



# **TARIFF ORDER**

**True-up of the FY 2017-18, Aggregate Revenue Requirement (ARR)  
and Determination of Generation Tariff for the FY 2020-21**

**Petition No. 16/2019**

**For**

**Puducherry Power Corporation Limited (PPCL)**

**18<sup>th</sup> May 2020**

**JOINT ELECTRICITY REGULATORY COMMISSION**

**For the State of Goa and Union Territories**

**3<sup>rd</sup> and 4<sup>th</sup> Floor, Plot No. 55-56, Sector -18, Udyog Vihar - Phase IV**

**Gurugram, (122015) Haryana**

**Telephone : +91(124) 4684705 Telefax: +91(124) 4684706**

**Website: [www.jercuts.gov.in](http://www.jercuts.gov.in)**

**E-mail: [secy-jerc@nic.in](mailto:secy-jerc@nic.in)**

# Table of Contents

<b>1. Chapter 1: Introduction .....</b>	<b>8</b>
1.1. About Joint Electricity Regulatory Commission (JERC) .....	8
1.2. About Puducherry Power Corporation Limited (PPCL) .....	8
1.3. Regulations Governing Tariff of PPCL.....	9
1.4. Filing and Admission of the Present Petition.....	9
1.5. Interaction with the Petitioner .....	9
1.6. Notice for Public Hearing .....	10
1.7. Public Hearing(s) .....	10
<b>2. Chapter 2: True-up for FY 2017-18 .....</b>	<b>11</b>
2.1. Regulations.....	11
2.2. Operational Parameters .....	12
2.2.1. Normative Annual Plant Availability Factor (NAPAF) .....	12
2.2.2. Auxiliary Power Consumption (APC).....	12
2.2.3. Gross Station Heat Rate (GSHR).....	12
2.3. Annual Fixed Cost (AFC) for True-up of FY 2017-18 .....	13
2.3.1. Capital Cost for FY 2017-18 .....	13
2.3.2. Depreciation.....	14
2.3.3. Interest Charge on Loan.....	15
2.3.4. Return on Equity .....	15
2.3.5. Operation and Maintenance (O&M) Expenses .....	17
2.3.6. Interest on Working Capital .....	17
2.3.7. Differential Annual Fixed Cost (AFC) approved during the True-up of FY 2017-18 .....	18
2.3.8. Carrying Cost on Differential Annual Fixed Cost (AFC) .....	19
2.4. Variable Charge/ Energy Charge approved for the True-up of FY 2017-18.....	20
<b>3. Chapter 3: True-up for the FY 2018-19 .....</b>	<b>21</b>
3.1. Applicable Regulations for True-up.....	21
3.2. Approach for Truing-up of the FY 2018-19.....	21
<b>4. Chapter 4: Determination of AFC for the FY 2020-21 .....</b>	<b>22</b>
4.1. Background .....	22
4.2. Regulations .....	22
4.3. Operational Parameters .....	22
4.3.1. Normative Annual Plant Availability Factor (NAPAF) .....	22
4.3.2. Auxiliary Power Consumption (APC).....	22
4.3.3. Gross Station Heat Rate (GSHR).....	23
4.4. Variable Cost Parameters for Working Capital.....	24
4.4.1. Data for Calculation of Parameters.....	24
4.4.2. Weighted Average Gross Calorific Value (GCV) of Gas.....	25
4.4.3. Weighted Average Price of Gas .....	26

4.4.4. Energy (Variable) Charges for Working Capital requirement .....	26
4.5. Annual Fixed Cost (AFC) approved for the FY 2020-21 .....	26
4.5.1. Capital Cost.....	27
4.5.2. Depreciation.....	27
4.5.3. Interest on Loan.....	28
4.5.4. Return on Equity .....	28
4.5.5. Operation and Maintenance (O&M) Expenses .....	29
4.5.6. Interest on Working Capital.....	30
4.5.7. Annual Fixed Cost (AFC) approved for the FY 2020-21.....	32
4.6. Energy/ Variable Charge (Net) .....	32
<b>5. Chapter 5: Annual Fixed Cost (AFC) and other charges for the FY 2020-21 .....</b>	<b>34</b>
<b>6. Chapter 6: Directives .....</b>	<b>35</b>
6.1. New Directives issued in this Order.....	35
6.1.1. Filing of Petition for Annual Performance Review (APR) .....	35
6.1.2. Submission of actual purchase bills for FY 2018-19 .....	35
6.1.3. Filing of the True-up Petitions upto FY 2019-20 .....	35
<b>Annexures.....</b>	<b>36</b>
Annexure 1: List of Stakeholders .....	36

# List of Tables

Table 1: Details of the PPCL Gas Power Station .....	8
Table 2: List of interactions with the Petitioner .....	9
Table 3: Details of Public Notices published by the Petitioner .....	10
Table 4: Details of Public Notices published by the Commission .....	10
Table 5: Depreciation approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	14
Table 6: Interest Charges approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	15
Table 7: Return on Equity approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	16
Table 8: O&M expenses approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	17
Table 9: Interest on working capital approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	18
Table 10: Revised Annual Fixed Cost approved by the Commission for True-up of FY 2017-18 (In INR Cr) .....	18
Table 11: Differential monthly capacity charges approved by the Commission for True-up of FY 2017-18 (in INR Cr) .....	19
Table 12: Computation of carrying cost on differential AFC for FY 2020-21 (In INR Cr) .....	20
Table 13: Details submitted by Petitioner for computation of weighted average GCV and price of gas .....	24
Table 14: Computation of weighted average GCV of gas .....	25
Table 15: Computation of weighted average price of gas .....	26
Table 16: Variable Charges for Working Capital .....	26
Table 17: Capital Cost approved by the Commission for the FY 2020-21 (INR Cr) .....	27
Table 18: Depreciation approved by the Commission for the FY 2020-21 (In INR Cr) .....	28
Table 19: Return on Equity approved by the Commission for the FY 2020-21 (In INR Cr) .....	29
Table 20: O&M Norms for Small gas turbine power generating stations as per CERC Tariff Regulations 2014 (in INR Lakh/MW) .....	30
Table 21: O&M Expenses approved by the Commission for the FY 2020-21 (In INR Cr) .....	30
Table 22: Computation of Cost of Gas for 1 month .....	31
Table 23: Interest on working capital approved by the Commission for the FY 2020-21 (In INR Cr) .....	31
Table 24: Annual Fixed Cost approved by the Commission for the FY 2020-21 (In INR Cr) .....	32
Table 25: List of participants in Public Hearings .....	36

# List of Abbreviations

<b>Abbreviation</b>	<b>Full form</b>
<b>Act</b>	Electricity Act, 2003
<b>APC</b>	Auxiliary Power Consumption
<b>CERC</b>	Central Electricity Regulatory Commission
<b>CGS</b>	Central Generating Station
<b>Commission/JERC</b>	Joint Electricity Regulatory Commission for the State of Goa and Union Territories
<b>EDP</b>	Electricity Department, Puducherry
<b>FC</b>	Fixed charge
<b>FY</b>	Financial Year
<b>GFA</b>	Gross Fixed Assets
<b>GCV</b>	Gross Calorific Value
<b>MU</b>	Million Unit
<b>MW</b>	Mega Watt
<b>MYT</b>	Multi-Year Tariff
<b>NAPAF</b>	Normative Annual Plant Availability Factor
<b>O&amp;M</b>	Operation and Maintenance Expenses
<b>PAFM</b>	Plant Availability Factor during the month
<b>PLF</b>	Plant Load Factor
<b>PPA</b>	Power Purchase Agreement
<b>PPCL</b>	Puducherry Power Corporation Limited
<b>RoE</b>	Return on Equity
<b>SHR</b>	Station Heat Rate

**Before the**  
**Joint Electricity Regulatory Commission**  
**For the State of Goa and Union Territories, Gurugram**

QUORUM

Sh. M. K. Goel, Chairperson

Petition No. 16/2019

**In the matter of**

Approval for the True-up of the FY 2017-18, Aggregate Revenue Requirement (ARR) and Determination of Generation Tariff for the FY 2020-21.

**And in the matter of**

Puducherry Power Corporation Limited (PPCL) .....Petitioner

**ORDER**


Dated: 18<sup>th</sup> May 2020

- 1) This Order is passed in respect to the Petition filed by Puducherry Power Corporation Limited (hereinafter referred to as “PPCL” or “the Petitioner”) for Approval for the True-up of the FY 2017-18, Aggregate Revenue Requirement and Determination of Generation Tariff for the FY 2020-21 before the Joint Electricity Regulatory Commission (herein after referred to as “The Commission” or “JERC”).
- 2) The Commission scrutinised the said Petition and generally found it in order. The Commission admitted the Petition on 26<sup>th</sup> November 2019. The Commission thereafter requisitioned further information/ clarifications on the data gaps observed to take a prudent view of the said Petition. The Commission also held a Technical Validation Session to determine sufficiency of data and the veracity of the information submitted. Further, suggestions/ comments/ views and objections were invited from the Stakeholders and Electricity Consumers. A Public Hearing was also held on 07<sup>th</sup> and 08<sup>th</sup> January 2020, and all the Stakeholders/Electricity Consumers present in the Public Hearing were heard.
- 3) Ministry of Home Affairs (MHA), Govt. of India has imposed nationwide lockdown with certain exceptions in the entire country from 24<sup>th</sup> March 2020 onwards to contain Covid-19. The Commission acknowledges that the prevailing situation due to outbreak of Covid-19 has led to complete shutdown of a number of commercial, industrial and Institutional establishments. COVID-19 (Corona Virus) outbreak has posed an unprecedented and unconceivable situation which is causing wide spread concern and economic hardship for communities, businesses and consumers across the country. The delay in issuance of this Order is due to the above uncontrollable factor i.e. nationwide lockdown with effect from March 24, 2020 due to the pandemic COVID 19.
- 4) Any Financial implication in view of lockdown due to pandemic covid-19, will be duly considered while evaluating the APR FY 2020-21 thereafter true-up of FY 2020-21.
- 5) The Petitioner has not submitted the true-up petition for FY 2018-19; therefore, the Commission has not carried out the True-up for FY 2018-19. The Commission shall revisit the ARR for the FY 2018-19 after the submission of true petition along with audited accounts by the Petitioner.

- 6) The approved generation tariff for FY 2020-21 shall come into force from 1<sup>st</sup> June 2020 and shall remain valid until further Orders of the Commission.
- 7) All existing provisions that are not modified by this Order shall continue to be in force.
- 8) The Commission approves the following for PPCL Gas Power Station at Karaikal:
  - (a) Annual Fixed Cost (AFC) at INR 33.17 Cr for FY 2020-21.
  - (b) Normative Annual Plant Load Factor (NAPLF) for the purpose of the calculation of Incentive and the formula for computation of energy charge (net) to be billed per month shall be considered as per the prevalent CERC Tariff Regulations.
  - (c) Billing of an additional claim of INR 4.86 Cr on account of True-up of FY 2017-18 from Electricity Department, Puducherry (EDP) in six equal monthly instalments starting within three months from the date of the Tariff Order.
  - (d) In addition to the charges approved above, the Commission also allows recovery of expenses pertaining to regulatory compliance (fees paid to the Commission towards filing of Tariff Petition for FY 2020-21 and related publication expenses) from the beneficiary in twelve equal monthly instalments.
- 9) Ordered accordingly, the attached documents giving detailed reasons, grounds and conditions are the Integral part of this Order.

-Sd-  
**(M.K. Goel)**  
**Chairperson**

Place: Gurugram  
Date: 18<sup>th</sup> May 2020

(Certified Copy)  
  
**(Rakesh Kumar)**  
**Secretary**

# 1. Chapter 1: Introduction

## 1.1. About Joint Electricity Regulatory Commission (JERC)

In exercise of powers conferred by the Electricity Act 2003, the Central Government constituted a Joint Electricity Regulatory Commission for all the Union Territories except Delhi to be known as “the Joint Electricity Regulatory Commission for the Union Territories” vide notification no. 23/52/2003-R&R dated 2<sup>nd</sup> May 2005. Later with the joining of the State of Goa, the Commission came to be known as “Joint Electricity Regulatory Commission for the State of Goa and Union Territories” (hereinafter referred to as “the JERC” or “the Commission”) vide notification no. 23/52/2003-R&R (Vol. II) dated 30<sup>th</sup> May 2008.

JERC is an autonomous body responsible for regulation of the Power Sector in the State of Goa and the Union Territories of Andaman & Nicobar Islands, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry, consisting of generation, transmission, distribution, trading and use of electricity. Its primary objective includes taking measures conducive to the development of the electricity industry, promoting competition therein, protecting the interests of consumers and ensuring the supply of electricity to all areas.

## 1.2. About Puducherry Power Corporation Limited (PPCL)

Puducherry Power Corporation Limited (hereafter referred to as ‘PPCL’ or ‘Petitioner’), an undertaking of Government of Puducherry, is a Government company within the meaning of Companies Act, 1956, as amended from time to time. Further, it is a “Generating Company”, as defined under sub-section 28 of section 2 of the Electricity Act, 2003.

PPCL was incorporated on 30<sup>th</sup> March 1993, with the objective of generating 32.5 MW of Electricity (22.9 MW from gas turbine and 9.6 MW from Steam turbine) at Karaikal which is one of the outlying regions of the Union Territory of Puducherry.

The details of Plant capacity, commercial & operation data etc. are given in the following table:

**Table 1: Details of the PPCL Gas Power Station**

S.No.	Subject	Particulars
1	Capacity	32.5 MW
	- Gas Turbine	22.9 MW
	- Steam Turbine	9.6 MW
2	Date of Commercial Operation	3 <sup>rd</sup> January 2000
3	Type of Fuel	Natural gas
4	Type of Cooling System	Induced draft cooling tower
5	Gas Supplier	GAIL (India) Ltd.

The required gas of 1.91 lakhs cubic meter per day is obtained from the gas wells at Narimanam in the Cauvery basin under an agreement with GAIL (India) Ltd.

The gas power station at Karaikal was declared ready for commercial operation on 3<sup>rd</sup> January 2000 and is supplying power to Electricity Department Puducherry (EDP) under a PPA signed with them on 25<sup>th</sup> February 2002.

The Electricity Department of Puducherry is the sole buyer of the electricity generated by PPCL.



### **1.3. Regulations Governing Tariff of PPCL**

The Commission notified the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Terms and Conditions for Determination of Tariff) Regulations, 2009 on 9<sup>th</sup> February 2010. PPCL was governed by these Regulations until the end of the Control Period i.e. 31<sup>st</sup> March 2019.

The Commission notified the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Generation, Transmission and Distribution Multi-Year Tariff) Regulations, 2018 on 10<sup>th</sup> August 2018. These Regulations are applicable for the 2<sup>nd</sup> MYT Control Period comprising of three financial years from FY 2019- 20 to FY 2021-22 to all the generation companies, transmission and distribution licensees in the State of Goa and Union Territories of Andaman & Nicobar Islands, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry.

### **1.4. Filing and Admission of the Present Petition**

The present Petition was admitted on 26<sup>th</sup> November 2019 and marked as Petition No. 16/2019. The Commission and the Petitioner subsequently uploaded the Petition on their respective websites.

### **1.5. Interaction with the Petitioner**

A preliminary scrutiny/analysis of the Petition was conducted and certain deficiencies were observed. Accordingly, deficiency notes were issued to the Petitioner. Further, additional information/clarifications were solicited from the Petitioner as and when required. The Commission and the Petitioner also discussed various concerns of the Petitioner and key data gaps, which included cost of gas, depreciation, O&M expenses, capitalization etc. The Petitioner submitted its response on the issues through various letters/emails.

The Commission conducted a Technical Validation session (TVS) with the Petitioner at the Commission' office in Gurugram, during which the discrepancies in the Petition were conveyed and additional information required by the Commission was sought. Subsequently, the Petitioner submitted replies to the issues raised in these sessions and provided documentary evidence to substantiate its claims regarding various submissions. The following table provides the list of interactions with the Petitioner along with the dates:

**Table 2: List of interactions with the Petitioner**

<b>S. No</b>	<b>Subject</b>	<b>Date</b>
1	Issue of First Deficiency Note	12.12.2019
2	Issue of Second Deficiency Note	13.01.2020
3	Public hearing	07.01.2020, 08.01.2020
4	Replies received from Petitioner	23.12.2020, 23.01.2020
5	Technical Validation Session	10.01.2020

## 1.6. Notice for Public Hearing

Public notices were published by the Petitioner for inviting suggestions/ comments from stakeholders on the Tariff Petition as given below:

**Table 3: Details of Public Notices published by the Petitioner**

Sl. No.	Date	Name of Newspaper	Language	Place of Circulation
1	17.12.2019	New Indian Express	English	Puducherry, Karaikal, Mahe, Yanam
2	17.12.2019	The Hindu	English	Puducherry, Karaikal, Mahe, Yanam
3	17.12.2019	Dinakaran	Tamil	Puducherry, Karaikal
4	17.12.2018	Dinathanthi	Tamil	Puducherry, Karaikal
5	18.12.2019	Kerala Kaumudi	Malayalam	Mahe

The Commission also published Public Notices in the leading newspapers as tabled below, giving due intimation to the stakeholders, consumers and the public at large about the Public Hearings conducted by the Commission on:

- 07<sup>th</sup> January 2020 from 10 AM onwards at Puducherry State Co-operative Union Building, Suffren Street, Puducherry.
- 08<sup>th</sup> January 2020 from 10 AM onwards at Danal K.A. Thangavelu Kalayarangam, Theitta Street, Near Municipality Marriage Hall, Karaikal

**Table 4: Details of Public Notices published by the Commission**

Sl. No.	Date	Name of Newspaper	Place of Circulation
1	13.12.2019	The New Indian Express	All Tamil Nadu
2	13.12.2019	Daily Thanthi	Puducherry
3	13.12.2019	Dinakaran	Puducherry
4	13.12.2019	Hindu	Visakhapatnam, Vijayawada
5	04.01.2020	The New Indian Express	All Tamil Nadu
6	04.01.2020	Daily Thanthi	Puducherry
7	04.01.2020	Dinakaran	Puducherry
8	04.01.2020	Hindu	Visakhapatnam, Vijayawada

## 1.7. Public Hearing(s)

The Public Hearings were held on 07<sup>th</sup> January 2020 at Puducherry State Co-operative Union Building, Suffren Street, Puducherry, and 08<sup>th</sup> January 2020 at Danal K.A. Thangavelu Kalayarangam, Theitta Street, Near Municipality Marriage Hall, Karaikal to discuss the issues related to the Petition filed by the Petitioner. The list of the Stakeholders is attached as **Annexure 1** to this Order.

## 2. Chapter 2: True-up for FY 2017-18

### 2.1. Regulations

The True-up for FY 2017-18 is being carried out as per the provisions of Regulation 8 of the JERC Tariff Regulations 2009. The said Regulation specifies as under:

*“(8) Review and True Up*

- 1) *The Commission shall undertake a review along with the next Tariff Order of the expenses and revenues approved by the Commission in the Tariff Order. While doing so, the Commission shall consider variations between approvals and revised estimates/actuals of sale of electricity, income and expenditure for the relevant year and permit necessary adjustments/ changes in case such variations are for adequate and justifiable reasons. Such an exercise shall be called ‘Review’.*
- 2) (i) *After audited accounts of a year are made available, the Commission shall undertake similar exercise as above with reference to the final actual figures or the provisional actual accounts as available as per the audited accounts. This exercise with reference to audited accounts shall be called ‘Truing Up’.*  
  
(ii) *The Truing Up for any year will ordinarily not be considered after more than one year of ‘Review’.*
- 3) *The revenue gap of the ensuing year shall be adjusted as a result of review and truing up exercises.*
- 4) *While approving such expenses/revenues to be adjusted in the future years as arising out of the Review and / or Truing up exercises, the Commission may allow the carrying costs as determined by the Commission of such expenses/revenues. Carrying costs shall be limited to the interest rate approved for working capital borrowings.*
- 5) *For any revision in approvals, the licensee would be required to satisfy the Commission that the revision is necessary due to conditions beyond its control.”*

The Commission had approved tariff for FY 2017-18 vide its Order dated 31<sup>st</sup> March 2017. The Commission in its Tariff Order had approved AFC of INR 23.34 Cr for FY 2017-18 based on the capital cost of INR 150.92 Cr.

The True-up for FY 2017-18 was not carried out in the MYT Order for the 2<sup>nd</sup> Control Period (FY 2019-20 to FY 2021-22) since the Petitioner had not submitted audited final accounts for the same. However, the Petitioner has submitted its Audited Annual Accounts for FY 2017-18 along the Petition for Tariff for FY 2020-21. According to the Regulation 8(2) of the MYT Regulations, 2014 cited above the Truing Up for any year is not ordinarily considered after more than one year of 'Review'; However, considering the difficulty faced by PPCL and request made to the Commission in this regard the Commission has considered Truing-up for FY 2017-18 so that the Tariff reflects a true picture in the subsequent years.

As a part of the True-up exercise, the Commission has reviewed the variations between approvals and actuals of income and expenditure for FY 2017-18 (as per the audited accounts submitted by the Petitioner) and has permitted necessary adjustments after due prudence check in cases where variations are for reasonable and justifiable reasons.

The Commission, for the purpose of the True-up for FY 2017-18, has considered the CERC Tariff Regulations for the period FY 2014-19 issued by CERC vide notification no. L-1/144/2013/CERC dated 21<sup>st</sup> February 2014 (herein referred to as CERC Tariff Regulations 2014).

## **2.2. Operational Parameters**

### **2.2.1. Normative Annual Plant Availability Factor (NAPAF)**

#### **Petitioner's Submission**

The Petitioner has considered a Normative Plant Availability Factor (NAPAF) of 85%, considering the Hon'ble APTEL judgment in Appeal No. 41/2012 dated 21<sup>st</sup> November 2012 and the previous Orders of the Commission.

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

The Commission in its Order dated 31<sup>st</sup> March 2017 had approved the NAPAF of 85% as per CERC Tariff Regulations 2014. NAPAF of 85% is also in line with the judgment of the Hon'ble APTEL dated 21<sup>st</sup> November 2012 in Appeal No. 41/2012. The Commission has therefore retained NAPAF of 85% for FY 2017-18.

**The Commission approves NAPAF at 85% for the FY 2017-18.**

### **2.2.2. Auxiliary Power Consumption (APC)**

#### **Petitioner's Submission**

The Petitioner has considered an auxiliary power consumption of 5.00% for calculation of revised tariff for FY 2017-18.

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

The Commission in its Tariff Order dated 31<sup>st</sup> March 2017 had approved auxiliary power consumption of 5%. The same was allowed considering the norms of auxiliary power consumption mentioned in Regulation 36 (E) (c) of the CERC Tariff Regulations, 2014 for small gas turbine generating stations and the CEA guidelines for plants with electric-driven gas booster compressors.

In accordance with the same, the Commission has decided to retain the auxiliary power consumption norm at 5% of gross generation.

**The Commission approves the APC at 5% for the FY 2017-18.**

### **2.2.3. Gross Station Heat Rate (GSHR)**

#### **Petitioner's Submission**

The Petitioner has considered the gross station heat rate of 2646 kcal/kWh for FY 2017-18 as per the Commission's Order dated 31<sup>st</sup> March 2017.

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

The Commission had approved GSHR of 2646 kcal/kWh in its Tariff Order dated 31<sup>st</sup> March 2017. This was based on analysis done by the Commission in the earlier Tariff Order, dated 25<sup>th</sup> April 2014, after detailed analysis of historical data of the heat rate for 12 years and the CERC Order dated 07<sup>th</sup> June 2012 on NEEPCO's Petition for revising the GSHR of Assam and Agartala gas power projects (analogous to the PPCL plant). The Commission had also gone through the 'performance guarantee report' of the PPCL gas power station for the guaranteed heat rate of 2,291 kcal/kWh (based on the NCV of the gas). The gross design heat rate for net station design heat rate of 2,291 kcal/kWh works out to 2,520 (2,291\*1.1) kcal/kWh, considering a conversion factor of 1.1, i.e. GCV = 110% of NCV. Further, applying the degradation factor of 5% as per the CERC Tariff Regulations, 2014, the normative GSHR comes to 2,520 \* 1.05 = 2,646 kcal/kWh.

Considering the above, the Commission decides to retain the station heat rate of 2646 kcal/kWh.

**The Commission approves the GSHR for the PPCL gas station at 2,646 kcal/kWh for the FY 2017-18.**

### **2.3. Annual Fixed Cost (AFC) for True-up of FY 2017-18**

The following components were considered in the Commission's Order dated 31<sup>st</sup> March 2017 as part of the fixed charge for FY 2017-18:

1. Depreciation
2. Interest on Loan
3. Interest on Working Capital
4. O&M Expenses
5. Return on Equity

The components of the fixed charge mentioned above are discussed in the following paragraphs. The Commission has arrived at the revised Annual Fixed Cost (AFC) for the year and accordingly approved the differential charge to be claimed/ refunded by PPCL as part of the True-up exercise for FY 2017-18.

#### **2.3.1. Capital Cost for FY 2017-18**

##### **Petitioner's Submission**

The Petitioner has considered the Capital Cost based on the approved capital cost of INR 150.92 Cr as per the Tariff Order dated 31<sup>st</sup> March 2017 with additional capitalisation of INR 0.32 Cr incurred towards installation of Continuous Effluent Monitoring System. The Petitioner submits that *"During the financial year 2017-18, a sum of INR 0.32 Cr had been incurred towards installation of Continuous Effluent Monitoring System. The continuous effluent monitoring system was installed based on the instructions issued by Central Pollution Control Board (CPCB) vide no B-29076/04/06/PCI- 1/5392, dt.05.02.2014 and as per directions issued by Puducherry Pollution Control Committee vide PPCC/ /CPCB/DIR/OMS/KKL/JE/2014/128, dt.09.05.2014."*

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

The Commission in the Tariff Order dated 31<sup>st</sup> March 2017, approved an opening capital cost of INR 150.92 Cr for FY 2017-18 with no additional capitalization.

Regulation 14 of the CERC Tariff Regulations 2014 provide that any additional capital expenditure incurred after the cut-off date, may be admitted by the Commission, subject to prudence check, if it is either due to change in law or in compliance of any existing law. Relevant extract of the Regulation 14 of CERC Tariff Regulations 2014 is stated below:

*"(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

- (i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) Change in law or compliance of any existing law;***
- (iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*
- (iv) .....*
- (x) ..... " (emphasis added)*

As per the Petitioner's submission, the additional capitalisation of INR 0.32 Cr was towards installation of Continuous Effluent Monitoring System which was installed based on the instructions issued by Central Pollution Control Board (CPCB).

On examining the copy of the directions of Puducherry Pollution Control Committee and CPCB, as submitted by the Petitioner, the Commission is of the view that action taken by the petitioner is in compliance of the relevant sections of the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.

**Accordingly, the Commission approves INR 150.92 Cr as the opening capital cost and INR 0.32 Cr as additional capitalization for the FY 2017-18.**

### **2.3.2. Depreciation**

#### **Petitioner's Submission**

The depreciation has been computed on the closing capital cost of INR 151.24 Cr which includes the Opening Capital Cost as INR 150.92 Cr per the Commission's Order dated 31<sup>st</sup> March 2017 and additional capitalisation of INR 0.32 Cr. The Petitioner has excluded the cost of freehold land of INR 7.93 Cr for depreciation purpose. The cumulative depreciation of the assets has been capped at 90% of the capital cost. The cumulative depreciation recovered up to FY 2016-17 is considered as INR 125.77 Cr. Accordingly the depreciation for the year has been considered as INR 0.40 Cr by the Petitioner.

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

The Commission has considered the opening capital cost of INR 150.92 Cr with additional capitalization of INR 0.32 Cr for FY 2017-18 and the average Capital Cost of INR 151.08 Cr is considered for calculation of depreciation. The cost of the freehold land of INR 7.93 Cr has been excluded for depreciation purpose. The cumulative depreciation recovered up to FY 2016-17 is INR 125.77 Cr (which includes cumulative depreciation of INR 125.41 Cr upto 2015-16 and INR 0.36 Cr as depreciation approved for the year 2016-17). As the plant has already completed 12 years from the date of commercial operation and FY 2017-18 was its 17<sup>th</sup> year of operation, the remaining depreciable value of the asset has been spread over the next 8 years of the useful life, as per the CERC Tariff Regulations 2014.

The cumulative depreciable value of the asset has been capped at 90% of the capital cost of the asset as per the CERC Tariff Regulations 2014 and accordingly the depreciation for the True-up of FY 2017-18 works out to INR 0.38 Cr.

The calculation of the same is as shown in the following table:

**Table 5: Depreciation approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	Average Capital Cost	150.92	151.24 <sup>1</sup>	151.08
2	Cost of Freehold (FH) Land	7.93	7.93	7.93
3	Capital cost excluding FH Land	142.99	143.31	143.15
4	Cap on cumulative depreciation (90% of S. No. 3)	128.69	128.98	128.83
5	Cumulative Depreciation upto the previous year	125.74	125.77	125.77

<sup>1</sup> The Petitioner has computed the depreciation on the closing balance of the Capital Cost instead of the average balance of the Capital Cost.

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
6	Balance depreciation to be recovered	2.95	3.21	3.06
7	Balance useful Life (years)	8 years	8 years	8 years
<b>8</b>	<b>Depreciation for the year</b>	<b>0.37</b>	<b>0.40</b>	<b>0.38</b>

Therefore, the Commission approves depreciation of INR 0.38 Cr for the FY 2017-18.

### **2.3.3. Interest Charge on Loan**

#### **Petitioner's Submission**

The Petitioner has claimed NIL interest charges for the True-up of FY 2017-18.

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

On the basis of the average capital cost of INR 151.08 Cr for FY 2017-18, the gross normative loan is INR 105.76 Cr (70% of the approved average capital cost of INR 151.08 Cr).

As per the CERC Tariff Regulations 2014, the repayment shall be deemed equal to the depreciation amount. It is seen that the cumulative depreciation recovered so far is higher than the gross normative loan amount, and accordingly there is no loan outstanding for the year. In the absence of any outstanding loan amount, the interest charges for the year are approved as NIL.

The computation of the interest charges is as shown in the following table:

**Table 6: Interest Charges approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	Average capital cost for the year	150.92	151.08	151.08
2	Normative loan at 70% of average capital cost	105.64	105.76	105.76
3	Cumulative repayment up to the previous year	105.64	105.76	105.76
4	Average net loan outstanding	0.00	0.00	0.00
5	Rate of interest (%)	13.36%	13.36%	13.36%
<b>6</b>	<b>Interest on Normative Loan</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

The Commission, therefore, approves the interest charges on normative loan as NIL for the FY 2017-18.

### **2.3.4. Return on Equity**

#### **Petitioner's Submission**

The Petitioner has submitted that the Commission did not gross up the base rate of return with the effective tax rate in its Order dated 31<sup>st</sup> March 2017 as it expected no tax payment for the year, due to losses carried forward from FY 2014-15. However, the Petitioner has incurred profit for the year and has paid taxes on the same. The Petitioner has further submitted that it be allowed the pre-tax rate of ROE as 23.481% (base rate of return of 15.5% grossed-



up by the corporate tax rate of 33.63%). Considering a normative equity capital of 30% of capital cost of INR 151.08 Cr, the Petitioner has claimed a Return on Equity of INR 10.58 Cr.

### Commission's Analysis

As per Regulation 25 of the CERC Tariff Regulations 2014, the rate of return on equity is to be computed as described below:

- (1) ***The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. [“The actual tax on income from other business streams including deferred tax liability (i.e. income on business other than business of generation or transmission, as the case may be) shall not be considered for the calculation of effective tax rate”.]***
- (2) .....
- (3) ***The generating company or the transmission licensee, as the case may be, shall True-up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.”***

The Commission observes that the Petitioner has paid total taxes of INR 1.22 Cr for FY 2017-18. However, the Petitioner has not paid the corporate tax rate of 33.63%, as claimed. As per the CERC Tariff Regulations 2014, the effective tax rate must be calculated considering the actual tax paid on its actual gross income. Accordingly, the Commission calculated the effective tax rate from the audited financial statements provided by the Petitioner, which works out to be 33.06% (actual tax payment of ~INR 1.22 Cr over actual gross income of ~INR 3.71 Cr). Therefore, the pre-tax rate of return on equity for FY 2017-18 is 23.156% (15.50% grossed-up with the effective tax rate of 33.06%).

The petitioner in its reply to the 2<sup>nd</sup> Deficiency note issued, submitted the revised computation for pre-tax rate of ROE as at 23.156% (base rate of return of 15.5% grossed-up by the corporate tax rate of 33.06%).

Considering equity amount as 30% of average capital cost for the year, the Commission has computed the return on equity for PPCL as below:

**Table 7: Return on Equity approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	Equity capital	45.28	45.32	45.32
2	Rate of return on equity (%)	15.50%	15.50%	15.50%
3	Effective rate of corporate tax (%)	0.00%	33.63%	33.06%
4	Effective rate of return on equity (%)	15.50%	23.353%	23.156%
5	<b>Return on Equity</b>	<b>7.02</b>	<b>10.58</b>	<b>10.50</b>

**Therefore, the Commission approves return on equity of INR 10.50 Cr for the FY 2017-18.**



### 2.3.5. Operation and Maintenance (O&M) Expenses

#### Petitioner's Submission

The Petitioner has claimed O&M expenses of INR 13.24 Cr, as approved in the Commission's Order dated 31<sup>st</sup> March 2017.

#### Commission's Analysis

As per Regulation 29 (c) of the CERC Tariff Regulations 2014, the O&M expenses for small gas turbine based generating plants (in the capacity range of 50 MW or below) for FY 2017-18 are to be considered as INR 40.73 lakhs/MW. Accordingly, in the Commission's Order dated 31<sup>st</sup> March 2017, the normative O&M expenses for the 32.5 MW gas plant of PPCL have been worked out as INR 13.24 Cr ( $40.73 \times 32.5 / 100 = 13.24$ ). As O&M expenses are allowed on a normative basis, the Commission has therefore retained the same for the True-up of FY 2017-18.

**Table 8: O&M expenses approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	CERC norms for O&M expenses (lakhs/MW)	13.24	13.24	13.24
2	O&M expenses as per CERC norms	13.24	13.24	13.24
3	Additional O&M expenses	0.00	0.00	0.00
4	<b>Total O&amp;M expenses</b>	<b>13.24</b>	<b>13.24</b>	<b>13.24</b>

Therefore, the Commission approves the normative O&M expenses of INR 13.24 Cr for the FY 2017-18.

### 2.3.6. Interest on Working Capital

#### Petitioner's Submission

The Petitioner has claimed interest on Working Capital as INR 2.85 Cr, considering the rate of interest as 12.80%.

#### Commission's Analysis

As per Regulation 28 (b) of the CERC Tariff Regulations, 2014, the working capital of the gas turbine generating station is to be considered as under:

- i. Fuel cost of one month (gas) at NAPAF
- ii. Maintenance spares at 30% of O&M expenses
- iii. Receivables equivalent to two months of capacity and energy charge based on the NAPAF
- iv. O&M expenses for one month

The applicable rate of interest shall be as per Regulation 28 (3):

*"Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1st April, 2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*

The Bank Rate has been defined in the CERC Tariff Regulations 2014 as follows:

“Bank Rate means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points.”

Accordingly, the Commission has considered a base rate of 9.10% (as on 1<sup>st</sup> April 2017) and arrived at the bank rate of 12.60% (9.10% + 3.50%) for computation of the interest on working capital for FY 2017-18.

The energy charges considered while working out the working capital are based on the average GCV of gas and the landed cost of gas for the period from April 2017 and March 2018. Further, normative generation at a NAPAF of 85% is considered for calculation of the cost of gas for the purpose of working capital.

The Commission has considered the working capital and the interest thereon as per the Regulations mentioned above and arrived at the interest on working capital of INR 2.82 Cr.

The computation of the interest charges is as follows:

**Table 9: Interest on working capital approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	Cost of gas (one month)	4.11	4.53	4.27
2	Maintenance spares (30% of O&M)	3.97	3.97	3.97
3	Receivables (two months)	12.10	12.64	13.03
4	O&M expenses (one month)	1.10	1.10	1.10
5	Total Working Capital	21.28	22.24	22.38
6	Rate of Interest (%)	12.75%	12.80%	12.60%
7	<b>Interest on Working Capital</b>	<b>2.71</b>	<b>2.85</b>	<b>2.82</b>

Therefore, the Commission approves interest on Working Capital of INR 2.82 Cr for the FY 2017-18.

### **2.3.7. Differential Annual Fixed Cost (AFC) approved during the True-up of FY 2017-18**

The revised AFC approved by the Commission vis-à-vis that submitted by the Petitioner for FY 2017-18 is as follows:

**Table 10: Revised Annual Fixed Cost approved by the Commission for True-up of FY 2017-18 (In INR Cr)**

S. No	Particulars	Approved in Tariff Order FY 18	Petitioner's Submission (True-up)	Approved by Commission for FY 18 (True-up)
1	Depreciation	0.37	0.40	0.38
2	Interest on Loan	0.00	0.00	0.00
3	Interest on Working Capital	2.71	2.85	2.82
4	Operation and Maintenance Expenses	13.24	13.24	13.24
5	Return on Equity	7.02	10.58	10.50
6	<b>Annual Fixed Cost</b>	<b>23.34</b>	<b>27.07</b>	<b>26.94</b>

The Commission in the Tariff Order for FY 2017-18, dated 31<sup>st</sup> March 2017, had approved AFC of INR 23.34 Cr. The AFC has now been trued up to INR 26.94 Cr for FY 2017-18, based on the True-up exercise carried out by the Commission.

While conducting the prudence check, the Commission has noticed that the Petitioner has been invoicing the Electricity Department, Puducherry based on a wrong billing formula. The Commission had directed the Petitioner to correct the formula as per CERC Tariff Regulations 2014 in its Order dated 16<sup>th</sup> March 2018. The Commission takes serious note of the Petitioner's non-compliance and directs the Petitioner to correct the formula as per the CERC Tariff Regulations 2019 for FY 2019-20 onwards and submit a status report on the same within one month of the issuance of this Order. The Commission has re-calculated the capacity charges for FY 2017-18 in the below table based on the correct formula as prescribed in the CERC Tariff Regulation 2014. The formula takes into account the actual availability vis-à-vis the normative availability.

**Table 11: Differential monthly capacity charges approved by the Commission for True-up of FY 2017-18 (in INR Cr)**

Month	PLF during month	Cumulative PLF	NAPLF	Capacity charges Approved for PPCL in Order (AFC Approved INR 23.34 Cr)	Capacity charges billed by PPCL to PED (As per Actuals Submitted by Petitioner)	Capacity charges entitled at AFC approved in True-up order (AFC Approved INR 26.94 Cr)
Apr-17	76.99%	76.99%	85.00%	1.76	1.74	2.03
May-17	80.18%	78.61%	85.00%	2.13	1.78	2.12
Jun-17	80.20%	79.13%	85.00%	1.94	1.80	2.12
Jul-17	80.35%	79.44%	85.00%	1.94	1.80	2.12
Aug-17	76.53%	78.85%	85.00%	1.94	1.71	2.02
Sep-17	83.05%	79.54%	85.00%	1.94	1.86	2.19
Oct-17	83.96%	80.18%	85.00%	1.94	1.88	2.22
Nov-17	83.69%	80.61%	85.00%	1.94	1.87	2.21
Dec-17	85.18%	81.13%	85.00%	1.94	1.91	2.25
Jan-18	74.59%	80.47%	85.00%	1.94	1.67	1.97
Feb-18	76.12%	80.10%	85.00%	1.94	1.71	2.02
Mar-18	90.27%	80.96%	85.00%	1.94	2.03	2.39
				<b>23.34</b>	<b>21.80</b>	<b>25.66</b>

### 2.3.8. Carrying Cost on Differential Annual Fixed Cost (AFC)

Regulation 8(13) of the CERC Tariff Regulations 2014 states that:

*“The amount under-recovered or over-recovered, along with simple interest at the rate equal to the bank rate as on 1st April of the respective year, shall be recovered or refunded by the generating company or the transmission licensee, as the case may be, in six equal monthly instalments starting within three months from the date of the Tariff Order issued by the Commission.”*

Accordingly, the Commission has calculated the carrying cost for differential annual fixed cost. As the AFC now approved is INR 26.94 Cr (against INR 23.34 Cr approved in the Tariff Order for FY 2017-18, dated 31<sup>st</sup> March

2017), the Commission has derived the Capacity Charges entitled at AFC Approved in True-up Order for FY 2017-18 at INR 25.66, based on the Actual PLF (as obtained from the bills submitted by the Petitioner).

The Petitioner billed the Capacity Charges at INR 21.80 Cr to PED; hence the Commission has considered an additional claim of INR 3.86 Cr (INR 25.66 Cr less INR 21.80 Cr) in FY 2017-18. Considering the carrying cost for FY 2017-18 and FY 2018-19, the Commission has computed the total claim allowed to the Petitioner (including carrying cost) in the table below. Further, the Commission is of the opinion that True-up for FY 2017-18 should have been carried out along with the Tariff for 2019-20. However, owing to unavailability of audited accounts, the Petitioner did not file the Petition for True-up for FY 2017-18 along with the petition for Tariff for 2019-20. Hence, no carrying cost has been allowed in FY 2019-20.

The computation of carrying cost is shown in the following table:

**Table 12: Computation of carrying cost on differential AFC for FY 2020-21 (In INR Cr)**

Particular	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Opening balance	-	4.10	-	4.60
Addition/(Reduction)	3.86	-		(4.60)*
Closing balance	3.86	4.10	-	-
Average balance	1.93	4.10	-	2.30
SBI Base rate as on 1st April	9.10%	8.70%	8.55%	7.90%
Bank Rate (Base Rate + 3.50%)	12.60%	12.20%	12.05%	11.40%
Carrying Cost	0.24	0.50	-	0.26
<b>Closing balance incl. carrying cost</b>	<b>4.10</b>	<b>4.60</b>	<b>-</b>	<b>4.86</b>

\*The differential is allowed to be recovered in FY 2020-21; hence, the recovery has been reduced in the same year.

**Therefore, the Commission approves a claim of INR 4.86 Cr as part of the True-up exercise for the FY 2017-18 and allows the Petitioner to recover the same from EDP during the FY 2020-21 in six equal monthly instalments starting within three months from the date of the Tariff Order.**

## **2.4. Variable Charge/ Energy Charge approved for the True-up of FY 2017-18**

The Commission, as per its Order dated 31<sup>st</sup> March 2017, had approved the formula on the basis of which the variable charge/energy charge would be claimed for FY 2017-18. The formula for the energy charge (per unit basis) accounts for the actual gas cost, the actual gross calorific value of the gas, normative auxiliary consumption and normative gross station heat rate (normative parameters approved by the Commission for FY 2017-18). The Petitioner has been billing the variable charge/ energy charge for FY 2017-18 based on this formula.

The Commission, as part of the prudence check during the True-up exercise, has verified the bills that have been raised to the beneficiary (the respondent), i.e. EDP, for FY 2017-18. The Commission has found the power sale bills to be in order and as per the parameters approved by the Commission.

**The Commission, therefore, does not find any variation in the amount due as differential to the Petitioner on account of the variable charge/ energy charge during the True-up exercise for the year.**

## **3. Chapter 3: True-up for the FY 2018-19**

### **3.1. Applicable Regulations for True-up**

The True-up for the FY 2017-18 has to be carried out in accordance with Regulation 8(2) of the MYT Regulations, 2009 stated as follows:

*“(2) After audited accounts of a year are made available, the Commission shall undertake similar exercise as above with reference to the final actual figures or the provisional actual accounts as available as per the audited accounts. This exercise with reference to audited accounts shall be called 'Truing Up'.*

*The Truing Up for any year will ordinarily not be considered after more than one year of 'Review'.*

*(3) The revenue gap/surplus, if any, of the ensuing year shall be adjusted as a result of review and truing up exercises.*

*(4) While approving such expenses/revenue to be adjusted in the future years as arising out of the Review and/or Truing up exercises, the Commission may allow the carrying costs as determined by the Commission of such expenses/revenue. Carrying costs shall be limited to the interest rate approved for working capital borrowings.*

*(5) For any revision in approvals, the licensee would be required to satisfy the Commission that the revision is due to conditions beyond its control.*

*(6) In case additional supply is required to be made to any particular category, the licensee may, any time during the year make an application to the Commission for its approval. The application will demonstrate the need for such additional supply of power and also indicate the manner in which the licensee proposes to meet the cost for such additional supply of power.”*

### **3.2. Approach for Truing-up of the FY 2018-19**

The Regulations quoted above require audited accounts be made available for the ‘Truing Up’ exercise of the appropriate year to be carried out. However, the Petitioner has failed to submit audited accounts for the FY 2018-19. The Petitioner through its petition has submitted that the Accounts for the FY 2017-18 have been audited but are pending adoption at the AGM till the time of truing up and determination of AFC exercise, hence the accounts for FY 2018-19 stand unaudited until the adoption of accounts for FY 2017-18. Therefore, the Petitioner has submitted Unaudited Accounts for FY 2018-19. The Petitioner maintained the same stand during the Technical Validation Session (TVS), where it has communicated to the Commission that the audited accounts for the FY 2018-19 could not be submitted due to pending adoption of Accounts for FY 2017-18.

Accordingly, the Commission is not carrying out the Truing Up exercise for FY 2018-19 in the current Order. Any parameter considered for the determination of ARR and revenue gap/surplus in the subsequent chapters will be considered as per the Commission’s True-up Order for the FY 2017-18 as a part of the current Order. Further, the Commission directs the Petitioner to submit the audited accounts for the FY 2018-19 along with Petition for determination of ARR for the FY 2021-22.

## **4. Chapter 4: Determination of AFC for the FY 2020-21**

### **4.1. Background**

In this Chapter, the Commission has determined the Annual Fixed Cost (AFC) and the normative variable cost parameters for the FY 2020-21.

### **4.2. Regulations**

As per provisions of Regulation 37 of the JERC Tariff Regulations 2018, the Commission, while determining the cost of generation of thermal/gas/hydro-electric generating stations located within the state, shall be guided, as far as feasible, by the principles and methodologies of CERC, as amended from time to time.

The Commission, for the purpose of calculation of AFC for the FY 2020-21, has considered the CERC Tariff Regulations for the period FY 2019-24 issued by CERC vide notification no. L-1/236/2018/CERC dated 7<sup>th</sup> March 2019 (hereinafter referred to as CERC Tariff Regulations 2019).

### **4.3. Operational Parameters**

#### **4.3.1. Normative Annual Plant Availability Factor (NAPAF)**

##### **Petitioner's Submission**

The Petitioner has considered a Normative Annual Plant Availability Factor (NAPAF) of 85% for the FY 2020-21, in line with the previous Orders issued by the Commission.

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

The Commission had approved NAPAF of 85% for each of the years from FY 2013-14 to FY 2018-19 as per the Tariff Orders of the respective years, in compliance with the judgment of Hon'ble APTEL in Appeal No. 41/2012 on 21<sup>st</sup> November 2012. The Commission has also perused the CERC Tariff Regulations 2019 and maintained the NAPAF to be 85% as per Regulation 49 (A) (a).

The Commission will revisit the same at the time of the True-up of the respective year. The Petitioner is directed to maintain the details of backing down of the power plant as may be required by PED, actual shutdown schedules and other uncontrollable factors affecting the operations of the plant and submit the same for review of the Commission along with the filing of the True-up of the respective years.

**The Commission approves NAPAF at 85% for the FY 2020-21.**

#### **4.3.2. Auxiliary Power Consumption (APC)**

##### **Petitioner's Submission**

With regard to auxiliary power consumption, the Petitioner seeks to invoke the power of the Hon'ble Commission to deviate from the Tariff Regulations, 2018 considering the peculiar facts of the case and for reasons beyond the control of the Petitioner. The Auxiliary Power Consumption (APC) is considered as per actual based on the period from 01.06.2019 to 30.09.2019 because the power station has electric Gas Booster Compressor pumps due to which APC is higher. As natural gas is supplied at a lower pressure, i.e. 3-5 kg/ sq.cm. four electric-driven gas booster compressors, each of 300 kW have to run to boost the gas pressure to 17 kg/ Cu.m., resulting in higher APC. The Petitioner submitted that CEA recommends higher auxiliary consumption for plants with electric gas booster pumps. Further, the Petitioner has submitted that the Hon'ble APTEL has held in a number of judgments that the



vintage of power plants is to be kept in mind before determining the various operating parameters for the power plant. Accordingly, the Petitioner has prayed for APC of 6% for the FY 2020-21.

### Commission's Analysis

The norms mentioned in the Regulation 49 (E) (c) of the CERC Tariff Regulations 2019 for gas turbine generating stations is as given below:

*“(c) For Gas Turbine /Combined Cycle generating stations:*

*(i) Combined Cycle : 2.75%*

*(ii) Open Cycle : 1.00%*

***Provided that where the gas based generating station is using electric motor driven Gas Booster Compressor, the Auxiliary Energy Consumption in case of Combine Cycle mode shall be 3.30% (including impact of air-cooled condensers for Steam Turbine Generators):***

***...” (Emphasis Added)***

The issue was taken up by the Hon'ble APTEL in its judgment dated 21<sup>st</sup> November 2012 in Appeal No. 41/2012 in the matter of Puducherry Power Corporation Limited vs. Joint Electricity Regulatory Commission and Electricity Department, Govt. of Puducherry. The Hon'ble APTEL had upheld the analysis of the Commission in the Tariff Order for FY 2011-12 and ordered that the APC should be approved as per the CERC Regulations and the CEA guidelines. The Commission had approved APC of 5.5% for FY 2011-12 (3.00% allowed by the CERC plus additional APC of 2.50% as per CEA guidelines in cases where electric motor driven gas booster compressors are part of the auxiliary plant). However, the Commission revised it downward to 5.00% for FY 2014-15 onwards as the CERC Tariff Regulations 2014 stipulated APC of 2.50% for Combined Cycle generating stations. A similar methodology cannot be adopted for FY 2019-20 as the CERC Tariff Regulations 2019 explicitly specify APC of 3.30% for Combined Cycle generating stations using electric motor driven Gas Booster Compressor as quoted above.

The Petitioner had submitted the actual power consumption of the electric motor driven Gas Booster Compressors for the last 5 years along with the petition for True-up of FY 2017-18 and Determination of AFC for FY 2020-21. The submissions have been analysed by the Commission and it is observed that the average APC is at 3.75% for the years 2015-2019. In light of the observations, the Commission has decided to retain the APC at 5%.

**Therefore, the Commission approves APC at 5% for the FY 2020-21.**

### **4.3.3. Gross Station Heat Rate (GSHR)**

#### **Petitioner's Submission**

The CERC Regulations provide for the determination of station heat rate based on GCV. The Petitioner has submitted that the station design net heat rate is 2,291 kcal/kWh. The gross design heat rate for net station design heat rate of 2,291 kcal/kWh works out to 2520 (2291\*1.1) kcal/kWh, considering a conversion factor of 1.1, i.e. GCV = 110% of NCV. Further, applying the degradation factor of 5% as per the CERC Tariff Regulations, 2014, the normative GSHR comes to  $2,520 * 1.05 = 2,646$  kcal/kWh. The Commission has also approved the GSHR at 2,646 kcal/kWh for FY 2015-16 based on the submission of the Performance Guarantee Report of the Corporation for the guaranteed heat rate of 2,291 kcal/kWh (on the basis of the NCV of the gas). Accordingly, the Petitioner has sought GSHR of 2,646 kcal/kWh for the FY 2020-21.

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

The Commission had dealt with the issue of fixing the GSHR in the earlier Tariff Order, dated 25<sup>th</sup> April 2014, after elaborately analysing the past actuals of the heat rate for 12 years and the CERC Order dated 07<sup>th</sup> June 2012 on NEEPCO's Petition for revising the GSHR of Assam and Agartala gas power projects (analogous to the PPCL plant). The Commission had also gone through the Performance Guarantee Report of the PPCL gas power station for the

guaranteed heat rate of 2,291 kcal/kWh (on the basis of the NCV of the gas), and accordingly approved GSHR at 2,646 kcal/kWh for FY 2014-15. A similar principle had been applied for approving the GSHR at 2,646 kcal/kWh for the 2<sup>nd</sup> Control Period.

On similar lines and considering the Performance Guarantee Report of PPCL gas power station for the guaranteed heat rate of 2,291 kcal/kWh (on the basis of the NCV of the gas), the Commission approves the GSHR at 2,646 kcal/kWh for the FY 2020-21.

**The Commission approves the GSHR for PPCL gas station at 2,646 kcal/kWh for the FY 2020-21.**

#### **4.4. Variable Cost Parameters for Working Capital**

The Commission has prescribed a formula, in line with the CERC Tariff Regulations 2019, for calculating the monthly energy (variable) charge for billing purpose in section 4.6 of this Order. Further, in the following paragraphs, variable charges have been computed using the same formula to work out the cost of gas (one month) and receivables for two months (energy charge component), which are used for calculation of the working capital requirement. The same shall be revisited based on the prevalent CERC Tariff Regulations at the time of True-up of the respective years.

The details of the weighted average Gross Calorific Value (GCV) and the price of gas, as submitted by the Petitioner and the Commission's analysis, are discussed in subsequent paragraphs.

##### **4.4.1. Data for Calculation of Parameters**

#### **Petitioner's Submission**

The Petitioner has considered a weighted average GCV of gas based on data from Apr'19 to Sep'19. Further, the Petitioner considered the data for Jul'19, Aug'19 and Sep'19 for computation of the average cost of gas.

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

The CERC Tariff Regulations 2019 for calculation of the working capital requirement state that:

*"The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:"*

The Commission has considered the latest data available for determining the calorific value and price of gas for working capital. The Petitioner has submitted invoices raised by GAIL for the period from Apr'19 to Nov'19. The Commission has considered the data for three latest available months. The data for the same has been tabulated below:

**Table 13: Details submitted by Petitioner for computation of weighted average GCV and price of gas**

S.No.	Particulars	Unit	Jul'19	Aug'19	Sep'19
1	Quantity of gas supplied by GAIL	Cu.m	4,964,819	5,343,541	5,252,928
2	Adjustment(+/-) in quantity supplied made by GAIL	Cu.m	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	4,964,819	5,343,541	5,252,928
4	Normative Transit & Handling Losses	Cu.m	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	4,964,819	5,343,541	5,252,928
6	Amount charged by the Gas Company	INR	56,655,927	64,730,963	65,811,860



S.No.	Particulars	Unit	Jul'19	Aug'19	Sep'19
7	Adjustment(+/-) in amount charged made by Gas Company	INR	-	-	-
8	Total amount charged (6+7)	INR	56,655,927	64,730,963	65,811,860
9	Transportation charges by rail / ship / road transport	INR	-	-	-
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	INR	-	-	-
11	Demurrage Charges, if any	INR	-	-	-
12	Cost of diesel in transporting gas through other system, if applicable	INR	-	-	-
13	Total Transportation Charges (9+/-10-11+12)	INR	-	-	-
14	Total amount Charged for fuel supplied including Transportation (8+13)	INR	56,655,927	64,730,963	65,811,860
15	Average GCV of Gas as fired	kcal/Cu.m	10,058.67	10,766.56	10,799.85
16	Average rate of Fuel/1000 Cu.m	INR/1000 Cu.m	11,411.48	12,113.87	12,528.60

#### 4.4.2. Weighted Average Gross Calorific Value (GCV) of Gas

##### Petitioner's Submission

The Petitioner has considered a weighted average GCV of 10,305.48 kcal/cu.m based on average GCV for the period from Apr'19 to Sep'19.

##### Commission's Analysis

The Commission has considered the average GCV of gas for Sept'19, Oct'19 and Nov'19 to compute the weighted average GCV of gas (weighted by the quantity of gas procured in respective months) for computation of working capital.

**Table 14: Computation of weighted average GCV of gas**

S. No.	Particulars	Unit	Sep'19	Oct'19	Nov'19
1	Quantity of gas supplied by GAIL	Cu.m	5,252,928	5,231,477	5,022,035
2	Weighted average GCV of gas as fired	kcal/Cu.m	10,799.83	10,821.08	10,863.14
3	<b>Weighted average GCV of gas (3 Months)</b>	<b>kcal/Cu.m</b>	<b>10,827.50</b>		

The Commission, therefore, considers it appropriate to take GCV of 10,827.50 kcal/Cu.m for purposes of computing the working capital requirement for the FY 2020-21.

**Accordingly, the Commission considers the Gross Calorific Value of gas as 10,827.50 kcal/Cu.m for purpose of computation of the fuel cost for the Working Capital requirement for the FY 2020-21.**

### 4.4.3. Weighted Average Price of Gas

#### Petitioner's Submission

The Petitioner has considered the cost of gas for Jul'19, Aug'19 and Sep'19 for computation of average cost of gas. This has been considered to arrive at the fuel cost for computing the requirement of working capital. The Petitioner has considered the average price of gas at INR 12,017.98 per 1000 Cu.m, based on the months of Jul'19, Aug'19 and Sep'19.

#### Commission's Analysis

The Commission has accordingly considered fuel bills for the period from Sep'19 to Nov'19 (latest available bills) for computation of landed cost of fuel.

**Table 15: Computation of weighted average price of gas**

S. No.	Particulars	Unit	Sep'19	Oct'19	Nov'19
1	Quantity of gas supplied by GAIL	Cu.m	5,252,928	5,231,477	5,022,035
2	Weighted average rate of fuel	INR/1000 cu.m	12,528.60	11,145.53	11,147.55
3	<b>Weighted average price of gas (3 months)</b>	<b>INR/1000 cu.m</b>	<b>11,614.71</b>		

The Commission in its analysis considers it appropriate to allow the weighted average price of gas as INR 11,614.71 per 1000 Cu.m as computed above.

**Accordingly, the Commission considers the weighted average cost of gas at INR 11,614.71 per 1000 Cu.m for the purpose of computation of fuel cost for working capital requirement for the FY 2020-21.**

### 4.4.4. Energy (Variable) Charges for Working Capital requirement

Based on the performance and cost parameters as approved in the earlier paragraphs, the fuel cost of PPCL gas station at 85% NAPAF, is worked out as given in the following table:

**Table 16: Variable Charges for Working Capital**

S.No.	Particular	Unit	Approved Value
1	Station Heat Rate (A)	kcal/kWh	2646
2	Gross Calorific Value of Gas (B)	kcal/ Cu.m	10,827.50
3	Price of gas (C)	INR/Cu.m	11.61
4	Fuel Cost /Gross units (D = A*(C/B))	INR/kWh	2.837
5	<b>Fuel Cost/Net units (E = D/(1-APC))</b>	<b>INR/kWh</b>	<b>2.988</b>

### 4.5. Annual Fixed Cost (AFC) approved for the FY 2020-21

The following components have been considered as part of the fixed charge for the FY 2020-21 as per Regulation 37.1 of the Tariff Regulations 2018:

1. Depreciation
2. Interest on Loan
3. Interest on Working Capital
4. O&M Expenses

## 5. Return on Equity

These are discussed in detail in the subsequent sections.

### 4.5.1. Capital Cost

#### Petitioner's Submission

The Petitioner has considered a total opening capital cost of INR 170.76 Cr which includes INR 169.01 Cr as closing capital of the FY 2019-20 as approved in Order dated 20<sup>th</sup> May 2019, INR 0.32 Cr towards installation of Continuous Effluent Monitoring System incurred in FY 2017-18, and INR 1.43 Cr as the incremental difference towards Rotor, Stator Vane Kit, and Inlet Guide Vane arrangement against the approved amount of INR 11.77 Cr in the FY 2018-19, totalling to INR 13.20 Cr.

#### Commission's Analysis

The Commission had approved INR 150.92 Cr as opening capital cost for FY 2017-18 in the Tariff Order dated 16<sup>th</sup> March 2018. The Commission has approved an additional capital of INR 0.32 Cr during the True-up for FY 2017-18 as part of the current Order. Further, the Commission had approved an additional capitalization of INR 11.77 Cr in FY 2018-19 and INR 6.32 Cr in FY 2019-20. Accordingly, the opening capital cost for FY 2019-20 is considered as INR 169.33 Cr.

Commission approves the Opening Capital Cost for FY 2020-21 at INR 169.33 Cr and no additional capitalization in FY 2020-21. However, the same shall be revisited based on actual capitalisation achieved during the time of True-up of the respective year. The detailed computation is shown in the following table:

**Table 17: Capital Cost approved by the Commission for the FY 2020-21 (INR Cr)**

S. No	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission
1	Opening capital cost	169.01	170.76	169.33
2	Additional Capitalization	0.00	0.00	0.00
3	Closing Capital Cost	169.01	170.76	169.33
4	Average Capital Cost	169.01	170.76	169.33

**The Commission approves a closing capital cost of INR 169.33 Cr for the FY 2020-21.**

### 4.5.2. Depreciation

#### Petitioner's Submission

The Petitioner has projected the depreciation charge for the FY 2020-21 at INR 3.21 Cr. The Petitioner has restricted the cumulative depreciation of the assets at 90% of the capitalised value of the asset. The rate of depreciation has been considered as per CERC Tariff Regulations 2014. The Petitioner also submitted that the station is over 19 years old, and the Petitioner has calculated depreciation, accordingly, based on the same methodology as adopted for the previous years.

#### Commission's Analysis

The Commission has considered average capital cost of INR 169.33 Cr for FY 2020-21, as described in the previous section. The cost of the freehold land of INR 7.93 Cr has been excluded for depreciation purpose in each of the years.

The cumulative depreciation recovered up to FY 2019-20 is INR 129.83 Cr, considering cumulative depreciation of INR 125.77 Cr up to final True-up of FY 2016-17 and approved depreciation of INR 0.37 Cr for FY 2017-18, INR 1.18 Cr for FY 2018-19, and INR 2.52 Cr for FY 2019-20.

It is noted that the plant is in its 20<sup>th</sup> year of commercial operation. The remaining depreciable value (upto 90% of the capital cost) of the asset has been spread over the balance useful life of the asset, i.e. 5 years for FY 2020-21, in line with the following provision of Regulation 33 (5) of the CERC Tariff Regulations 2019:

*“Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.”*

The depreciable value of the asset (excluding land valued at INR 7.93 Cr) has been capped at 90% of the capital cost of the asset, and accordingly the depreciation for the FY 2020-21 is approved as shown in the following table:

**Table 18: Depreciation approved by the Commission for the FY 2020-21 (In INR Cr)**

S. No.	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission
1	Average capital cost	169.01	170.76	169.33
2	Cost of freehold (FH) land	7.93	7.93	7.93
3	Capital cost excluding FH Land	161.08	162.83	161.40
4	Cap on cumulative depreciation	144.97	146.55	145.26
5	Cumulative depreciation upto the previous year	130.37	130.50	129.83
6	Balance depreciation to be recovered	14.60	16.05	15.43
7	Balance useful Life (years)	5	5	5
<b>8</b>	<b>Depreciation for the year</b>	<b>2.92</b>	<b>3.21</b>	<b>3.09</b>

**The Commission approves the depreciation at INR 3.09 Cr for the FY 2020-21. However, the same shall be revisited during the time of True-up of the respective year.**

### **4.5.3. Interest on Loan**

#### **Petitioner's Submission**

The Petitioner has claimed NIL interest charges for each year of the FY 2020-21.

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

It is observed that the cumulative depreciation recovered upto the previous year is INR 129.83 Cr for FY 2020-21, as also reflected in section 4.5.2 above. The gross normative average loan for FY 2020-21 is INR 118.53 Cr based on the approved average capital cost in section 4.5.1. The Commission observes that the cumulative depreciation recovered so far is higher than the gross normative loan amount for the FY 2020-21, and accordingly there is no loan outstanding for the period. In the absence of any outstanding loan amount, the interest charges for FY 2020-21 are approved as NIL.

**The Commission approves the interest charges on normative loan as NIL for the FY 2020-21. However, the same shall be revisited as per prevalent CERC Regulations during the time of True-up of the respective years.**

### **4.5.4. Return on Equity**

#### **Petitioner's Submission**

Since the entire capital cost for PPCL has been financed through its own funds, the equity has been considered at the normative level of 30% and the balance 70% has been considered as normative loan for calculation of Interest on Loan component of capacity charges.

The return on Equity has been calculated @ 21.868% (base rate of return of 15.5% grossed up by the corporate tax rate of 29.12%) for the FY 2020-21 as per CERC Tariff Regulations 2019. Accordingly, the Petitioner has claimed a return on equity of INR 11.20 Cr for the FY 2020-21.

### Commission's Analysis

CERC Tariff Regulations 2019 specifies that normative equity be capped at 30% of the capital cost. Further, Regulation 30 (2) of the CERC Tariff Regulations 2019 specifies the rate of return on equity shall be at 15.50% for thermal stations.

In respect of grossing up of allowed rate of return on equity with the effective tax rate, Regulation 31 (1) of the CERC Regulations 2019 specifies *"The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be."*

Accordingly, the Commission for the purpose of computation of Return on Equity has considered 30% of the capital cost as equity and the rate of return on equity at 15.50% as per CERC Tariff Regulations 2019.

The Commission has considered the effective tax rate based on the prevailing corporate tax rates. Accordingly, the Commission has considered an effective tax rate of 29.12% (corporate tax rate of 25%, surcharge of 12% and health & education cess of 4%) and the grossed up rate of return on equity as 21.868% for the FY 2020-21. The detailed computation is shown in the following table:

**Table 19: Return on Equity approved by the Commission for the FY 2020-21 (In INR Cr)**

S. No	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission
1	Equity Capital	50.70	51.23	50.80
2	Rate of Return on Equity (%)	15.50%	15.50%	15.50%
3	Effective Rate of Corporate Tax (%)	29.12%	29.12%	29.12%
4	Effective Rate of Return on Equity (%)	21.868%	21.868%	21.868%
5	<b>Return on Equity</b>	<b>11.09</b>	<b>11.20</b>	<b>11.11</b>

The effective rate of return on equity shall be reviewed at the time of True-up of the respective year. Accordingly, the Petitioner is directed to provide the necessary details at the time of the True-up for calculation of effective tax rate.

**The Commission approves a return on equity of INR 11.11 Cr for the FY 2020-21. However, the same shall be revisited during the time of True-up of the respective years.**

### 4.5.5. Operation and Maintenance (O&M) Expenses

#### Petitioner's Submission

The Petitioner has considered INR 43.50 lakh/MW as specified by the CERC for small gas turbine for the year 2018-19, based on Regulation 29(1)(c) of the applicable CERC Tariff Regulations 2014. It is further escalated at the rate of 6.80% per annum for the FY 2020-21 (as per norms in CERC Tariff Regulations 2014). Accordingly, the Petitioner has claimed INR 16.13 Cr towards O&M expenses for the FY 2020-21.

#### Commission's Analysis

The Commission has examined the O&M expenses claimed by the Petitioner. The CERC Tariff Regulations 2019 specifies norms of INR 36.21 lakh/MW, INR 37.48 lakh/MW and INR 38.80 lakh/MW for FY 2019-20, FY 2020-21 and FY 2021-22 respectively. However, the Commission observes that PPCL is nearing the end of its useful life

(i.e. by FY 2025-26) and it does not reap the benefits of economies of scale, as its plant capacity is relatively less i.e. 32.5 MW. In light of the above, the Commission has opted to continue with the norms of CERC Tariff Regulations 2014 for now.

As per Regulation 29(1)(c) of the CERC Tariff Regulations 2014, the O&M expenses for small gas turbine power generating plants for FY 2018-19 are to be considered as INR 43.50 lakh/MW. Further, the Commission has derived the escalation rate from the norms as shown in the following table:

**Table 20: O&M Norms for Small gas turbine power generating stations as per CERC Tariff Regulations 2014 (in INR Lakh/MW)**

FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	CAGR (FY 2014-15 to FY 2018-19)
33.43	35.70	38.13	40.73	43.50	6.80%

Accordingly, the O&M expenses for PPCL (32.5 MW) gas plant have been worked out for the FY 2020-21 as shown in the following table:

**Table 21: O&M Expenses approved by the Commission for the FY 2020-21 (In INR Cr)**

S. No.	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission
1	Derived O&M Norms (INR Lakh/MW)	49.62	49.62	49.62
2	O&M Expenses	16.13	16.13	16.13
3	Additional Expenditure Claimed/Allowed	-	-	-
4	<b>Total O&amp;M Expenses</b>	<b>16.13</b>	<b>16.13</b>	<b>16.13</b>

**The Commission approves INR 16.13 Cr towards O&M expenses for the FY 2020-21.**

#### **4.5.6. Interest on Working Capital**

##### **Petitioner's Submission**

For computing the Interest on Working Capital (IWC), the Petitioner has considered the rate of interest as 'Bank Rate' as on 1<sup>st</sup> April 2017. The energy charges considered while working out IWC are based on average actual fuel consumption and payments made pertaining the period of July '19, August '19 and September '19.

Accordingly, the Petitioner has claimed interest on working capital of INR 3.49 Cr for FY 2020-21.

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

The Commission has considered CERC Tariff Regulations 2019 for the computation of interest on working capital. As per Regulation 34 (b) of the CERC Tariff Regulations 2019, the working capital for a gas turbine generating station shall have the following components:

- i. Fuel cost of one month (Gas) at NAPAF
- ii. Maintenance spares at 30% of O&M expenses including water charges and security expenses
- iii. Receivables equivalent to 45 days of capacity and energy charge based on the NAPAF
- iv. O&M expenses, including water charges and security expenses, for one month

The applicable rate of interest for computation of interest on working capital as per Regulation 34 (3) of the CERC Tariff Regulations, 2019 is:



*‘Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later’*

The Bank Rate has been defined in the Regulations as follows:

*‘Bank Rate means one year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points’*

Accordingly, the Commission has considered the latest available SBI one year MCLR of 8.55% (notified on 10<sup>th</sup> March 2019) and arrived at the bank rate of 12.05% (8.55% + 3.50%) for computation of the IWC for the FY 2020-21. The relevant interest rate as on 1<sup>st</sup> April of the respective year shall be considered based on the prevalent CERC Tariff Regulations during the True-up of the respective year.

The energy charges considered while calculating working capital are based on average actual fuel consumption and payments made in Sep’19, Oct’19 and Nov’19. The weighted average GCV and weighted average cost of gas for calculating the fuel requirement/cost are discussed in Section 4.4 of this Order. Energy charges for working capital purposes have been worked out corresponding to generation at NAPAF of 85%.

The Commission has considered the working capital and interest thereon, as per the Regulations mentioned above at an interest rate of 12.05% per annum. The detailed computation is shown in the following table:

**Table 22 Computation of Cost of Gas for 1 month**

S. No.	Particulars		MOU	Computation
1	Weighted Average GCV of Gas (As computed in section 4.4)	A	kcal/scm	10,827.50
2	PLF	B		85%
3	Capacity	C	MW	32.5
4	Generation	$D=(365*24*C*1000*B/10^6)$	MU	242.00
5	SHR	E	kcal/kWh	2,646
6	Sp. gas consumption	$F=E/G$	scm/kWh	0.228
7	Weighted Average Price of Gas (As computed in section 4.4)	G	Rs./1000 scm	11614.71
8	Cost of gas (1 month)	$H=D*F*(G/10^4)/12$	Cr	5.34

**Table 23: Interest on working capital approved by the Commission for the FY 2020-21 (In INR Cr)**

S. No	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission
1	Cost of gas (one month)	5.34	5.34	5.34
2	Maintenance spares (30% of O&M)	4.84	4.84	4.84
3	Receivables (two months) / 45 days <sup>2</sup>	16.28	16.28	12.15
4	O&M expenses (one month)	1.34	1.34	1.34
5	Total Working Capital	27.79	27.80	23.67
6	Rate of Interest (%)	12.55%	12.55%	12.05%
7	<b>Interest on Working Capital</b>	<b>3.49</b>	<b>3.49</b>	<b>2.85</b>

<sup>2</sup> The receivables now approved by the Commission have been computed equivalent to 45 days of capacity and energy charge based on the NAPAF, as per the CERC Regulations 2019.

**The Commission approves Interest on Working Capital of INR 2.85 Cr for the FY 2020-21. However, the same shall be revisited during the True-up exercise of the respective year.**

#### **4.5.7. Annual Fixed Cost (AFC) approved for the FY 2020-21**

The Commission based on the analysis of the AFC parameters in the above paragraphs approves the Annual Fixed Cost for the FY 2020-21 as shown in the following table:

**Table 24: Annual Fixed Cost approved by the Commission for the FY 2020-21 (In INR Cr)**

S. No	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission	Reference
1	Depreciation	2.92	3.21	3.09	Table 18
2	Interest on Loan	0.00	0.00	0.00	-
3	Return on Equity	11.09	11.20	11.11	Table 19
4	Operation and Maintenance Expenses	16.13	16.13	16.13	Table 21
5	Interest on Working Capital	3.49	3.49	2.85	Table 23
<b>6</b>	<b>Annual Fixed Cost</b>	<b>33.62</b>	<b>34.03</b>	<b>33.17</b>	

**The Commission approves Annual Fixed Cost of INR 33.17 Cr for the FY 2020-21. However, the same shall be revisited during the time of True-up of the respective years.**

#### **4.6. Energy/ Variable Charge (Net)**

The Commission approves the computation of energy charge for FY 2020-21 based on the following formula specified in the CERC Tariff Regulations 2019:

$$\text{ECR} = \text{GSHR} \times \text{LPPF} \times 100 / \{(\text{CVPF}) \times (100 - \text{AUX})\}$$

Where

ECR= Energy Charge Rate, in INR per kWh, sent out upto three decimal places

GSHR= Normative Gross Station Heat Rate in kcal/kWh

LPPF= Weighted average landed price of gas in INR/Cu.m, during the calendar month

CVPF= Weighted average Gross Calorific Value of gas, in kcal per Cu.m

AUX= Normative Auxiliary Power Consumption in percentage

As the energy charges shall be computed and billed based on the above formula, there will be no need for any adjustment in True-up on this account.

Based on the parameters above, an *illustrative example* is as shown below:

Assuming,

GSHR = Normative Gross Station Heat Rate i.e. INR 2646 kcal/kWh for FY 2020-21

LPPF = INR 11.61/Cu.m

CVPF = 10,827.50 kcal/Cu.m

AUX = Normative Auxiliary Power Consumption, at 5.00% for FY 2020-21

ECR =  $2646 \times 11.61 \times 100 / ((10827.50 \times (100-5.0)) = \text{INR } 2.988/\text{kWh}$



So, it can be observed from the above example that the energy charge for the month works out to be INR 2.988/kWh based on approved normative parameters.

**The above calculations are for illustration purpose only. The actual billing every month shall be based on the formula prescribed in the prevalent CERC Tariff Regulations based on actual values for gross calorific value and price of gas and normative values of gross station heat rate and auxiliary power consumption.**

## ***5. Chapter 5: Annual Fixed Cost (AFC) and other charges for the FY 2020-21***

In view of the workings in the previous sections, the Commission now approves the following:

- Annual Fixed Cost (AFC) at INR 33.17 Cr for FY 2020-21.
- Normative Annual Plant Load Factor (NAPLF) for the purpose of the calculation of Incentive and the formula for computation of energy charge (net) to be billed per month shall be considered as per the prevalent CERC Tariff Regulations.
- Billing of an additional claim of INR 4.86 Cr on account of True-up of FY 2017-18 from Electricity Department, Puducherry (EDP) in six equal monthly instalments starting within three months from the date of the Tariff Order.
- In addition to the charges approved above, the Commission also allows recovery of expenses pertaining to regulatory compliance (fees paid to the Commission towards filing of Tariff Petition for FY 2020-21 and related publication expenses) from the beneficiary in twelve equal monthly instalments.

## ***6. Chapter 6: Directives***

The Commission directs the utility to comply with the directions mentioned below in the given timeframe, failing which the Commission shall be constrained to take appropriate action under Section 142 of the Electricity Act 2003 and various other provisions of the Act, and Regulations framed by JERC.

### ***6.1. New Directives issued in this Order***

#### ***6.1.1. Filing of Petition for Annual Performance Review (APR)***

The Petitioner has submitted the actual generation data for the first 6 months for the APR year in its Petition for True-up of the FY 2017-18 and Determination of AFC for FY 2020-21. However, APR is not possible without the actual data (for the first 6 months of the year) for all the AFC parameters.

The Commission, therefore, directs the Petitioner to submit all the necessary data for APR in the future Petitions along with the revised estimates of the AFC parameters for the whole year based on the actual data, starting with the Petition for APR of FY 2020-21.

#### ***6.1.2. Submission of actual purchase bills for FY 2018-19***

The Petitioner is directed to submit the actual purchase bills related to the Rotor, Stator Vane Kit, and Inlet Guide Vane arrangement in FY 2018-19 as a part of the True-up petition for FY 2018-19.

#### ***6.1.3. Filing of the True-up Petitions upto FY 2019-20***

The Commission directs the Petitioner to complete the filing of the True-up Petitions upto FY 2019-20 by 30<sup>th</sup> November 2020.

# Annexures

## Annexure 1: List of Stakeholders

The following is the list of the participants in Public Hearings conducted in Puducherry and Karaikal:

**Table 25: List of participants in Public Hearings**

S. No.	Name of Stakeholder
1	Shri. Keerthi Gurunathan, Hotel Association of Puducherry
2	Shri. K. Saravanan
3	Shri. Raghuraman, CII Puducherry
4	Shri .V.Perumal
5	Shri. G. Vazhumuni
6	Shri. M. Narayanasamy Makkal Mandram
7	Thiru. Karthikeyan Pasumai Bharatham
8	Shri.V. Balasubramani, Parent Association
9	Thiru. T. Geethanathan, CPI, Puducherry
10	Shri. P. Ragupathy, President, Human Awareness Organisation
11	Shri. Rajendiran, Sumangala Steels
12	Shri. Daniel
13	Shri. R. Chanemougam
14	Shri Bairavan, Karaikal Industrial Forum
15	Shri. Mohammed Bilal, SUCI Communist Party
16	Shri. A.S.Ravi, AITUC Karaikal District
17	Shri. R.Pazhanirajan
18	Shri. R. Silambarasan
19	Shri. R.Gunasekaran, TR Patinam consumer Forum
20	Shri. M. Rajadurai, FEDCOT India
21	Shri. A.S. Balasubramanian
22	Shri. D. Mathan Kumar
23	Shri. S.Singaravelan
24	Shri. S.Martien
25	Shri. M. Senthil Kumar Gandhi
26	Tmt. D.Victoria
27	Shri. G. Balamurugan
28	Shri. K.Jayakumar
29	Shri. S.P. Vedanayagam
30	Shri. J.Sivaganesh
31	Shri. N.G.R. Elangovan
32	Shri. E.Jayaseelan