



TARIFF ORDER

**True-up of the FY 2018-19, Aggregate Revenue Requirement (ARR)
and Determination of Generation Tariff for the FY 2021-22**

Petition No. 35/2020

For

Puducherry Power Corporation Limited (PPCL)

7th April 2021

JOINT ELECTRICITY REGULATORY COMMISSION

For the State of Goa and Union Territories

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List of Abbreviations

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

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

QUORUM

Sh. M. K. Goel, Chairperson

Petition No. 35/2020

In the matter of

Approval for the True-up of the FY 2018-19, Aggregate Revenue Requirement (ARR) and Determination of Generation Tariff for the FY 2021-22.

And in the matter of

Puducherry Power Corporation Limited (PPCL)Petitioner

ORDER

Dated: 7th April 2021

- 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 2018-19, Aggregate Revenue Requirement and Determination of Generation Tariff for the FY 2021-22 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 18th December 2020. 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. Further, due to the COVID-19 pandemic that had adversely impacted the movement of people as per the guidelines of GoI which had suggested avoiding of travel and gathering of people as far as possible, the Commission had decided to conduct the Public Hearing virtually. The virtual Public Hearing was held on 27th January 2021, and all the Stakeholders/Electricity Consumers present in the Public Hearing were heard.
- 3) The approved generation tariff for FY 2021-22 shall come into force from 1st April 2021 and shall remain valid until further Orders of the Commission.
- 4) All existing provisions that are not modified by this Order shall continue to be in force.
- 5) The Commission approves the following for PPCL Gas Power Station at Karaikal:
 - (a) Annual Fixed Cost (AFC) at INR 34.64 Cr for FY 2021-22.

- (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 7.42 Cr on account of True-up of FY 2018-19 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 2021-22 and related publication expenses) from the beneficiary in twelve equal monthly instalments.
- 6) 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: 7th April 2021

(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 2nd 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 30th 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 30th 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 rd 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 3rd January 2000 and is supplying power to Electricity Department Puducherry (EDP) under a PPA signed with them on 25th 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 9th February 2010. PPCL was governed by these Regulations until the end of the Control Period i.e. 31st 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 10th August 2018. These Regulations are applicable for the 2nd 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 18th December 2020 and marked as Petition No. 35/2020. 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 via video-conferencing, 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

S. No	Subject	Date
1	Issue of First Deficiency Note	15.12.2020
2	Issue of Second Deficiency Note	10.2.2021
3	Public hearing	27.1.2021
4	Replies received from Petitioner	2.1.2021, 20.1.2021, 22.2.2021
5	Technical Validation Session	8.1.2020

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	1.1.2021	New Indian Express	English	Puducherry, Karaikal, Mahe & Yanam
2		The Hindu	English	Visakhapatnam, Vijayawada
3		The Daily Thanthi	Tamil	Puducherry
4		Dinakaran	Tamil	Puducherry

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 27th January 2021 via video-conferencing.

Table 4: Details of Public Notices published by the Commission

Sl. No.	Date	Name of Newspaper	Place of Circulation
1	30.12.2020	The Hindu	Visakhapatnam, Vijayawada
2		New Indian Express	All Tamil Nadu
3	22.1.2021	Daily Thanthi	Puducherry
4		Dinakaran	Puducherry

1.7. Public Hearing

The COVID-19 pandemic has adversely impacted the movement of people as per the guidelines of GoI. These guidelines have also suggested avoiding of travel and gathering of people as far as possible. In view of above, the physical conduct of proceedings by the Commission was not possible. So, The Commission deemed it is necessary to provide an access to all the stakeholders by conducting proceedings remotely, by the use of audio and video enabled hearings in the matters of Petition submitted by Electricity Department, Puducherry. Therefore, the Commission has decided that the comments/suggestions of the stakeholders need to be heard virtually through video conferencing for seeking their opinion.

Accordingly, the virtual Public Hearing was held on 27th January 2021 via video-conferencing to discuss the issues related to the Petition filed by the Petitioner. No comments were received from any stakeholder during the public hearing.

2. Chapter 2: True-up for FY 2018-19

2.1. Regulations

The True-up for FY 2018-19 is being carried out as per the provisions of Regulation 8 of the JERC MYT Regulations 2014. 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 2018-19 vide its Order dated 16th March 2018. The Commission in its Tariff Order had approved AFC of INR 29.83 Cr for FY 2018-19 based on the capital cost of INR 162.69 Cr.

The True-up for FY 2018-19 was not carried out in the Order dated 18th May 2020 since the Petitioner had not submitted audited final accounts for the same. However, the Petitioner has submitted its Audited Annual Accounts for FY 2018-19 along the Petition for Tariff for FY 2021-22. 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 2018-19 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 2018-19 (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 2018-19, has considered the CERC Tariff Regulations for the period FY 2014-19 issued by CERC vide notification no. L-1/144/2013/CERC dated 21st 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 21st November 2012 and the previous Orders of the Commission.

Commission's Analysis

The Commission in its Order dated 16th March 2018 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 21st November 2012 in Appeal No. 41/2012. The Commission has therefore retained NAPAF of 85% for FY 2018-19.

The Commission approves NAPAF at 85% for the FY 2018-19.

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 2018-19.

Commission's Analysis

The Commission in its Tariff Order dated 16th March 2018 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 2018-19.

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 2018-19 as per the Commission's Order dated 16th March 2018.

Commission's Analysis

The Commission had approved GSHR of 2646 kcal/kWh in its Tariff Order dated 16th March 2018. This was based on analysis done by the Commission in the earlier Tariff Order, dated 25th April 2014, after detailed analysis of historical data of the heat rate for 12 years and the CERC Order dated 07th 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 2018-19.

2.3. Annual Fixed Cost (AFC) for True-up of FY 2018-19

The following components were considered in the Commission's Order dated 16th March 2018 as part of the fixed charge for FY 2018-19:

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 2018-19.

2.3.1. Capital Cost for FY 2018-19

Petitioner's Submission

The Petitioner has considered the Capital Cost as on 1st April 2018 based on the approved capital cost of INR 151.24 Cr as per the Tariff Order dated 18th May 2020.

The Petitioner has claimed an additional capitalisation of INR 13.20 Cr in the instant petition as per actuals as against INR 11.769 Cr approved as per Tariff Order dated 16th March 2018.

Commission's Analysis

The Commission in the Tariff Order dated 16th March 2018, approved an opening capital cost of INR 150.92 Cr for FY 2018-19 with additional capitalization of INR 11.769 Cr towards replacement of new Rotor, Stator Vane kit and Inlet guide Vane arrangement.

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 13.20 Cr was towards replacement of new Rotor, Stator Vane kit and Inlet guide Vane arrangement. The Petitioner has submitted a copy of the supply order along with the invoices.

We have verified the Petitioner's submission; accordingly, the Commission approves INR 151.24 Cr as the opening capital cost and INR 13.20 Cr as additional capitalization for the FY 2018-19.

2.3.2. Depreciation

Petitioner's Submission

The depreciation has been computed on the closing capital cost of INR 164.44 Cr which includes the Opening Capital Cost as INR 151.24 Cr and additional capitalisation of INR 13.20 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 2017-18 is considered as INR 126.17 Cr. Accordingly the depreciation for the year has been considered as INR 2.10 Cr by the Petitioner.

Commission's Analysis

The Commission has considered the opening capital cost of INR 151.24 Cr with additional capitalization of INR 13.20 Cr for FY 2018-19 and the average Capital Cost of INR 157.84 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 2017-18 is INR 126.15 Cr (which includes cumulative depreciation of INR 125.77 Cr upto 2016-11 and INR 0.38 Cr as depreciation approved for the year 2017-18). As the plant has already completed 12 years from the date of commercial operation and FY 2018-19 was its 18th year of operation, the remaining depreciable value of the asset has been spread over the next 7 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. The calculation of the same is as shown in the following table:

Table 5: Depreciation approved by the Commission for True-up of FY 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	Average Capital Cost	162.69	164.44	157.84
2	Cost of Freehold (FH) Land	7.93	7.93	7.93
3	Capital cost excluding FH Land	154.76	156.51	149.91
4	Cap on cumulative depreciation (90% of S. No. 3)	139.28	140.86	134.92
5	Cumulative Depreciation upto the previous year	126.16	126.17	126.15
6	Balance depreciation to be recovered	13.12	14.69	8.77
7	Balance useful Life (years)	7.00	7.00	7.00
8	Depreciation for the year	1.88	2.10	1.25

Therefore, the Commission approves depreciation of INR 1.25 Cr for the FY 2018-19.

2.3.3. Interest Charge on Loan

Petitioner's Submission

The Petitioner has claimed NIL interest charges for the True-up of FY 2018-19.

Commission's Analysis

On the basis of the average capital cost of INR 157.84 Cr for FY 2018-19, the gross normative loan is INR 110.49 Cr (70% of the approved average capital cost of INR 157.84 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 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	Average capital cost for the year	156.80	157.84	157.84
2	Normative loan at 70% of average capital cost	109.76	110.49	110.49
3	Cumulative repayment up to the previous year	109.76	110.49	110.49
4	Average net loan outstanding	0.00	0.00	0.00
5	Rate of interest (%)	13.45%	13.45%	13.45%
6	Interest on Normative Loan	0.00	0.00	0.00

The Commission, therefore, approves the interest charges on normative loan as NIL for the FY 2018-19

2.3.4. Return on Equity

Petitioner's Submission

The Petitioner has submitted that it be allowed the pre-tax rate of ROE as 23.160% (base rate of return of 15.5% grossed-up by the corporate tax rate of 33.06%). Considering a normative equity capital of 30% of average capital cost of INR 157.84 Cr, the Petitioner has claimed a Return on Equity of INR 10.97 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 tax for FY 2018-19 as per Minimum Alternate Tax (MAT). 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 based on the corporate tax rate applicable to the Petitioner. The applicable tax rate for the FY 2018-19 to domestic companies having Gross Turnover in FY 2017-18 upto INR 250 Cr was at 25%. As per ITR for FY 2018-19 submitted by the Petitioner the taxable income is more than INR 1 Cr but less than INR 10 Cr therefore surcharge of 7% is applicable to the Petitioner. Additionally cess of 4% is applicable. The effective rate is derived as 27.82%. Therefore, the pre-tax rate of return on equity for FY 2018-19 is 21.470% (15.50% grossed-up with the effective tax rate of 27.82%).

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 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	Equity capital	47.04	47.35	47.35
2	Rate of return on equity (%)	15.50%	15.50%	15.50%
3	Effective rate of corporate tax (%)	33.06%	33.06%	27.82%
4	Effective rate of return on equity (%)	23.16%	23.160%	21.470%
5	Return on Equity	10.89	10.97	10.17

Therefore, the Commission approves return on equity of INR 10.17 Cr for the FY 2018-19.

2.3.5. Operation and Maintenance (O&M) Expenses

Petitioner's Submission

The Petitioner has claimed O&M expenses of INR 21.94 Cr which include INR 14.14 Cr as approved vide Tariff Order dated 16th March 2018, additional insurance of INR 0.73 Cr and an additional claim of INR 7.07 Cr as one-time expenses towards inspection of turbines. The details of one-time expenses claimed are as under:

Particulars	Amount (INR Cr)
Major inspection of Gas Turbine	1.04
Major inspection of Steam Turbine	1.62
Mandatory spares GT (MI)	4.41
Total	7.07

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 2018-19 are to be considered as INR 43.50 lakh/MW. Accordingly, in the Commission's Order dated 16th March 2018, the normative O&M expenses for the

32.5 MW gas plant of PPCL have been worked out as INR 14.14 Cr ($43.50 \times 32.5 / 100 = 14.14$). As O&M expenses are allowed on a normative basis, the Commission has therefore retained the same for the True-up of FY 2018-19.

The Petitioner has claimed additional insurance cost of INR 0.73 Cr and an additional claim of INR 7.07 Cr as one-time expenses towards inspection of turbines incurred once every three years. The details of one-time expenses claimed are as under:

Particulars	Amount (INR Cr)
Major inspection of Gas Turbine	1.04
Major inspection of Steam Turbine	1.62
Mandatory spares GT (MI)	4.41
Total	7.07

In response to the Commission's specific query in this regard, the Petitioner submitted the documentary evidence in the form of work order, invoices and proof of payments for the inspection charges. The Commission has gone through the Work Order and invoices submitted by the Petitioner for procurement of inspection spares and execution of the inspection work. Accordingly, the Commission allows the amount as one-time expenditure to the Petitioner for FY 2018-19.

The insurance expenses are a part of 'administrative and general' expenses, which are already included in the O&M expenses determined by CERC. Hence, the Commission is of the opinion that the additional expense of INR 0.73 Cr towards insurance premium cannot be allowed to the Petitioner.

Table 8: O&M expenses approved by the Commission for True-up of FY 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	CERC norms for O&M expenses (lakhs/MW)	43.50	43.50	43.50
2	O&M expenses as per CERC norms	14.14	14.14	14.14
3	Additional one-time O&M expenses	0.00	7.80	7.07
4	Total O&M expenses	14.14	21.94	21.21

Therefore, the Commission approves the normative O&M expenses of INR 21.21 Cr for the FY 2018-19.

2.3.6. Interest on Working Capital

Petitioner's Submission

The Petitioner has claimed interest on Working Capital as INR 3.71 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 8.70% (as on 1st April 2018) and arrived at the bank rate of 12.20% (8.70% + 3.50%) for computation of the interest on working capital for FY 2018-19.

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 2018 to March 2019. Further, normative generation at a NAPAF of 85% is considered for calculation of the cost of gas for the purpose of working capital.

The computation of the interest charges is as follows:

Table 9: Interest on working capital approved by the Commission for True-up of FY 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	Cost of gas (one month)	4.56	5.02	5.35
2	Maintenance spares (30% of O&M)	4.24	6.58	4.24*
3	Receivables (two months)	14.09	15.55	16.70
4	O&M expenses (one month)	1.18	1.83	1.18*
5	Total Working Capital	24.07	28.98	27.47
6	Rate of Interest (%)	12.15%	12.80%	12.20%
7	Interest on Working Capital	2.92	3.71	3.35

* O&M Expenses excluding the one-time expenses for inspection and mandatory spares have been considered for the purpose of computation of working capital as they are not the recurring expenses.

Therefore, the Commission approves interest on Working Capital of INR 3.35 Cr for the FY 2018-19.

2.3.7. Differential Annual Fixed Cost (AFC) approved during the True-up of FY 2018-19

The revised AFC approved by the Commission vis-à-vis that submitted by the Petitioner for FY 2018-19 is as follows:

Table 10: Revised Annual Fixed Cost approved by the Commission for True-up of FY 2018-19 (In INR Cr)

S. No	Particulars	Approved in Tariff Order for FY 2018-19	Petitioner's Submission	Approved by Commission for FY 2018-19
1	Depreciation	1.87	2.10	1.25
2	Interest on Loan	0.00	0.00	0.00
3	Interest on Working Capital	2.92	3.71	3.35
4	Operation and Maintenance Expenses	14.14	21.94	21.21
5	Return on Equity	10.89	10.97	10.17
6	Annual Fixed Cost	29.83	38.71	35.98

The Commission in the Tariff Order for FY 2018-19, dated 16th March 2018, had approved AFC of INR 29.83 Cr. The AFC has now been trued up to INR 35.98 Cr for FY 2018-19, 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 16th 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 2018-19 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 2018-19 (in INR Cr)

Month	PLF during month	Cumulative PLF	NAPLF	Capacity charges Approved for PPCL in Order (AFC Approved INR 29.83 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 35.98 Cr)
Apr-18	88.53%	88.53%	85.00%	2.49	2.49	3.00
May-18	83.32%	85.88%	85.00%	2.49	2.43	3.00
Jun-18	88.91%	86.88%	85.00%	2.49	2.54	3.00
Jul-18	90.82%	87.88%	85.00%	2.49	2.49	3.00
Aug-18	90.60%	88.43%	85.00%	2.49	2.49	3.00
Sep-18	86.30%	88.08%	85.00%	2.49	2.49	3.00
Oct-18	91.27%	88.55%	85.00%	2.49	2.49	3.00
Nov-18	80.07%	87.50%	85.00%	2.49	2.49	3.00

Dec-18	60.44%	84.45%	85.00%	2.49	1.98	2.82
Jan-19	38.59%	79.81%	85.00%	2.49	1.08	1.34
Feb-19	82.50%	80.03%	85.00%	2.49	2.36	2.90
Mar-19	87.13%	80.63%	85.00%	2.49	2.52	3.08
				29.83	27.79	34.13

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 35.98 Cr (against INR 29.83 Cr approved in the Tariff Order for FY 2018-19, dated 16th March 2018), the Commission has derived the Capacity Charges entitled at AFC Approved in True-up Order for FY 2018-19 at INR 34.13 Cr, based on the Actual PLF (as obtained from the bills submitted by the Petitioner).

The Petitioner billed the Capacity Charges at INR 27.79 Cr to PED; hence the Commission has considered an additional claim of INR 6.34 Cr (INR 34.13 Cr less INR 27.79 Cr) in FY 2018-19. Considering the carrying cost for FY 2018-19 and FY 2019-20, 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 2018-19 should have been carried out along with the Tariff for FY 2020-21. However, owing to unavailability of audited accounts, the Petitioner did not file the Petition for True-up for FY 2018-19 along with the petition for Tariff for FY 2020-21. Hence, no carrying cost has been allowed in FY 2020-21.

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

Table 12: Computation of carrying cost on differential AFC for FY 2021-22 (In INR Cr)

Particular	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Opening balance	-	6.73	-	7.14
Addition/(Reduction)	6.34		-	(7.14)*
Closing balance	6.34	-	-	-
Average balance	3.17	3.37	-	3.57
SBI Base rate as on 1st April	8.70%	8.55%	7.90%	7.00%
Bank Rate (Base Rate + 3.50%)	12.20%	12.05%	11.40%	10.50%
Carrying Cost	0.39	0.41	-	0.28#
Closing balance incl. carrying cost	6.73	7.14	-	7.42

*The differential is allowed to be recovered in FY 2021-22; hence, the recovery has been reduced in the same year.

#The carrying cost has been allowed for 9 months as the differential AFC has been allowed to be recovered by Dec' 21.

Therefore, the Commission approves a claim of INR 7.42 Cr as part of the True-up exercise for the FY 2018-19 and allows the Petitioner to recover the same from PED during the FY 2021-22 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 2018-19

The Commission, as per its Order dated 16th March 2018, had approved the formula on the basis of which the variable charge/energy charge would be claimed for FY 2018-19. 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 2018-19). The Petitioner has been billing the variable charge/ energy charge for FY 2018-19 based on this formula.

The Commission, as part of the prudence check during the Truing-up exercise, has verified the bills that have been raised to the beneficiary (the respondent), i.e. PED, for FY 2018-19. 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 2019-20

3.1. Applicable Regulations for True-up

The True-up for the FY 2019-20 has to be carried out in accordance with Regulation 11 of the MYT Regulations, 2018 stated as follows:

“11 Annual Performance Review, Truing-up and tariff determination during the Control Period

11.1 *The Generating Company, Transmission Licensee and Distribution Licensee shall be subject to annual performance review and truing up of expenses and revenue during the Control Period in accordance with these Regulations.*

11.2 *The Generating Company, Transmission Licensee and Distribution Licensee shall file an application for the annual performance review of the current year, truing up of the previous Year or the Year for which the audited accounts are available and determination of tariff for the ensuing Year on or before 30th November of each Year:*

Provided that the Generating Company, Transmission Licensee or Distribution Licensee, as the case may be, shall submit to the Commission information in such form as may be specified by the Commission, together with the audited accounts, extracts of books of account and such other details as the Commission may require to assess the reasons for and extent of any variation in financial performance from the approved forecast of Aggregate Revenue Requirement and Expected Revenue from Tariff and Charges.

11.3

11.4

11.5

3.2. Approach for Truing-up of the FY 2019-20

Regulation 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 2019-20. The Petitioner through its petition has submitted that the Accounts for the FY 2018-19 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 2019-20 stand unaudited until the adoption of accounts for FY 2018-19. Therefore, the Petitioner has submitted Unaudited Accounts for FY 2019-20. 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 2019-20 could not be submitted due to pending adoption of Accounts for FY 2018-19.

Accordingly, the Commission is not carrying out the Truing Up exercise for FY 2019-20 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 2018-19 as a part of the current Order. Further, the Commission directs the Petitioner to submit the audited accounts for the FY 2019-20 and FY 2020-21 along with Petition for determination of ARR for the FY 2022-23, however, in case of standalone revenue gap for FY 2019-20, the treatment of carrying cost shall be in line with the methodology adopted by the Commission in the true-up of FY 2018-19.

4. Chapter 4: Determination of AFC for the FY 2021-22

4.1. Background

In this Chapter, the Commission has determined the Annual Fixed Cost (AFC) and the normative variable cost parameters for the FY 2021-22.

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 2021-22, has considered the CERC Tariff Regulations for the period FY 2019-24 issued by CERC vide notification no. L-1/236/2018/CERC dated 7th 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 2021-22, 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 2019-20 as per the Tariff Orders of the respective years, in compliance with the judgment of Hon'ble APTEL in Appeal No. 41/2012 on 21st 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 2021-22.

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 01.06.2020 to 30.09.2020 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 5.50% for the FY 2021-22.

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 21st 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 2018-19 and Determination of AFC for FY 2021-22. The submissions have been analysed by the Commission and it is observed that the average APC is at 3.4% for the years 2016-2020. 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 2021-22.

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 2021-22.

Commission's Analysis

The Commission had dealt with the issue of fixing the GSHR in the earlier Tariff Order, dated 25th April 2014, after elaborately analysing the past actuals of the heat rate for 12 years and the CERC Order dated 07th 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 2nd 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 2021-22.

The Commission approves the GSHR for PPCL gas station at 2,646 kcal/kWh for the FY 2021-22.

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'20 to Sep'20. Further, the Petitioner considered the data for Jul'20, Aug'20 and Sep'20 for computation of the average cost of gas.

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

S.No.	Particulars	Unit	Jul'20	Aug'20	Sep'20
1	Quantity of gas supplied by GAIL	Cu.m	5,058,504	5,110,667	5,292,590
2	Adjustment(+/-) in quantity supplied made by GAIL	Cu.m	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	5,058,504	5,110,667	5,292,590
4	Normative Transit & Handling Losses	Cu.m	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	5,058,504	5,110,667	5,292,590
6	Amount charged by the Gas Company	INR	45,516,074	45,472,242	46,909,257
7	Adjustment(+/-) in amount charged made by Gas Company	INR	-	-	-
8	Total amount charged (6+7)	INR	45,516,074	45,472,242	46,909,257
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	-	-	-

S.No.	Particulars	Unit	Jul'20	Aug'20	Sep'20
13	Total Transportation Charges (9+/-10-11+12)	INR	-	-	-
14	Total amount Charged for fuel supplied including Transportation (8+13)	INR	45,516,074	45,472,242	46,909,257
15	Average GCV of Gas as fired	kcal/Cu.m	10,841.00	10,812.83	10,808.10
16	Average rate of Fuel/1000 Cu.m	INR/1000 Cu.m	8,997.93	8,897.52	8,863.19

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 Jul'20 to Nov'20. The Commission has considered the data for three latest available months. The data for the same has been tabulated below:

Table 14: Details considered by the Commission for computation of weighted average GCV and price of gas

S.No.	Particulars	Unit	Jul'20	Aug'20	Sep'20	Oct'20	Nov'20
1	Quantity of gas supplied by GAIL	Cu.m	5,058,504	5,110,667	5,292,590	5,351,865	5,110,950
2	Adjustment (+/-) in quantity supplied made by GAIL	Cu.m	-	-	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	5,058,504	5,110,667	5,292,590	5,351,865	5,110,950
4	Normative Transit & Handling Losses	Cu.m	-	-	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	5,058,504	5,110,667	5,292,590	5,351,865	5,110,950
6	Amount charged by the Gas Company	INR	45,516,074	45,472,242	46,909,257	36,521,964	34,798,661
7	Adjustment (+/-) in amount charged made by Gas Company	INR	-	-	-	-	-
8	Total amount charged (6+7)	INR	45,516,074	45,472,242	46,909,257	36,521,964	34,798,661
9	Transportation charges by rail / ship / road transport	INR	-	-	-	-	-

S.No	Particulars	Unit	Jul'20	Aug'20	Sep'20	Oct'20	Nov'20
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	45,516,074	45,472,242	46,909,257	36,521,964	34,798,661
15	Average GCV of Gas as fired	kcal/Cu.m	10,841.00	10,812.83	10,808.20	10,827.40	10,805.56
16	Average rate of Fuel/1000 Cu.m	INR/1000 Cu.m	8,997.93	8,897.52	8,863.19	6,824.16	6,808.65

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

Petitioner's Submission

The Petitioner has considered a weighted average GCV of 10,830.57 kcal/cu.m based on average GCV for the period from Apr'20 to Sep'20.

Commission's Analysis

The Commission has considered the average GCV of gas for Sept'20, Oct'20 and Nov'20 to compute the weighted average GCV of gas (weighted by the quantity of gas procured in respective months) for computation of working capital.

Table 15: Computation of weighted average GCV of gas

S. No.	Particulars	Unit	Sep'20	Oct'20	Nov'20
1	Quantity of gas supplied by GAIL	Cu.m	5,292,590	5,351,865	5,110,950
2	Weighted average GCV of gas as fired	kcal/Cu.m	10,808.20	10,827.40	10,805.56
3	Weighted average GCV of gas (3 Months)	kcal/Cu.m	10,813.87		

Accordingly, the Commission considers the Gross Calorific Value of gas as 10,813.87 kcal/Cu.m for purpose of computation of the fuel cost for the Working Capital requirement for the FY 2021-22.

4.4.3. Weighted Average Price of Gas

Petitioner's Submission

The Petitioner has considered the cost of gas for Jul'20, Aug'20 and Sep'20 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 8,919.55 per 1000 Cu.m, based on the months of Jul'20, Aug'20 and Sep'20.

Commission's Analysis

The Commission has accordingly considered fuel bills for the period from Sep'20 to Nov'20 (latest available bills) for computation of landed cost of fuel.

Table 16: Computation of weighted average price of gas

S. No.	Particulars	Unit	Sep'20	Oct'20	Nov'20
1	Quantity of gas supplied by GAIL	Cu.m	5,292,590	5,351,865	5,110,950
2	Weighted average rate of fuel	INR/1000 cu.m	8,863.19	6,824.16	6,808.65
3	Weighted average price of gas (3 months)	INR/1000 cu.m	7,504.08		

Accordingly, the Commission considers the weighted average cost of gas at INR 7,504.08 per 1000 Cu.m for the purpose of computation of fuel cost for working capital requirement for the FY 2021-22.

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 17: Variable Charges for Working Capital

S.No.	Particular	Unit	Approved Value
1	Station Heat Rate (A)	kcal/kWh	2,646.00
2	Gross Calorific Value of Gas (B)	kcal/ Cu.m	10,813.87
3	Price of gas (C)	INR/Cu.m	7.504
4	Fuel Cost /Gross units (D = A*(C/B))	INR/kWh	1.836
5	Fuel Cost/Net units (E = D/(1-APC(5%)))	INR/kWh	1.933

4.5. Annual Fixed Cost (AFC) approved for the FY 2021-22

The following components have been considered as part of the fixed charge for the FY 2021-22 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 20th 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 has approved closing capital cost for FY 2018-19 as INR 164.44 Cr as part of the current Order. Further, the Commission had approved an additional capitalization of INR 6.32 Cr in FY 2019-20 in the MYT Order dated 31st March 2017. Accordingly, the opening capital cost for FY 2020-21 is considered as INR 170.76 Cr.

Commission approves the Opening Capital Cost for FY 2020-21 at INR 170.76 Cr and no additional capitalization in FY 2021-22. 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 18: Capital Cost approved by the Commission for the FY 2021-22 (INR Cr)

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

The Commission approves a closing capital cost of INR 170.76 Cr for the FY 2021-22.

4.5.2. Depreciation

Petitioner's Submission

The Petitioner has projected the depreciation charge for the FY 2021-22 at INR 3.11 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 2019. 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 170.76 Cr for FY 2021-22, as described in the previous section. The cost of the freehold land of INR 7.93 Cr has been excluded for depreciation purpose.

The cumulative depreciation recovered up to FY 2020-21 is INR 133.40 Cr, considering cumulative depreciation of INR 126.15 Cr up to final True-up of FY 2017-18 and approved depreciation of INR 1.25 Cr for FY 2018-19, INR 2.72 Cr for FY 2019-20, and INR 3.29 Cr for FY 2020-21.

It is noted that the plant is in its 21st 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. 4 years for FY 2021-22, 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 2021-22 is approved as shown in the following table:

Table 19: Depreciation approved by the Commission for the FY 2021-22 (In INR Cr)

S. No.	Particulars	Approved by Commission in Tariff Order	Petitioner's Submission	Now Approved by Commission
1	Average capital cost	169.01	170.76	170.76
2	Cost of freehold (FH) land	7.93	7.93	7.93
3	Capital cost excluding FH Land	161.08	162.83	162.83
4	Cap on cumulative depreciation	144.97	146.55	146.55
5	Cumulative depreciation upto the previous year	133.29	134.09	133.40
6	Balance depreciation to be recovered	11.68	12.46	13.14
7	Balance useful Life (years)	4.00	4.00	4.00
8	Depreciation for the year (6/7)	2.92	3.11	3.29

The Commission approves the depreciation at INR 3.29 Cr for the FY 2021-22. However, the same shall be revisited during the time of True-up of the year.

4.5.3. Interest on Loan

Petitioner's Submission

The Petitioner has claimed NIL interest charges for each year of the FY 2021-22.

Commission's Analysis

It is observed that the cumulative depreciation recovered upto the previous year is INR 133.40 Cr for FY 2021-22, as also reflected in section 4.5.2 above. The gross normative average loan for FY 2021-22 is INR 119.53 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 2021-22, and accordingly there is no loan outstanding for the period. In the absence of any outstanding loan amount, the interest charges for FY 2021-22 are approved as NIL.

The Commission approves the interest charges on normative loan as NIL for the FY 2021-22. However, the same shall be revisited as per prevailing CERC Regulations during the time of True-up.

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 2021-22.

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 average 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 2021-22. The detailed computation is shown in the following table:

Table 20: Return on Equity approved by the Commission for the FY 2021-22 (In INR Cr)

S. No	Particulars	Approved by Commission in Tariff Order	Petitioner's Submission	Now Approved by Commission
1	Equity Capital	50.70	51.23	51.23
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	Return on Equity	11.09	11.20	11.20

The effective rate of return on equity shall be reviewed at the time of True-up. 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 11.20 Cr for the FY 2021-22. However, the same shall be revisited during the time of True-up.

4.5.5. Operation and Maintenance (O&M) Expenses

Petitioner's Submission

The Petitioner has considered INR 32.50 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 computed INR 17.22 Cr towards O&M expenses for the FY 2021-22. The Petitioner has additionally claimed INR 1.70 CR as provision for expenses towards the implementation of the 7th Pay Commission.

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.

In response to the Commission's specific query with regards to the applicability of the 7th Pay Commission, the Petitioner has submitted that the 7th CPC is applicable to the Petitioner from 1.4.2019 and the Petitioner is paying the 7th CPC w.e.f. July 2020. The Petitioner submitted unaudited annual accounts for 2019-20 and the provisional annual accounts for 2020-21 were not furnished. At present the Commission has not been able to verify the 7th CPC related provisions and payments from the submissions, hence, the Commission approved NIL amount towards 7th CPC for the FY 2021-22. The same shall be revisited at the time of true-up based on actuals.

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 21: 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 2021-22 as shown in the following table:

Table 22: O&M Expenses approved by the Commission for the FY 2021-22 (In INR Cr)

S. No.	Particulars	Approved by Commission in Tariff Order	Petitioner's Submission	Now Approved by Commission
1	Derived O&M Norms (INR Lakh/MW)	53.00	53.00	53.00
2	O&M Expenses	17.22	17.22	17.22
3	Additional Expenditure Claimed/Allowed	-	1.70	-
4	Total O&M Expenses	17.22	18.93	17.22

The Commission approves INR 17.22 Cr towards O&M expenses for the FY 2021-22.

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 applicable on 1st April 2019. The energy charges considered while working out IWC are based on average actual fuel consumption and payments made pertaining the period of July '20, August '20 and September '20.

Accordingly, the Petitioner has claimed interest on working capital of INR 2.98 Cr for FY 2021-22.

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 10th 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 1st 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’20, Oct’20 and Nov’20. 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 23 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	10,813.87
2	PLF	B		85%
3	Capacity	C	MW	32.50
4	Generation	$D = \frac{365 * 24 * C * 1000 * B}{10^6}$	MU	242.00
5	SHR	E	kcal/kWh	2,646
6	Sp. gas consumption	$F = E/G$	scm/kWh	0.353
7	Weighted Average Price of Gas (As computed in section 4.4)	G	Rs./1000 scm	7504.08
8	Cost of gas (1 month)	$H = D * F * (G / 10^4) / 12$	Cr	5.34

Table 24: 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)	5.17	5.68	5.17
3	Receivables (two months) / 45 days ¹	16.48	12.15	12.33
4	O&M expenses (one month)	1.44	1.58	1.44
5	Total Working Capital	28.42	24.75	24.27
6	Rate of Interest (%)	12.55%	12.05%	12.05%
7	Interest on Working Capital	3.57	2.98	2.92

The Commission approves Interest on Working Capital of INR 2.92 Cr for the FY 2021-22. However, the same shall be revisited during the True-up.

4.5.7. Annual Fixed Cost (AFC) approved for the FY 2021-22

The Commission based on the analysis of the AFC parameters in the above paragraphs approves the Annual Fixed Cost for the FY 2021-22 as shown in the following table:

Table 25: Annual Fixed Cost approved by the Commission for the FY 2021-22 (In INR Cr)

S. No	Particulars	Approved by Commission in MYT Order	Petitioner's Submission	Now Approved by Commission	Reference
1	Depreciation	2.92	3.11	3.29	Table 19
2	Interest on Loan	0.00	0.00	0.00	-
3	Return on Equity	3.57	2.98	2.92	Table 20
4	Operation and Maintenance Expenses	17.22	18.93	17.22	Table 22
5	Interest on Working Capital	11.09	11.20	11.20	Table 24
6	Annual Fixed Cost	34.80	36.23	34.64	

The Commission approves Annual Fixed Cost of INR 34.64 Cr for the FY 2021-22. However, the same shall be revisited during the time of True-up.

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:

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

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

¹ 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.

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 2021-22

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

- Annual Fixed Cost (AFC) at INR 34.64 Cr for FY 2021-22.
- 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 7.42 Cr on account of True-up of FY 2018-19 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 2021-22 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 the True-up Petitions upto FY 2019-20

The Commission directs the Petitioner to complete the filing of the True-up Petitions up to FY 2020-21 by 30th November 2021.

6.1.2. Billing as per the Correct Formula

The Commission has noticed that the Petitioner has been invoicing the Electricity Department, Puducherry based on a wrong billing formula. In its Tariff Order dated 16th March 2018, the Commission directed the Petitioner to correct the formula as per CERC Tariff Regulations 2014, however, the Petitioner is still billing without following the formula suggested in the applicable Regulations. 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.