ASSAM ELECTRICITY REGULATORY COMMISSION

(AERC)

TARIFF ORDER

March 01, 2019

Lakwa Replacement Power Project (LRPP)

Approval of Capital Cost,
APR for FY 2018-19,
ARR for Control Period from FY 2019-20 to FY 2021-22 and Tariff for FY 2019-20

Assam Power Generation Corporation Limited (APGCL)

Petition No.18/2018

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List of Abbreviations

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

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

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

ASSAM ELECTRICITY REGULATORY COMMISSION

Guwahati

Present

Shri Subhash Ch. Das, Chairperson

Shri Dipak Chakravarty, Member

Petition No. 18/2018

Assam Power Generation Corporation Limited (APGCL) - Petitioner

ORDER

(Passed on March 01, 2019)

(1) APGCL filed Petition for approval of Capital Cost, Annual Performance Review (APR) for FY 2018-19, approval of Aggregate Revenue Requirement (ARR) for Control Period from FY 2019-20 to FY 2021-22 and determination of Tariff for FY 2019-20 for Lakwa Replacement Power Project (LRPP) on December 10, 2018. The same was registered as Petition No 18/2018.

(2) The Commission held an Admissibility Hearing on December 20, 2018 and admitted the Petition (Petition No.18/2018) vide Order dated December 20, 2018, with directions to submit additional data and clarifications, as the Commission on preliminary analysis found that the Petition was incomplete in material particulars. Accordingly, additional data and clarifications on the Petitions were sought from APGCL vide letter dated December 19, 2018.

(3) 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 ensure due public participation. A copy of the Petition and other relevant documents were also made available to the consumers and other interested Parties at the office of the Managing Director of APGCL. A copy of the Petition was also made available on the websites of the Commission and APGCL.

(4) Accordingly, a Public Notice was issued by the APGCL inviting objections/suggestions from objectors to be submitted on or before January 12, 2019.

The notice was published in four (4) leading newspapers of the State on December 22, 2018.

Date	Name of Newspaper	Language
22.12.2018	The Assam Tribune	English
	Dainik Axom	Assamese
	Purbanchal Prahari	Hindi
	Dainik Jugasankha	Bengali

(5) In reply to the queries raised by the Commission vide letter dated December 19, 2018, APGCL submitted their reply on December 31, 2018

(6) The Petitions were discussed in the meeting of the State Advisory Committee (SAC) held on February 5, 2019 at Assam Administrative Staff College, Khanapara, Guwahati.

(7) The Commission did not receive any written suggestions/objections from the stakeholders on the Petition filed by APGCL. A News Paper notice was also published inviting participation from the General Public as well as the Respondents. The public was notified about the place, date and time of Hearing to enable them to take part in the hearing to be held at Assam Administrative Staff College, Khanapara, Guwahati on February 12, 2019. The Hearing was held as scheduled. The details are discussed in the relevant Chapters of this Tariff Order.

(8) The Commission, now in exercise of its powers vested under Sections, 61, 62, 86 and 181of 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 objectors and all other relevant materials on record, has carried out the approval of Capital Cost, Annual Performance Review (APR) for FY 2018-19, Aggregate Revenue Requirement (ARR) for Control Period from FY 2019-20 to FY 2021-22 and determination of Tariff for FY 2019-20 for Lakwa Replacement Power Project (LRPP) as detailed in subsequent Chapters of this Order.

(9) The approved Generation Tariff shall be effective from April 1, 2019 and shall continue until replaced by another Order by the Commission.

(10) Accordingly, the Petition 18/2018 stands disposed of.

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

1 Introduction

1.1 Constitution of the Commission

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

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

1.2 Tariff related Functions of the Commission

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

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

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

a) The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;
b) That the electricity generation, transmission, distribution and supply are conducted on commercial principles;
c) That factors which would encourage efficiency, economical use of the resources, good performance, optimum investments, and other matters which the State commission considers appropriate for the purpose of this Act;
d) The interests of the consumers are safeguarded and at the same time, the consumers pay for the use of electricity in a reasonable manner based on their customer category cost of supply;

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

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

1.3 Background

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

1.4 Multi Year Tariff Regulations, 2015

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

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

1.4.3 Regulation 10 of the MYT Regulations, 2015, as amended in November 2017, specifies that the Commission shall undertake the APR and True-up for the respectiveyears of the Control Period from FY 2016-17 to FY 2018-19.

1.5 Multi Year Tariff Regulations, 2018

1.5.1 The Commission, in exercise of the powers conferred under Section 61 read with Section 181(2) (zd) of the Act, has notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2018 (herein after referred as "MYT Regulations, 2018") on June 28, 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. 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, 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:

(i) 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 41.4 of the MYT Regulations, 2015, APGCL filed a Petition for approval of provisional tariff for LRPP on September 26, 2017. The approved Provisional Tariff for LRPP for FY 2018-19 vide its Order dated March 19, 2018.

1.6.2 APGCL has now filed Petition for approval of Capital Cost, Annual Performance Review (APR) for FY 2018-19, approval of Aggregate Revenue Requirement (ARR) for Control Period from FY 2019-20 to FY 2021-22 and determination of Tariff for FY 2019-20 for Lakwa Replacement Power Project (LRPP) on December 10, 2018. The same was registered as Petition No 18/2018.

1.6.3 The Commission held an Admissibility Hearing on December 20, 2018 and admitted the Petition (Petition No.18/2018) vide Order dated December 20, 2018, with directions to submit additional data and clarifications, as the Commission on preliminary analysis found that the Petition was incomplete in material particulars. Accordingly, additional data and clarifications on the Petitions were sought from APGCL vide letter dated December 19, 2018.

1.6.4 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 ensure due public participation. A copy of the Petition and other relevant documents were also made available to the consumers and other interested Parties at the office of the Managing Director of APGCL. A copy of the Petition was also made available on the websites of the Commission and APGCL.

1.6.5 Accordingly, a Public Notice was issued by the APGCL inviting objections/suggestions from objectors to be submitted on or before January 12, 2019. The notice was published in four (4) leading newspapers of the State on December 22, 2018.

Date	Name of Newspaper	Language
22.12.2018	The Assam Tribune	English
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1.6.6 In reply to the queries raised by the Commission vide letter dated December 19, 2018, APGCL submitted their reply on December 31, 2018

1.6.7 The Commission also sought details of Power Purchase Agreement (PPA) between APDCL and APGCL. In this regard, APGCL submitted the Power Purchase Agreement dated September 24, 2018, wherein supply of power from 69.76 MW of LRPP has been indicated. Clause 5 of the PPA indicates that tariff for the electricity supplied from Station would be as determined by the Commission from time to time

1.6.8 The Commission did not receive any written suggestions/objections from the stakeholders on the Petition filed by APGCL. A News Paper notice was also published inviting participation from the General Public as well as the Respondents. The public was notified about the place, date and time of Hearing to enable them to take part in the hearing to be held at Assam Administrative Staff College, Khanapara, Guwahati on February 12, 2019. The Hearing was held as scheduled. The details are discussed in the relevant Chapters of this Tariff Order.

1.7 State Advisory Committee Meeting

1.7.1 A meeting of the State Advisory Committee (SAC) (constituted under Section 87 of the Act) was convened on February 5, 2019.During the SAC meeting, AEGCL, APGCL and APDCL made presentations on their respective MYT Petitions filed for FY 2019-20 to FY 2021-22.

1.7.2 The minutes of the SAC meeting are appended to this order as **Annexure 1.**

2 Approval of Capital Cost for LRPP

2.1 Background

2.1.1 Lakwa Thermal Power Station (LTPS) had installed capacity of 157.2 MW consisting of seven gas turbine Units and one waste heat recovery unit. Out of these, three Units have capacity of 20 MW each, four Units have capacity of 15 MW each and Waste Heat Recovery Unit has capacity of 37.2 MW. Of the four nos. of 15 MW Units operating in open cycle, three were commissioned in 1980-81, one was commissioned in 1986 and Waste Heat Recovery Unit was commissioned in FY 2011-12. One Unit of 15 MW was decommissioned in January 1, 2017, making the current installed capacity of LTPS as 142.2 MW.

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

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

2.1.4 Lakwa Replacement Power Project (LRPP) was planned under Assam Power Sector Investment programme (MFF-II) of Asian Development Bank (ADB) for arranging fund (90% as Grant and 10% as Term Loan). The loan agreement was signed between ADB, GOI and GoA on February 20, 2015. The equity part of the Project was funded by GoA. The Letter of Award for execution of the project was issued to the consortium of Wartsila India Pvt. Ltd and Wartsila Finland on December 11, 2015 through process of competitive bidding, and the Contract Agreement was signed on January 19, 2016 and Zero Date started from March 9, 2016. The Project was commissioned on April 26, 2018.

2.2 Approval of Provisional Tariff

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

2.2.2 The Commission vide Order dated March 19, 2018 had determined the provisional tariff for FY 2018-19 as under:

Table 1: Provisional Tariff for FY 2018-19 for LRPP as approved by the Commission

Particulars	FY 2018-19
Annual Fixed Charges (Rs. Crore)	27.56
Monthly Fixed Charges (Rs. Crore)	2.30
Energy Charges (Rs./kWh)	1.50

2.3 Present Petition

2.3.1 The Regulation 29 of MYT Regulations, 2015 specifies the provision for approval of the capital cost of the project as under:

"29 Capital Cost and capital structure

29.1 Capital cost for a project shall include:

a. the expenditure incurred or projected to be incurred upto the date of commercial operation of the project, any gain or loss on account of foreign exchange risk variation on the loan during construction up to the date of commercial operation of the project, as admitted by the Commission, after prudence check

b. Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed

c. Increase in cost in contract packages as approved by the Commission;

d. Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 30.8 of these regulations

e. capitalised initial spares subject to the ceiling rates specified in this Regulation; and

f. additional capital expenditure or de-capitalization determined under Regulation 30

g. Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 46 of these regulations; and
h. Adjustment of any revenue earned by the transmission licensee by using the assets before COD.
i. the capital cost admitted by the Commission prior to 1.4.2016 duly trued up by excluding liability, if any, as on 1.4.2016
j. expenditure on account of renovation and modernization as admitted by this Commission in accordance with regulation 30.5

Provided that the cost of the common assets forming part of the project, should be considered based on the suitable allocation and such allocated cost shall form part of the capital cost:
Provided that the assets forming part of the project, but not in use, shall be taken out of the capital cost:
29.2 The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:"

2.3.2 Accordingly, APGCL in the present Petition, prayed for approval of Capital cost of Rs. 268.21 Crore for LRPP.

2.4 Commissioning of LRPP

2.4.1 APGCL submitted that LRPP was commissioned on April 26, 2018.

Commission's Analysis

2.4.2 The Commission sought the necessary documentary evidences for confirming the date of commissioning of LRPP, which were submitted by APGCL.

2.4.3 **In view of the above, the Commission has considered Date of Commercial Operation (COD) of LRPP as April 26, 2018 for the purpose of approval of capital cost and final Tariff.**

2.5 Approval of Capital Cost

2.5.1 APGCL submitted the project cost and capital expenditure as on Date of Commercial Operation (COD) along with Auditor's certificate as shown in the following Table:

Table 2: Capital Expenditure as on COD for LRPP as submitted by APGCL

Particulars	Revised Total Project Cost (Rs. Crore)	Expenditure as on COD (Rs. Crore)
Civil Works	21.22	21.22
Plant and Machinery	246.99	224.65
Total	**268.21**	**245.87**

2.5.2 Further, APGCL submitted that funds received from ADB has been considered at 90:10 Grant:Loan ratio. The funding of the above capital expenditure is shown in the following Table:

Table 3: Funding of Capital Expenditure as on COD for LRPP as submitted by APGCL (Rs. Crore)

Particulars	Revised Total Project Cost	Expenditure as on COD
ADB Grant	213.98	202.55
Government of Assam Loan	1.53	1.31
ADB Loan	23.78	22.51
Government of Assam Equity	28.92	19.50
Total	**268.21**	**245.87**

Foreign Exchange Risk Variation

2.5.3 APGCL submitted that, as per regulation 29.1 (a) of MYT Regulations, 2015, any loss or gain on account of Foreign exchange risk variation will form part of the capital cost for the plant. The impact on account of Foreign exchange risk variation is as shown below:

Table 4: FERV impact for LRPP as submitted by APGCL (Rs. Crore)

Particulars	
Euro to INR conversion considered during bidding	1 EURO = 68.66 INR
EURO Payment done upto COD	EURO 1.80 Crore
INR Amount as per rate considered during bidding	Rs. 123.72 Crore
Actual INR amount paid	Rs. 130.41 Crore
FERV Loss upto COD	Rs. 6.69 Crore

2.5.4 APGCL further submitted that FERV loss upto COD has already been considered as part of the capital cost. Further, payment of around Euro 20 lakhs is pending to the EPC contractor, the actual impact of FERV on such payment will be claimed on actuals during True-up of FY 2018-19.

Interest during Construction (IDC)

2.5.5 APGCL submitted that IDC is allowed as part of the capital cost of the project as per Regulation 30.8 of MYT Regulations, 2015. APGCL submitted the IDC of Rs. 3.19 Crore upto COD, which has been considered as part of Capital cost as on COD.

Cost of Fuel pertaining to Generation before COD

2.5.6 APGCL submitted that Rs. 6.70 Crore was billed to APDCL towards fuel consumed before COD. The details of the same are shown below:

Table 5: Fuel Cost before COD as submitted by APGCL (Rs. Crore)

Month	Gross Generation (MU)	Gas Consumption (MMSCM)	Rate (Rs. /1000 SCM)	Total Cost (Rs.)
February, 2018	1.86	0.43	6057	26,28,471.34
March, 2018	21.62	5.04	6658	3,35,70,193.54
April, 2018 (upto 25 April, 2018)	19.04	4.47	6888	3,08,17,147.68
Grand Total	**42.52**	**9.95**		**6,70**

2.5.7 In view of the above, APGCL summarized the capital cost as on COD as shown in the following Table:

Table 6: Capital Cost as on COD for LRPP as submitted by APGCL (Rs. Crore)

Particulars	As on COD
Hard Cost	218.07
Interest During Construction	3.19
Overhead Cost	4.22
Initial Spares	20.39
Grand Total	**245.87**

Additional Capital expenditure

2.5.8 APGCL submitted that the additional expenditure post COD is as per Regulation 30 of MYT Regulations, 2015, which is reproduced as under:

"30 Additional capitalization and de-capitalization

30.1 The following capital expenditure, actually incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial *operation and up to the cut-off date may be admitted by the Commission, subject to the prudence check.*

a. Undischarged liabilities recognized to be payable at a future date;

b. Works deferred for execution;

c. Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 29.5;

d. Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

e. Change in law or compliance of any existing law:

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff."

2.5.9 APGCL submitted that the expenditure to be undertaken post COD of LRPP is within the original scope of work and these were either works deferred for execution or un-discharged liabilities recognized to be payable at a future date. APGCL submitted the following additional capital expenditure post COD of LRPP, but excluding gain/ (loss) of FERV:

Table 7: Additional Capital expenditure as submitted by APGCL (Rs. Crore)

Particulars	FY 2018-19
Additional Capital expenditure post COD	22.34

2.5.10 APGCL prayed to the Commission to approve the additional capitalization planned in FY 2018-19.

Commission's Analysis

2.5.11 Regulation 29.1 of MYT Regulations, 2015 specifies the provisions related to Capital Cost and Capital structure, which is reproduced as under:

"29 Capital Cost and capital structure

29.1 Capital cost for a project shall include:

a) the expenditure incurred or projected to be incurred upto the date of commercial operation of the project, any gain or loss on account of foreign exchange risk variation on the loan during construction up to the date of commercial operation of the project, as admitted by the Commission, after prudence check

b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to *the actual amount of loan in the event of the actual equity less than 30% of the funds deployed*

c) Increase in cost in contract packages as approved by the Commission;

d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 30.8 of these regulations

e) capitalised initial spares subject to the ceiling rates specified in this Regulation; and

f) additional capital expenditure or de-capitalization determined under Regulation 30

g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 46 of these regulations; and

h) Adjustment of any revenue earned by the transmission licensee by using the assets before COD.

i) the capital cost admitted by the Commission prior to 1.4.2016 duly trued up by excluding liability, if any, as on 1.4.2016

j) expenditure on account of renovation and modernization as admitted by this Commission in accordance with regulation 30.5

Provided that the cost of the common assets forming part of the project, should be considered based on the suitable allocation and such allocated cost shall form part of the capital cost:

Provided that the assets forming part of the project, but not in use, shall be taken out of the capital cost:"

2.5.12 The Commission sought the break of Total Capital cost submitted by APGCL . APGCL submitted the following break-up of the capital cost:

Table 8: Break-up of Capital Cost as submitted by APGCL

Sr. No.	Particulars	Project Cost (Rs. Crore)
1	Hard Cost	240.41
2	Interest During Construction	3.19
3	Overhead Cost	4.22
4	Initial Spares	20.39
5	**Grand Total**	**268.21**

2.5.13 The Commission notes that APGCL has submitted the Auditor's Certificate dated December 6, 2018, for Capital expenditure incurred upto COD. The capital expenditure incurred till COD is shown as Rs. 245.87 Crore in Auditor's Certificate. This includes capital expenditure of Rs. 24.62 Crore incurred in FY 2015-16, Rs. 105.71 Crore incurred in 2016-17, Rs. 112.35 Crore incurred in FY 2017-18 and IDC of Rs. 3.19 Crore.

2.5.14 Further, the Commission notes that project was funded by ADB in ratio of Grant and loan of 90:10. APGCL issued letter of award for execution of project to consortium of Wartsila India Pvt. Ltd and Wartsila Finland on December 11, 2015. Subsequently, the Contract agreement was signed on January 19, 2016. The Commission asked APGCL as to how least cost principles was ensured in awarding the contract for execution of the project. APGCL submitted that it has ensured the least cost principle as project was awarded after competitive bidding. The Commission has verified documents submitted by APGCL i.e., Bid evaluation report, Copy of Notification of Award and Contract Agreement.

2.5.15 Further, the Commission observes that contract includes price of EURO 2,0021,690 for offshore supply by Wartsila Finland and Rs. 95,63,25,089 for onshore supply and services by Wartsila India (Pvt.) Ltd. These prices are exclusive of taxes and duties. Also, there are clauses for price escalation for sales of goods, installation and other services and Civil Services contract.

2.5.16 Further, it is noted that EPC cost of project is funded by ADB. For meeting the other expenses, loan and equity has been funded by Government of Assam. The Commission sought copies of loan agreements with Government of Assam. APGCL submitted that the approval of Public Investment Board (PIB) was obtained for DPR (revision 1) with equity component for Rs. 73.14 Crore. This equity component was to cover works and custom duty, excise duty and other taxes. However, APGCL learnt that it will get a waiver as per rules for custom duty and excise duty as LRPP is an externally aided project (ADB). Based on the above, a revised DPRwas prepared with an equity component of Rs. 28.92 crore. The loan amount of Rs. 1.53 Crore was disbursed before FY 2013-14and equity amount of Rs. 28.92 Crore was disbursed during FY 2016-17 and FY 2017-18.

2.5.17 In view of the above, for the purpose of approval of capital cost as on COD, the Commission approves the actual Hard cost inclusive of cost of EPC (domestic and foreign component), taxes and duties of Rs. 218.07 Crore

Foreign Exchange Risk Variation

2.5.18 As regards FERV, MYT Regulations, 2015 specifies that any gain or loss on account of FERV on the load during construction upto COD shall be part of capital cost. APGCL has proposed FERV loss of Rs. 6.69 Crore after taking into account the actual payment made of Rs.130.41 Crore as against Rs. 123.72 Crore considered during the bidding. The Commission notes that EURO to INR exchange rate of 68.88

has been considered during the bidding. However, the actual exchange rate varies during the construction period of the project. The Commission sought details of date-wise payment made in Euro upto COD and prevalent exchange rates as on date of payment of each tranche. The computation of actual payment made after considering the prevailing exchange rate is shown in the following Table:

Table 9: Impact of FERV as on COD

Sr. No.	Date	Amount in EURO	Exchange Rate	Amount in INR
1	January 28, 2016	20,02,169	74.06	14,82,82,839
2	December 28, 2016	1,40,15,183	72.32	1,01,35,96,254
3	April 19, 2017	6,14,335	69.19	4,25,06,760
4	May 18, 2017	7,93,048	71.62	5,67,99,208
5	June 13, 2017	5,94,786	72.15	4,29,11,728
	Grand Total	**1,80,19,521**		**1,30,40,96,789**

2.5.19 From the above table, it is noted that the actual payment made in EURO has been converted to INR on the date of payment with the applicable exchange rate. The actual payment made has been computed as Rs. 130.41 Crore. However, APGCL has considered an amount of Rs. 123.72 Crore in EPC contract based on exchange rate at the time of bidding. Accordingly, the Commission has determined the FERV loss of 6.69 Crore and the same has been allowed in capital cost of the project. Further, APGCL clarified that no hedging cost has been considered on such foreign loan component.

2.5.20 Further, any loss/(gain) on account of FERV towards the pending payment shall be considered at time of truing up for the respective years.

Interest during Construction (IDC)

2.5.21 The Commission observes that APGCL has claimed IDC of Rs. 3.19 Crore. In reply to the query of the Commission, APGCL submitted that the estimated COD was April 30, 2018 as considered in the tariff order dated March 19,2018. IDC considered in original project cost is Rs. 3.52 crore. There has been no delay in COD of the project with respect to tariff order dated March 19, 2018. Due to prudent phasing of funds, IDC was less than the projected IDC and the project got commissioned before the estimated COD.

2.5.22 The Commission notes that LRPP has achieved COD on April 26, 2018. The

Commission sought details of chronology of events for commissioning of LRPP, which was submitted by APGCL as under:

Table 10: Chronology of events for LRPP Schedule

Sr. No.	Particulars	Date
1	Investment approval by Board of APGCL	21-06-2013
2	Approval from ADB	20-02-2015
3	Placement of Order	11-12-2015
4	Synchronisation of Units	14-02-2018
	Unit 1	*10-02-2018*
	Unit 2	*06-02-2018*
	Unit 3	*08-02-2018*
	Unit 4	*09-02-2018*
	Unit 5	*11-02-2018*
	Unit 6	*13-02-2018*
	Unit 7	*14-02-2018*
5	Taking full load on units	18-03-2018
6	COD	26-04-2018

2.5.23 As per the original DPR submitted to ADB, the project was envisaged to start in September, 2012 and commissioned in January 2015. There was delay in getting approval of Board of APGCL and approval of loan from ADB. Prima facie, it can be seen from the above table that Investment approval of Board of APGCL was taken on June 21, 2013 and LRPP was commissioned on April 26, 2018, approx. after 58 months. Further, it is noted that project is funded by ADB. It took around 30 months for placement of EPC order after Investment Approval. Further, synchronisation of units were done after 26 months from the date of placement of Order.

2.5.24 From the perusal of computation of original IDC of Rs. 3.52 Crore, it is observed that the said amount was computed considering the debt component of Rs. 233.10 Crore at 89% of capital cost of project. However, the actual debt component is much lower than envisaged in IDC computation. The actual debt component is Rs. 23.82 Crore in the capital cost of Rs. 245.87 Crore as on COD. The Commission has restricted the Equity to 30% of the project cost excluding the grant, and the balance amount of Equity is considered as loan. Accordingly, the Commission approves the IDC towards the normative debt component, in proportion to IDC computed by APGCL. Accordingly, the Commission approves IDC of Rs. 0.44 Crore.

Fuel Cost

2.5.25 The Commission notes that APGCL has recovered the fuel expenses of Rs. 6.70 Crore towards fuel cost consumed before COD. In reply to query of the Commission, APGCL clarified that the rate of gas in Rs./1000 SCM has been considered as per bills received from the Gas suppliers. LRPP doesnot have a dedicated fuel supply source and there is a single source for LTPS and LRPP. Further, the billing for gas is done in the name of LTPS only. The Commission has verified the fuel bills of LTPS for the period from February 2018 to April 2018.

2.5.26 The Commission notes that APGCL has billed actual fuel cost to APDCL for supply of infirm power. There is no additional revenue earned on account of sale of infirm power. In view of this, the Commission approves actual fuel cost of Rs. 6.70 Crore, and there is no implication on the project cost.

Initial Spares

2.5.27 As regards Initial Spares, Regulation 29.5 of the MYT Regulations, 2015 specifies a percentage of 6% of Plant and Machinery cost for Gas Turbine/Combined Cycle thermal generating stations. The cost of initial spares proposed by APGCL, works out to be 9.35% of the Plant and Machinery cost. It is noted that LRPP is Gas Engine based plant and MYT Regulations, 2015 does not specify the percentage for Gas Engine based plants. The Commission sought list of initial spares. In reply, APGCL submitted that initial spares are part of contract with M/s. Wartsila and spares have not been procured separately. After perusing the details submitted by APGCL, the Commission is of view that the initial spares are not procured separately by APGCL. APGCL has procured the initial spares as recommended by OEM. Hence, the Commission approves the cost of Initial Spares of Rs. 20.39 Crore, as submitted by APGCL, as part of Capital cost of project.

2.5.28 In view of the above, the Commission approves the capital cost of LRPP as on COD as under:

Table 11: Capital Cost of LRPP as on COD as approved by the Commission

Sr. No.	Particulars	Capital Cost as on COD (Rs. Crore)
1	Hard Cost	218.07
2	Interest During Construction	0.44
3	Overhead Cost	4.22
4	Initial Spares	20.39
5	**Grand Total**	**243.12**

Means of Finance

2.5.29 As regards the means of finance, the Commission notes that funding of the project as proposed by APGCL is 80% from Grant, 10% from Equity and 10% from Debt. APGCL submitted capital cost of Rs. 245.87 Crore as on COD, which includes Grant of Rs. 202.55 Crore, Loan of Rs. 23.82 Crore and Equity of Rs. 19.5 Crore. Further, after deducting the grant from additional capitalisation, the funding would be in debt:equity ratio of 55:45. However, MYT Regulations, 2015 restricts the equity of the project up to 30%. The equity over and above 30% shall be considered as normative loan. Accordingly, the Commission has considered the normative debt:equity ratio of 70:30 after deducting the grant from the capital cost of the project.

2.5.30 Further, disallowed capital cost has been reduced from grant, equity and loan in the same proportion of the actual funding. The funding of the capital cost as on COD approved by the Commission is shown in the following table:

Table 12: Funding of Capital Cost as on COD as approved by the Commission (Rs. Crore)

Particulars	Approved actual funding	Approved normative for tariff determination
Grant	200.29	200.29
Equity	19.28	12.85
Debt	23.55	29.99
Total	**243.12**	**243.12**

Additional Capitalisation

2.5.31 As per MYT Regulations, 2015, the capital expenditure after the COD and up to the cut-off date may be allowed by the Commission, which would include works deferred for execution within the original scope. APGCL has proposed to complete the additional capitalisation during FY 2018-19. The Commission has, therefore, provisionally approved the additional capitalisation claimed by APGCL towards works deferred for execution, subject to prudence check based on actual additional capitalisation at the time of truing-up. Accordingly, the Commission approved Additional Capitalisation as shown in the Table below:

Table 13: Additional Capital expenditure as approved by the Commission (Rs. Crore)

Particulars	FY 2018-19
Additional capitalisation post COD	22.34

3 Annual Performance Review for FY 2018-19

3.1 Methodology for Annual Performance Review

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

…

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

3.1.2 Earlier, the Commission has determined the provisional Tariff for LRPP for FY 2018-19. Now, APGCL submitted the Annual Performance Review (APR) Petition for FY 2018-19, supported by actual information available till September, 2018 and estimated the values for the next six months.

3.1.3 From the above said Regulation, as amended in November 2017, it is clear that the main objective of APR is to compare the performance targets for FY 2018-19 vis-à-vis approved forecast in the MYT Order. The Revenue Gap/(Surplus) arising out of APR for FY 2018-19 shall not be passed on to the beneficiaries, and the same shall be considered at the time of Truing-up only.

3.1.4 In the present Chapter, the Commission has analysed the revised submission of all the elements of ARR vis-à-vis approved values in provisional Tariff Order for FY 2018-19. The Commission has computed the Revenue Gap/(Surplus) as an indication of the performance in FY 2018-19. 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 2018-19.

3.1.5 Further, it is noted that LRPP has been commissioned on April, 26, 2018. Hence, the computation of ARR has been considered from the dated of COD i.e., April 26, 2018 till March 31, 2019.

3.2 Performance Parameters for FY 2018-19

3.2.1 APGCL in its Petition has submitted the performance parameters for LRPP for FY 2018-19 as shown in the following Table:

Table 14: Performance Parameters for LRPP as submitted by APGCL

Particulars	Approved	April-Sept (Actual)	Oct-March (Estimated)	Estimated FY 2018-19
Plant Availability Factor (PAF) (%)	85.00%	73.58%	96.42%	85.00%
Plant Load Factor (PLF) (%)	90.00%	67.75%	96.42%	82.09%
Auxiliary Consumption (%)	3.50%	3.08%	3.50%	3.29%
Gross generation (MU)	508.03	178.43	294.60	473.03
Net Generation (MU)	490.25	172.93	284.29	457.22
Gross Station Heat Rate (kcal/kWh)	2,000	2127	2150	2138

3.2.2 As per Regulation 49.1 of the MYT Regulations, 2015, Normative Plant Availability Factor, for recovery of full fixed charges, is 85% for new plants commissioned on or after 1st April 2016. The Commissioned had approved the same. APGCL submitted that the estimated Normative Annual Plant Availability Factor is 85.00% for FY 2018-19 for LRPP and is expected to achieve the same

3.2.3 As per Regulation 49.2 of the MYT Regulations, 2015, Normative Plant Load factor is 90% for new plants commissioned on or after 1st April 2016. The Commissioned had approved the same. As LRPP is newly commissioned plant, it is facing teething problems for initial months. Hence, the Normative Plant Load Factor may not be achieved in FY 2018-19. The Commission has provided stabilisation period for coal and gas-based power plants under Regulation 49.6 of MYT Regulations 2015. APGCL requests the Commission to provide similar stabilization period of 90 days for Gas engine based thermal power plants as APGCL is also facing stabilisation issues for LRPP. APGCL requests the Commission to invoke “Power to remove difficulties” under Regulation 115 of the MYT Regulations 2015, while providing treatment for the same.

3.2.4 As per Regulation 49.4(c), of the MYT Regulations, 2015 the Normative Station Heat Rate, is 2000 kcal/kWh for gas engine based generating station of 5 MW and above in open cycle mode of operation. In case of LRPP, the actual SHR value is higher than the approved value and APGCL prays to the Commission to revise the norms for LRPP.As regards Station Heat Rate, APGCL submitted as under:

(a) The Commission in its Order dated 19March 2018 has stated that the contention of APGCL that the guaranteed engine wise Gross station heat rate is on NCV basis is not justified. However, as per the technical proposal 4A of the EPC documents with M/s Wartsila for development of LRPP, the guaranteed engine wise Gross Heat Rate was 1873 kcal/kWh on NCV basis (lower heating value). The copy of technical proposal has also been submitted.
(b) There is a difference between consideration of Gross SHR on GCV basis and NCV basis. The conversion of Gross Station Heat Rate (GSHR) from NCV basis to GCV basis was also referred in CERC Order no. 15 of 2014 dated 05.02.2016.
(c) Further, the difference between calculation of Gross Station Heat Rate and Net Station Heat Rate is clearly illustrated at page 5 of the Ministry of Power document of '*Normalization Document and Monitoring & Verification Guidelines*' for Thermal power plants. The formulas given in this document are used as the base document for setting and verification of targets under the PAT scheme of Ministry of Power.
(d) APGCL further submitted that there is a difference between Gross station heat rate of GCV basis, Gross station heat rate on NCV basis, Net station heat rate of GCV basis and Net station heat rate on NCV basis. The Commission in its Order dated June 14, 2018, against the Review Petition of APGCL, had order APGCL to submit the PG test report and also stated that the SHR issues will be considered at the time to determination of final tariff of LRPP.
(e) As per page 1 of the summary of the PG test report for LRPP, the actual values obtained during PG test for engine wise Gross Heat Rate was around 1873 kcal/kWh on NCV basis (lower heating value). Also, as per page 4 of the summary of the PG test report for LRPP, the actual values obtained during PG test for Plant Heat Rate was around 2109 kcal/kWh on GCV basis (higher heating value). The summary of the PG test report for LRPP has also been submitted. The conversion factor of 1.11 for conversion of heat rate from NCV basis to GCV basis has been considered as the average ratio of GCV and NCV of fuel received for LTPS in the last 2.5 years. The values obtained after PG test are shown in the following Table:

Table 15: SHR values after PG Test as submitted by APGCL

Particulars	Guaranteed values Engine wise Gross Heat Rate on NCV basis	As per PG Test Report		PG test values obtained after conversion to gross heat rate on GCV basis	
		Plant Heat Rate on GCV basis	Engine wise Gross Heat Rate on NCV basis	Plant Heat Rate on GCV basis	Engine wise Gross Heat Rate value on GCV basis
SHR (kcal/kWh)	1873	2109	1873	2109	2079

(f) The actual SHR values (Gross SHR on GCV basis) obtained in FY 2018-19 are close to values obtained through conversion of PG test values to Gross heat rate on GCV basis. The actual Gross SHR on GCV basis is higher than the PG test report values, as during PG test report ideal conditions were made for completion of the test. The ideal conditions that were prepared for PG test was - LTPS load was decreased to facilitate PG test report because the gas pressure keeps changing frequently and corrections were applied to arrive at PG test numbers due to low load and knock state.

(g) Further, the commission is aware of the fluctuating gas pressure faced by APGCL as per earlier submissions of the APGCL. The variation in gas pressure is also established by the variation in gas pressure shown below for LRPP during PG test. Hence, practically when both LRPP and LTPS operate simultaneously, the changing gas pressure and quantity of gas has an impact on SHR of both the plants. Thus, the values obtained in PG test report can never be achieved in practical scenario. This was also established for LTPS and NTPS in the IIT report on '*Evaluation of Station Heat rates for Namrup and Lakwa Thermal Power Station of APGCL*', which was already accepted by the Commission.

(h) CEA under Regulation 24(5)(b) at page 42 of its CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 has considered SHR as 2150 Kcal/ kWh for gas engines greater than 5 MW. APGCL submitted that the actual values of SHR for LRPP are close to the SHR values considered by CEA and values obtained through conversion of PG test values to Gross heat rate on GCV basis.

(i) SHR norm of 2150 Kcal/kWh will provide the requisite margin for LRPP to compensate for partial loading, start-stop etc. which are practically required during running of power plant. Similar margin is provided over and above the Design heat rate (PG heat rate) to coal and gas / liquid based plants in the MYT Regulations 2015.

(j) In view of the above, APGCL prays to the Commission to revise the SHR norms for LRPP issued vide order dated 19 March 2018 to 2150 Kcal/kWh as per CEA regulations from COD.

3.2.5 As regards Auxiliary Consumption for LRPP, APGCL submitted that the Normative Auxiliary energy consumption is 3.50% as per Regulation 49.3(ii) of MYT Regulations, 2015for gas engine based generating station in open cycle mode of operation with gas booster compressor. APGCL prayed the Commission to approve the estimated Auxiliary Consumption of 3.29% for FY 2018-19.

Commission's Analysis

3.2.6 Regulation 49.1 of the MYT Regulations, 2015 specifies the Normative PAF for new generating stations commissioned after April 1, 2016 as 85% for full recovery of Fixed Charges. Further, Regulation 49.2 of the MYT Regulations, 2015 specifies the Normative PLF for new Gas engine-based generating stations as 90% for incentive. Accordingly, the Commission provisionally approves PAF of 85% for FY 2018-19. Further, the incentive will be applicable above normative PLF of 90% and the same shall be considered at time of truing up for FY 2018-19.

3.2.7 As regards the Auxiliary Consumption for Gas engine based generating Station, Regulation 49.3 (ii) specifies the norm of 2% for open cycle and 3.50% for open cycle with Gas Booster compressor. The Commission notes that LRPP has installed gas booster, hence, Auxiliary Consumption norm of 3.50% has been approved.

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

3.2.9 As regards SHR, Regulation 49.4 (c) of the MYT Regulations, 2015 specifies SHR norms of 2000 kcal/kWh for open cycle for capacity more than 5 MW. The other documents such as DPR, Board approval for Investment, also indicated the consideration of Station Heat Rate of 2000 kcal/kWh. As directed by the Commission in provisional tariff Order, APGCL has conducted the PG test. From the results of the PG Test, the Commission observes that Engine wise Heat rate on NCV basis has arrived at 1893 kcal/kWh. This works out tobe 2101 kcal/kWh on GCV basis. The Commission finds merit in the submission of APGCL. Further, the Commission notes that CEA (Technical Standards for Construction of Electric Plants and Electric Lines) Regulations, 2010 specifies the Gross Station Heat Rate for 5 MW of Gas Engine

Based Gen Sets as 2150 kcal/kWh. In view of the above, the Commission approves the Station Heat Rate for LRPP as 2150 kcal/kWh.

3.2.10 The performance parameters approved by the Commission for LRPP are shown in the following Table:

Table 16: Performance Parameters for LRPP approved by the Commission

Particulars	LRPP
Plant Availability Factor (PAF) for Full recovery of Fixed Charges	85%
Plant Load Factor (PLF) for Incentive	90%
Auxiliary Consumption	3.50%
Gross Station Heat Rate (kcal/kWh)	2,150

3.2.11 Further, the Gross & Net Generation as provisionally approved for FY 2018-19 is shown below:

Table 17: Generation for LRPP approved by the Commission

Particulars	FY 2018-19
Gross generation (MU)	473.03
Net Generation (MU)	456.47

3.3 Fuel Cost

3.3.1 As per Regulation 11 of the MYT Regulations 2015, 'Fuel Price' and 'Calorific Value of Fuel' are uncontrollable items. The actual values for Fuel Price and GCV are shown in the following Table as submitted by APGCL:

Table 18: GCV and Landed Price of Gas for LRPP as submitted by APGCL

Particulars	FY 2018-19
GCV of Gas (kcal/SCM)	9,095.31
Price of Gas (Rs./1000 SCM)	7,314.91

3.3.2 Accordingly, APGCL has projected fuel cost as Rs. 81.35 Crore for FY 2018-19 for LRPP for the purpose of Annual Performance Review.

Commission's Analysis

3.3.3 The Commission notes that the gas allocation for LTPS will be used for operation of LRPP. No separate gas allocation has been sought by APGCL for LRPP. Hence, the Commission has considered the GCV of gas and landed price of gas as considered for LTPS for FY 2018-19 for the purpose of Annual Performance Review. The GCV and landed price of gas considered by the Commission for FY 2018-19 is shown in the following Table:

Table 19: GCV and Landed Price of Gas for LRPP as approved by the Commission

Particulars	FY 2018-19
GCV of Gas (kcal/SCM)	9126.42
Price of Gas (Rs./1000 SCM)	7758.11

3.3.4 APGCL is hereby directed to have separate metering arrangements for Gas supplies to LTPS and LRPP, if not done already.

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

Table 20: Fuel Cost for LRPP approved by the Commission

S. No.	Particulars	Unit	APGCL's Submission	Approved by the Commission
1	Gross Generation	MU	473.03	473.03
2	Auxiliary Consumption	%	3.50%	3.50%
3	Net Generation	MU	456.47	456.47
4	Heat Rate	kcal/kWh	2,138.32	2150.00
5	GCV of gas	kcal/SCM	9,095.31	9,126.42
6	Overall Heat Requirement	G. cal.	10,11,487.86	10,17,014.32
7	Gas consumption	M. SCM	111.21	111.44
8	Price of Gas	Rs./1000 SCM	7,314.91	7,758.11
9	Total cost of Gas	Rs. Crore	81.35	86.47
10	Ex-Bus Energy Charges	Rs./kWh	1.78	1.89

3.4 O&M Expenses

3.4.1 APGCL submitted that MYT Regulations, 2015 does not provide separate norms for Employee Expenses, A&G Expenses and R&M expenses. APGCL submitted the proposed O&M Expenses of Rs. 18.92 Crore for FY 2018-19 as per MYT Regulations, 2015.

3.4.2 APGCL further submitted that Special R&M and increase in Terminal liabilities will be submitted separately at time of time truing up for FY 2018-19.

Commission's Analysis

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

3.4.4 Accordingly, O&M norm for FY 2018-19 has been computed as Rs. 27.03 lakh per MW. The Commission has computed the O&M expenses for LRPP for FY 2018-19 based on norms provided in the MYT Regulations, 2015 as under:

Table 21: O&M Expenses for LRPP as provisionally approved by the Commission

Particulars	FY 2018-19
O&M Norms (Rs. Lakh/MW)	27.03
Effective Installed Capacity (MW) (for period from April 26, 2018 to March 31, 2019)	64.98
Normative O&M Expenses (Rs. Crore)	17.56

3.5 Capital Cost and Means of Finance

3.5.1 APGCL submitted the Capital Investment and means of finance for LRPP as on COD as mentioned in the earlier Section of this Order.APGCL submitted the additional capitalisation of Rs. 22.34 Crore for FY 2018-19. The means of finance for capital cost as on COD and Additional capitalisation proposed for FY 2018-19 has been considered by APGCL for the purpose of Annual Performance Review as shown in the following Table:

Table 22: Capital Expenditure for LRPP as submitted by APGCL (Rs. Crore)

S. No.	Particulars	Capital Cost as on COD	FY 2018-19 (Estimated)	Total
1	Capital Expenditure	245.87	22.34	268.21
2	**Funding**			
2.1	ADB Grant	202.55	11.43	213.98

S. No.	Particulars	Capital Cost as on COD	FY 2018-19 (Estimated)	Total
2.2	ADB Loan	22.51	1.27	23.78
2.3	GoA Loan	1.31	0.22	1.53
2.4	GoA Equity	19.50	9.42	28.92
2.5	**Total**	**245.87**	**22.34**	**268.21**

Commission's Analysis

3.5.2 As discussed in earlier Section of this Order, the Commission has approved the additional capital expenditure of Rs. 22.34 Crore to be capitalised in FY 2018-19. As regards the means of finance, the Commission notes that funding of the project as proposed by APGCL is 80% from Grant, 10% from Equity and 10% from Debt. Further, after deducting the grant from additional capitalisation, the funding would be in debt:equity ratio of 14:86. However, MYT Regulations, 2015 restricts the equity of the project up to 30%. The equity over and above 30% shall be considered as normative loan. Accordingly, the Commission has considered the normative debt:equity ratio of 70:30 after deducting the grant from the capital cost of the project.

3.5.3 Accordingly, the funding of capitalised works for LRPP as considered by the Commission for the purpose APR is shown in the following Table:

Table 23: Funding of Additional Capitalization of Capital Cost as considered by the Commission as on COD (Rs. Crore)

Particulars	APGCL Submission	Approved by Commission
Grant	11.43	11.50
Equity	9.42	3.25
Debt	1.49	7.59
Total Capitalised works	**22.34**	**22.34**

3.6 Depreciation

3.6.1 APGCL has projected the Depreciation for LRPP for FY 2018-19 as per MYT Regulations, 2015. APGCL has computed the Depreciation considering Capital Cost of the asset with 10% salvage value. Also, depreciation of grants has not been considered. APGCL submitted the Depreciation for FY 2018-19 as shown in the following Table:

Table 24: Depreciation for LRPP as submitted by APGCL (Rs. Crore)

Particulars	Approved vide Order dt. 19.03.2018	APGCL's Submission
Depreciation	8.70	12.26
Less: Depreciation on assets funded through Grants	7.65	7.10
Net Depreciation	1.05	5.16

Commission's Analysis

3.6.2 For computation of depreciation, the Commission has considered the Capital Cost as on COD as opening GFA. The additional capitalisation as asset addition during FY 2018-19. The Commission has considered the scheduled depreciation rates as specified in MYT Regulations, 2015. The Commission has not considered depreciation on assets funded through grants in accordance with Regulation 31 and 33 of MYT Regulations, 2015. The Commission has computed the depreciation for FY 2018-19 from COD till March 31, 2019.

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

Table 25: Depreciation for LRPP as approved by the Commission (Rs. Crore)

Particulars	FY 2018-19
Opening GFA	243.12
Addition during year	22.34
Closing GFA	265.46
Wt. avg. Depreciation rate	4.44%
Depreciation	**11.30**
Opening Grant towards GFA	*200.29*
Closing Grant towards GFA	*211.79*
Less: Depreciation on Grants	*8.53*
Net Depreciation	**2.77**

3.7 Interest on loan capital

3.7.1 APGCL has submitted normative Interest on Loan capital for LRPP for FY 2018-19 as per Regulation 35 of MYT Regulations, 2015. APGCL has considered normative loan portfolio and the repayment shown is considered equal to the depreciation for FY 2018-19. The interest rate has been considered as the estimated weighted average rate of interest for FY 2018-19 for APGCL as a whole. The normative interest on loan capital as submitted by APGCL for FY 2018-19 is shown in the following Table:

Table 26: Interest on Loan Capital for LRPP as submitted by APGCL (Rs. Crore)

Sr. No.	Particulars	Approved vide Order dt. 19.03.2018	APGCL's Submission
1	Net Normative Opening Loan	25.00	24.04
2	Addition of normative loan during the year	0.00	1.27
3	Repayment of normative loan during the year	1.05	5.16
4	Net Normative Closing Loan	23.94	20.15
5	Average normative Loan during the year	24.48	22.09
6	Rate of Interest (%)	10%	10.12%
7	Interest on Loan Capital	**2.25**	**2.08**

Commission's Analysis

3.7.2 The Commission notes that Interest on loan capital for FY 2018-19 is required to be allowed on normative basis as per Regulation 35 of MYT Regulations, 2015. The Commission has considered the opening normative loan equal to debt component considered for project cost as on COD. The loan repayment has been considered equivalent to depreciation approved in this Order. The Commission has considered the weighted average rate of interest as 10.12% as submitted by APGCL. Interest on loan capital has been computed for the period from COD till March 31, 2019.The interest on loan capital approved by the Commission for LRPP for FY 2018-19 is shown in the following Table:

Table 27: Interest on Loan Capital for LRPP provisionally approved by the Commission (Rs. Crore)

Sr. No.	Particulars	FY 2018-19
1	Normative Opening Loan	29.99
2	Addition of normative loan during the year	7.59
3	Normative Repayment during the year	2.77
4	Normative Closing Loan	34.80
5	Interest Rate (%)	10.12%
6	**Interest on Loan Capital**	**3.05**

3.8 Return on Equity

3.8.1 APGCL has projected the Return on Equity (ROE) of Rs. 3.50 Crore for LRPP for FY 2018-19 as per Regulation 34 of the MYT Regulations, 2015.

Commission's Analysis

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

Table 28: Return on Equity for LRPP for FY 2018-19 as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission	Approved by Commission
1	Opening equity	19.50	12.85
2	Addition of equity during the year	9.42	3.25
3	Closing equity	28.92	16.10
4	Rate of return	15.50%	15.50%
5	**Return on Equity**	**3.50**	**2.09**

3.9 Interest on Working Capital (IoWC)

3.9.1 APGCL has projected IoWC of Rs. 4.19 Crore as per Regulation 37 of the MYT Regulations, 2015. As per the Regulations, APGCL has claimed 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 as shown equal to the interest rate equivalent to State Bank of India base rate as on 1stApril of the respective year plus 350 basis points i.e., 9.10% + 3.50 % = 12.60%.

Commission's Analysis

3.9.2 The Commission has computed IoWC in accordance with Regulation 37.2 of the MYT Regulations, 2015. As per the Regulations, the rate of Interest shall be equal to State Bank of India Base Rate as on 1stApril of the respective year plus 350 basis points. Accordingly, rate of interest of 12.60% has been considered for computation of IoWC for FY 2018-19. IoWC approved by the Commission for FY 2018-19 is shown in the following Table:

Table 29: IoWC for LRPP approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission	Approved by Commission
1	Fuel Cost for one month	6.78	7.37
2	O&M Expenses for one month	1.58	1.46
3	Maintenance Spares-30% of O&M	5.68	5.27
4	Receivables for two months	19.20	19.69
5	**Total Working Capital Requirement**	**33.23**	**33.79**
6	Rate of Interest	12.60%	12.60%
7	**Interest on working Capital**	**4.19**	**4.26**

3.10 Non-Tariff Income

3.10.1 APGCL submitted that the non-tariff income shall be deducted from the Annual Fixed Cost in determining the Annual Fixed Cost of the Generation Company as per Regulation 47 of the MYT Regulations, 2015. APGCL has not considered any Non-tariff Income for LRPP for FY 2018-19.

Commission's Analysis

3.10.2 At this stage, the Commission has not considered any Non-tariff Income for LRPP, however, the same shall be considered based on actuals at the time of Truing up for FY 2018-19.

3.11 Summary of ARR for Control Period

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

Table 30: Summary of ARR for LRPP approved by the Commission (Rs. Crore)

S. No.	Particulars	Approved vide Order dt. 19.03.2018	APGCL's Submission	APR FY 2018-19
A	**Annual Fixed Charges**			
1	O&M expenses	18.92	18.92	17.56
2	Depreciation	1.05	5.16	2.77
3	Interest on Loans	2.25	2.08	3.05
4	Return on Equity	1.53	3.50	2.09
5	Interest on Working Capital	3.80	4.19	4.26

S. No.	Particulars	Approved vide Order dt. 19.03.2018	APGCL's Submission	APR FY 2018-19
7	*Less:* Non-Tariff Income	-	-	-
8	**Total Annual Fixed Charges**	**27.56**	**33.84**	**29.73**
B	**Fuel Cost**	**73.33**	**81.35**	**86.45**
C	**Net ARR**	**100.89**	**115.19**	**116.19**

3.12 Revenue Gap/(Surplus)

3.12.1 The Commission in its Order dated March 19, 2018 had approved the provisional tariff for FY 2018-19 for LRPP. The Commission has approved Annual Fixed Charges of Rs. 27.56 Crore and Energy Charges of Rs.1.50/kWh for FY 2018-19. Accordingly, the revenue estimated for FY 2018-19 works out as Rs. 96.03 Crore. Accordingly, revenue gap for LRPP for FY 2018-19 works out as under:

Table 31: Revenue Gap for FY 2018-19 approved by the Commission (Rs. Crore)

Sr. No.	Particulars	FY 2018-19
1	Net ARR	116.19
2	Less: Revenue from Sale of power	96.03
3	Revenue Gap/(surplus)	20.16

3.12.2 The APR reveals a Revenue Gap of Rs. 20.16 crore for FY 2018-19 for LRPP. It is only indicative in the absence of Audited Annual Accounts for FY 2018-19. Hence, this is not carried forward to ARR for FY 2019-20. It will be considered only after Truing up process for FY 2018-19, after the Audited Annual Accounts are made available.

4 ARR for MYT Control Period from FY 2019-20 to FY 2021-22

4.1 Introduction

4.1.1 Regulation 4 of the MYT Regulations, 2018 specifies the Multi year Tariff Framework for next Control period from FY 2019-20 to FY 2021-22 as under:

"4 Multi-Year Tariff Framework

4.1 The Commission shall determine the tariff for matters covered under clauses (i), (ii), (iii), (iv) and (v) of Regulation 3.3 above under a Multi-Year Tariff framework with effect from 1st April 2019.

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:

(i) 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

4.1.2 Accordingly, APGCL has made its submission for approval of Aggregate Revenue Requirement for Control Period from FY 2019-20 to FY 2021-22 and approval of

Tariff for FY 2019-20 for LRPP separately.

4.1.3 This Chapter deals with the approval of ARR for the MYT Control Period from FY 2019-20 to FY 2021-22and determination of Tariff for FY 2019-20 for LRPP in accordance with the provisions of MYT Regulations, 2018 and based on analysis of submissions made by APGCL.The Commission has determined ARR for the Control Period and approved tariff for FY 2019-20 for LRPP separatelyin line with MYT Regulations, 2018 as discussed in subsequent sections of this Chapter.

4.2 Norms of Operation

4.2.1 APGCL submitted the norms of operation for LRPP for Control period from FY 2019-20 to FY 2021-22 as shown in the following Table:

Table 32: Norms of Operation for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Plant Availability Factor (%)	85%	85%	85%
Plant Load Factor (%)	90%	90%	90%
Auxiliary Consumption (%)	3.50%	3.50%	3.50%
Station Heat Rate (kCal/kWh)	2150	2150	2150
Gross Generation (MU)	549.95	549.95	549.95
Net Generation (MU)	530.70	530.70	530.70

4.2.2 APGCL has considered Normative Annual Plant Availability Factor (NAPAF) of 85%, Normative Annual Plant Load Factor (NAPLF) of 90% and Auxiliary Consumption of 3.50% as per the provisions of MYT Regulations, 2018.Accordingly, APGCL has projected the Gross Generation and Net Generation for Control period, as shown in the above table.

4.2.3 As regards Station Heat Rate, APGCL submitted that he actual SHR value is higher than the approved value of FY 2018-19 and APGCL prayed to the Commission to revise the norms for LRPP for FY 2018-19. The proposed SHR has been considered as 2150 kcal/kWh as per CEA regulations.

Commission's Analysis

4.2.4 Regulation 47.1 of MYT Regulations, 2018 specifies the Normative Plant Availability factor for recovery of full fixed charges, as 85% for new Generating Stations.

Accordingly, the Commission approves Normative Plant Availability Factor of 85% for LRPP for FY 2019-20 to FY 2021-22.

4.2.5 Regulation 47.2 of MYT Regulations, 2018 specifies Normative Plant Load Factor for Incentive as 90% for Gas engine-based stations. Accordingly, the same normative PLF is applicable for LRPP. However, for the purpose of projection of Generation, the Commission has considered the PLF of 85%.

4.2.6 As regards Auxiliary Consumption, the Commission approves Auxiliary Consumption of 3.50% for LRPP for FY 2019-20 to FY 2021-22 in accordance with Regulation 47.3 of MYT Regulations, 2018.

4.2.7 As discussed in earlier Chapter of this Order, the Commission approves Gross Station Heat Rate of 2150 kcal/kWh for LRPP for FY 2019-20 to FY 2021-22.

4.2.8 The norms of operation approved by the Commission for LRPP for FY 2019-20 to FY 2021-22 are shown in the following Table:

Table 33: Norms of Operation for LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Plant Availability Factor (%)	85%	85%	85%
Plant Load Factor (%)	90%	90%	90%
Auxiliary Consumption (%)	3.50%	3.50%	3.50%
Station Heat Rate (kcal/kWh)	2150	2150	2150
Gross Generation (MU)	520.82	519.40	519.40
Net Generation (MU)	502.59	501.22	501.22

4.3 Fuel Cost

4.3.1 APGCL submitted that 'Fuel Price' and 'Calorific Value of Fuel' are uncontrollable items as per Regulation 11 of the MYT Regulations, 2018. The values of 'Calorific Value of Fuel' are considered same as considered for FY 2018-19.

4.3.2 As regards price of Fuel, APGCL submitted that the Gas prices has been revised to USD 3.36 / MMBTU from October 2018. Hence, the same price of gas has been considered for FY 2019-20 to FY 2020-21.

4.3.3 The following parameters are considered for calculating the landed gas price of gas for the MYT Control period:

(a) Basic Non-APM Gas price = $ 3.66 / MMBTU

(b) Basic APM Gas price = $ 2.02 / MMBTU (60% of Non-APM gas price)

(c) USD exchange rate = ₹ 73.63 (USD exchange rate for the month of Oct'18 in Rs as obtained from RBI website)

4.3.4 APGCL submitted the GCV and Price of Fuel for Control Period as shown in the following Table:

Table 34: GCV and Landed Price of Gas for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
GCV of Fuel (kCal/SCM)	9095	9095	9095
Price of Fuel (Rs./1000 SCM)	8961.76	8975.83	8991.25

4.3.5 Accordingly, APGCL has projected fuel cost of Rs. 116.50 Crore for FY 2019-20, Rs. 116.69 Crore for FY 2020-21 and Rs. 116.89 Crore for FY 2021-22.

Commission's Analysis

4.3.6 The Commission has considered the GCV of gas and landed price of gas based on the FY 2018-19 actual data.

4.3.7 For price of gas, the Commission has considered the actual weighted average landed price of gas for the period from April 2018 to December, 2018. The GCV and landed price of gas considered by the Commission for projection of fuel cost is shown in the following Table:

Table 35: GCV and Landed Price of Gas for Control Period as approved by the Commission

Station	Particulars	FY 2019-20	FY 2020-21	FY 2021-22
LRPP	GCV of Gas (kcal/SCM)	9,126.42	9,126.42	9,126.42
	Price of Gas (Rs./1000SCM)	7,758.11	7,758.11	7,758.11

4.3.8 The Commission has projected the fuel cost for LRPP based on approved Performance parameters, GCV of gas and landed price of gas. The fuel cost projected by the Commission for LRPP for the Control Period is shown in the following Table:

Table 36: Fuel Cost for LRPP for Control Period as approved by the Commission (Rs. Crore)

S. No.	Particulars	Derivation	Unit	APGCL's Submission			Approved by the Commission		
				FY 2019-20	FY 2020-21	FY 2021-22	FY 2019-20	FY 2020-21	FY 2021-22
1	Gross Generation	A	MU	549.95	549.95	549.95	520.82	519.40	519.40
2	Heat Rate	B	kcal/kWh	2150	2150	2150	2,150.00	2,150.00	2,150.00
3	GCV of gas	C	kcal/SCM	9095	9095	9095	9,126.42	9,126.42	9,126.42
4	Overall Heat	D=AxB	G. cal.	1182389	1182389	1182389	11,19,760.27	11,16,700.82	11,16,700.82
5	Gas consumption	E=D/C	M. SCM	130	130	130	122.69	122.36	122.36
6	Price of Gas	F	Rs./1000 SCM	8962	8976	8991	7758.11	7758.11	7758.11
7	Total cost of Gas	G=ExF/10000	Rs. Crore	**116.50**	**116.69**	**116.89**	**95.19**	**94.93**	**94.93**

4.5 Annual Fixed Cost

4.5.1 As per regulation 42.1 of the MYT Regulations, 2018, the following components have been considered as part of Annual Fixed Cost under the Multi Year Tariff framework for the power plants:

(a) Return on Equity Capital

(b) Interest on Loan capital

(c) Depreciation

(d) Operation and Maintenance Expenses

(e) Interest on Working Capital

(f) Less: Non-Tariff Income

4.5.2 For the computation of Annual Fixed Cost, APGCL has considered the principles provided in the MYT Regulations, 2018, which has been discussed in subsequent Section of this Order.

4.6 Depreciation

4.6.1 APGCL has computed the Depreciation as per Regulation 32 of the MYT Regulations, 2018. APGCL has computed the Depreciation considering the Capital Cost of the asset admitted by the Commission and projected asset addition with 10% salvage value. Also, depreciation on grants has been subtracted. The depreciation submitted for LRPP for Control Period from FY 2019-20 to FY 2021-22 as shown in the following Table:

Table 37: Depreciation for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Opening GFA	268.21	268.21	268.21
Addition of GFA during the year	-	-	-
Closing GFA	268.21	268.21	268.21
Rate of Depreciation (%)	5.13%	5.13%	5.13%
Depreciation	13.75	13.75	13.75
Less: Depreciation on grants	7.83	7.83	7.83
Net Depreciation	5.92	5.92	5.92

Commission's Analysis

4.6.2 For computation of depreciation, the Commission has considered closing GFA for FY 2018-19 as approved in this Order, as the Opening GFA for FY 2019-20. Since, the additional capitalisation approved during the control period is Nil, no asset addition has been considered during the year. The Commission has considered the scheduled depreciation rates as specified in MYT Regulations, 2018.

4.6.3 The Commission has not considered depreciation on assets funded through grants in accordance with Regulation 30 and 32 of MYT Regulations, 2018.

4.6.4 In view of the above, the Commission has approved depreciation for the period from FY 2019-20 to FY 2020-21 as per MYT Regulations, 2018, as given in the Table below:

Table 38: Depreciation for LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Opening GFA	265.46	265.46	265.46
Addition of GFA during the year	-	-	-
Closing GFA	265.46	265.46	265.46
Rate of Depreciation (%)	5.13%	5.13%	5.13%
Depreciation	13.60	13.60	13.60
Less: Depreciation on grants	10.85	10.85	10.85
Net Depreciation	2.75	2.75	2.75

4.7 Return on Equity

4.7.1 APGCL submitted that Regulation 33 of the MYT Regulations, 2018 has considered the pre-tax return on equity at 15.5% on equity capital. APGCL has projected the Return on Equity (RoE) at a rate of 15.5% in accordance with the MYT Regulations, 2018. The actual tax paid would be claimed separately during True-up of respective years. APGCL submitted the ROE for Control Period for LRPP from FY 2019-20 to FY 2021-22 as shown in the following Table:

Table 39: Return on Equity for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Opening Equity	28.92	28.92	28.92
Addition of Equity during the year	-	-	-
Closing Equity	28.92	28.92	28.92
Rate of Return (%)	15.50%	15.50%	15.50%
Return on Equity	4.48	4.48	4.48

Commission's Analysis

4.7.2 The Commission has approved the Return on Equity 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 Return on Equity at 15.50% is shown in the Table below:

Table 40: Return on Equityfor LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Opening Equity	16.10	16.10	16.10
Addition of Equity during the year	-	-	-
Closing Equity	16.10	16.10	16.10
Rate of Return (%)	15.50%	15.50%	15.50%
Return on Equity	2.50	2.50	2.50

4.8 Interest on Loan Capital

4.8.1 APGCL has computed the Interest on Loan Capital as per Regulation 34 of the MYT Regulations, 2018 on normative basis. APGCL has considered normative loan portfolio and the repayment is considered equal to the depreciation for FY 2019-20 to FY 2021-22. The interest rate has been considered as the weighted average rate of interest considered for FY 2018-19. APGCL submitted the Interest on Loan Capital for LRPP for Control Period from FY 2019-20 to FY 2021-22 as shown in the following Table:

Table 41: Interest on Loan Capitalfor LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Net Normative Opening Loan	20.15	14.23	8.31
Addition of normative loan during the year	0.00	0.00	0.00
Repayment of normative loan during the year	5.92	5.92	5.92
Net Normative Closing Loan	14.23	8.31	2.39
Average normative Loan during the year	17.19	11.27	5.35
Rate of Interest (%)	10.30%	10.18%	10.10%
Interest on Loan Capital	**1.77**	**1.15**	**0.54**

Commission's Analysis

4.8.2 The Commission notes that Interest on loan capital for the Control Period is required to be allowed on normative basis as per Regulation 34 of MYT Regulations, 2018.

4.8.3 The closing net normative loan for FY 2018-19, as approved in this Order has been considered as opening net normative loan for FY 2019-20. No addition in normative loan has been considered. The repayment for the year has been considered equivalent to depreciation approved in this Order.

4.8.4 As per MYT Regulations, 2018, weighted average rate of Interest shall be computed based on outstanding loan as on April 1, 2019. The Commission sought details of outstanding loans as on April 1, 2019 along with documentary evidences. Accordingly, weighted average interest rate has been computed as 10.27%, 10.16% and 10.08% for each year of the Control Period. The interest on loan capital as approved by the Commission for the Control Period is shown in the following Table:

Table 42: Interest on Loan Capital for LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Net Normative Opening Loan	34.80	32.05	29.30
Addition of normative loan during the year	-	-	-
Repayment of normative loan during the year	2.75	2.75	2.75
Net Normative Closing Loan	32.05	29.30	26.55
Rate of Interest (%)	10.30%	10.18%	10.10%
Interest on Loan Capital	3.44	3.12	2.82

4.9 O&M Expenses

4.9.1 APGCL has projected O&M Expenses for FY 2019-20 to FY 2021-22 as per Regulation 50.1 of the MYT Regulations, 2015, considering the escalation factor of 6.30%. O&M Expenses projected for Control Period are shown in the following Table:

Table 43: O&M Expenses for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
O&M Expenses	20.11	21.38	22.73

Commission's Analysis

4.9.2 Regulation 50.2 of MYT Regulations, 2018 specifies norms for O&M Expenses for Gas Engine based Generating Station for base year of the Control period i.e., FY 2018-19. The Commission notes that Regulation has inadvertently mentioned the base year as FY 2015-16, which would be rectified by issuing subsequent amendment to MYT Regulations, 2018. Further, it is specified that O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above at the escalation factor 6.30% to arrive at permissible O&M expenses for each subsequent year.

4.9.3 The Commission has computed the O&M Expenses for LRPP for Control Period in accordance with the provisions of MYT Regulations, 2018. Accordingly, the O&M Expenses approved by the Commission for LRPP for Control Period is shown in the following Table:

Table 44: O&M Expenses for LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	Base O&M Expenses	FY 2019-20	FY 2020-21	FY 2021-22
O&M Expenses	18.85	20.04	21.30	22.64

4.10 Interest on Working Capital

4.10.1 APGCL submitted the Interest on Working Capital (IOWC) as per Regulation 36 of the MYT Regulations, 2018 on normative basis. 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, i.e., 8.5% + 3.00 % = 11.50%.APGCL submitted the Interest on Working Capital for LRPP for Control Period from FY 2019-20 to FY 2021-22 as shown in the following Table:

Table 45: Interest on Working Capital for LRPP for FY 2019-20 to FY 2021-22 as submitted by APGCL (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Fuel Cost for one month	9.71	9.72	9.74
O&M Expenses for one month	1.68	1.78	1.89
Maintenance Spares @30% of O&M	6.03	6.41	6.82
Receivable for two months	25.62	25.77	25.94
Total Working Capital Requirement	43.04	43.69	44.40
Rate of Interest (%)	11.50%	11.50%	11.50%
Interest on Working Capital	**4.95**	**5.02**	**5.11**

Commission's Analysis

4.10.2 The Commission has computed IoWC in accordance with Regulation 36.1 of the MYT Regulations, 2018. 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 i.e., 11.50%.

4.10.3 IoWC approved by the Commission for the Control Period is shown in the following Table:

Table 46: Interest on Working Capital for LRPP for FY 2019-20 to FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Fuel Cost for one month	7.91	7.91	7.91
O&M Expenses for one month	1.67	1.78	1.89
Maintenance Spares @30% of O&M	6.01	6.39	6.79
Receivable for two months	21.32	21.49	21.67
Total Working Capital Requirement	36.91	37.56	38.26
Rate of Interest (%)	11.50%	11.50%	11.50%
Interest on Working Capital	**4.24**	**4.32**	**4.40**

4.11 Non-Tariff Income

4.11.1 APGCL has not considered any Non-tariff Income for LRPP for Control Period.

Commission's Analysis

4.11.2 The Commission has also not considered any non-tariff Income for LRPP for Control period. The same shall be considered on actual basis at time of truing up for respective years.

4.11.3 **Summary of ARR for Control Period**

4.11.4 Based on the above analysis, the station-wise ARR approved for the Control Period for existing Stations is summarised in the Tables below:

Table 47: Summary of ARR for Control Period for LRPP approved by the Commission (Rs. Crore)

Sr. No.	Particulars	APGCL's Submission			Approved by Commission		
		FY 2019-20	FY 2020-21	FY 2021-22	FY 2019-20	FY 2020-21	FY 2021-22
A	**Annual Fixed Charges**						
1	O&M expenses	20.11	21.38	22.73	20.04	21.30	22.64
2	Depreciation	5.92	5.92	5.92	2.75	2.75	2.75
3	Interest on Loans	2.15	1.84	1.55	3.44	3.12	2.82
4	Return on Equity	4.48	4.48	4.48	2.50	2.50	2.50
5	Interest on Working Capital	4.95	5.02	5.11	4.24	4.32	4.40
6	Less:Non-tariff Income	-	-	-	-	-	-
7	**Annual Fixed Charges**	**37.23**	**37.95**	**38.77**	**32.97**	**33.99**	**35.11**
B	**Fuel Cost**	**116.50**	**116.69**	**116.89**	**95.19**	**94.93**	**94.93**
C	**Net ARR**	**153.74**	**154.64**	**155.66**	**128.16**	**128.92**	**130.04**

4.11.5 Based on the above determined ARR, the Generation tariff for FY 2019-20 for LRPP has been discussed in next Chapter.

5 Generation Tariff for FY 2019-20 for LRPP

5.1 Generation Tariff for FY 2019-20

5.1.1 APGCL submitted the Tariff for LRPP for FY 2019-20 as shown in the following Table:

Table 48: Tariff for FY 2019-20 as submitted by APGCL

Sr. No.	Particulars	FY 2019-20
1	Annual Fixed Charges (Rs. Crore)	37.23
2	Monthly Fixed Charges (Rs. Crore)	3.10
3	Energy Charge Rate (Rs./kWh)	2.20

Commission's Analysis

5.1.2 As discussed in earlier Chapter of this Order, the Commission clarifies that no revenue gap for FY 2018-19 has been considered for recovery during FY 2019-20 and the same shall be considered only after truing up for FY 2018-19.

5.1.3 The tariff for FY 2019-20 has been determined based on the net ARR approved by the Commission in earlier Chapter of this Order.

5.1.4 Regulation 47.1 stipulates that the normative PAF for full recovery of Annual Fixed Charges shall be 85% for LRPP. The Availability approved by the Commission for LRPP is more than normative PAF. Hence, the Commission approves the full recovery of Fixed Charges for LRPP. Any loss in Annual Fixed Charges on account of lower availability shall be considered at time of truing up for FY 2019-20. The Payment of Annual Fixed Charges shall be on monthly basis in equal instalments in proportion to contracted capacity subject to adjustment at the end of the year with respect to NAPAF.

5.1.5 Further, the Commission approves Energy Charge Rate based on Norms of Operation approved and GCV and price of Fuel considered in this Order. Any adjustment of rate of energy charge on account of variation in price or calorific value of fuels shall be done in accordance with Regulation 51.3 of MYT Regulations, 2018.

5.1.6 The Tariff approved by the Commission for LRPP for FY 2019-20 is shown in the following Table:

Table 49: Tariff for FY 2019-20 as approved by the Commission

Sr. No.	Particulars	FY 2019-20
1	Annual Fixed Charges (Rs. Crore)	32.97
2	Monthly Fixed Charges (Rs. Crore)	2.748
3	Energy Charge Rate (Rs./kWh)	1.89

5.2 Applicability of Tariff

5.2.1 The approved Generation tariff for FY 2019-20 shall be effective from April 1, 2019 and shall continue until replaced/modified by an Order of the Commission.

Sd/-

(D. Chakravarty)

Member, AERC

Sd/-

(S. C. Das)

Chairperson, AERC

Annexure 1: Minutes of the 24th Meeting of the State Advisory Committee

24th Meeting of the State Advisory Committee

VENUE : ASSAM ADMINISTRATIVE STAFF COLLEGE, GUWAHATI – 22.

DAY / DATE : TUESDAY, 5th February, 2019.

LIST OF MEMBERS / SPECIAL INVITEES: AT ANNEXURE-I (ENCLOSED)

The 24th Meeting of State Advisory Committee (SAC) was chaired by the Hon'ble Chairperson, AERC, Shri S.C. Das IAS, (Retd.). At the onset, the Chairperson welcomed all members and invitees to the meeting. He briefed the participants that the meeting was convened, primarily, to discuss the Multi Year Tariff (MYT) Petitions for FY 2019-20 to FY2021-22, which were filed by the State Power Utilities in December 2018. The Chairperson informed that the utilities would make short PowerPoint presentations on the important features of their respective petitions during the meeting. He further informed the participants that a Public Hearing is also scheduled to be held on 12thFebruary 2019 on these petitions.

The Chairperson stated that as stipulated by Section 87 of the Electricity Act 2003, the Commission has made it a point to approach the SAC for advice in all important matters of policy, including Regulations and Tariff making. He requested the members to offer their valuable advice on the petitions and in particular, on the following aspects:

a) The Discom has claimed increase in fixed charges stating that these charges accounted for only 14% of the electricity tariff as on date, while fixed cost constituted 60% of the total cost. The Commission increased fixed charges last year by Rs 5 and Rs 10 across different categories of consumers.

b) The High Tension (HT) consumers have been claiming that cross subsidy surcharge be reduced further and tariff be based on voltage wise cost of supply.

c) APDCL have signed the UDAY scheme and as per the MoU, the Company has to restrict the distribution loss to 15% or below in 2019-20. The distribution loss achieved by APDCL in FY 2018-19 is 17.64 %.Whether the Distribution loss trajectory for the MYT period is to be determined keeping in view the MOU under the UDAY scheme.

The Chairperson observed that the State Power Companies have been making huge capital investments and most of these are funded under different schemes of the State & Central Governments and loans from ADB and the World Bank. With capitalization of these projects, electricity tariff is likely to be affected over the next couple of years. The Chairperson further observed that there is a possibility of decrease in POC charges with increase in State generation in the coming years and concern displayed by the Central Government regarding high POC charges for few states and constitution of a Committee to study the matter afresh.

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 Hon'ble Members during the course of discussions are briefly recorded below.

Agenda: Confirm the Minutes of the 23rd meeting of SAC held on 15.06.2018

The Minutes of the 23rd Meeting of the Committee were circulated among the Members and Special Invitees. The following comments were received on the above:

a) Shri A.K. Baruah, Adviser AASIA brought to the notice of the Commission that point No.VI of Agenda No. 5 regarding the status of reconstitution of the Consumer Grievance Redressal Forums was raised by him and not by the member mentioned in the minutes.

b) Shri Baruah stated that one of his observations regarding non-payment of load security interest to LT consumers by APDCL was also not recorded in the minutes.

The Chairperson, AERC directed that necessary modifications be made to the minutes.

It is regretted that there was an inadvertent mistake in the name of the member. As directed by the Commission, rectification has been made and point No.VI of Agenda No. 5 of the minutes of the 23rd meeting of SAC held on 15.06.2018 shall henceforth be read as under:

"*Shri A. K. Baruah, Adviser, AASSIA enquired regarding the status of the re-constituted Consumer Grievance Redressal Forums. Chairperson AERC remarked* *that the Commission had written to the Discom to reconstitute 3 CGRFs in Jorhat, Guwahati and Silchar as per the AERC Regulations and the process is underway*."

Chairperson AERC remarked that at present there are eight (8) CGRFs across the State and the Commission has directed only three to be reconstituted with independent members according to the AERC Regulations, 2016. This was because the total number of cases recorded in the 8 CGRFs annually was not more than 20-25. He observed that most of the grievances, more than 95%, were sorted out at the sub-divisional level. The Chairperson further observed that APDCL should improve record keeping of the grievances attended at sub-divisional and divisional levels.

Regarding the point of non-payment of load security interest to LT consumers, an addition has been made to the minutes in Agenda No 5 as Point No. viii as under:

"*Shri A.K. Baruah, Adviser AASSIA stated that although, APDCL is paying load security interests to HT consumers, no payment is being made to the LT consumers. He observed that this is a contravention to the provisions of the Electricity Act 2003 as the Act advocates interest payment to all consumers irrespective of the category to which the consumers belong*".

The Commission directed APDCL to devise a means to pay interest on load security to the LT consumers as well, as has been specified in the AERC Regulations & the Electricity Act, and furnish an action taken report in the next SAC meeting.

Shri Champak Baruah, Member stated that he mentioned about the introduction of merit cum seniority in promotion of Engineers of the three Companies but there are no records of the same in the minutes.

The Chairperson clarified that as the matter relates to internal administration of the utilities over which the Commission has no jurisdiction, it was not recorded.

Agenda: Action Taken on the minutes of the 23rd Meeting of SAC.

A power-point presentation was made by Assistant Director (Engineering) AERC, Shri J. Bezbaruah on the salient features of action taken reports submitted by the power utilities. Hard copies of the action taken reports were also circulated among the members of SAC.

The Chairperson AERC asked the respective utilities to respond to any query from the SAC Members. The important points of discussion are noted below:

i. Shri Subodh Sharma, President, Bidyut Grahak Manch stated that solid steps need to be taken by the State Generating Sector to improve own generation capacity. He observed that more State generation would help reduce the POC charges. He further observed that performance of the state generation sector has a direct bearing on the health of the State Transmission and Distribution utilities.

ii. Shri Dilip Kumar Sarma, Sr. Consultant, NETC stressed that all efforts should be made to establish large sized generation plant inside the State of Assam either in State or Central sector which will contribute towards moderating the existing POC charges and in turn the domestic tariff.

iii. Regarding action taken by the Generation Company following decision of construction of the National Gas Grid in the State, MD APGCL, Ms Kalyani Baruah informed that APGCL has submitted a proposal to both MOPNG and GAIL for 9.75 MMSCMD of gas to set up power plants at various locations of Assam. Out of the 9.75 MMSCMD of gas, 6.60 MMSCMD is for the proposed 250 MW Chandrapur Thermal Power Project and 1450 MW (2X725 MW) Thermal Power Project at Lower Assam. The balance 3.15 MMSCMD gas is proposed to be utilized by the 725 MW Amguri Thermal Power Project and 100 MW Ph-II Namrup Replacement Power Project. MD, APGCL further informed that the price of gas available would be high and APDCL is considering appointing consultants to conduct a feasibility study for the proposed projects.

  Chairperson AERC observed that APGCL should accept the gas available even if price may be high, keeping in mind the future energy security of the State.

  Shri V.K. Pipersenia, IAS (Retd), Chairman APDCL/AEGCL /APGCL informed that they would soon initiate the process to appoint consultants to conduct a feasibility study regarding the viability of the proposed gas projects vis-à-vis the cost of gas available.

  Shri D. Chakravarty, Member AERC, suggested that gas available should be a mixture of both domestic and RLNG to reduce cost. MD, APGCL informed that MOPNG has given assurance that the gas made available would be a mixture of both domestic and RLNG and likely to be priced between $8- $12 per MMBTU.

Shri Subodh Sharma suggested that since the National Gas Grid is likely to be completed by 2020, therefore, the viability study needs to be completed at an early date so that these projects come into existence before gas becomes available. He informed the house that M/s GAIL had proposed uniform pricing of gas throughout the country; however, the outcome of the proposal is unknown.

Shri Dilip Kumar Sarma stressed that APGCL through the Govt. of Assam should vigorously pursue the proposal of M/s GAIL to the Ministry of Petroleum for uniform pricing of gas through out the country irrespective of distance or direction. At the same time, commitment from GAIL should also be obtained for minimum quantum of gas required for economic operation of gas based plants to be established by APGCL

Shri Dilip Kumar Sarmaalso observed that, given the present energy scenario, the gas that would be available in the country for the next 50 years would meet only 15-20% of the total requirement. Therefore, gas that would be supplied to Assam would be imported gas and likely to be priced at $8-$9 per MMBTU.

iv. Shri K. Medhi, Secretary, NESSIA opined that there have been discussions regarding setting up of power projects in Chandrapur since a long time, however, nothing concrete has been achieved so far.

MD, APGCL replied that different kinds of projects were proposed in the past. She stated that as suggested by Advisory Committee Members, a pumped storage project was proposed to be set up at Chandrapur. It was informed that although some investors had shown interest in the project initially, they failed to bid when tenders were floated for the same, even after repeated extensions.

v. Shri A.K Baruah, Adviser, AASSIA suggested that APGCL should ensure adherence to the timelines for completing their projects.

vi. Shri Subodh Sharma enquired regarding the new timelines for completion of the NRPP project.

MD, APGCL informed that gas turbine (Open Cycle) project of NRPP is likely to be commissioned in April, 2019 and the combined cycle project by December, 2019.

vii. He further enquired as to why same generation output was shown throughout the MYT period for NRPP. It was informed that APDCL has committed gas of 0.66 mmscmd from M/s GAIL of which 0.49 will be utilized in NRPP and with the remaining gas, APGCL proposes to run few units of NTPS.

Shri Sharma observed that APGCL should make efforts to actually achieve the proposed generation or else power procurement planning of APDCL gets affected and the consumers may end up paying higher electricity price. He suggested that the quantum of generation shown by APDCL and APGCL should match.

viii. Shri Champak Baruah enquired as to the status of the 70 MW Amguri Solar Power Project. He emphasized the fact that while the last date for bidding of the project was shown as 29.05.2019 in the last meeting, now the same is shown as 06.02.2019.

It was informed by the MD, APGCL that as suggested by SAC Members in the last meeting, APGCL decided to implement the project on its own through EPC contractors as project implementation through SECI was getting delayed. Therefore new tenders were floated and it is expected to receive a number of bids by 06.02.2019.

It was emphasized from the Chair that APGCL should take steps for timely completion of their projects such as NRPP, 120 MW Lower Kopili Hydel project, 24 MW Borpani Middle-II SHEP , etc

ix. Shri K. Medhi, General Secretary, NESSIA suggested that since APGCL has not succeeded in adding sizeable new generation capacity, perhaps, APGCL may not undertake any new project and instead, APDCL may be asked to procure power from outside sources through different modes.

Chairperson, AERC agreed that APGCL had not achieved much success with new projects in recent years except for 70 MW Lakwa Replacement Power Project (LRPP), which was commissioned in time, and reiterated that the Company must make ardent efforts to increase generation. He observed that the power generated by APGCL is one of the cheapest powers available to the Discom. The Chairperson further observed that emphasis must also be laid for fast completion of the Central

Sector Generation projects in Assam as the State receives 50% allocated power from these projects.

x. Regarding (2x800) MW Coal based Margherita Project, it was informed by MD, APGCL that although the matter has been pursued with the Central Government several times, no progress has been made in getting coal linkage for the project, so far.

xi. There was a suggestion in the last meeting that newly recruited engineers of the State distribution company may be trained on the technical aspects of electricity by their deputation to generation/ transmission Company and similar measure may be adopted for engineers of the generation / transmission sector so that these new recruits get a good idea of the overall power sector. Shri V.K. Pipersenia, Chairman, APGCL/AEGCL/APDCL commented that although it's a good suggestion, the three power Companies must devise their own HR policies. Shri Pipersenia informed that at present, the Discom has a shortage of manpower and therefore, they are not in a position to depute any Engineer to other utilities. The three companies have to together decide on the matter.

Regarding the Development of 100 MW (25x4) Solar Power Plant within the State by APDCL it was informed by Shri R. Agarwal, IAS, MD, APDCL that Azure Power India Pvt. Ltd, New Delhi and Maheshwari Mining and Energy Pvt. Ltd, Telengana were the successful bidders for 90 MW and 10 MW respectively. It was informed that the timeline for implementation of the projects will be 18 months from the date of signing the PPA. It was further informed that the bidders have identified the land for the projects. The land in Udalguri area which was identified for one project has already been transferred to the developer by the BTC administration while land acquisition is under process for the rest of the projects.

Shri Subodh Sharma suggested that as agricultural land cannot be used for power projects, the low lying lands of Brahmaputra river valley may be used for the purpose.

MD, APDCL informed that the land identified for the projects were lying vacant and as such, there was some relaxation in norms and conversion of the land allowed for the purpose of setting solar plants.

xii. It was further informed by MD, APDCL that as suggested in the last meeting, APDCL is carrying out energy audit of the 33/11 KV Jalukbari sub-station under PAT scheme. Based on its output, it was informed that, similar audit may also be carried out in near future for other sub-stations.

Chairperson AERC stated that as was informed in the last meeting, energy audit study has been taken up by the Commission in three circles of APDCL namely Guwahati Circle II, Jorhat and Cachar. Two Consultants were engaged through open bidding but the work was delayed due to absence of transformer meters and 33 KV & 11 KV line meters. He informed that meetings with concerned APDCL officers was held from time to time and metering works are likely to be completed shortly. The audit works will start immediately when the necessary infrastructure is in place.

Shri Subodh Sharma observed that the meters installed should have provisions for IT connectivity in future.

MD, APDCL responded positively stating that the meters installed have the provision for IT connectivity.

xiii. On safety related aspects, MD, APDCL informed that the Company have taken a slew of measures to ensure safety of the consumers. APDCL have started replacing the bare conductors for LT consumers with AB conductors, all transformers under Saubhagya scheme are fenced and whenever cases of unfenced transformers are reported, the Company immediately takes necessary action for fencing.

Shri Subodh Sharma suggested that many electrical accidents can be avoided if emphasis is laid on proper earthing of the conductors.

MD, APDCL agreed to the suggestion and assured that action would be taken in this regard. He requested the members to offer suggestions to APDCL regarding these issues so that appropriate action can be initiated. He stated that there is shortage of manpower to maintain the lines and recently a number of recruitments have taken place in this regard which is expected to help the Company considerably.

Shri Champak Baruah commented that accidents also take place due to non adherence to safety procedures by the linemen and officers of APDCL. Instances have come to his notice where linemen are taking shutdown instead of JEs, which is not as per safety protocol. He observed that prior information of shutdown to the local people while working on the electric lines /poles/ transformers is essential.

Chairperson AERC observed that APDCL must ensure that the safety protocols are being followed and continue with their safety initiatives for the consumers.

xiv. Shri Saurav Agarwal, FINER informed that as requested in the last meeting, APDCL circulated an advisory to the field offices regarding the new provision that the requirement for declaring minimum 65% of the contracted demand no longer exist. However, APDCL is not allowing a consumer to reduce the contract demand after the month of September.

It was clarified by APDCL that it is sticking to the month of September as tariff petitions, showing the load, is to be submitted by the month of November each year.

Chairperson AERC informed that as per the Supply Code Regulations, a consumer can reduce the contract demand only once in a year, but as this was the first year of the new Supply Code Regulations, he asked APDCL to look into the matter to consider some relaxation, if feasible.

Agenda: Presentation on MYT Petitions for FY 2019-20 to FY 2021-22 by AEGCL

There was a brief power point presentation on the MYT petitions for FY 2019-20 to FY 2021-22 along with true up for FY 2017-18 and Annual Performance Review for FY 2018-19. The presentation of AEGCL is enclosed as Annexure I. The following discussions took place during the course of the presentation.

i. It was informed that from FY 2019-20, the transmission charges on account of PGCIL shall be reflected in the tariff of APDCL.

ii. Shri Subodh Sharma commented that APDCL must correctly ascertain the PGCIL charges and may seek help of AEGCL in this regard.

Chairperson AERC observed that PGCIL charges are basically the POC charges and the actual amount can be ascertained through SLDC. He opined that APDCL shall acquire the expertise in calculating these charges over a period of time and until then, may seek assistance from AEGCL.

iii. Shri Subodh Sharma pointed out that while the cost of AEGCL should have been around 30-40 paise/unit for the MYT period of FY 2019-20 to FY 20121-22, AEGCL was asking a tariff of 51- 62 paise/unit.

MD, AEGCL explained that the tariff included the BST charges of 20 paise per unit.

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iv. Shri Subodh Sharma stated that Generators like Kathalguri Power Station, being a central sector generator, despite having the AEGCL network at their bays, have to evacuate their power through PGCIL network. Therefore, the consumers of Assam have to bear high POC charges. These issues need to be taken up by the Assam Government with the Central Government and Shri Sharma requested AERC to bring the matter to the notice of the State Government.

Chairperson AERC observed that many States are facing similar issues and these matters are being examined in the Central Government. However, he noted the suggestion of Shri Sharma.

v. Shri Subodh Sharma opined that AEGCL is the best performing company among the three power utilities of the State and it is important that policy decisions should not cause any harm to the Company.

vi. Shri Sharma again pointed out the issue regarding Tariff Based Competitive Bidding (TBCB) which has been made compulsory for setting up new intrastate transmission projects as per the Tariff Policy, 2016. He expressed concern that the State Transmission Company may suffer if TBCB is accepted.

Chairperson, AERC stated that it is a policy decision of the Government of India that any intra state transmission project, which cost above a threshold limit, shall be developed by the State Government through competitive bidding process and the limit is to be decided by the State Electricity Regulatory Commissions. The Chairperson informed that AERC, in consultation with the State Government and AEGCL, has specified a threshold limit through a draft notification in January 2019. He further informed that comments on the draft notification may be submitted within 31st March, 2019.

vii. Shri S.N. Kalita MD, AEGCL informed that as directed by the Commission, the Company has taken initiative to restructure and strengthen SLDC.

Agenda: Presentation on MYT Petitions for FY 2019-20 to FY 2021-22 by APGCL

APGCL made a brief power point presentation on MYT petitions for FY 2019-20 to FY 2021-22 along with true up for FY 2017-18 and Annual Performance Review for FY 2018-19. The presentation of AEGCL is enclosed as Annexure II. The important points raised by the participants during the course of the presentation are summarized below:

i) MD APGCL, Ms K. Baruah informed that the tariff proposed for Lakwa Thermal Power Station (LTPS) for the MYT period starting with FY 2019-20 are Rs 5.31/unit, Rs 5.66/unit and Rs 5.62/unit respectively. The proposed tariffs are the highest among the APGCL power stations as special R&M has been proposed for the Station which will require major overhauling.

ii) It was further informed by MD, APGCL that the new projects are being financed from ADB as 90 % Grant and 10% loan while R&M of old plants are being financed with State Government assistance. On a query from Shri Subodh Sharma, it was further informed by Ms Baruah that APGCL may restructure the Company and convert the capital grants to equity.

iii) The members expressed concern that the thermal stations of APGCL were unable to generate to their installed capacity due to inadequate availability of gas and important projects like Margherita Coal based project is yet to receive coal linkage. Besides, commissioning of most of the ongoing projects of APGCL has been delayed due to various reasons. They observed that if APGCL did not improve its performance, the performance of AEGCL will suffer too. And the consumers also have to bear greater cost of power through POC charges for power purchased from outside the State.

Given the above scenario, all members agreed that the State Government has to play a pivotal role in ensuring adequate gas availability and coal linkage for the projects of APGCL, at the earliest.

Agenda: Presentation on MYT Petitions for FY 2019-20 to FY 2021-22 by APDCL

There was a short Power Point presentation from APDCL on the MYT petitions for FY 2019-20 to FY 2021-22 along with true up for FY 2017-18 and Annual Performance Review for FY 2018-19. The presentation of AEGCL is enclosed as Annexure III. The following discussions took place during the course of the presentation:

i. APDCL informed that due to repeated persuasions against the POC charges by six States including Assam, the Ministry of Power called a meeting to hear their grievances. It was further informed that APDCL submitted their viewpoints on the matter and requested that 80% of the fixed cost may be socialized instead of 20% as is done now.

   MD, AEGCL observed that only 26% of the PGCIL transmission capacity is being utilsed and the rest 74% stands for reliability of the system and future use. He therefore, suggested that 74% may be proposed as reliability cost of the network to be equally shared by all users.

   Chairperson AERC observed that if 50% of the charges are socialized and 50% charged through POC, even then there will be some considerable reduction in the transmission charges. .

ii. It was informed that for the first time Assam is receiving 50 MW RTC Wind Power from projects in Tamil Nadu. APDCL has signed agreement with SECI and PTC and Assam is receiving the power from 4th February, 2019. It was further informed that APDCL would receive another 50 MW of wind power within this year. It was also informed that the 3rd unit of NTPC Bongaigaon Thermal Power Station will be commissioned shortly. Although, the price of this thermal power is high, APDCL will procure the power as per PPA. APDCL informed that Assam will soon also receive around 200 MW power from Mangdechu Hydro Electric project in Bhutan.

iii. The Discom informed that APDCL has been chosen the ADB Best Performing Utility award for timely implementation of its projects under 2017 ADB loan 3200 IND. The award would be given in October this year

Agenda: Comment and suggestion of the Members

i. Shri Subodh Sharma offered the following suggestions –

a) Due to SAUBHAGYA, DDUGJY and other such schemes of the Government of India, the domestic consumers are increasing at a faster pace than any other consumer category. As such, increased sale to such consumers also increases the distribution losses of the Company and affecting its revenue. APDCL is expected to function as a commercial entity; however, the peculiar consumer mix is preventing it from doing so. As such, adequate subsidy from the State Government is essential.

b) Although, first financial restructuring of the distribution Company was carried out years back and with signing of the UDAY scheme, another restructuring is underway, APDCL is yet to draw up a master plan to bring a commercial turnaround. The loss making utility must try to chalk out a master plan as to what should be the tariff at which it can achieve a financial turnaround, considering all the regulatory provisions and subsidies of the State Government that is likely to be available. They must also consider the investments required to bring the losses to the required level.

c) The three State Power Companies are symbiotically interconnected and in the long run, success of one would depend not only on its own performance but on the performance of the other two as well. Therefore, each Company must try to build itself as a robust commercial organization.

Chairperson AERC stated that in every Tariff Order, the Commission sets some parameters for achievement by the Companies. APDCL should make all efforts to achieve the targets set in tariff orders like distribution loss, collection efficiency, etc; so as to achieve a financial turnaround. The Chairperson observed that technical loss in the system may be higher than what is envisaged, in addition to commercial losses. A lot of investment in distribution infrastructure is required to reduce technical loss and to have an idea of these losses, the Commission is conducting the energy audit in three Electrical Circles. The final report of this audit is likely to be submitted by the end of this year and then the Commission would be in a better position to issue directions.

ii. Shri K. Medhi, General Secretary, NESSIA offered the following suggestions –

a) The proposed increase in fixed charges is very high while improved power scenario is a matter of opinion and usually differs from place to place. Instead of enhancing fixed charges, APDCL may conduct actual load survey sub-division wise. This would help increase the connected load and increase in fixed charges may not be necessary.

   He requested the Commission to look into the above aspects before allowing any enhancement.

b) Due to programmes such as SAUBHAGYA and DDUGJY, the performance of APDCL is dwindling. He stated that AT&C looses have increased substantially, collection efficiency has gone down even when the number of connections have increased; and arrears increased compared to earlier years. In view of the above scenario Shri Medhi suggested that

1. APDCL should try to enhance alternate and effective time tested methods for revenue realization.
2. Adopt energy efficient technologies & equipments and encourage consumers to do the same.

c) APDCL should encourage use of solar rooftops in the State and try to draw the benefits of Central Government sponsored schemes for solar rooftops.

d) There are many ghost (non-existent) electricity consumers and if the arrear of these ghost consumers are taken out, the balance sheet will be cleaner. Shri Medhi opined that there is a presumption that 40% of the total arrear is due to non-existent consumers.

Chairperson AERC assured that the suggestions would be considered while taking any decision.

iii. Shri Abhijit Sharma, Secreetary, ABITA made the following submissions –

a) He enquired regarding the status of providing dedicated feeders to the tea gardens.

Shri Rakesh Agarwal, MD APDCL stated that an amount of Rs 20 Crores were earmarked in the budget for installation of 11 numbers of dedicated feeders. However, tendering for the purpose is in process.

He informed that from FY 2018-19, the process of financing of the State government has undergone a massive change. Initially, whenever, funds were allocated by the State Government, the entire fund was released to APDCL and the money could be utilized. However, now, the State Government gives an allocation in the budget, a DPR/ proposal has to be submitted from APDCL, then administrative approval is received, then tendering/ allotment of works have to be done, then it has to be uploaded for financial sanction, and once the work is partially executed, only then the finance is released just like a State Government Department. He observed that due to this change in the process of release of funds, works are getting delayed.

MD, APDCL informed that during the last year 14,000 smart meters were installed in Guwahati as a pilot project and in January this year the Company was able to generate bills for 11000 meters without any kind of human intervention. He stated that technological interventions would make services convenient for the consumers; however, this would not only require the support of consumers but also massive investments. He informed that APDCL is trying to bring investments through IPDS, ADB Financing and the State Government.

b) While appreciating the endeavors of APDCL, Secretary, ABITA stated that the tea sector contributed around 8% of the total revenue of the Company amounting to approximately Rs 800 Cr. He explained that unless the supply to rural consumers and the tea gardens are separated, power position in the tea estates is unlikely to improve as the quality of power available may not be good enough for use in the tea gardens. As a result, the tea gardens have to utilize their generators and power produced is costlier than the power. from APDCL. While APDCL loses revenue, the tea gardens have to pay greater cost of production.

c) Secretary, ABITA also observed that as directed by the Commission in the last meeting, the Company can introduce Voluntary Disclosure of load program from time to time where consumers can be asked to disclose their loads. The Company may allow consumer to enhance their loads in a hassle free way with very few documentation requirements.

   MD APDCL informed that this is being done and about Rs 25 Cr additional fixed charges are collected after the VDL scheme in October last year.

   Chairman APDCL suggested that online facility for enhancement of load should be made available.

d) Secretary, ABITA stated that with the ongoing works of SAUBHAGYA, all the development works of APDCL has taken a backseat.

MD APDCL informed that some of the contractors involved in the development schemes like ADB, IPDS were also chosen for implementing the SAUBHAGYA scheme and since it is a time bound program, the development works were somewhat delayed. However, he assured that he and Chairman APDCL are personally reviewing the progress of every work under the schemes, and lots of advancement in the works is expected in the next couple of weeks.

It was informed from APDCL that online facilities were launched for new LT connections, however, applications received through online facility are very few. Therefore, as directed by Chairman, APDCL, the Company is planning to facilitate only online applications for new connection for LT consumers so that they get acquainted with the new systems. It was further informed that online facility for new HT connections will be launched too, shortly.

Shri Subodh Sharma observed that the electronic meters are equipped with facilities to capture the maximum demand during the month and APDCL can check if the contracted demand has been exceeded by any consumer.

Chairperson, AERC agreed to the suggestion and observed that the meter readers are not taking such readings and may be asked to do so by the concerned authorities. He noted that for HT consumers, it is being done because if these consumers exceeded contract demand they were penalized but for LT consumers, the same was not practiced. He further observed that this practice will do away with the necessity for conducting internal load survey by the Company, as has been proposed.

iv. Shri Saurav Agarwal, Chairperson, Power, FINER made the following observations:

a) As load enhancement is to be allowed online, load reduction should also be allowed online once a year.

Chairperson AERC directed APDCL to look into the matter.

b) Cost of power is one of the highest. One of the factors contributing to this is costly power from NTPC Bongaigaon Station. APDCL and the consumers must raise their voice against such tariffs when the petitions are filed for tariff determination in the Central Electricity Regulatory Commission. APDCL may consider opening a separate Cell or assign competent officers with the responsibility to voice these concerns in CERC. Recently, the draft MYT Regulations has been notified and there was no representation from Assam. APDCL can have a dedicated Cell to voice the concerns of the people of Assam in appropriate Forums like CERC, whenever necessary.

It was clarified from APDCL that the Company has been submitting response petitions before the CERC against NTPC tariff petitions and also contesting these in the Appellate Tribunal. APDCL cited an example where the Kathalguri station of NEEPCO had filed a petition before CERC requesting for reduction in PLF stating non availability of fuel. NEEPCO stated the example of APGCL gas stations whose PLF were low due to non availability of gas. This is a recent case where APDCL managed to win the case against NEEPCO.

Chairperson AERC observed that the consumers like FINER and ABITA may also file petitions before the concerned forum.

Shri Subodh Sharma stated that an individual consumer residing in Delhi have made representations to CERC against the NTPC petitions. However, he also observed that this is a costly affair and large consumers like FINER and ABITA should come forward.

c) In the last budget, the Government of Assam has announced 5% electricity duty ad valorem on the total consumption which has increased the electricity duty substantially for the industrial consumers.

Chairperson AERC opined that it is the policy decision of the State Government.

d) A number of points have been raised by the Statutory Auditors on the financial Statements of APDCL and requested the Commission to consider those while determining tariff.

The Commission assured that all the points which are likely to impact the tariff will be scrutinized before making a decision.

The Chairperson, AERC thanked the members for their suggestions.

Agenda: Discussions on Draft Regulations notified by AERC

Two draft Regulations namely Draft AERC (Electricity Supply Code) (First Amendment) Regulations, 2018 and Draft AERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2018 were notified as previous publications as per Section 181 (3) of the Electricity Act 2003 and public hearings were also held. These Regulations were circulated among the Advisory Committee members. Chairperson, AERC requested the Members to submit their comments on the Regulations, if any.

There was no comment from any member.

Agenda: Any Other matter.

No other matter came up for discussion.

Chairperson, AERC assured the members that the MYT proposals of the utilities would be prudently scrutinized and the valuable suggestions offered by each stakeholder would be taken into account while determining tariffs for FY 2019-20 and Annual Revenue Requirement for FY 2020-21 and FY2021-22.

The meeting ended with vote of thanks from the Chair.

Sd/-

Secretary,
Assam Electricity Regulatory Commission