior to commissioning of NRPP is lower than the expected availability. The lower availability of gas would not only affect the generation from NTPS but also NRPP. APGCL at all times have to ensure the utilisation of gas supply should be maximised for running NRPP at full capacity, as NRPP is more efficient than NTPS. Only balance supply of gas shall be used for operation of NTPS.

As regards the gas supply position of LTPS and LRPP, the Commission notes that after the consumption by LRPP, the remaining gas is utilised for generation from LTPS. APGCL has not been able to source gas as per contracted capacity for LTPS and LRPP in past years. 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. 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.

It is observed that APGCL has considered Gross Generation based on the effective capacity of the plants. On scrutiny, the same are found to be justifiable. Accordingly, Gross Generation as proposed by APGCL is considered. The Commission has considered the Net Generation after considering the normative Auxiliary Consumption, as shown in the Table below:

**Table 87: Gross Generation and Net Generation for the Control Period as approved by Commission (MU)**

Station	Gross Generation			Net Generation		
	FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	195.09	195.09	195.09	186.31	186.31	186.31
LTPS	425.74	425.74	425.74	402.32	402.32	402.32
KLHEP	390.00	390.00	390.00	388.05	388.05	388.05
LRPP	519.40	519.40	519.40	501.22	501.22	501.22

### 7.3.5 Gross Station Heat Rate

APGCL, in its Petition, has submitted GSHR for existing Stations for the Control Period as shown in the following Table:

**Table 88: Gross Station Heat Rate for the Control Period as submitted by APGCL (kcal/kWh)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	3900	3900	3900
LTPS	3200	3200	3200
LRPP	2150	2150	2150

### Commission's Analysis

Regulation 48.4 (a) and (b) (iii) of the MYT Regulations, 2021 specifies the GSHR of 4300 kcal/kWh for Open Cycle and 3900 kcal/kWh for Closed Cycle of NTPS, and 3900 kcal/kWh for Open Cycle and 3200 kcal/kWh for Closed Cycle of LTPS. Regulation 48.4 (b) (iii) of the MYT Regulations, 2021 specifies the GSHR of 2150 kcal/kWh for LRPP.

The Commission approves GSHR for NTPS, LTPS and LRPP as specified in the MYT Regulations, 2021, as shown in the following Table:

**Table 89: Gross Station Heat Rate for the Control Period as approved by the Commission (kcal/kWh)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS (Open Cycle)	4300	4300	4300
NTPS (Closed Cycle)	3900	3900	3900

Station	FY 2022-23	FY 2023-24	FY 2024-25
LTPS (Open Cycle)	3900	3900	3900
LTPS (Closed Cycle)	3200	3200	3200
LRPP	2150	2150	2150

### 7.3.6 Fuel Cost

APGCL in its Petition has submitted that it has considered the new gas price implemented from October 2021 for projecting the fuel cost for the Control Period. The price of Gas and GCV for NTPS, LTPS and LRPP for the Control Period as submitted by APGCL is shown in the table below:

**Table 90: Landed Price of Gas (Rs. /1000 SCM) and GCV as submitted by APGCL**

Station	Parameter	UoM	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	GCV	kcal/SCM	9,204.80	9,204.80	9,204.80
	Price	Rs./1000 SCM	5,552.01	5,552.27	5,552.54
LTPS	GCV	kcal/SCM	9,337.66	9,337.66	9,337.66
	Price	Rs./1000 SCM	7937.08	7938.66	7940.29
LRPP	GCV	kcal/SCM	9,337.66	9,337.66	9,337.66
	Price	Rs./1000 SCM	7937.08	7938.66	7940.29

The fuel cost projected by APGCL for the Control Period is shown in the following Table:

**Table 91: Fuel Cost for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	45.89	45.89	45.90
LTPS	115.80	115.82	115.85
LRPP	94.92	94.94	94.96

### Commission's Analysis

The Commission asked APGCL to justify the marginal increase considered in the weighted average price of gas considered in FY 2023-24 and FY 2024-25 over FY 2022-23 levels. In reply to data gap, APGCL submitted that there was an inadvertent error in the Gas Price Computation submitted as part of the Petition. It has considered

a 3% increase in the AGCL Gas Transportation Contract. APGCL corrected the error and submitted the revised gas price.

APGCL also submitted that there is a slight change in the Gas price for LTPS and LRPP due to 3% escalation in Monthly Metering Charge by GAIL for supply of gas to LTPS and LRPP. Therefore, APGCL prayed to the Commission to approve the revised gas price as shown below:

**Table 92: Revised Landed Price of Gas as submitted by APGCL (Rs. /1000 SCM)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	5,617.39	5,617.39	5,617.39
LTPS	7,932.73	7,932.77	7,932.82
LRPP	7,932.73	7,932.77	7,932.82

APGCL submitted the revised fuel cost for the Control Period as shown below:

**Table 93: Revised Fuel Cost for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	46.43	46.43	46.43
LTPS	115.74	115.74	115.74
LRPP	94.87	94.87	94.87

For the purpose of projecting the fuel price of NTPS, LTPS and LRPP for the Control Period, APGCL has considered the new gas price implemented from October 2021, which is appropriate. Therefore, the Commission has considered the fuel price and GCV as submitted by APGCL during the Control Period as shown below:

**Table 94: GCV and Landed Price of Gas for Control Period as approved by the Commission**

Station	Parameter	UoM	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	GCV	kcal/SCM	9,204.80	9,204.80	9,204.80
	Price	Rs./1000 SCM	5,617.39	5,617.39	5,617.39
LTPS	GCV	kcal/SCM	9,337.66	9,337.66	9,337.66
	Price	Rs./1000 SCM	7,932.73	7,932.77	7,932.82
LRPP	GCV	kcal/SCM	9,337.66	9,337.66	9,337.66
	Price	Rs./1000 SCM	7,932.73	7,932.77	7,932.82

Accordingly, the Commission has approved the fuel cost for NTPS, LTPS and LRPP for the Control Period as shown in the Tables below:

**Table 95: Fuel Cost for NTPS for Control Period as approved by the Commission (Rs. Crore)**

Sl. No.	Particulars	Derivation	Unit	FY 2022-23	FY 2023-24	FY 2024-25
1	Gross Generation	A	MU	195.09	195.09	195.09
2	Heat Rate	B	kcal/kWh	3900.00	3900.00	3900.00
3	GCV of gas	C	kcal/SCM	9204.80	9204.80	9204.80
4	Overall Heat	D=AxB	G. cal.	760856.22	760856.22	760856.22
5	Gas consumption	E=D/C	M. SCM	82.66	82.66	82.66
6	Price of Gas	F	Rs./1000 SCM	5617.39	5617.39	5617.39
<b>7</b>	<b>Total cost of Gas</b>	<b>G=ExF/100</b>	<b>Rs. Crore</b>	<b>46.43</b>	<b>46.43</b>	<b>46.43</b>

**Table 96: Fuel Cost for LTPS for Control Period as approved by the Commission (Rs. Crore)**

Sl. No.	Particulars	Derivation	Unit	FY 2022-23	FY 2023-24	FY 2024-25
1	Gross Generation	A	MU	425.74	425.74	425.74
2	Heat Rate	B	kcal/kWh	3,200.00	3,200.00	3,200.00
3	GCV of gas	C	kcal/SCM	9,337.66	9,337.66	9,337.66
4	Overall Heat	D=AxB	G. cal.	13,62,355.20	13,62,355.20	13,62,355.20
5	Gas consumption	E=D/C	M. SCM	145.90	145.90	145.90
6	Price of Gas	F	Rs./1000 SCM	7,932.73	7,932.77	7,932.82
<b>7</b>	<b>Total cost of Gas</b>	<b>G=ExF/100</b>	<b>Rs. Crore</b>	<b>115.74</b>	<b>115.74</b>	<b>115.74</b>

**Table 97: Fuel Cost for LRPP for Control Period as approved by the Commission (Rs. Crore)**



Sl. No.	Particulars	Derivation	Unit	FY 2022-23	FY 2023-24	FY 2024-25
1	Gross Generation	A	MU	519.40	519.40	519.40
2	Heat Rate	B	kcal/kWh	2,150.00	2,150.00	2,150.00
3	GCV of gas	C	kcal/SCM	9,337.66	9,337.66	9,337.66
4	Overall Heat	D=AxB	G. cal.	11,16,700.82	11,16,700.82	11,16,700.82
5	Gas consumption	E=D/C	M. SCM	119.59	119.59	119.59
6	Price of Gas	F	Rs./1000 SCM	7,932.73	7,932.77	7,932.82
7	<b>Total cost of Gas</b>	<b>G=ExF/100</b>	<b>Rs. Crore</b>	<b>94.87</b>	<b>94.87</b>	<b>94.87</b>

### 7.3.7 O&M Expenses

APGCL submitted that as per the MYT Regulations, 2021, the average of the approved O&M expenses for FY 2018-19 and FY 2019-20 and actual normative O&M expenses for FY 2020-21 has been considered for NTPS, LTPS and KLHEP. The average normative O&M expenses obtained for FY 2019-20, has been escalated at the rate equal to average of last three years CPI and WPI inflation considered in the ratio of 60:40 for the respective years to arrive at O&M expenses for FY 2020-21 to FY 2024-25, i.e., 4.57%. Further, APGCL has computed O&M expenses for MYT Control period for FY 2022-23 to FY 2024-25 at the effective capacity for NTPS and LTPS.

As regards LRPP, APGCL submitted that O&M expense are to be projected as per Regulation 51.2 of the Tariff Regulations, 2021. As per the Regulation, normative rate of O&M expenses for LRPP is Rs. 43.40 Lakhs/MW/Year. Normative O&M expenses obtained for FY 2022-23 has been escalated at the rate equal to average of last three years CPI & WPI inflation considered in the ratio of 60:40 for the respective years to arrive at O&M expenses for FY 2023-24 to FY 2024-25, i.e., 4.57%.

The O&M expenses projected by APGCL for FY 2022-23 to FY 2024-25 is shown in the table below:

**Table 98: O&M Expenses for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	20.76	21.71	22.70
LTPS	42.47	44.41	46.44
KLHEP	31.49	32.93	34.43
LRPP	30.27	31.66	33.10

In addition to above, APGCL has considered expenses towards increase in AERC Tariff filing fee of Rs. 0.10 Crore for FY 2022-23 to FY 2024-25 for NTPS, LTPS and LRPP.

#### **Commission's Analysis**

The Commission has computed the normative O&M Expenses for NTPS, LTPS and KLHEP for the Control Period in accordance with Regulation 51.1 of the MYT Regulations, 2021, in the following manner:

- a) **Step 1:** The average of actual O&M expenses including insurance for the 3 years (FY 2018-19, FY 2019-20, FY 2020-21) based on the audited accounts, excluding Special O&M expenses, has been derived as shown below:

**Table 99: Average actual O&M Expenses for FY 2018-19 to FY 2020-21 (Rs. Crore)**

Stations	FY 2018-19	FY 2019-20	FY 2020-21	3 Year Avg.
NTPS	40.32	36.46	29.77	35.52
LTPS	29.77	38.61	39.79	36.06
KLHEP	24.76	28.65	30.60	28.00

- b) **Step 2:** The average of such O&M expenses is considered as O&M expenses for FY 2019-20 and has been escalated based on the escalation factor as approved by the Commission for the respective years (i.e., 6.30% for FY 2020-21 and FY 2021-22) to arrive at the O&M expenses for the base year of FY 2021-22.
- c) **Step 3:** The O&M expenses for each subsequent year has been determined by escalating the base expenses determined above for previous FY at escalation factor equal to average of last three years CPI and WPI inflation considered in the ratio of 60:40 (i.e., 5.25%) to compute the normative O&M expenses for each subsequent year of the Control Period as shown in the table below:

**Table 100: Normative O&M Expenses for FY 2022-23 to FY 2024-25 (Rs. Crore)**

Stations	FY 2021-22 (Base Year)	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	40.13	42.24	44.46	46.79
LTPS	40.74	42.88	45.13	47.50
KLHEP	31.64	33.31	35.06	36.90

The O&M expenses for LRPP have been estimated based on the O&M norm of Rs. 43.40 Lakh/MW for FY 2022-23 specified in Regulation 51.2 (b) of MYT Regulations, 2021. The O&M expenses for subsequent years of Control Period have been derived considering escalation of 5.25% on O&M expenses of FY 2022-23. Accordingly, the following O&M expenses are approved for the Control Period for all existing Stations of APGCL:

**Table 101: O&M Expenses approved by the Commission for the Control Period (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	42.24	44.46	46.79
LTPS	42.88	45.13	47.50
KLHEP	33.31	35.06	36.90
LRPP	30.27	31.86	33.54

In addition to above, the Commission has approved amount of Rs. 0.10 Crore for NTPS, LTPS and LRPP towards increase in AERC Tariff Filing Fees as submitted by APGCL (shown separately in ARR Tables in subsequent sections).

### 7.3.8 Capitalisation and its Funding

The Capital Investment proposed by APGCL for the Control Period towards R&M plan and ERP implementation for existing stations have been discussed in detail in the previous Chapter. APGCL has considered the capitalisation against R&M plan only. The summary of Station-wise capitalisation proposed by APGCL for the Control Period is given in the Table below:

**Table 102: Capitalisation for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	1.72	1.57	1.13
LTPS	18.02	16.49	9.68
KLHEP	20.65	17.95	13.10
LRPP	0.85	0.80	0.30

APGCL has proposed funding of above capitalisation entirely through debt for the Control Period.

#### Commission's Analysis

The scheme-wise analysis of Capital Investment proposed by APGCL for the Control Period and their approval have been discussed in detail in the previous Chapter. The Commission has considered the capitalisation against R&M plan only and not against ERP implementation. The summary of Station-wise capitalisation approved by the Commission for the Control Period is given in the Table below:

**Table 103: Capitalisation approved by the Commission for Control Period (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	0.66	0.94	0.44
LTPS	13.67	12.31	5.88
KLHEP	19.40	14.95	11.75
LRPP	0.65	0.55	0.30

As regards the funding of these works, the Commission has considered the same through debt as proposed by APGCL.

### 7.3.9 Depreciation

APGCL has projected the depreciation based on the depreciation rates specified in the MYT Regulations, 2021. APGCL has not considered the depreciation on assets funded through grants/subsidies as per Regulation 33 of MYT Regulations, 2021.

The depreciation projected by APGCL for existing generating Stations for the Control Period is shown in the following Table:

**Table 104: Depreciation for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	0.92	0.95	0.98
LTPS	11.64	11.28	11.53
KLHEP	20.78	21.28	21.64
LRPP	2.70	2.74	2.76

### Commission's Analysis

For computation of depreciation, the Commission has considered the Station-wise closing GFA for FY 2021-22 as approved in this Order, as the Opening GFA for FY 2022-23. The capitalisation approved for the respective years of the Control Period has been considered as asset addition during the year. The Commission has considered the scheduled depreciation rates as specified in MYT Regulations, 2021.

The depreciation has been limited to 90% of the asset value. the Commission has not considered depreciation on assets funded through grants in accordance with Regulation 33 of MYT Regulations, 2021.

In view of the above, the Commission has approved depreciation for the period from FY 2022-23 to FY 2024-25 as per MYT Regulations, 2021, as given in the Table below:

**Table 105: Depreciation for Control Period as approved by the Commission (Rs. Crore)**

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	Depreciation	1.37	1.34	1.40
	Less: Depreciation on assets funded by Grants	0.10	0.10	0.10
	Net Depreciation	<b>1.28</b>	<b>1.25</b>	<b>1.30</b>
LTPS	Depreciation	18.97	19.96	17.09
	Less: Depreciation on assets funded by Grants	2.50	2.56	2.15
	Net Depreciation	<b>16.47</b>	<b>17.40</b>	<b>14.93</b>
KLHEP	Depreciation	24.10	24.21	23.96
	Less: Depreciation on assets funded by Grants	2.53	2.46	2.39
	Net Depreciation	<b>21.56</b>	<b>21.74</b>	<b>21.58</b>
LRPP	Depreciation	13.73	13.74	13.73
	Less: Depreciation on assets funded by Grants	11.04	11.02	11.00
	Net Depreciation	<b>2.69</b>	<b>2.72</b>	<b>2.74</b>

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

#### 7.3.10 Interest on loan capital

APGCL has projected the Interest on long-term Loan on normative basis for FY 2022-23 to FY 2024-25. APGCL has considered normative loan portfolio and the repayment is considered equal to the depreciation for FY 2022-23 to FY 2024-25. The interest rates of 10.93%, 10.85% and 10.79% have been considered as the weighted average rate of interest for FY 2022-23 to FY 2024-25.

APGCL has computed the Interest on loan capital on normative basis as per MYT Regulations, 2021, as shown in the Table below:

**Table 106: Interest on Loan Capital for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	0.05	0.13	0.08

Station	FY 2022-23	FY 2023-24	FY 2024-25
LTPS	0.35	0.97	1.15
KLHEP	16.85	16.54	15.81
LRPP	2.57	2.34	2.09

### Commission's Analysis

7.3.11 The closing net normative loan for FY 2021-22 as approved in this Order has been considered as opening net normative loan for FY 2022-23. 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, 2021, the rate of interest shall be the weighted average rate of interest computed on the basis of the actual loan portfolio at the beginning of each year. The Commission has computed the weighted average interest rate of 10.93%, 10.85%, and 10.79% for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

7.3.12 The Interest on loan capital approved by the Commission for the Control Period is shown in the following Table:

**Table 107: Interest and Finance Charge as approved for the Control Period (Rs. Crore)**

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
<b>NTPS</b>	Net Normative Opening Loan	-	-	-
	Addition of Normative Loan during the Year	0.66	0.94	0.44
	Normative Repayment during the year	1.28	1.25	1.30
	Net Normative Closing Loan	-	-	-
	Interest Rate (%)	10.93%	10.85%	10.79%
	<b>Interest on Loan capital</b>	-	-	-
<b>LTPS</b>	Net Normative Opening Loan	-	-	-
	Addition of Normative Loan during the Year	13.67	12.31	5.88
	Normative Repayment during the year	16.47	17.40	14.93
	Net Normative Closing Loan	-	-	-
	Interest Rate (%)	10.93%	10.85%	10.79%
	<b>Interest on Loan capital</b>	-	-	-
<b>KLHEP</b>	Net Normative Opening Loan	153.46	151.30	144.51
	Addition of Normative Loan during the Year	19.40	14.95	11.75
	Normative Repayment during the year	21.56	21.74	21.58

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
	Net Normative Closing Loan	151.30	144.51	134.68
	Interest Rate (%)	10.93%	10.85%	10.79%
	<b>Interest on Loan capital</b>	<b>16.65</b>	<b>16.04</b>	<b>15.06</b>
LRPP	Net Normative Opening Loan	24.43	22.38	20.21
	Addition of Normative Loan during the Year	0.65	0.55	0.30
	Normative Repayment during the year	2.69	2.72	2.74
	Net Normative Closing Loan	22.38	20.21	17.78
	Interest Rate (%)	10.93%	10.85%	10.79%
	<b>Interest on Loan capital</b>	<b>2.56</b>	<b>2.31</b>	<b>2.05</b>

### 7.3.13 Return on Equity

APGCL submitted that there is no plan of addition in equity in FY 2022-23 to FY 2024-25 for the existing plants. Further, the actual Income Tax paid would be claimed separately during True up of respective years.

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, 2021, as shown in the Table below:

**Table 108: Return on Equity for Control Period as submitted by APGCL (Rs. Crore)**

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
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%
	<b>Return on Equity</b>	<b>8.53</b>	<b>8.53</b>	<b>8.53</b>
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%
	<b>Return on Equity</b>	<b>22.18</b>	<b>22.18</b>	<b>22.18</b>
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%
	<b>Return on Equity</b>	<b>10.64</b>	<b>10.64</b>	<b>10.64</b>
LRPP	Opening Equity	15.74	15.74	15.74
	Closing Equity	15.74	15.74	15.74
	Rate of Return (%)	0.16	0.16	0.16
	<b>Return on Equity</b>	<b>2.44</b>	<b>2.44</b>	<b>2.44</b>



### Commission's Analysis

The Commission has approved the Return on Equity in accordance with Regulation 34.2 of the MYT Regulations, 2021. The Commission has not considered any addition of equity for capitalised works as approved in this Order. Accordingly, the approved Return on Equity at 15.50% same as proposed by APGCL, is shown in the Table below:

**Table 109: Return on Equity approved for the Control Period (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	8.53	8.53	8.53
LTPS	22.18	22.18	22.18
KLHEP	10.64	10.64	10.64
LRPP	2.44	2.44	2.44

#### 7.3.14 Interest on Working Capital (IoWC)

APGCL has projected normative interest on working capital. However, as APGCL does not have liquid fuel stock facility, it has not considered working capital on storage of liquid fuel. The rate of interest has been considered equal to the normative interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months, which 10% (7% + 3%).

APGCL has computed the IoWC as per provisions of the MYT Regulations, 2021 for existing generating stations for the Control Period as shown in the following Table:

**Table 110: Interest on Working Capital for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	2.45	2.46	2.50
LTPS	6.00	6.30	6.47
KLHEP	2.69	2.57	2.64
LRPP	4.80	4.48	4.97

### Commission's Analysis

The Commission has computed IoWC in accordance with Regulation 37 of the MYT Regulations, 2021. Rate of interest has been considered equal to the normative

interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months for the determination of tariff, which works out to 10.00%.

Interest on working capital approved by the Commission for the Control Period is shown in the following Table:

**Table 111: Interest on Working Capital approved for the Control Period (Rs. Crore)**

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	Fuel Cost for one month	3.78	3.78	3.78
	O&M Expenses for one month	3.52	3.70	3.90
	Maintenance Spares-30% of O&M	12.67	13.34	14.04
	Receivables for two months	16.09	16.17	16.59
	Total Working Capital Requirement	<b>36.06</b>	<b>37.00</b>	<b>38.31</b>
	Rate of Interest (%)	10.00%	10.00%	10.00%
	<b>IoWC</b>	<b>3.61</b>	<b>3.70</b>	<b>3.83</b>
LTPS	Fuel Cost for one month	9.64	9.64	9.64
	O&M Expenses for one month	3.57	3.76	3.96
	Maintenance Spares-30% of O&M	12.86	13.54	14.25
	Receivables for two months	34.87	37.30	37.29
	Total Working Capital Requirement	<b>60.96</b>	<b>64.25</b>	<b>65.15</b>
	Rate of Interest (%)	10.00%	10.00%	10.00%
	<b>IoWC</b>	<b>6.10</b>	<b>6.42</b>	<b>6.51</b>
KLHEP	O&M Expenses for one month	2.78	2.92	3.07
	Maintenance Spares-15% of O&M	5.00	5.26	5.53
	Receivables for two months	16.47	13.31	13.44
	Total Working Capital Requirement	<b>24.25</b>	<b>21.49</b>	<b>22.05</b>
	Rate of Interest (%)	10.00%	10.00%	10.00%
	<b>IoWC</b>	<b>2.42</b>	<b>2.15</b>	<b>2.20</b>
LRPP	Fuel Cost for one month	7.91	7.91	7.91
	O&M Expenses for one month	2.52	2.66	2.79
	Maintenance Spares-30% of O&M	9.08	9.56	10.06
	Receivables for two months	28.41	24.69	29.08
	Total Working Capital Requirement	<b>47.92</b>	<b>44.81</b>	<b>49.84</b>

Station	Particulars	FY 2022-23	FY 2023-24	FY 2024-25
	Requirement			
	Rate of Interest (%)	10.00%	10.00%	10.00%
	<b>IoWC</b>	<b>4.79</b>	<b>4.48</b>	<b>4.98</b>

## 7.4 Special R&M Plan for Existing Stations

7.4.1 APGCL submitted Special R&M schemes for NTPS, LTPS, KLHEP and LRPP for the period from FY 2022-23 to FY 2024-25 as discussed below:

## 7.5 Special R&M Plan for NTPS

7.5.1 APGCL submitted Special R&M activities proposed to be undertaken at NTPS for major overhauling of Gas Turbine Units 2, 3 and 6 during the Control Period. APGCL proposed expenses of Rs. 4.25 Crore, Rs. 1.60 Crore and Rs. 0.80 Crore for FY 2022-23, FY 2023-24 and FY 2024-25, respectively.

### Commission's Analysis

7.5.2 The Commission analysed the individual works in detail and sought justification/ additional details from APGCL on proposed expenses for Special R&M. The Commission also analysed the information submitted by APGCL in its replies for the individual schemes in detail and accordingly approved Special R&M expenses.

7.5.3 As regards the high amount of Special R&M proposed for old Units of NTPS, the Commission asked APGCL clarify whether all these expenses are necessary. In reply, APGCL submitted that Special R&M for minimal overhaul of both the gas turbines have been proposed to keep the units operational so that if gas is available to run both the units then both are in operational condition. Also, if one unit breaks down, the other unit can act as a standby to run till the first one is repaired if possible. Further, at the time of planned maintenance of NRPP both the units can be utilised to supply a certain quantum of power to APDCL utilising the available gas.

7.5.4 In FY 2022-23, APGCL proposed Rs.3.35 Crore for purchase of overseas spares for major overhauling of Units 2 and 3. APGCL has also proposed expenses of Rs. 0.80 Crore in FY 2023-24 and FY 2024-25 towards major overhauling of Units 2 and 3. However, the Commission notes that APGCL has proposed availability of only 1 Unit (either Unit 2 or Unit 3) in Control Period. Therefore, the Commission has allowed expenses for only one Unit, i.e., Unit 2 and disallowed expenses for Unit 3. As regards the proposed Major overhauling of Unit 6 of NTPS, the Commission has allowed the APGCL MYT Order for FY 2022-23 to FY 2024-25

same, as per the schedule of R&M proposed by APGCL.

7.5.5 Thus, the Commission has approved Special R&M expenses of Rs. 2.58 Crore, Rs. 0.80 Crore and Rs. 0.80 Crore for FY 2022-23, FY 2023-24 and FY 2024-25, respectively. This component will accordingly be considered as revenue expenditure in the ARR, in the relevant year in which the overhauling is done. Therefore, APGCL should ensure that the planned Overhauling is undertaken as per the schedule and as approved, failing which the present approval shall stand lapsed, unless ordered otherwise by the Commission.

## **7.6 Special R&M Plan for LTPS**

7.6.1 APGCL has proposed overhauling of Unit 7 of LTPS in FY 2022-23, overhauling of Unit 5 in FY 2023-24, and overhauling of Unit 6 of LTPS in FY 2024-25, based on the OEM recommendations after completion of the prescribed running hours. APGCL submitted that the major overhauling of the whole Unit including turbine, boilers and generator will help extend its life, reliability and safety of operation and will enhance the operating life of the turbine for another full cycle operation. APGCL proposed expenses of Rs. 15.00 Crore, Rs. 26.05 Crore, and Rs. 28.80 Crore in FY 2022-23, FY 2023-24, and FY 2024-25, respectively, after factoring in the time required to procure the necessary spares.

### **Commission's Analysis**

7.6.2 The Commission analysed the individual works in detail and sought justification/ additional details from APGCL on proposed expenses for Special R&M. As regards the high amount of Special R&M proposed for old Units of LTPS, the Commission asked APGCL clarify whether all these expenses are necessary. In reply, APGCL submitted that Special R&M of the GT units have been proposed for overhauling of the units so that they can run that long.

7.6.3 The Commission also analysed the information submitted by APGCL in its replies for the individual schemes in detail and has accordingly approved Special R&M expenses.

7.6.4 The Commission has disallowed the proposed expenses of Rs. 2.80 Crore for overhauling of Unit 6 of LTPS, in view of old Unit, which already has completed its useful life. The Commission has considered the expenses for overhauling of Unit 5 and 7 of LTPS as proposed by APGCL for the Control Period.

7.6.5 Thus, the Commission has approved Special R&M expenses of Rs. 15.00 Crore, Rs. 26.05 Crore and Rs. 26.00 Crore for FY 2022-23, FY 2023-24 and FY 2024-25, respectively. This component will accordingly be considered as revenue expenditure in the ARR, in the relevant year in which overhauling is done. Therefore, APGCL should ensure that the planned Overhauling is undertaken as per the schedule and as approved, failing which the present approval shall stand lapsed, unless ordered otherwise by the Commission.

## **7.7 Special R&M Plan for KLHEP**

7.7.1 APGCL has proposed Overhauling of Unit 2 of KLHEP in FY 2022-23, which was rescheduled due to the delay in overhauling of Unit 1. APGCL submitted the Special R&M expenses of Rs. 12.00 Crore for FY 2022-23 for KLHEP Unit 2.

### **Commission's Analysis**

7.7.2 The Commission in last Tariff Order had approved Special R&M of Rs.12 Crore for Unit 2 of KLHEP for FY 2021-22. The Commission sought justification from APGCL for rescheduling the overhaul of Unit 2 to FY 2022-23. In reply, APGCL submitted that the supervising experts from M/s Voith suggested to replace the runner of the Unit-2 of KLHEP at the time of its overhauling. As the original overhauling estimate of Unit-2 did not include the cost of the runner, APGCL wanted to be assured about the need for its replacement. To assess the need for runner, an inspection was conducted in the month of November 2021 where it was confirmed that the runner of Unit-2 needs to be replaced. As this runner was part of the original assembly of the turbine, which was obtained more than 30 years ago from Japan, its deteriorated condition is justified. The estimated cost of the runner, which is around Rs. 8.00 Crore, has now been placed before the Commission for approval as Special R&M as an additional submission along with the estimated expense of Rs. 12.00 Crore for the overhauling of Unit-2. The runner is a custom-made spare and thus will take time to manufacture specifically as per the design. Thus, considering all these factors, it is assumed that if the amount of Rs. 12.00 Crore for the overhauling of Unit-2 is approved along with the estimated cost of the runner of Rs. 8.00 Crore, then the overhauling of Unit-2 will be completed by the end of FY 2022-23. As APGCL has to accommodate the replacement of the runner with the overhauling of Unit-2 of KLHEP, the overhauling work of the unit is getting delayed.

7.7.3 In view of the above, the Commission has approved the Special R&M expenses of Rs. 12.00 Crore for FY 2022-23 for KLHEP Unit 2. The Commission has also approved Special R&M expenses of Rs. 8.00 Crore sought by APGCL for cost of runner. However, APGCL should follow the process of tendering to ensure optimum costing of runner. Special R&M will accordingly be considered as revenue expenditure in the ARR, in the relevant year in which overhauling is done. Therefore, APGCL should ensure that the planned Overhauling is undertaken as per the schedule and as approved, failing which the present approval shall stand lapsed, unless ordered otherwise by the Commission.

## **7.8 Special R&M Plan for LRPP**

7.8.1 APGCL has proposed the overhaul of Wartsila 20V34SG engines scheduled at every 16000 running hours and subsequent multiples thereof. APGCL submitted that the major activities done during the 16000 Overhaul are – overhaul of Cylinder head, Piston, and Liner, and connecting rod bearings replacement. The periodic maintenance as per Original Equipment Manufacturer (OEM) recommendation helps to maintain the fuel and lube oil consumption at an optimum level, to maintain NAPA and NAPLF, and to avoid any major breakdown due to wear and tear of components, avoid engine malfunction, and increase the engine's lifespan.

7.8.2 APGCL also proposed expenses for Turbocharger Maintenance during the Control Period. APGCL submitted that a properly maintained turbocharger, as per the OEM guidelines, is a very important requirement for the efficient and reliable operations of these high efficiency natural gas based reciprocating engines. Timely replacement of parts is crucial to maintain the fine tolerances and clearances in the turbocharger to get the optimal efficiency of the engines.

7.8.3 APGCL proposed expenses of Rs. 32.72 Crore, Rs. 9.37 Crore, and Rs. 33.75 Crore for FY 2022-23, FY 2023-24, and FY 2024-25, respectively.

### **Commission's Analysis**

7.8.4 The Commission analysed the individual works in detail and sought justification/ additional details from APGCL on proposed expenses for Special R&M. As regards the high amount of Special R&M proposed for LRPP, the Commission asked APGCL justify such high capex for LRPP considering that it is a new plant. In reply, APGCL submitted that LRPP is a gas engine based thermal project and the capex of LRPP for

the Control Period has been proposed as per the OEM manuals and cost of OEM spares which includes a major portion of overseas spares. These spares are necessary for the health of the engines and without timely maintenance as per the OEM manuals the station can suffer immediately as these engines have been designed as per a certain quality of the gas and whenever there is a deviation in the quality in the form of rich gas the operation of the engines suffer and wear and tear of various parts of the machines happen. O&M of gas engines are costlier than gas turbines. APGCL requested the Commission to approve the proposed Special R&M of LRPP.

7.8.5 The Commission also analysed the information submitted by APGCL in its replies for the individual schemes in detail and has accordingly approved Special R&M expenses.

7.8.6 As regards the proposed Major Overhauling of GT units and Turbocharger of LRPP, the Commission allows the same, as the running hours prescribed by the OEM before next Major Overhaul are being completed as per the schedule of R&M proposed by APGCL. This component will accordingly be considered as revenue expenditure in the ARR, in the relevant year in which overhauling is done. Therefore, APGCL should ensure that the planned Overhauling is undertaken as per the schedule and as approved, failing which the present approval shall stand lapsed, unless ordered otherwise by the Commission.

## 7.9 Summary of Special R&M Plan

7.9.1 Based on the scheme-wise analysis of Special R&M proposed by APGCL for existing stations for the Control Period, as elaborated above, the summary of Station-wise Special R&M approved by the Commission for the Control Period is given in the Table below:

**Table 112: Special R&M approved by the Commission for Control Period (Rs. Crore)**

Station	FY 2022-23		FY 2023-24		FY 2024-25	
	Proposed	Approved	Proposed	Approved	Proposed	Approved
NTPS	4.25	2.58	1.60	0.80	0.80	0.80
LTPS	15.00	15.00	26.05	26.05	28.80	26.00
KLHEP	12.00	20.00	0.00	0.00	0.00	0.00
LRPP	32.72	32.72	9.37	9.37	33.75	33.75

7.9.2 It is to be noted that the Commission has approved the Special R&M expenses for individual schemes for NTPS, LTPS, KLHEP and LRPP during the Control Period. Therefore, at the time of true up of respective years, APGCL should submit the actual Special R&M expenses incurred for such individual schemes approved by the Commission for existing stations.

## 7.10 Capacity Building

7.10.1 APGCL submitted that it is endeavouring to develop its human resources to meet the growing challenges of continuous technological development and future needs of the power sector as well as of the society. APGCL is aiming at betterment of job performance of individuals as well as the group. In order to develop the skills, knowledge and job performance of different personnel working in different departments of APGCL, a tentative Training Calendar considering all disciplines / branches has been prepared for FY 2022-23 to FY 2024-25 comprising different relevant subjects related to power generation, maintenance and corporate office activities. It is planned that 34 nos. of training programmes for 206 nos. employees (Officer and Staff) with a financial involvement of Rs. 1 Crore will be undertaken in FY 2022-23 to FY 2024-25.

7.10.2 APGCL has allocated the annual Capacity Building expenses for NTPS, LTPS, KLHEP and LRPP as shown below:

**Table 113: Capacity Building expenses as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	0.06	0.04	0.04
LTPS	0.13	0.09	0.09
KLHEP	0.13	0.10	0.10
LRPP	0.09	0.07	0.07
<b>Total</b>	<b>0.40</b>	<b>0.30</b>	<b>0.30</b>

### Commission's Analysis

7.10.3 As regards Capacity Building expenses, the Commission is of the opinion that it should be part of Normative A&G Expenses. The Commission had allowed Capacity Building Expense separately in addition to normative A&G Expenses in the previous Control Period as an incentive to APGCL to train its employees in modern technology so that their productivity increases. However, any incentive should not be extended indefinitely



and the Commission has already allowed this special incentive to APGCL for whole Control Period from FY 2019-20 to FY 2021-22. Hence, the Commission has not approved any additional expense towards Capacity Building for FY 2022-23 to FY 2024-25.

#### 7.10.4 Non-Tariff Income

APGCL has projected the Non-Tariff Income for existing Generating Stations for the Control Period, at the same level as estimated for FY 2021-22, as shown in the following Table:

**Table 114: Non-Tariff Income for Control Period as submitted by APGCL (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	7.13	7.13	7.13
LTPS	9.22	9.22	9.22
KLHEP	5.75	5.75	5.75
LRPP	0.00	0.00	0.00
<b>Total</b>	<b>22.09</b>	<b>22.09</b>	<b>22.09</b>

#### Commission's Analysis

The Commission observed that as compared to NTI of Rs.35.99 Crore claimed for FY 2020-21, APGCL has estimated NTI of Rs .22.09 Crore for FY 2021-22 and Control Period. In reply to query asked in this regard, APGCL submitted that in view of the reduced interest rates post COVID-19 pandemic and the reduced Fixed Deposits of APGCL, it has projected NTI of Rs. 22.09 Crore as approved in Tariff Order for FY 2021-22. The same amount has been projected for the Control Period.

Accordingly, the Commission has considered the NTI as projected by APGCL for existing Stations, as shown in the following Table:

**Table 115: Non-Tariff Income for Control Period as approved by the Commission (Rs. Crore)**

Station	FY 2022-23	FY 2023-24	FY 2024-25
NTPS	7.13	7.13	7.13
LTPS	9.22	9.22	9.22
KLHEP	5.75	5.75	5.75
LRPP	0.00	0.00	0.00
<b>Total</b>	<b>22.09</b>	<b>22.09</b>	<b>22.09</b>

#### 7.10.5 **Summary of ARR for Control Period**

Based on the above analysis, the station-wise ARR approved for the Control Period for existing Stations is summarised in the Tables below. It may be noted that the Fixed Cost projected by APGCL for NTPS and LTPS in the Tables below is after considering effective capacity, whereas, the Fixed Cost approved by the Commission for NTPS and LTPS in the Tables below are for full capacity. The computations for effective capacity have been done subsequently by the Commission.

**Table 116: Summary of ARR for NTPS for Control Period approved by the Commission (Rs. Crore)**

Sr. No.	Particulars	APGCL's Submission			Approved by Commission		
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
<b>A</b>	<b>Capacity Charges (Annual Fixed Charges)</b>						
1	O&M expenses	20.76	21.71	22.70	42.24	44.46	46.79
2	Special R&M Expenses	4.25	1.60	0.80	2.58	0.80	0.80
3	Increase in AERC Tariff Filing Fees	0.10	0.10	0.10	0.10	0.10	0.10
4	Depreciation	0.92	0.95	0.98	1.28	1.25	1.30
5	Interest on Loans	0.05	0.13	0.17	0.00	0.00	0.00
6	Return on Equity	8.53	8.53	8.53	8.53	8.53	8.53
7	Interest on Working Capital	2.46	2.47	2.51	3.61	3.70	3.83
8	Capacity Building	0.06	0.04	0.04	0.00	0.00	0.00
9	Less: Non-Tariff Income	7.13	7.13	7.13	7.13	7.13	7.13
<b>10</b>	<b>Fixed Cost</b>	<b>29.99</b>	<b>28.39</b>	<b>28.70</b>	<b>51.19</b>	<b>51.70</b>	<b>54.22</b>
B	Fuel Cost	46.43	46.43	46.43	46.43	46.43	46.43
<b>C</b>	<b>Total ARR</b>	<b>76.42</b>	<b>74.83</b>	<b>75.13</b>	<b>97.62</b>	<b>98.13</b>	<b>100.65</b>

**Table 117: Summary of ARR for LTPS for Control Period as approved by the Commission (Rs. Crore)**

Sr. No.	Particulars	APGCL's Submission			Approved by Commission		
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
<b>A</b>	<b>Capacity Charges (Annual Fixed Charges)</b>						
1	O&M expenses	42.47	44.41	46.44	42.88	45.13	47.50
2	Special R&M Expenses	15.00	26.05	28.80	15.00	26.05	26.00
3	Increase in AERC Tariff Filing Fees	0.10	0.10	0.10	0.10	0.10	0.10
4	Depreciation	11.64	11.28	11.53	16.47	17.40	14.93
5	Interest on Loans	0.35	0.97	1.15	-	-	-
6	Return on Equity	22.18	22.18	22.18	22.18	22.18	22.18
7	Interest on Working Capital	6.00	6.30	6.47	6.10	6.42	6.51
8	Capacity Building	0.13	0.09	0.09	0.00	0.00	0.00
9	Less: Non-Tariff Income	9.22	9.22	9.22	9.22	9.22	9.22
<b>10</b>	<b>Fixed Cost</b>	<b>88.65</b>	<b>102.18</b>	<b>107.55</b>	<b>93.51</b>	<b>108.07</b>	<b>108.01</b>
B	Fuel Cost	115.74	115.74	115.74	115.74	115.74	115.74
<b>C</b>	<b>Total ARR</b>	<b>204.39</b>	<b>217.91</b>	<b>223.29</b>	<b>209.25</b>	<b>223.81</b>	<b>223.75</b>

Table 118: Summary of ARR for KLHEP for Control Period as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission			Approved by Commission		
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
<b>A</b>	<b>Capacity Charges (Annual Fixed Charges)</b>						
1	O&M expenses	31.49	32.93	34.43	33.31	35.06	36.90
2	Special R&M	12.00	0.00	0.00	20.00	0.00	0.00
3	Increase in AERC Tariff Filing Fees	0.00	0.00	0.00	0.00	0.00	0.00
4	Depreciation	20.78	21.28	21.64	21.56	21.74	21.58
5	Interest on Loans	16.85	16.53	15.79	16.65	16.04	15.06
6	Return on Equity	10.64	10.64	10.64	10.64	10.64	10.64
7	Interest on Working Capital	2.69	2.57	2.64	2.42	2.15	2.20
8	Capacity Building	0.13	0.10	0.10	0.00	0.00	0.00
9	Less: Non-Tariff Income	5.75	5.75	5.75	5.75	5.75	5.75
<b>10</b>	<b>Fixed Cost</b>	<b>88.82</b>	<b>78.29</b>	<b>79.50</b>	<b>98.85</b>	<b>79.89</b>	<b>80.63</b>
B	Fuel Cost	0.00	0.00	0.00	0.00	0.00	0.00
<b>C</b>	<b>Total ARR</b>	<b>88.82</b>	<b>78.29</b>	<b>79.50</b>	<b>98.85</b>	<b>79.89</b>	<b>80.63</b>

Table 119: Summary of ARR for LRPP for Control Period as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission			Approved by Commission		
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25
<b>A</b>	<b>Capacity Charges (Annual Fixed Charges)</b>						
1	O&M expenses	30.27	31.66	33.10	30.27	31.86	33.54
2	Special R&M	32.72	9.37	33.75	32.72	9.37	33.75
3	Increase in AERC Tariff Filing Fees	0.10	0.10	0.10	0.10	0.10	0.10
4	Depreciation	2.70	2.73	2.76	2.69	2.72	2.74
5	Interest on Loans	2.57	2.34	2.09	2.56	2.31	2.05
6	Return on Equity	2.44	2.44	2.44	2.44	2.44	2.44
7	Interest on Working Capital	4.80	4.48	4.97	4.79	4.48	4.98
8	Capacity Building	0.09	0.07	0.07	0.00	0.00	0.00
9	Less: Non-Tariff Income	0.00	0.00	0.00	0.00	0.00	0.00
<b>10</b>	<b>Fixed Cost</b>	<b>75.69</b>	<b>53.19</b>	<b>79.28</b>	<b>75.58</b>	<b>53.28</b>	<b>79.60</b>
B	Fuel Cost	94.87	94.87	94.87	94.87	94.87	94.87
<b>C</b>	<b>Total ARR</b>	<b>170.56</b>	<b>148.06</b>	<b>174.15</b>	<b>170.45</b>	<b>148.15</b>	<b>174.47</b>

### 7.10.6 Net ARR for Effective Capacity

The Commission has considered the Net ARR computed on the effective capacity of NTPS and LTPS based on the actual retirement of Units as submitted by APGCL.

The Commission has considered the effective capacity of 43.50 MW for NTPS on account of retirement of Units 1, 4 and 5 and considering that one of Unit 2 or 3 will be available during the Control Period. Further, the effective capacity of LTPS has been considered at 97.20 MW in line with the effective capacity considered in FY 2020-21. Accordingly, the Commission has computed the Net ARR at effective capacity.

The Commission has computed the Net ARR for the Control Period after adjusting for effective capacity for NTPS and LTPS, as shown in the following Table:

**Table 120: APR for NTPS for the Control Period as approved by the Commission at Effective Capacity (Rs. Crore)**

Particulars	FY 2022-23	FY 2023-24	FY 2024-25
<b>Total Fixed Cost approved on installed capacity</b>	55.65	57.93	60.45
Reduction in fixed cost due to Decommissioning	35.39	36.84	38.45
<b>Total Fixed Cost approved at effective Capacity</b>	20.26	21.09	22.01
Add: Capacity Building Charges	0.00	0.00	0.00
Add: AERC Filing Fees	0.10	0.10	0.10
Add: Special R&M	2.58	0.80	0.80
Less: Non-Tariff Income	7.13	7.13	7.13
<b>Total Fixed Cost approved for effective capacity</b>	<b>15.80</b>	<b>14.86</b>	<b>15.77</b>
Add: Fuel Cost	46.43	46.43	46.43
<b>Net ARR approved for effective capacity</b>	<b>62.23</b>	<b>61.29</b>	<b>62.21</b>

**Table 121: APR for LTPS for the Control Period as approved by the Commission at Effective Capacity (Rs. Crore)**

Particulars	FY 2022-23	FY 2023-24	FY 2024-25
<b>Total Fixed Cost approved on installed capacity</b>	87.63	91.13	91.13
Reduction in fixed cost due to Decommissioning	27.73	28.84	28.84
<b>Total Fixed Cost approved at effective Capacity</b>	59.90	62.29	62.29

<b>Particulars</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>
Add: Capacity Building Charges	0.00	0.00	0.00
Add: AERC Filing Fees	0.10	0.10	0.10
Add: Special R&M	15.00	26.05	26.00
Less: Non-Tariff Income	9.22	9.22	9.22
<b>Total Fixed Cost approved for effective capacity</b>	<b>65.78</b>	<b>79.23</b>	<b>79.18</b>
Add: Fuel Cost	115.74	115.74	115.74
<b>Net ARR approved for effective capacity</b>	<b>181.52</b>	<b>194.97</b>	<b>194.92</b>



## 8 Tariff for FY 2022-23

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

8.1.1 APGCL has computed the cumulative Revenue Gap/(Surplus) after True-up of FY 2020-21, without carrying cost, as shown in the following Table:

**Table 122: Revenue Gap/(Surplus) as submitted by APGCL (Rs. Crore)**

Sr. No.	Particulars	Rs. Crore
1	Stand-alone Revenue Gap/(Surplus) for FY 2020-21	65.33
3	<b>Total True up claim</b>	<b>65.33</b>

**Note:** In reply to query, APGCL has submitted carrying cost Rs.6.53 Crore, making the total claim of APGCL as Revenue Gap of Rs. 71.86 Crore

### 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 of FY 2020-21 approved in this Order along with carrying/holding cost. No Revenue Gap/(Surplus) arising out of APR of FY 2021-22 has been proposed to be recovered through tariff in FY 2022-23, in accordance with the MYT Regulations, 2021.

8.1.3 The Commission has computed the cumulative Revenue Gap/(Surplus) as shown in the following Table:

**Table 123: Revenue Gap/(Surplus) for FY 2020-21 as approved by the Commission (Rs. Crore)**

Particulars	Submitted by APGCL	Approved after Truing up
<b>Truing up for FY 2020-21</b>		
ARR for NTPS*	84.65	56.45
ARR for LTPS*	131.94	115.68
ARR for KLHEP	97.87	49.23
ARR for LRPP	96.72	97.57
<b>Combined ARR</b>	<b>411.18</b>	<b>318.92</b>
Revenue from Sale of Power	345.85	345.85
<b>Revenue Gap/(Surplus)</b>	<b>65.33</b>	<b>(26.93)</b>

Particulars	Submitted by APGCL	Approved after Truing up
<b>Computation of carrying/(holding) cost on Revenue Gap/(Surplus) of FY 2020-21</b>		
Carrying /(holding) cost for FY 2020-21 @ 10.05% (half Year)		(1.35)
Carrying /(holding) cost for FY 2021-22 @10.00% (full Year)		(2.69)
Carrying /(holding) cost for FY 2022-23 @ 10.00% (half Year)		(1.35)
<b>Total</b>		<b>(5.39)</b>
<b>Cumulative Revenue Gap/(Surplus) along with Carrying/(Holding) Cost</b>	<b>65.33</b>	<b>(32.32)</b>

**Note:** \*Considering effective capacity

8.1.4 The Commission approves the Revenue Surplus of Rs. 32.32 Crore arising out of Truing up for FY 2020-21, including the holding cost. This amount is to be refunded to APDCL in 12 equal monthly instalments, viz., Rs 2.69 Crore per month during FY 2022-23, as adjustments in the monthly bill.

## 8.2 Fixed Charges and Energy Charges for FY 2022-23 for NTPS, LTPS and LRPP

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

**Table 124: Proposed Generation tariff as submitted by APGCL (Rs. Crore)**

Station	Particulars	FY 2022-23
<b>NTPS</b>	Annual Fixed Charges (Rs. Crore)	29.99
	Monthly Fixed Charges (Rs. Crore)	2.50
	Energy Charges (Rs. /kWh)	2.49
<b>LTPS</b>	Annual Fixed Charges (Rs. Crore)	88.65
	Monthly Fixed Charges (Rs. Crore)	7.39
	Energy Charges (Rs. /kWh)	2.88
<b>LRPP</b>	Annual Fixed Charges (Rs. Crore)	75.69
	Monthly Fixed Charges (Rs. Crore)	6.31
	Energy Charges (Rs. /kWh)	1.89

## Commission's Analysis

8.2.2 The Commission has determined the Tariff for FY 2022-23 for NTPS, LTPS and 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 48.1 of the MYT Regulations, 2021 specifies that the NAPAF for full recovery of Annual Fixed Charges shall be 50% for both NTPS and LTPS and 85% for LRPP.

8.2.5 The Fixed Charges for NTPS, LTPS and LRPP as approved by the Commission for FY 2021-22 is shown in the following Table:

**Table 125: Fixed Charges as approved for FY 2022-23 by the Commission (Rs. Crore)**

Generating Station	Annual Fixed Charges	Monthly Fixed Charges
NTPS	15.80	1.32
LTPS	65.78	5.48
LRPP	75.58	6.30

8.2.6 However, in the event of actual Availability for the year, computed in accordance with the Regulation 48.1 of the MYT Regulations, 2021, being less than the Normative Availability, the Fixed Charges shall be proportionately adjusted as per the MYT Regulations, 2021.

### **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 126: Energy Charges for FY 2022-23 approved by the Commission (Rs. Crore)**

Station	Particulars	FY 2021-22
NTPS	Fuel Cost (Rs. Crore)	46.43
	Net Generation (MU)	186.31
	<b>Energy Charges (Rs. /kWh)</b>	<b>2.49</b>

Station	Particulars	FY 2021-22
LTPS	Fuel Cost (Rs. Crore)	115.74
	Net Generation (MU)	402.32
	<b>Energy Charges (Rs. /kWh)</b>	<b>2.88</b>
LRPP	Fuel Cost (Rs. Crore)	94.87
	Net Generation (MU)	501.22
	<b>Energy Charges (Rs. /kWh)</b>	<b>1.89</b>

### 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 127: Proposed Generation tariff for KLHEP as submitted by APGCL**

Station	Particulars	FY 2022-23
KLHEP	Capacity Charges (Rs. Crore)	44.41
	Energy Charges (Rs. /kWh)	1.14

#### Commission's Analysis

8.3.2 Regulation 50.1 of the MYT Regulations 2021 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 2022-23 based on the applicable AFC and projected Availability as under:

**Table 128: Capacity Charges and Energy Charges approved by the Commission for KLHEP for FY 2022-23**

Particulars	FY 2022-23
Annual Fixed Charge (Rs. Crore)	98.85
<b>Capacity Charges (Rs. Crore)</b>	<b>49.42</b>
Design Energy (MU)	390.00
Auxiliary Consumption (%)	0.50%
Net Design Energy (MU)	<b>388.05</b>
<b>Energy Charge Rate (Rs. /kWh)</b>	<b>1.27</b>

8.3.3 The Capacity Charges shall be charged for calendar month on monthly basis as per

Regulation 52.1 and 52.2 of MYT Regulations, 2021.

#### 8.4 Generation Tariff for FY 2022-23

8.4.1 The Commission approves the Generation Tariff for FY 2022-23 as shown in the following Table:

**Table 129: Generation Tariff for FY 2022-23 approved by the Commission**

Particulars	Particulars	FY 2022-23
<b>NTPS</b>	Annual Fixed Charges (Rs. Crore)	15.80
	Monthly Fixed Charges (Rs. Crore)	1.32
	Energy Charges (Rs. /kWh)	2.49
<b>LTPS</b>	Annual Fixed Charges (Rs. Crore)	65.78
	Monthly Fixed Charges (Rs. Crore)	5.48
	Energy Charges (Rs. /kWh)	2.88
<b>LRPP</b>	Annual Fixed Charges (Rs. Crore)	75.58
	Monthly Fixed Charges (Rs. Crore)	6.30
	Energy Charges (Rs. /kWh)	1.89
<b>KLHEP</b>	Capacity Charges (Rs. Crore)	49.42
	Energy Charge Rate (Rs. /kWh)	1.27

8.4.2 Since, the Commission has determined Station-wise Generation Tariff for FY 2022-23, the billing shall be done for each station separately on monthly basis in accordance with the provisions of MYT Regulations, 2021.

#### 8.5 Applicability of Tariff

8.5.1 The approved Generation tariff for FY 2022-23 shall be effective from April 1, 2022 and shall continue until replaced/modified by an Order of the Commission.

Sd/-

(S.N. Kalita)

Member, AERC

Sd/-

(B. Borthakur)

Member, AERC

Sd/-

(K. S. Krishna)

Chairperson, AERC

## 9 Directives

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The Commission issued certain directives to APGCL in the past Tariff 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 of directives issued in the Tariff Order dated 15<sup>th</sup> February, 2021. The Commission has reviewed the compliance of directives submitted by APGCL and the status is as follows:

### **Status of Directives issued in the Tariff Order dated 15<sup>th</sup> February, 2021**

#### **Directive 1: Procurement of Gas**

APGCL should continue to pursue with its gas suppliers/ transporter to obtain the contracted quantum of gas on a regular basis and explore all viable sources to get additional allotments to overcome the generation problem.

Further, APGCL should claim compensation, in case the Minimum Guaranteed Quantity (MGQ) and Quality are not met by Gas Supplier/Gas Transporter.

#### **Status:**

APGCL submitted that it is facing shortage of gas supply at an average of 28% for LTPS and 45 % for NTPS during last three financial years. Considering the pattern of supply of gas in last three years, the total additional gas requirement for running both the units (Old & New) of NTPS, NRPP, LTPS and LRPP is 0.66 MMSCMD.

APGCL participated in the forward auction of HOEC, which was held on 24.06.2021 for a quantum of gas 0.66 MMSCMD on fall back basis, which can be used for both NTPS and LTPS for maximizing generation whenever gas supply is less from OIL/ONGC. APGCL stood as H4 bidder at variable premium of USD 0.43/MMBTU. A Direct contract with HOEC (on behalf of Dirok JV) is mandatory for supply of Dirok Gas and it will be signed shortly.

Correspondence was made both with OIL and GAIL for enhancement of Gas Supply at least to the MGQ level at LTPS/NTPS to enable APGCL to generate at full load in both LTPS and LRPP thereby reaching the generation at optimum level.

Oil India limited has declared Force Majeure due to Baghjaan issue occurred on 27<sup>th</sup> May, 2020 and hence, gas supply is less.

Gas supply from GAIL is less due to reduction in production, and decline in production due to ageing of oil fields is an established phenomenon in oil and gas Industries.

## **Directive 2: Capacity Building**

The Commission directs APGCL to complete the recruitment process within the MYT Control Period, in line with the manpower planning study conducted for all 3 Companies. APGCL should submit the Report on manpower planning study within 1 month of issue of this Order.

APGCL should submit the training calendar for its employees for FY 2021-22, duly approved by its Board, within 2 months of issue of this Order.

### **Status:**

The total sanctioned post of APGCL is 977 nos. as per the approval in the Board of Directors APGCL meeting held on 7<sup>th</sup> June, 2021, out of which the total strength of manpower in APGCL as on 30<sup>th</sup> June, 2021 was 778 nos. It is worth mentioning that 60 nos. of vacancies have been/will occur due to retirement and death of the employees in the year 2021.

In view of the above, APGCL has initiated the following recruitment process:

- Recruitment of Assistant Manager, Junior Manager and Assistant Accounts Officer has been initiated by APGCL and the appointment letters were distributed on 26<sup>th</sup> February, 2021 (forenoon). Total no. of posts as advertised is detailed below:

<b>Name of the post</b>	<b>Requirement</b>
Assistant Manager (Electrical)	5 nos.
Assistant Manager (Mechanical)	5 nos.
Assistant Manager (HR)	2 nos.
Junior Manager (Electrical)	5 nos.
Junior Manager (Mechanical)	5 nos.
Junior Manager (IT)	2 nos.
Assistant Accounts Officer	2 nos.
<b>Total</b>	<b>26 nos.</b>

- Accordingly, 18 (eighteen) nos. of appointees have joined in different establishments under APGCL in the month of March 2021.
- Recruitment for 48 nos. of post of Sahayak (Experienced) in APGCL has been initiated and the results were declared on 26<sup>th</sup> February 2021. Accordingly, 35

(thirty-five) nos. of appointees have joined in different establishments under APGCL in the month of May 2021.

- Recruitment for 5 nos. of Laboratory Assistant, 5 nos. of ANM/GNM and 1 no. of AM (Law) in APGCL has been initiated and the OMR based written examination was held on 21<sup>st</sup> February, 2021. OMR based results of the same was declared on 9<sup>th</sup> June, 2021.

### **Directive 3: Preventive Maintenance**

For reduction of auxiliary consumption and proper maintenance of the generation turbines and power plants, an appropriate mechanism of maintenance of these turbines and power plants is necessary. While outsourcing of manpower for maintenance of the power plants may be necessary from time to time, however, the Company should develop expertise among its own ground level technical persons.

The Commission directs APGCL to take measures to develop its own dedicated Maintenance Teams so as to facilitate preventive and scheduled maintenance of the turbines/plants on time. APDCL should also plan proper training programmes for these Maintenance Teams as part of the Training Calendar to be submitted within 2 months of issue of this Order.

APGCL should consider incorporation of the Preventive Maintenance Module, as part of the ongoing ERP implementation, by acquiring the online data acquisition software/hardware, to ensure the required machine health. APGCL should submit its Report in this regard within 2 months of issue of this Order.

### **Status:**

Most of the senior employees of APGCL have retired and APGCL has been recruiting fresh employees from time to time. To continue the routine maintenance works, APGCL sometimes has to engage contractual manpower so that there is no lapse in the regular works of APGCL. Further, in case of specialized works APGCL takes the help of expert agencies so that works are completed efficiently and effectively on time as well as to train the fresh employees.

Preventive maintenance of equipment is part of the O&M module as per the OEM guidelines in the ongoing ERP implementation. At present ERP implementation work is ongoing and expected date of Go-Live is March, 2022.



#### **Directive 4: Special R&M**

APGCL should carry out Special R&M within the approved period and for the station/unit for which the expense has been approved.

In case of any change in Special R&M Plan, the same has to be brought to the notice of the Commission for approval, failing which, the same shall not be allowed as expenditure in the subsequent year.

#### **Status:**

Work Order for overhauling of KLHEP Unit-2 has already been placed. Work will be completed by the end of March 2022. Preparation of work order for overhauling of LTPS Gas turbine Unit-7, P/H-II is under process and will be completed by the end of March, 2022. Preparation of work order for overhauling Gas Compressor No. 7 of LTPS is under process and will be completed by the end of March, 2022.

#### **Directive 5: Coordination Committee**

It has been observed by the Commission that there are common issues relating to power generation, transmission, and distribution, which have been adversely affecting power supply to consumers and which can be resolved by effective coordination between the three Companies namely, APGCL, AEGCL and APDCL.

The Commission, therefore, directs that a Coordination Committee be constituted consisting of senior Officers from APGCL, AEGCL, SLDC and APDCL for settlement of matters of common interests relevant to generation, evacuation of power and supply to consumers. The Committee shall be headed by the CGM, SLDC. This Coordination Committee shall meet as often as required, but at least once in every quarter of each year. The Minutes of Meeting of each Coordination Committee meeting shall be submitted to the Commission within 15 days of such meeting.

The Commission directs that the Committee is to be constituted within 3 months of issue of this Order, and a report regarding its constitution shall be submitted to the Commission within 3 months of issue of this Order.

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

**Status:**

A co-ordination committee has been constituted among AEGCL, APGCL, SLDC and APDCL headed by Chief General Manager (SLDC), on 12.03.2021. But due to COVID-19 pandemic situation, the co-ordination committee meeting could not be held till now.

**New Directives:**

The Commission hereby issues the following directives to APGCL:

**Directive 1: Completion of Projects**

The Commission directs APGCL to complete the new and ongoing projects on time. The Commission also directs APGCL to set up their ongoing Solar Plants on time.

**Directive 2: Procurement of gas**

APGCL should continue to pursue with its gas suppliers/ transporter to obtain the contracted quantum of gas on a regular basis. The issue of gas should be pursued with the concerned ministry of GOI in consultation with the State Government.

**Directive 3: Fixed Asset Register**

The Commission directs APGCL that Fixed Asset Register should be updated every year, and these should be 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 4: Energy Audit of LTPS and NTPS**

The Commission directs APGCL to conduct an energy Audit of LTPS and NTPS with the help of NIT Silchar.

**Directive 5: Overhauling of Units**

Commission observes that the Overhauling of units are never completed on time as proposed by APGCL. The Commission directs APGCL to complete the overhauling of units as per scheduled otherwise the Commission may not allow the expenditure in

future.

**Directives 6: Solar Storage/ Pump Storage**

The Commission directs APGCL to initiate action for installation of solar/pump storage facilities to suit the demand.

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

**Sd/-**

**(S.N Kalita)  
Member, AERC**

**Sd/-**

**(B.Borthakur)  
Member, AERC**

**Sd/-**

**(K.S. Krishna)  
Chairperson, AERC**

# Annexure 1: Minutes of the 29<sup>th</sup> Meeting of the State Advisory Committee

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## **29<sup>th</sup> Meeting of the State Advisory Committee**

**VENUE** : AERC Conference Hall, Guwahati.

**DAY / DATE** : Friday, 25<sup>th</sup> February, 2022.

**LIST OF MEMBERS / SPECIAL INVITEES**: At Annexure-I (Enclosed)

The 29<sup>th</sup> Meeting of State Advisory Committee (SAC) was chaired by the Hon'ble Chairperson, AERC, Kumar Sanjay Krishna, IAS, (Retd.).

Shri S.N Kalita, Member (Technical) participated in the meeting through video conferencing.

At the onset, Hon'ble Chairperson, AERC welcomed all members and invitees. He informed the members that APGCL, AEGCL, and SLDC submitted tariff petitions for MYT Control Period FY2022-23 to 2024-25, True-Up for FY 2020-21, APR for FY 2021-22 and Tariff for FY 2022-23 on 30<sup>th</sup> November 2021, and APDCL submitted on 16<sup>th</sup> December 2021. The Commission after scrutiny of the petitions directed the petitioners to publish the petition for information of the public and for comments/suggestions vide order dated 23.12.2021 after the preliminary hearing. In response to the petitions, eight (8) nos. of stakeholders submitted their views. The Commission has fixed 2<sup>nd</sup> March, 2022 for a public hearing. So, the Commission decided to place the tariff petition before the State Advisory Committee for valuable suggestions and guidance of the members. Hon'ble Chairperson requested the members to give constructive views and suggestions to enable Commission to complete tariff determination process within the timeline.

The welcome address 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 members during the discussions are briefly recorded below.

### **Agenda: Confirmation of the Minutes of 28<sup>th</sup> meeting of SAC held on 23.09.2021**

The draft minutes of the 28<sup>th</sup> meeting held on 23.09.2021 were circulated among the members. Few comments were received from the members that have been incorporated in the final minutes. The minutes were confirmed and accepted by the members.

## **Agenda: Presentation by APGCL**

A Power Point presentation was made by MD, APGCL on the salient features of MYT petition submitted by APGCL. Important points of the discussion are noted below-

In true up for FY 2020-21, APGCL has shown a revenue gap of Rs. 25.86 Crore, Rs. 55.03 Crore for NTPS, KLHEP, and surplus of Rs. 13.59 Crore, Rs. 1.98 Crore for LTPS, LRPP. APGCL has a projected per unit cost of Rs. 3.87, Rs. 3.21, Rs. 4.84 and Rs. 2.07 for NTPS, LTPS, KLHEP, and LRPP, respectively.

In APR for FY 2021-22, APGCL has projected per-unit cost of Rs. 4.4, Rs.4.34, Rs. 2.32 and Rs. 2.21 for NTPS, LTPS, KLHEP and LRPP respectively.

In ARR for FY 2022-23 to FY 2024-25, APGCL has proposed a tariff of Rs. 3.85, Rs. 3.79 and Rs. 3.74 respectively.

MD, APGCL highlighted that in True-Up, KLHEP's gross generation is less than approved figures due to landslide. MD, APGCL also requested the Commission to approve special R&M for LTPS, and KLHEP amounting Rs. 5 Crore, and Rs.8 Crore, respectively. Several projects are in pipeline for APGCL for e.g Borpani stages 1 & 2, Lower Kopili in Hydro. APGCL is also emphasizing in solar plant and are developing solar generation plants in Majuli and Namrup. MD, APGCL highlighted that these new plants will be beneficial for APDCL during power crisis situations like October coal crisis when prices shoot up in IEX. Chairman, APGCL mentioned that a comprehensive study is very important for resources in Assam which will help in the enhancement of Generation Capacity and Renewable Capacity addition.

Consumer activist Shri Subodh Sharma stated that there is a lack of co-ordination between APGCL and APDCL which leads to power evacuation and optimization. He also mentioned that real-time measurement of gas supply is not available with APGCL except at LTPS which should be incorporated to ensure Calorific value and other parameters for the Generating station. He also suggested to conduct co-ordination meetings between the three utilities which were also directed by the Hon'ble Commission.

Shri K. Medhi, Secretary, NESSIA requested APGCL to ensure timely completion of the Hydro and Solar projects with meticulous planning with the proper funding mechanism. MD,APGCL replied that budget provision is already made for the solar project and GoA has assured funding for Borpani stage 1&2. MD, APGCL also informed that Azure Power will complete the solar project in Silchar in March' 22.

Shri M.B Devchoudhury suggested that a study may be carried out for LTPS 's high auxiliary consumption to which MD, APGCL replied that APGCL will carry out the same.

Member, Technical enquired about the funding to pay the Interest & Finance charges for NRPP amounting Rs. 63.95 Crore to which MD, APGCL replied that the same will be adjusted in tariff.

Shri Saurabh Agarwal, Chairman, Power Committee, FINER expected APGCL to expedite peak time demand management and proper planning of resources.

Hon'ble Chairperson stated that Prime Minister is committed to attain target for renewable power and opined that APGCL should come up with a new renewable generation project with provision for storage. MD, APGCL replied that the same has been proposed to be incorporated in the policy of Govt. of Assam.

#### **Agenda: Presentation by AEGCL**

A PowerPoint presentation was made by MD, AEGCL on the salient features of MYT petition submitted by AEGCL and SLDC. Important points of the discussion are noted below

In True-up for FY 2020-21, AEGCL has shown ARR of Rs.378.56 Crore and a surplus of Rs. 16.36 Crore. For SLDC, in True-Up, ARR of Rs. 4.67 Crore and gap of Rs. 0.40 Crore is shown.

In APR for FY 2021-22, AEGCL has shown ARR of Rs.406.17 Crore and a gap of Rs. 5.72 Crore. For SLDC, in APR, ARR of Rs. 6.15 Crore and surplus of Rs. 1.21 Crore is shown.

In ARR for FY 2022-23,2023-24 and 2024-25, AEGCL has shown ARR of Rs.504.89 Crore, Rs. 530.42 Crore and Rs. 577.71 Crore, respectively. In ARR for FY 2022-23,2023-24 and 2024-25, SLDC has shown ARR of Rs.7.74 Crore, Rs. 9.40 Crore and Rs. 11.24 Crore, respectively.

AEGCL has submitted a loss of 3.34% for True-up and projected a loss of 3.30% through APR and ARR. AEGCL has a projected transmission charge of Rs.0.452 Rs./kwh and SLDC charge of Rs. 96.49/MW/Day for FY 2022-23.

MD, AEGCL has mentioned that Transmission Loss reduction will be ensured with the help of various projects details of which have been submitted in the tariff petition in the Capital Investment Plan. DGM(F&A) has mentioned that AEGCL has proposed to increase BST by 5 paise from the existing 15 paise to meet the liabilities of the pension trust. Shri, Subodh Sharma stated that Govt. should be made responsible for liabilities

of pension trust instead of consumers. Member, Technical requested AEGCL to brief the Commission on how the deficit of pension trust is met in other states.

MD, AEGCL has stated about EOI by private telecom companies for OPGW infrastructure of AEGCL. Shri D.K Sharma, retd. Director PGCIL, mentioned that AEGCL should submit the details of income from OPGW.

Shri Harsh Sutodiya. Ex. member, AIIMO enquired about the timeline for completion for SAMAST which will ensure a proper mechanism to quantify real time transmission loss. MD, AEGCL replied that the four pilot projects of SAMAST shall be completed by Oct' 22.

Hon'ble Chairperson requested AEGCL to come up with actual analysis for Transmission loss instead of notional loss for proper reporting in Tariff Petition.

#### **Agenda: Presentation by APDCL**

A PowerPoint presentation was made by MD, APDCL on the salient features of MYT petition submitted by APDCL. Important points of the discussion are noted below

In True-Up for FY 2020-21, APDCL submitted ARR of Rs.6571.8 Crore with a gap of Rs.973.49 Crore. In APR for FY 2021-22, APDCL submitted ARR of Rs.7085 Crore with a gap of Rs. 645.57 Crore. In ARR for FY 2022-23, 2023-24 and 2024-25, APDCL submitted ARR of Rs. 7536.029 Crore, Rs.8300.39 Crore. and Rs. 9059.01 Crore, respectively.

MD, APDCL has highlighted that the gap in True Up is mainly due to deviation in Power purchase cost to the tune of Rs.608 Crore. Key driving factor for this deviation are less generation by APGCL, incremental POC charges, additional fixed cost due to demand crash during the covid period, delay in commissioning of Nikachu Hydro Power Plant, etc.

MD, APDCL mentioned that APDCL is the first to get the DPR approved for RDSS (Revamped Distribution Sector Scheme) details of which are available in the tariff petition.

AASSIA opined that special consideration should be made for small scale industries in fixing the tariff.

Shri Subodh Sharma has suggested that Govt. should take up a master plan to reduce the revenue gap to improve APDCL's financial health.

FINER requested the Utilities to make a Power Roadmap for the State for the next 10 years. FINER also suggested APDCL to not purchase RECs as the upcoming 1000MW Solar Capacity will fulfill the RPO as per Regulations. FINER emphasized on incorporation of storage facility for the 1000MW Solar Capacity and explore Open Market for trading of this Solar Power.

NESSIA prayed before the Hon'ble Commission to not increase fixed charges as Industries will be affected adversely because of this, any increase in tariff should be recovered through energy charge. Shri M.P Bezbaruah, Prof. Guwahati University also supported the views.

Shri U.K Sharma, member senior Engineer's Forum advised APDCL should take up pilot projects in remote circles for getting better results.

Shri Harsh Sutodiya. Ex. member, AIIMO enquired about Power in hours for industrial feeders, cost of Power Purchase, REC burden of APDCL etc. for a better understanding of Tariff modeling.

The meeting ended with a vote of thanks from and to the Chair.

**Sd/-**  
**Secretary,**  
**Assam Electricity Regulatory Commission**



## **LIST OF MEMBERS, SPECIAL INVITEES AND OFFICERS PRESENT.**

### **Members**

1. Kumar Sanjay Krishna, IAS (Retd), Chairperson, AERC
2. Smt. Bulbuli Borthakur, Member (Law), AERC
3. Shri Satyendra Nath Kalita, Member (Technical), AERC
4. Shri Gautam Talukdar, Secretary, Power (E ) Department, Government of Assam
5. Shri Harsh Sutodia, Executive Member, AIMO
6. Shri Subodh Sharma, Consumer Activist
7. Shri Mrinmoy Baruah, Secretary. ABITA
8. Shri M.C Barthakur, Vice President AASSIA
9. Shri J N Baruah, Treasurer, AASSIA
10. Shri M P Bezbaruah, Professor, Guwahati University
11. Shri Kumud Medhi, Secretary, NESSIA
12. Shri Saurabh Agarwal, Chairman Power, FINER
13. Shri D.K. Sarma, Retd. Director, PGCIL
14. Shri Champak. Baruah, Ex-Member (T), APDCL & Member, CGRF (Ghy).
15. Prof. N. B Dev Choudhury, Professor, NIT, Silchar
16. Dr. Aditya Bihar Kandali, Department of Electrical Engineering, JEC
17. Shri U.K. Sharma, Senior Engineer's Forum
18. Dr Satyajit Bhuyan, Professor, AEC

### **SPECIAL INVITEES**

1. Shri Sanjeeva Kumar, IAS (Retd.), Chairman, APGCL
2. Shri Rakesh Kumar, IAS, Managing Director, APDCL & APGCL
3. Shri D Das, Managing Director, AEGCL

### **OFFICERS FROM APDCL. AEGCL & APGCL**

#### **APDCL**

1. Shri Anamul Haque Laskar, CGM (Com & EE), APDCL
2. Shri Sumit Kr. Singha, AGM, APDCL
3. Shri N. Deb, AGM (F&A), APDCL

#### **AEGCL**

1. Shri L. Bhuyan, CGM, AEGCL
2. Shri HimayshuBaishya, GM, AEGCL
3. Shri Suresh Kaimal, DGM, AEGCL

4. Shri F H Ajhmi, DGM, AEGCL
5. Shri Debasish Paul, AGM, AEGCL
6. Shri MrigankaBhuyan, AGM, AEGCL
7. Shri Pranab Saha, AGM, AEGCL
8. Shri Bidyut Bikash Das, Consultant, AEGCL

#### **APGCL**

1. Mrs Aklantika Saikia, DGM, APGCL
2. Mrs Pinky Deb, AM (F&A), APGCL
3. Shri Manash Jyoti Konwar, JM, APGCL
4. Shri Sunny Kumar Singh, Deloitte India, Consultant

#### **OFFICERS FROM AERC**

1. Shri M.K. Deka, ACS (Retd), Secretary, AERC
2. Shri A.N. Devchoudhury, Director (Tariff), AERC
3. Ms. P. Sharma, Joint Director (Regulatory Affairs & Finance Planning), AERC
4. Shri N.K. Deka, Deputy Director (Gen, PPA, P&P), AERC
5. Mrs R. Baruah, Deputy Director (Engg.), AERC
6. Mrs P. Rabha, Assistant Director (Tariff), AERC

#### **ADVISER FROM AERC:**

1. Shri S.K. Roy, ACS (Retd).

## Annexure 2- Station Wise Depreciation

### Depreciation for NTPS (Rs. Crore)

Sr. No.	Particulars	FY 2020-21			FY 2021-22			FY 2022-23			FY 2023-24			FY 2024-25		
		Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation
1	Land	9.71	-	-	9.71	-	-	9.71	-	-	9.71	-	-	9.71	-	-
2	Building	11.18	-	0.37	11.18	-	0.37	11.18	-	0.09	11.18	-	0.00	11.18	-	0.00
3	Hydraulic works	0.04	-	0.00	0.04	-	0.00	0.04	-	0.00	0.04	-	0.00	0.04	-	0.00
4	Other civil works	25.53	0.43	0.93	25.95	-	0.93	25.95	-	0.93	25.95	-	0.93	25.95	-	0.93
5	Plant & machinery- Gas	96.78	1.06	0.15	97.85	-	0.18	97.85	0.66	0.20	98.50	0.94	0.26	99.44	0.44	0.32
6	Plant & machinery- Hydel	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
7	Lines & cables	1.95	-	0.10	1.95	-	0.10	1.95	-	0.10	1.95	-	0.10	1.95	-	0.10
8	Vehicle	0.45	-	-	0.45	-	-	0.45	-	-	0.45	-	-	0.45	-	-
9	Furniture	1.18	0.05	0.01	1.24	-	0.01	1.24	-	0.01	1.24	-	0.01	1.24	-	0.01
10	Other office equipment	1.48	0.10	0.10	1.59	-	0.05	1.59	-	0.03	1.59	-	0.03	1.59	-	0.03
11	Roads on land belonging to others	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
12	Capital spares at Generating Stations	41.46	-	-	41.46	-	-	41.46	-	-	41.46	-	-	41.46	-	-
13	<b>Total</b>	<b>189.76</b>	<b>1.65</b>	<b>1.66</b>	<b>191.41</b>	<b>-</b>	<b>1.65</b>	<b>191.41</b>	<b>0.66</b>	<b>1.37</b>	<b>192.07</b>	<b>0.94</b>	<b>1.34</b>	<b>193.00</b>	<b>0.44</b>	<b>1.40</b>

### Depreciation for LTPS (Rs. Crore)

Sr. No.	Particulars	FY 2020-21			FY 2021-22			FY 2022-23			FY 2023-24			FY 2024-25		
		Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation
1	Land	4.75	-	-	4.75	-	-	4.75	-	-	4.75	-	-	4.75	-	-
2	Building	32.21	-	1.08	32.21	-	1.08	32.21	0.76	1.10	32.97	0.75	1.14	33.72	0.61	1.17
3	Hydraulic works	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
4	Other civil works	43.19	0.07	1.45	43.26	-	1.45	43.26	1.26	1.49	44.51	0.30	1.54	44.81	0.24	1.56
5	Plant & machinery- Gas	275.31	14.62	14.92	289.93	-	15.31	289.93	11.65	15.86	301.58	11.26	16.77	312.84	5.03	13.84
6	Plant & machinery- Hydel	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
7	Lines & cables	9.29	-	0.49	9.29	-	0.49	9.29	-	0.49	9.29	-	0.49	9.29	-	0.49
8	Vehicle	0.24	-	-	0.24	-	-	0.24	-	-	0.24	-	-	0.24	-	-
9	Furniture	0.60	0.03	0.01	0.63	-	0.01	0.63	-	0.01	0.63	-	0.01	0.63	-	0.01
10	Other office equipment	0.37	0.02	0.02	0.39	-	0.02	0.39	-	0.02	0.39	-	0.01	0.39	-	0.01
11	Roads on land belonging to others	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
12	Capital spares at Generating Stations	114.93	-	-	114.93	-	-	114.93	-	-	114.93	-	-	114.93	-	-
13	<b>Total</b>	<b>480.89</b>	<b>14.73</b>	<b>17.98</b>	<b>495.62</b>	<b>-</b>	<b>18.36</b>	<b>495.62</b>	<b>13.67</b>	<b>18.97</b>	<b>509.29</b>	<b>12.31</b>	<b>19.96</b>	<b>521.60</b>	<b>5.88</b>	<b>17.09</b>

### Depreciation for KLHEP (Rs. Crore)

Sr. No.	Particulars	FY 2020-21			FY 2021-22			FY 2022-23			FY 2023-24			FY 2024-25		
		Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation
1	Land	4.40	-	-	4.40	-	-	4.40	-	-	4.40	-	-	4.40	-	-
2	Building	17.35	-	0.58	17.35	-	0.58	17.35	-	0.58	17.35	-	0.58	17.35	-	0.58
3	Hydraulic works	162.46	-	8.58	162.46	-	8.58	162.46	2.44	8.62	164.90	4.62	8.70	169.52	1.17	8.61
4	Other civil works	102.75	-	3.43	102.75	0.29	3.43	103.04	2.21	3.49	105.25	0.62	3.45	105.87	2.24	3.49
5	Plant & machinery- Gas	-	-	-	-	-	0.00	0.00	-	-	0.00	-	-	0.00	-	-
6	Plant & machinery- Hydel	175.61	0.01	9.27	175.62	-	9.27	175.62	14.75	9.66	190.37	9.70	9.73	200.07	8.34	9.54
7	Lines & cables	32.57	-	1.72	32.57	-	1.72	32.57	-	1.72	32.57	-	1.72	32.57	-	1.72
8	Vehicle	0.29	-	-	0.29	-	-	0.29	-	-	0.29	-	-	0.29	-	-
9	Furniture	0.12	-	0.01	0.12	-	0.01	0.12	-	0.01	0.12	-	0.01	0.12	-	0.01
10	Other office equipment	0.11	0.02	0.01	0.14	-	0.01	0.14	-	0.01	0.14	-	0.01	0.14	-	0.01
11	Roads on land belonging to others	0.28	-	0.01	0.28	-	0.01	0.28	-	0.01	0.28	-	0.01	0.28	-	0.01
12	Capital spares at Generating Stations	18.76	-	-	18.76	-	-	18.76	-	-	18.76	-	-	18.76	-	-
13	<b>Total</b>	<b>514.71</b>	<b>0.03</b>	<b>23.61</b>	<b>514.74</b>	<b>0.29</b>	<b>23.61</b>	<b>515.03</b>	<b>19.40</b>	<b>24.10</b>	<b>534.44</b>	<b>14.95</b>	<b>24.21</b>	<b>549.39</b>	<b>11.75</b>	<b>23.96</b>

### Depreciation for LRPP (Rs. Crore)

Sr. No.	Particulars	FY 2020-21			FY 2021-22			FY 2022-23			FY 2023-24			FY 2024-25		
		Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation	Opening GFA	Addition of GFA	Depreciation
1	Land	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
2	Building	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
3	Hydraulic works	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
4	Other civil works	24.36	-	0.81	24.36	-	0.81	24.36	0.50	0.83	24.86	0.21	0.82	25.07	0.30	0.83
5	Plant & machinery- Gas	244.38	-	12.90	244.38	-	12.90	244.38	0.15	12.91	244.54	0.34	12.92	244.88	-	12.90
6	Plant & machinery- Hydel	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
7	Lines & cables	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
8	Vehicle	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
9	Furniture	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
10	Other office equipment	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
11	Roads on land belonging to others	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
12	Capital spares at Generating Stations	-	-	-	-	-	-	0.00	-	-	0.00	-	-	0.00	-	-
13	<b>Total</b>	<b>268.75</b>	<b>-</b>	<b>13.72</b>	<b>268.75</b>	<b>-</b>	<b>13.72</b>	<b>268.75</b>	<b>0.65</b>	<b>13.73</b>	<b>269.40</b>	<b>0.55</b>	<b>13.74</b>	<b>269.95</b>	<b>0.30</b>	<b>13.73</b>

## Annexure 3- Capital Investment Plan

### Capital Investment Plan for NTPS (Rs. Lakh)

S. No.	NTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
<b>A</b>	<b>R&amp;M Proposed for NTPS</b>							
	<b>Electro-Mechanical Work at NTPS</b>							
1	100W LED Street Light/bay light (complete set) with separate clamps & pipe bend fitting etc.	10.00	10.00	-	10.00	10.00	-	The CAPEX proposed for proper illumination of streets & colony areas. Hence, allowed
2	200W LED Street Light/bay light (complete set) with separate clamps & pipe bend fitting etc.	-	22.50	-	-	22.50	-	
3	30 M high Mast Lighting System (complete set)		12.00	12.00	-	12.00	12.00	
4	Renovation of damaged sludge removing system of water clariflocculation system at Dillighat water Intake for the purpose of better water treatment	12.00	12.00	-	12.00	12.00	-	The CAPEX proposed for renovating 85% of damaged existing system. Hence, allowed
5	Chemical Laboratory building up-gradation along with new Alum & Lime tanks & supply lines	10.00	-	-	-	-	-	CAPEX proposed is not considered necessary at this stage, for these old Units which have outlived their Useful life. Hence, disallowed
6	Supply, installation & commissioning of sulphuric Acid dilution tank at DM Plant	9.50	-	-	9.50	-	-	The CAPEX proposed will greatly enhance reliability and ensure uninterrupted operation of the unit by minimising downtime and forced outages and hence allowed

S. No.	NTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
7	Renovation of damaged drinking water supply pipeline from D.M. plant to WHP residential colony & officers' colony at pahar line	12.00	-	-	12.00	-	-	The CAPEX proposed for renovating damaged drinking water supply pipeline. Hence, allowed
8	Overhauling (Electrical & Mechanical) of Overhead EOT crane at GTMD side (MMM make, Shaw Box type)	13.00	-	-	13.00	-	-	The CAPEX proposed for overhauling (Electrical & Mechanical) of Overhead EOT crane which is important item for emergency TG manual operation for GT units. Hence, allowed.
9	procurement, Installation & Commissioning of 33 KV SF6 Circuit breaker at NTPS Switchyard for WHP & 2 MVA auxiliary power supply transformer.	16.00	-	-	-	-	-	The CAPEX proposed is disallowed since required documentary evidence from OEM regarding non-availability of spare parts is not submitted
10	Mobile trolley mounted 6000 LPH capacity transformer oil filtration plant.	35.00	-	-	-	-	-	Present arrangement of renting equipment from AEGCL/APDCL may be continued. Hence, disallowed
11	Procurement of Automatic Pressure calibrator, Model Fluke 729 300 G	8.00	-	-	-	-	-	Use of present equipment may be continued. Hence, proposed CAPEX disallowed
12	Procurement of 0-100 psi Hydrogen Regulator, Model: AA-0805-2, Make: Harris calorific Co., Ohio, USA	4.00	-	-	-	-	-	
13	Overhauling (Electrical & Mechanical) of Overhead EOT crane at STMD side	5.00	-	-	5.00	-	-	The CAPEX proposed for overhauling (Electrical & Mechanical) of Overhead EOT crane which is important during the overhauling work. Hence, allowed.



S. No.	NTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
14	procurement, Installation & Commissioning of Air Circuit Breaker, Make L&T, Model CN CS 3200 D	9.00	-	-	-	-	-	Proposed CAPEX is disallowed since required documentary evidence from OEM regarding non-availability of spare parts is not submitted
15	Megger MIT515 5KV Insulation Resistance Testers	4.00	-	-	-	-	-	Use of present equipment may be continued. Hence, proposed CAPEX disallowed
16	Multifunction/ Multi i- parameter Calibration test bench.	20.00	-	-	-	-	-	Use of present equipment may be continued, considering old age of Units that have outlived their useful life. Hence, proposed CAPEX disallowed
17	Procurement of 100 HP BCW pump motor for unit no. 6	4.20	-	-	4.20	-	-	CAPEX justified and hence, allowed
18	procurement of Instrument & Clutch air compressor with motor for Gas Turbine Units.	-	6.00	-	-	-	-	Replacement being proposed merely because useful life is over; no problems in operations identified; no need to spend for such Old Units. Hence, proposed CAPEX is disallowed
19	Renovation of the Spray pond Piping System of GT Units	-	18.50	-	-	18.50	-	CAPEX justified and hence, allowed
20	Procurement, Installation & Commissioning of 33 KV SF6 Circuit breaker at NTPS Switchyard for Cooling Tower & Township feeders.	-	16.00	-	-	-	-	Disallowed since required documentary evidence from OEM regarding non-availability of spare parts not submitted
21	Overhauling of ALCO Diesel engine no. 2 of Diesel Powerhouse including Procurement of Spares	-	18.85	-	-	18.85	-	CAPEX proposed for Overhauling of Diesel engine which is important for smooth functioning and reliability. Hence, allowed.

S. No.	NTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
22	Procurement of Vibration analyzer; Model: 810; Make: Fluke	-	9.75	-	-	-	-	Use of present equipment may be continued, considering old age of Units that have outlived their useful life. Hence, proposed CAPEX disallowed.
23	Procurement of Hart Communicator, Model: AMX Trex; Make: Emerson	-	5.45	-	-	-	-	This has never been used in the past; no need to start new practice for such old Units being retained only to utilise gas available. Hence, proposed CAPEX disallowed.
24	Procurement of INLET THERMOCOUPLE, K TYPE; Element specification 02-9074-17-25, well specification: 16-6028-02-22.1; Make: PYCO, USA	-	7.20	-	-	-	-	Use of present equipment may be continued; no need to increase spares for such old and retiring Units. Hence, disallowed
25	procurement, Installation & Commissioning of Air Circuit Breaker, Make L&T, Model CN CS 1250	-	6.00	-	-	-	-	Disallowed since required documentary evidence not submitted
26	Turbovisory monitor system for #6	-	13.00	-	-	-	-	Disallowed since no justification submitted
27	Overhauling of ALCO Diesel engine no. 3 of Diesel Powerhouse including Procurement of Spares	-	-	18.85	-	-	18.85	CAPEX proposed for Overhauling of Diesel engine which is important for smooth functioning and reliability. Hence, allowed.
28	Tan Delta testing kit	-	-	40.00	-	-	-	Present arrangement of renting equipment from AEGCL/APDCL may be continued. Hence, disallowed
29	Multifunction/ Multi- parameter Calibration test bench.	-	-	20.00	-	-	-	Use of present equipment may be continued. Hence, disallowed

S. No.	NTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
30	Procurement of instrument Air Compressor for unit 6 Model-TBTD MM, Sl. No.- ALO422, LP Bore-255, HP bore-160, stroke 120, FAD m/min-622, press-9.0 kg/cm, rpm- 650,Krilosker Pneumatic make.	-	-	13.50	-	-	13.50	The CAPEX proposed will greatly enhance reliability and ensure uninterrupted operation of the unit by minimising downtime and forced outages and hence allowed
31	Procurement of Turbine Oil filter machine	-	-	9.00	-	-	-	Disallowed since no justification submitted. Hence, disallowed
	<b>Total R&amp;M Proposed (In Lakhs)</b>	<b>171.70</b>	<b>157.25</b>	<b>113.35</b>	<b>65.70</b>	<b>93.85</b>	<b>44.35</b>	
<b>B</b>	ERP implementation and consultancy services	<b>280.00</b>	<b>62.00</b>	<b>63.00</b>	<b>280.00</b>	<b>62.00</b>	<b>63.00</b>	CAPEX justified and hence, allowed
	<b>Total CAPEX proposed for NTPS</b>	<b>451.70</b>	<b>219.25</b>	<b>176.35</b>	<b>345.70</b>	<b>155.85</b>	<b>107.35</b>	

**Capital Investment Plan for LTPS (Rs. Lakh)**

S. No.	LTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
<b>A</b>	<b>R&amp;M Proposed for KLHEP</b>							
	<b>Electromechanical Works</b>							
1	Replacement of Fill Packs of 03 cells of Cooling Tower	170.00	-	-	170.00	-	-	CAPEX justified and hence, allowed
2	New and Updated Human Machine Interface (HMI) System along with installation & commissioning charges	180.00	-	-	131.40	-	-	Considered cost as per offer submitted by vendor. Balance amount disallowed
3	Overhauling of HPBFP with mandatory spares	-	140.00	-	-	140.00	-	CAPEX justified for efficient operations and hence, allowed
4	Overhauling of Cooling Water Pumps (CWP) along with supply of spares.	-	-	35.00	-	-	35.00	CAPEX justified for efficient operations and hence, allowed
5	Replacement of Battery Bank, Charger Panel and DCDB Panel for GT unit #5, #6 and #7.	-	-	150.00	-	-	150.00	CAPEX justified for efficient operations and hence, allowed
6	Condensate Extractor Pump Overhauling	50.00	-	-	50.00	-	-	CAPEX justified for efficient operations and hence, allowed
7	Replacement of critical MOVs with new & servicing of the remaining MOVs & servicing of Mechanical Valves	100.00	-	-	100.00	-	-	CAPEX proposed for smooth operation of the STG, hence, allowed
8	Up gradation of main Battery Bank along with Charger, Cables, MS Stand & other accessories.	100.00	-	-	100.00	-	-	CAPEX justified for efficient operations and hence, allowed
9	Intermediate Overhauling of 37.2 MW STG & procurement of spares	50.00	-	-	50.00	-	-	CAPEX justified for efficient operations and hence, allowed
10	Procurement of field instruments of Gas Turbine units of LTPS. (Unit #5)	70.00	-	-	-	-	-	Units- 5&6 commissioned in 1994, hence completed useful life. Since the field instruments are proposed

S. No.	LTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
								to be purchased as spares to maintain stock level it is disallowed.
11	Procurement of field instruments and auxiliaries' motors for Gas Compressor unit # 9.	55.00	-	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
12	Up-gradation of Generators control & protection panel of 3 X 20MW, Ph-II units (1 unit in first phase) For unit # 5	-	150.00	-	-	150.00	-	The CAPEX proposed will ensure safety & reliability of the generating unit. Hence allowed
13	Procurement and installation and commissioning of 132 KV SF6 Breaker (05 nos.), spring charge mechanism along with up gradation of Control Panel.	-	350.00	-	-	350.00	-	The CAPEX proposed will ensure reliability of the generating unit. Hence allowed
14	Procurement of auxiliaries motors and field instruments for 4RDS2 Dresser-Rand Gas Compressor units #6, # 7 and #8	220.00	-	-	73.33	-	-	Units- 6 & 7 have completed useful life. Since the field instruments are proposed to be purchased as spares to maintain stock level it is disallowed for unit 6&7. Allowed for Unit 8
15	Procurement of spares for 4RDS2 Dresser-Rand Gas Compressor # 6,7 & 8.	78.00	-	-	78.00	-	-	CAPEX justified for efficient operations and hence, allowed
16	Procurement of 01 no 23" LP cylinder suitable for 4RDS2 Dresser-Rand Gas compressor unit #6, 7 or 8.	118.00	-	-	118.00	-	-	CAPEX justified for efficient operations and hence, allowed
17	Procurement of Spares for Gas Compressor Unit #9	70.00	-	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.

S. No.	LTSPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
18	Procurement, Erection, Testing and commissioning of EOT crane at Gas Compressor #9 , Capacity-10 T	45.00	-	-	-	-	-	Present arrangement may be continued
19	Procurement of Spares for Combustion Inspection of GT unit # 5 & 6	35.00	-	-	35.00	-	-	CAPEX justified for efficient operations and hence, allowed
20	Complete overhauling of one 7.5 MVA (R14) station transformers. Manufacturing year 1980	55.00	-	-	55.00	-	-	CAPEX justified for efficient operations and hence, allowed
21	Procurement of 132kV Current transformers for station transformers and bus tie bay.	46.20	-	-	46.20	-	-	CAPEX justified for efficient operations and hence, allowed
22	Procurement of 132kV Feeder Isolators.	59.40	-	-	59.40	-	-	CAPEX justified for efficient operations and hence, allowed
23	Diversion of 11 KV Colony Feeder	35.00	-	-	35.00	-	-	CAPEX proposed for minimising the outages. Hence, allowed
24	Servicing of Diverter Damper (DD) Complete & its actuator gearbox along with supply of spares	-	40.00	-	-	40.00	-	CAPEX justified for efficient operations and hence, allowed
25	Overhauling of Cooling Water Pumps (CWP) along with supply of spares.	-	30.00	-	-	30.00	-	CAPEX justified for efficient operations and hence, allowed
26	Procurement of a new Silica analyzer for SWAS.	-	12.00	-	-	12.00	-	CAPEX justified for efficient operations and hence, allowed
27	Replacement of Motor Control Centre Panel for Raw Water Intake Pump House.	-	25.00	-	-	25.00	-	CAPEX justified for efficient operations and hence, allowed
28	Procurement of field instrument for Gas Compressor Units # 6 and # 7 of LTSPS.	-	50.00	-	-	-	-	Units- 6 & 7 have completed useful life. Since the field instruments are proposed to be purchased as spares to maintain

S. No.	LTPS Proposed CAPEX	APGCL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
								stock level it is disallowed for unit 6&7.
29	Procurement of field instruments for Gas Turbine Unit # 6 of LTPS.	-	60.00	-	-	-	-	Units- 6 has completed useful life. Since the field instruments are proposed to be purchased as spares to maintain stock level it is disallowed.
30	Major overhauling of Generator transformer ,30 MVA 11/132KV of GT unit #5 and #6along with oil filtration	-	25.00	-	-	25.00	-	CAPEX justified for efficient operations and hence, allowed
31	Procurement of 05 sets of 132KV isolators for replacing the old existing isolators in phase II power house switchyard	-	50.00	-	-	50.00	-	CAPEX justified for efficient operations and hence, allowed
32	Testing and commissioning of transfer Bus of 132kV PH#II switchyard including switchyard auxiliaries.	-	40.00	-	-	40.00	-	CAPEX justified for efficient operations and hence, allowed
33	Major Overhauling of 7.5MVA 132/3.3kv Station transformer 1 &2.	-	20.00	-	-	20.00	-	CAPEX justified for efficient operations and hence, allowed
34	Renovation of Air Conditioning system of Phase-II Power Control room	-	50.00	-	-	50.00	-	CAPEX justified for efficient operations and hence, allowed
35	Procurement of spares for 4RDS2 Dresser-Rand Gas Compressor # 6,7 & 8.	-	85.00	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
36	Procurement of 01 no 13" HP cylinder suitable for 4RDS2 Dresser-Rand Gas compressor unit #6, 7 or 8.	-	58.00	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.

S. No.	LTPS Proposed CAPEX	APGCL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
								level. Reply regarding HP or LP cylinders also not given
37	Procurement of Inlet Air filter for 20 MW frave-V Gas Turbine # 6 & 7-01 set	-	15.00	-	-	15.00	-	CAPEX justified for efficient operations and hence, allowed
38	Procurement of Spares for Combustion Inspection of GT unit # 5 & 6	-	40.00	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
39	Procurement of Spares for Gas Compressor Unit #9	-	70.00	-	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
40	Modification of Hydran Point Pipe line of Fire Fighting system at PH-II power House	-	50.00	-	-	50.00	-	CAPEX justified for efficient operations and hence, allowed
41	Procurement of 33kV Current transformers.	-	20.79	-	-	20.79	-	CAPEX justified for efficient operations and hence, allowed
42	Complete overhauling of one 7.5 MVA station transformers	-	55.00	-	-	-	-	Disallowed based on submission of APGCL that work may be dropped
43	Procurement of Transformer 132kV Isolators.	-	36.30	-	-	36.30	-	CAPEX justified for efficient operations and hence, allowed
44	Procurement of 33kV Isolators.	-	28.05	-	-	28.05	-	CAPEX justified for efficient operations and hence, allowed
45	Procurement of 145kV Circuit Breaker	-	8.80	-	-	8.80	-	CAPEX justified for efficient operations and hence, allowed
46	Field Instruments of C&I	-	-	10.00	-	-	10.00	CAPEX justified for efficient operations and hence, allowed
47	Procurement of Intake Pump	-	-	25.00	-	-	25.00	CAPEX justified for efficient operations and hence, allowed
48	Up-gradation of illumination system of WHRP.	-	-	10.00	-	-	10.00	CAPEX justified for efficient operations and hence, allowed



S. No.	LTFS Proposed CAPEX	APGCL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
49	Procurement of field instruments and auxiliaries' motors for Gas Compressor unit # 9.	-	-	70.00	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
50	Modification of Firefighting system of Phase-II power house and Switchyard.	-	-	100.00	-	-	-	Query on useful life and actual life completed and whether replacement justified, before completion of useful life was not addressed, hence, disallowed
51	Procurement , erection, testing and commissioning of High Mast Tower for illumination in the entire Ph-II Power House and Switchyard area. 4 (Four) No.s	-	-	60.00	-	-	60.00	CAPEX justified for efficient operations and hence, allowed
52	Procurement of Spares for Gas Compressor Unit #9	-	-	70.00	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
53	Procurement of spares for Ingersoll rand Instrument Air Compressor # 1, 2 & 3	-	-	5.00	-	-	5.00	CAPEX justified for efficient operations and hence, allowed
54	Procurement of Inlet Air filter for 20 MW frave-V Gas Turbine #5 , 6 & 7 - 01 Set	-	-	35.00	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
55	Procurement of Spares for Combustion Inspection of GT unit # 5 & 7	-	-	45.00	-	-	-	Disallowed as APGCL has not submitted the Present status of spares vis-à-vis prudent spares level.
56	Procurement of fan blade Assembly for 4DRS2 Dresser - Rand Heat exchanger of Gas Compressor #6, 7 or 8.(02 set)	-	-	35.00	-	-	35.00	CAPEX justified for efficient operations and hence, allowed

S. No.	LTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
57	Inspection servicing and maintenance of 4RDS2 Gas compressor #8 by OEM Dresser-Rand	-	-	10.00	-	-	10.00	CAPEX justified for efficient operations and hence, allowed
58	Inspection servicing and maintenance of Gas compressor #9 by OEM	-	-	10.00	-	-	-	After completion of last major restoration work in 22-23, not completing 3 years in FY 24-25. Hence, disallowed
59	Procurement of one 500KVA 33/0.4kV transformer.	-	-	7.70	-	-	7.70	CAPEX justified for efficient operations and hence, allowed
60	Procurement of testing and safety equipment.	-	-	50.00	-	-	-	Present arrangement may be continued
61	Procurement of Transformer oil filtration machine	-	-	35.20	-	-	35.20	CAPEX justified for efficient operations and hence, allowed
62	Procurement of one 2.5 MVA 33/11 KV Transformer.	-	-	35.00	-	-	35.00	CAPEX justified for efficient operations and hence, allowed
63	Procurement of Switchyard and Colony equipment for renovation and upgradation of existing old system	-	-	30.00	-	-	30.00	CAPEX justified for efficient operations and hence, allowed
<b>B</b>	<b>Civil Work for LTPS</b>							
64	Layout of LTPS Plant with supply of all proper drawings	6.00	-	-	6.00	-	-	CAPEX proposed for civil work is justified and hence, allowed
65	Deep tube well water supply system inside the power plant at LTPS, Maibella (Including boring, supplying, and fitting of pump set up with all pipeline and fittings, construction of filter chamber and supply of all filter materials.)	55.00	-	-	55.00	-	-	CAPEX proposed for civil work is justified and hence, allowed
66	Construction of paver block road from main road in front of army canteen to newly constructed multi	25.00	-	-	25.00	-	-	CAPEX proposed for civil work is justified and hence, allowed

S. No.	LTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
	storied building inside LTPS residential colony.							
67	Roof treatment of cooling water pump house panel room of WHRP at power plant of LTPS	1.50	-	-	1.50	-	-	CAPEX proposed for civil work is justified and hence, allowed
68	Construction of LTPS main gate	10.00	-	-	10.00	-	-	CAPEX proposed for civil work is justified and hence, allowed
69	Repairing of Switchyard stored at power plant at LTPS	8.00	-	-	8.00	-	-	CAPEX proposed for civil work is justified and hence, allowed
70	Renovation of children park and construction of surrounding drain along with cover slabs at LTPS, Maibella	20.00	-	-	20.00	-	-	CAPEX proposed for civil work is justified and hence, allowed
71	Development and repairing of roads inside LTPS residential colony.	15.00	15.00	15.00	15.00	15.00	15.00	CAPEX proposed for civil work is justified and hence, allowed
72	Repairing of quarters at LTPS residential colony.	30.00	30.00	30.00	30.00	30.00	30.00	CAPEX proposed for civil work is justified and hence, allowed
73	Renovation of water supply pipelines and all fittings at LTPS residential colony and Power Plant	10.00	10.00	10.00	10.00	10.00	10.00	CAPEX proposed for civil work is justified and hence, allowed
74	Repairing of water pump house building, development of surrounding areas of water supply system of LTPS	7.00	7.00	7.00	7.00	7.00	7.00	CAPEX proposed for civil work is justified and hence, allowed
75	Supplying of filter chamber material of LTPS	8.00	8.00	8.00	8.00	8.00	8.00	CAPEX proposed for civil work is justified and hence, allowed
76	Development of boundary walls around LTPS Colony	20.00	20.00	20.00	20.00	20.00	20.00	CAPEX proposed for civil work is justified and hence, allowed
77	Renovation of Erector's Hostel at LTPS	15.00	15.00	15.00	15.00	15.00	15.00	CAPEX proposed for civil work is justified and hence, allowed
78	Providing of boundary fencing for the residential quarters of LTPS	20.00	20.00	20.00	20.00	20.00	20.00	CAPEX proposed for civil work is justified and hence, allowed

S. No.	LTPS Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
79	Repairing of Administrative office building of LTPS	15.00	15.00	15.00	15.00	15.00	15.00	CAPEX proposed for civil work is justified and hence, allowed
	<b>Total (In Lakhs)</b>	<b>1,802.10</b>	<b>1,648.94</b>	<b>967.90</b>	<b>1,366.83</b>	<b>1,230.94</b>	<b>587.90</b>	
<b>C</b>	ERP implementation and consultancy services	626.00	139.00	140.00	626.00	139.00	140.00	CAPEX justified and hence, allowed
	<b>Total CAPEX proposed for LTPS</b>	<b>2,428.10</b>	<b>1,787.94</b>	<b>1,107.90</b>	<b>1,992.83</b>	<b>1,369.94</b>	<b>727.90</b>	

**Capital Investment Plan for LRPP (Rs. Lakh)**

S. No.	LRPP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
<b>A</b>	<b>R&amp;M Proposed for LRPP</b>							
	<b>For Electromechanical work</b>							

S. No.	LRPP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
1	LED illumination for LRPP powerhouse	20.00	-	-	-	-	-	LRPP plant is very new and APGCL should have installed energy efficient lighting system upfront. Life of earlier lighting system won't be over. No need to replace such recently installed lighting system, hence, disallowed
2	Procurement of 11 KV and 3.3 KV VCB Breaker	-	50.00	-	-	25.00	-	APGCL proposed to procure 2 nos. of 11 KV (1250 Amps) VCB and 2 nos. of 11 KV VCB Breaker (3150 Amps) as a spares. However, one set of spares is sufficient; hence, second set of proposed spares disallowed
	<b>Civil Work for LRPP</b>							
3	Deep tube well water supply system for to support the river water supply system at LTPS, Maibella. (including boring, supplying and fitting of pump set up with all pipeline and fittings)	35.00	-	-	35.00	-	-	CAPEX justified for water supply system and hence, allowed
4	Water supply pipeline and reservoir for the newly constructed multi-storeyed building at LTPS.	20.00	20.00	20.00	20.00	20.00	20.00	CAPEX justified for water supply system and hence, allowed
5	Development and repairing of roads inside LTPS residential colony.	10.00	10.00	10.00	10.00	10.00	10.00	CAPEX justified for development and repairing of roads inside LTPS residential colony and hence, allowed
	<b>Total R&amp;M Proposed (In Lakhs)</b>	<b>85.00</b>	<b>80.00</b>	<b>30.00</b>	<b>65.00</b>	<b>55.00</b>	<b>30.00</b>	

S. No.	LRPP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
B	ERP implementation and consultancy services	449.00	100.00	101.00	449.00	100.00	101.00	CAPEX justified and hence, allowed
	<b>Total CAPEX proposed for LRPP</b>	<b>534.00</b>	<b>180.00</b>	<b>131.00</b>	<b>514.00</b>	<b>155.00</b>	<b>131.00</b>	

**Capital Investment Plan for KLHEP (Rs. Lakh)**

S. No.	KLHEP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
<b>A</b>	<b>R&amp;M Proposed for KLHEP</b>							
	<b>Electromechanical Work for KLHEP</b>							
1	Spare for Inspection & Repairing of KLHEP units	40.00	40.00	40.00	40.00	40.00	40.00	CAPEX justified and hence, allowed
2	Repairing of 220 KV GTR/33 KV DTR/ 11 KV DTR/ LT DTR	100.00	100.00	100.00	-	-	-	CAPEX proposed disallowed since repairing of DTR should come under Repair & Maintenance, not Capex
3	Replacement of Broken Cable Tray in 220 KV Switchyard area.	20.00	20.00	20.00	20.00	20.00	20.00	CAPEX justified and hence, allowed
4	Renovation of Runner for 51MW Francis type vertical shaft Turbine of KLHEP	-	-	500.00	-	-	500.00	CAPEX for Runner is justified and hence, allowed
5	Replacement of SF6 Breakers, CT's, PT's, Isolators etc. of 220KV Switchyard at KLHEP	1,000.00	-	-	1,000.00	-	-	CAPEX justified and hence, allowed
6	Energy Meter for Office cum Guest House and Staff Quarter at Lengery.	30.00	-	-	5.15	-	-	Proposed CAPEX for Single Phase Static Energy Meter 89 Nos. and Three Phase Static Energy Meter 14 Nos at the rate of Rs. 22,274 per meter. Since cost per meter is very high; considered cost Rs. 5000 per meter
7	Marshalling Panel for 21MVA Generator Transformer	65.00	-	-	65.00	-	-	The Marshalling panel was obtained in the year 1983 and now it is required to be replaced. Hence, allowed
8	3-Phase, 750KVA, 11/0.43KV Transformer used as Unit Auxiliary Transformer (UAT)	25.00	-	-	25.00	-	-	For the smooth functioning of the 2x50 MW KLHEP plant, there is requirement for procuring of 1 no. of 3 Phase, 750 KVA, 11/0.43KV Transformer. Hence, allowed

S. No.	KLHEP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
9	Design, Supply and installation & Commissioning of extension in the existing 33 KV outdoor Switchyard for Power evacuation from 13.5 MW MSHEP and Station auxiliary power supply to 2X50 MW KLHEP Power house and Project Area	250.00	-	-	250.00	-	-	Outdoor switchyard will reduce the constraint of power evacuation and strengthen the 33KV LT network which is very important for smooth running of the plant. Hence, allowed
10	CO2 Fire Protection for both the 50 MW Generator of KLHEP	40.00	-	-	40.00	-	-	CAPEX proposed for fire protection for heavy Electrical Equipment's which is very necessary for the safety of the equipment. Hence, allowed
11	Silent 500KVA DG set for Power House	-	65.00	-	-	65.00	-	CAPEX proposed for new DG set required for smooth operation of KLHEP. Hence, allowed
12	Mobile crane with 360 base rotational and lifting capacity of 20 Ton	-	180.00	-	-	180.00	-	CAPEX proposed for new mobile crane with 360 base rotational and lifting capacity of 20 Ton which is required for the smooth functioning of the KLHEP. Hence, allowed
13	Renovation and Refurbishment of 130T EOT Crane with redesigned control system.	-	60.00	-	-	60.00	-	CAPEX proposed for renovation of the EOT crane which is necessary. Hence, allowed
14	Replacement of all 2X50 Mw Generator Control and Relay Panel	-	350.00	-	-	350.00	-	To enhance reliability and sensitivity of the system a very dynamic and state of art modernized digital control and protection system for both the units is to be installed. Hence, allowed
15	Cooling water supply system for Generator Turbine and Transformer	-	150.00	-	-	150.00	-	Installation of cooling water will reduce the downtime of force unit shutdown and in turn will increase the generation. Hence, allowed



S. No.	KLHEP Proposed CAPEX	APGCL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
16	Replacement of existing FCB with Trip Coil monitoring provision for 50MW Unit-1	-	200.00	-	-	-	-	APGCL has not installed the FCB of unit-2. First APGCL should install the FCB ordered in 2015 (it is 7 years now). The need for another FCB for Unit 1 may be assessed later. Hence, disallowed
17	Design, Supply and installation & Commissioning Bay Extension in the existing 220KV KLHEP Switchyard for ideal Charging of 16 MVA Bharat Bijlee make 220/33KV transformer.	-	-	100.00	-	-	100.00	CAPEX for Bay Extension is justified and hence, allowed
18	Roof Top Solar Power For KLHEP	-	-	95.00	-	-	95.00	CAPEX proposed for roof top solar to meet full lighting load demand of Power House and also to power up battery bank system. Hence, allowed
19	Upgradation of Transformer capacity and substation at KLHEP Lengery	-	-	75.00	-	-	75.00	CAPEX is justified and hence, allowed
	<b>Civil Work for KLHEP</b>							
20	TOE wall for all benches at excavated area, drains for all benches, riverbank, protection at upstream left bank, site clearance at Dam gallery etc	200.00	-	-	200.00	-	-	CAPEX for civil work is justified and hence, allowed
21	Roof leakage treatment, Boundary wall and fencing, painting of penstock pipes, checking of penstock welding joints etc	40.00	-	-	40.00	-	-	CAPEX for civil work is justified and hence, allowed
22	Railing for protection around security rest room, toilets or urinals etc	15.00	-	-	15.00	-	-	CAPEX for civil work is justified and hence, allowed

S. No.	KLHEP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
23	Repairing of filing pot holes for bitumeneous road from Amtreng to Hatidubi Dam, road from zero point to powerhouse etc	30.00	-	-	30.00	-	-	CAPEX for civil work is justified and hence, allowed
24	Chain link fencing around the premises, repairing of old civil store at Amtreng etc	20.00	-	-	20.00	-	-	CAPEX for civil work is justified and hence, allowed
25	Colony road, quarter repairing, construction of new multi story residential building etc	170.00	-	-	170.00	-	-	CAPEX for civil work is justified and hence, allowed
26	Renovation of tunnel for spalling areas at various locations of tunnel during impounding or machine over hauling	20.00	-	-	20.00	-	-	CAPEX for civil work is justified and hence, allowed
27	Security barrack, staircase or permanent foot bridge, hydraulic oil for powerpack, painting of radial gates, drain at quarry no. 1&2 etc	-	150.00	-	-	150.00	-	CAPEX for civil work is justified and hence, allowed
28	Painting of powerhouse, maintenance of anchor blocks and saddles etc	-	35.00	-	-	35.00	-	CAPEX for civil work is justified and hence, allowed
29	Repairing of security rest room, chain link fencing, around the premise etc	-	25.00	-	-	25.00	-	CAPEX for civil work is justified and hence, allowed
30	Side drain along with Bituminous roads from zero point to Hatidubi Dam, cattle bridge, retaining walls etc	-	300.00	-	-	300.00	-	CAPEX for civil work is justified and hence, allowed
31	Boundary wall around the premises, repairing of old electromechanical store etc	-	50.00	-	-	50.00	-	CAPEX for civil work is justified and hence, allowed
32	New water supply system, water treatment plant etc	-	50.00	-	-	50.00	-	CAPEX for new water supply system is justified and hence, allowed

S. No.	KLHEP Proposed CAPEX	APGECL Proposal (Rs. Lakh)			Approved by Commission (Rs. Lakh)			Remark
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2022-23	FY 2023-24	FY 2024-25	
33	Renovation of tunnel for spalling areas at various locations of tunnel during impounding or machine overhauling	-	20.00	20.00	-	20.00	20.00	CAPEX for civil work is justified and hence, allowed
34	Construction of new bituminous road at 3-new stretches, bamboo palisading for slope protection, plantation along the newly excavated areas etc	-	-	200.00	-	-	200.00	CAPEX for civil work is justified and hence, allowed
35	Repairing and construction of new drain where required along the penstock pipelines etc	-	-	60.00	-	-	60.00	CAPEX for civil work is justified and hence, allowed
36	Water supply system for valve house, beautification valve house etc	-	-	30.00	-	-	15.00	Expenses on beautification not considered necessary. Since exact breakup is not provided, 50% cost disallowed
37	Cattle bridges, box culverts, retaining walls for hill slope protection at required locations etc	-	-	40.00	-	-	40.00	CAPEX for civil work is justified and hence, allowed
38	Construction of new watch tower at electromechanical store etc	-	-	10.00	-	-	10.00	CAPEX for civil work is justified and hence, allowed
39	Beautification of office campus, colony front and back entrance gate, office buildings, Guest house etc	-	-	20.00	-	-	-	Expenses not considered necessary; hence, disallowed
	<b>Total R&amp;M Proposed (In Rs. Lakh)</b>	<b>2,065.00</b>	<b>1,795.00</b>	<b>1,310.00</b>	<b>1,940.15</b>	<b>1,495.00</b>	<b>1,175.00</b>	
<b>B</b>	ERP implementation and consultancy services	644.00	143.00	144.00	644.00	143.00	144.00	CAPEX justified and hence, allowed
	<b>Total CAPEX proposed for KLHEP</b>	<b>2,709.00</b>	<b>1,938.00</b>	<b>1,454.00</b>	<b>2,584.15</b>	<b>1,638.00</b>	<b>1,319.00</b>	

