



TARIFF ORDER

Determination of Tariff for FY 2015-16

For

Puducherry Power Corporation Limited

Date: 31.03.2015

**JOINT ELECTRICITY REGULATORY COMMISSION
FOR GOA AND UNION TERRITORIES**

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Before the

**Joint Electricity Regulatory Commission for the
State of Goa and Union Territories
Gurgaon**

Quorum¹

S. K. Chaturvedi (Chairman)

Petition No. 159/2015

In the matter of

Determination of Generation Tariff for the Financial Year 2015-16 for Puducherry Power Corporation Limited (PPCL) Gas Power Station (32.5 MW)

And in the matter of

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

Electricity Department, PuducherryRespondent

ORDER

Date: 31.03.2015

¹ As per Section 93 of the Electricity Act, 2003; no act or proceedings of the Appropriate Commission shall be questioned or shall be invalidated merely on the ground of existence of any vacancy or defect in the constitution of the Appropriate Commission. Therefore, Shri S K Chaturvedi the chairperson of the JERC constituted the valid Quorum for the public hearing in respect of the determination of the ARR & tariff for FY 2015-16, due to vacancy in the position of member at that time.

1. Introduction

1.1 JERC Formation

In exercise of the powers conferred by Section 83 of the Electricity Act, 2003 the Central Government constituted a two member (including Chairperson) Joint Electricity Regulatory Commission for all Union Territories except Delhi to be known as “Joint Electricity Regulatory Commission for Union Territories” with headquarters at Delhi as notified vide notification no. 23/52/2003 – R&R dated May 2’ 2005. Later on 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” as notified on May 30’ 2008. The Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Andaman & Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry) started functioning with effect from September 2008. Office of the Commission is presently located in the district town of Gurgaon, Haryana.

1.2 Puducherry Power Corporation Limited

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. Further, it is a “Generating Company”, as defined under sub-section 28 of Section 2 of 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 Union Territory of Puducherry. The required gas of 1.91 lakhs cubic meter of gas per day is obtained from the gas wells at Narimanam in the Cauvery basin under an agreement with the GAIL (India) Ltd.

The commercial operation of the Karaikal station has been declared with effect from 3rd January 2000 and is supplying power to Electricity Department, Puducherry under the Power Purchase Agreement (PPA) signed with them on February 25’ 2002.

Consequent to setting up of the Joint Electricity Regulatory Commission, the Petitioner had filed petition for determination of tariff for the period FY 2011-12. The Commission vide order dated August 6' 2011 had approved tariff with effect from June 2011 for FY 2011-12. Subsequently, based on review petition filed by the Petitioner, the Commission had revised the tariff vide its order communicated to PPCL on December 28' 2011 and the Corporation then filed Appeal No. 41 of 2012 to APTEL against the review order pertaining to the tariff order FY 2011-12 which was disposed of by the APTEL with directions, as per the judgment dated November 21' 2012.

In the light of observations and findings of the Hon'ble APTEL in appeal no. 41/2012, the petition for tariff determination for FY 2011-12 (petition no. 18/2010) and review petition for FY 2011-12 (petition no. 45/2011) were restored by the Commission vide its order dated December 19' 2012.

The Commission carried out detailed proceedings in this matter and subsequently vide its order dated April 29' 2013 approved capital cost of Rs 146.45 Crores for FY 2011-12 against the earlier approved capital cost of Rs 137.77 Crores. The order observed that the approved capital cost of Rs 146.45 Crores will be considered along with the audited accounts at the time of approval of True-up for FY 2011-12, True-up for FY 2012-13 and Review for FY 2013- 14. The directions of the APTEL and the subsequent order of the Commission have been discussed in detail in para 2.1 of this order.

At present, the tariff of the instant station is at a rate fixed by the Commission to Puducherry Power Corporation Limited vide Commission's order dated April 25'2014 on the basis of petition filed for the tariff period FY 2014-15.

1.3 Regulations

The Commission, in exercise of the powers conferred upon by the Electricity Act, 2003 has notified JERC (Terms and Conditions for determination of Tariff)

Regulations, 2009 for determination of tariff (hereinafter referred to as JERC Tariff Regulations).

As per provisions of Clause 19 of the JERC (Terms and Conditions for Determination of Tariff) Regulations 2009, the Commission, while determining the cost of generation of each 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.

1.4 Filing of Petition

The Petitioner was mandated to file the tariff petition for the tariff period FY 2015 - 16 before November 30' 2014.

The Petitioner submitted before the Commission that the collection of data/information from the various sources is taking more than the estimated time and submitted before the Commission that it may be allowed to file the Tariff Petition in the first week of January 2015.

Due to delay in filing of the petition as per the regulatory timeline, the Petitioner filed an application for condonation of delay in filing the Tariff Petition for FY 2015-16 before the Commission vide its application dated 10th December 2014. The Commission acceded to the request of the Petitioner and granted exemption of time up to 7th January 2015 for filing of the petition vide its letter dated 18th December 2014.

PPCL filed its petition before the Joint Electricity Regulatory Commission for approval of tariff for FY 2015-16 for Puducherry Gas Power Station (32.5 MW) for sale of power to the deemed distribution licensee of Puducherry, received at the Commission's office on 5th January 2015 under Section 62 read with Regulation no. 3 to 10 of "Joint Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2009".

The Petitioner has not filed any True-up petition for FY 2013-14 and Review petition for FY 2014-15 alongwith the Tariff Petition for FY 2015-16. However, PPCL submitted the True-up petition for FY 2013-14 on 16th March 2015, much after the Public Hearing of the Tariff Petition for FY 2015-16 was held on 17th February 2015. As such, the Commission has not taken cognisance of the True-up Petition for FY 2013-14. The Petitioner later informed the Commission that the Review Petition for FY 2014-15 will be submitted along with Tariff Petition for FY 2016-17.

1.5 Admission of Petition

The Commission admitted the petition for determination of Generation Tariff for PPCL for FY 2015-16 on 6th January 2015 vide its letter addressed to PPCL dated 12th January 2015. The copy of the letter stating the admittance of the petition is enclosed as **Annexure 1** to this Order.

In compliance of Regulation 29 of JERC (Conduct of Business) Regulations 2009 and Regulation 12(5) of JERC (Terms and Conditions for Determination of Tariff) Regulations 2009, the Petitioner was directed to publish the public notice of the tariff petition (abridged form) in atleast two newspapers widely circulated in the area of UT of Puducherry, highlighting the petition and outlining the existing & proposed tariff. Further, it was indicated that the public notice should highlight that the suggestions/objections from the general public/stakeholders should be received latest by 23rd January 2015. The Petitioner was directed to submit the copies of the newspapers in which the public notice is published before the Commission.

1.6 Interaction with the Petitioner

The Commission interacted regularly with the Petitioner to seek clarifications and justification on various issues essential for the analysis of the tariff petition. The Commission and the Petitioner also discussed key issues related to the petition, which included norms of operation of the plant, details of fuel expenses submitted to the Commission, etc.

The technical validation session was held at the Commission's office on 13th February 2015, where the representatives of the Petitioner were present. The Commission carried out prudence check of the bills submitted and sought clarifications in the submissions of the Petitioner.

The Petitioner submitted its replies, as shown below, in response to the queries raised by the Commission, which have been considered during approval of the tariff of the Petitioner.

Table 1.1: List of Correspondence with PPCL

Sl. No.	Date	Subject
1.	04.03.2015	Clarifications/additional data /information sought by the Commission
2.	13.03.2015	Reply to clarifications & submission of additional data/information.
3.	16.03.2015	True-up petition for FY 2013-14

1.7 Public Hearing Process

The Commission directed the Petitioner to publish the summary of the tariff petition in abridged form and manner as approved in accordance with Section 64 of the Electricity Act 2003 to ensure public participation.

The public notice was published by PPCL in the following newspapers for inviting objections/suggestions from the stakeholders on the tariff petition:

Table 1.2: Details of public notice published by PPCL

S. No.	Date	Name of newspapers	Place
1.	09.01.2015	The Hindu	Chennai Edition
2.	09.01.2015	Kerala Kaumudi Daily	Mahe Region
3.	09.01.2015	Dinakaran	Trichy Edition (Karaikal Region)
4.	09.01.2015	Dinakaran	Puducherry Region

The petitioner also cited the public notice and the petition on its website (www.ppcl.puducherry.gov.in) for inviting objections and suggestions on the petition.

Interested parties / stakeholders were requested to file their objections / suggestions on the petition on or before 23.01.2015. The copies of public notice are attached as **Annexure-2** to this order.

The Commission published the notice for public hearing regarding the approval of the tariff for FY 2015-16. Schedule of the public hearing is given below.

Table 1.3: Schedule of Public Hearing at Puducherry

Date & Time	Venue of Hearing	Subject
17 th February 2015 10.00 Hours onwards	Hall at Puducherry Multipurpose Social Service Society (PMSSS) Complex, # 81, Laporte Street, Puducherry – 605001	Petition # 159/2015 for approval of Tariff for FY 2015-16 (alongwith MYT Petition and Business Plan approval of ED-Puducherry)

Table 1.4: Details of Public Notice published by the Commission

S. No.	Date	Name of newspapers	Place
1.	04.02.2015	The New Indian Express	Chennai Edition
2.	04.02.2015	The New Indian Express	Kochi Edition
3.	04.02.2015	Dina Thanthi	Puducherry
4.	04.02.2015	Dina Malar	Puducherry
5.	04.02.2015	Malai Malar	Puducherry

Table 1.5: Repeat Public Notice published by the Commission

S. No.	Date	Name of newspapers	Place
1.	15.02.2015	The New Indian Express	Chennai Edition
2.	15.02.2015	The New Indian Express	Kochi Edition
3.	15.02.2015	Dina Thanthi	Puducherry
4.	15.02.2015	Dina Malar	Puducherry
5.	15.02.2015	Malai Malar	Puducherry

The copies of public notice published by the Commission for intimation of public hearing (s) are attached as **Annexure 3** to this order. The public notices were also published on the website of the Commission (www.jercuts.gov.in).

During the public hearing, each stakeholder was provided an opportunity to present his/her views on the petition filed by the Petitioner. All those present in the hearing, irrespective of whether they had given a written objection or not, were given opportunity to express their views. However, there were no objections or comments received from any of the stakeholders either oral or written during the public hearing of the Tariff Petition for FY 2015-16.

2. Summary of Aggregate Revenue Requirement (ARR) and Tariff Petition for FY 2015-16 filed by the Petitioner

2.1 Introduction

Karaikal Gas Power Station declared commercial operation w.e.f. 03.01.2000 and is supplying power to Electricity Department-Puducherry under a PPA signed with them on 25.02.2002. Consequent to setting up of the Joint Electricity Regulatory Commission, the Petitioner had filed petition for determination of tariff for the period FY 2011-12 (petition no. 18/2010). The Commission vide its order dated August 6' 2011 had approved tariff with effect from June 2011. Subsequently, based on review petition (petition no. 45/2011) filed by the Petitioner on the tariff order dated August 6' 2011, the Commission partially allowed the review petition vide order dated November 3' 2011 and the Corporation then filed Appeal No. 41 of 2012 to APTEL against the review order pertaining to the tariff period FY 2011-12. The Hon'ble APTEL vide its order dated November 21' 2012 partially allowed the Appeal and disposed off the appeal with directions. The key observations and findings of the APTEL are as summarized below.

Quote

“

1. *Tariff Regulation 22(2) provides for determination of the capital cost to be considered on the basis of the audited accounts or approvals already granted by the Commission. The Appellant claimed capital cost of Rs.146.45 Crores based on the audited accounts which were not taken into consideration by the Joint Commission and capital cost of only Rs.137.77 Crores was allowed on the ground that the approval of competent authority was not obtained. This is not a proper approach as the approval of the competent authority was not contemplated under the Regulation. Even though the approval of the competent authority for Rs.146.45 Crores was placed before the Joint Commission for reconsideration of*

the capital cost in the Review, the Joint Commission wrongly rejected the claim on the ground that nothing new had been pointed out by the Appellant. The Joint Commission should have scrutinized the audited accounts placed before it by the Appellant and considered the approval obtained from the Government and passed the order after prudence check in accordance with law. The Joint Commission is directed to consider the documents on record and pass order according to law after hearing the parties once again.

- 2. The Tariff Regulations provide that the components of generation tariff shall be as laid by the Central Commission in the 2004 Tariff Regulations as amended from time to time. The 2009 Tariff Regulations have been made effective by the Central Commission with effect from 1.4.2009. According to the 2009 Regulations, Normative Plant Availability Factor (NAPF) is to be taken as 85% for thermal power stations. However, the Joint Commission in the impugned order adopted NAPF of 87.5% contrary to the Tariff Regulations. The State Commission is directed to pass the consequential order in accordance with the Tariff Regulations.*
- 3. The State Commission has determined the auxiliary consumption as per the Tariff Regulations. No case has been made out by the Appellant for relaxation of the norms for auxiliary consumption.*
- 4. In view of the above, issue No. 1&2 regarding capital cost and Normative Annual Plant Availability Factor is answered in favour of the Appellant. Issue No. 3 regarding Auxiliary Consumption is answered as against the Appellant.*
- 5. Thus, the Appeal is partly allowed. "*

Unquote

In the light of observations and findings of the Hon'ble APTEL in appeal no. 41/2012, the petition for tariff determination for FY 2011-12 (petition no. 18/2010) and review petition (petition no. 45/2011) were restored by the Commission vide its order dated December 19' 2012.

The Commission carried out detailed proceedings in this matter and subsequently vide its order dated April 29' 2013 approved capital cost of Rs 146.45 Crores for FY 2011-12 against the earlier approved capital cost of Rs 137.77 Crores.

Further, the Commission in the order dated April 29' 2013 noted that the approved capital cost of Rs 146.45 Crores will be considered along with the audited accounts at the time of approval of true-up for FY 2011-12 & FY 2012-13 and Review for FY 2013-14.

The Commission noted that NAPAF of 85% would be considered at the time of true-up for FY 2011-12 and FY 2012-13. NAPAF at 85% had already been approved for FY 2013-14 and FY 2014-15 as per the tariff orders for FY 2013-14 and FY 2014-15.

The Petitioner submitted the True-up petitions for FY 2011-12 and FY 2012-13 along with audited accounts at the time of filing of the Tariff Petition for FY 2014-15. The Commission after considering the audited accounts, approved the capital cost of Rs.146.45 crore for tariff determination purpose during True-up of FY 2011-12.

Presently, the tariff of the station is at the rate fixed by the Commission vide its order dated April 25' 2014 on the basis of petition filed for the tariff period FY 2014-15.

For FY 2015-16, the Petitioner has submitted the operational parameters and cost of the generation. The operational parameters pertain to normative plant availability, station heat rate (SHR) and auxiliary power consumption. The costs cover both the energy (variable) and capacity (fixed) charges.

The summary of the proposal is as mentioned in the following sections.

2.2 Summary of the tariff for FY 2015-16 submitted by the Petitioner

The Petitioner has claimed the opening capital cost of Rs 148.12 Crores as approved in the order dated April 25' 2014 plus proposed capitalization amount of Rs 3.92 Crores paid towards the R.O. Plant and (i.e.) the Corporation considered the amount of Rs 3.32 crores on payment basis upto 31.10.2014 and the amount incurred towards R.O Plant upto September, 2014 is Rs 3.92 crores and the difference of Rs 0.60 crores (Rs 3.92 Crores - Rs 3.32 Crores) has been added to the Opening Capital Cost of Rs 148.12 crores as the project is completed and handed over to the Corporation. As such, it is submitted that the difference amount of Rs 0.60 crores may please be allowed as additional cost to the R.O. Plant. In this regard it is submitted to the Hon'ble Commission that the PPCL will claim the total expenditure of R.O. plant after discharge/adjusting all liabilities.

The Petitioner has submitted that Normative Plant Availability Factor (NAPAF) of 85% be fixed for FY 2015-16. The Petitioner has submitted that the Commission is to be guided by the principles and methodologies of CERC Regulations for fixation of generation tariff and CERC has specified NAPAF of 85% for the period 2009-14 for thermal generating stations.

The gross and net generation, the fixed and variable charges projected by the Petitioner for FY 2015-16 are as given below:

Table 2.1: Annual Fixed Charge proposed by PPCL for FY 2015-16

Sl. No.	Particulars	FY 2015-16
1.	Gross generation (MUs)	242.66
2.	Auxiliary consumption (%)	6.00%
3.	Net generation (MUs)	228.10
4.	Annual Fixed Charge (Rs. Crores)	25.91
(a)	Interest on loan capital (Rs. Crores)	0.00
(b)	Depreciation (Rs. Crores)	0.33
(c)	O&M expenses (Rs. Crores)	11.60
(d)	Interest on working capital (Rs. Crores)	3.41
(e)	Return on equity (Rs. Crores)	10.57

The Petitioner has proposed that the monthly capacity (Fixed) charge payable shall be calculated as per the formula given in Para 30(2) of CERC Tariff Regulations, 2014.

The Petitioner has proposed that the energy charges would be billed as per the below mentioned formula based on CERC Regulations 2014.

$$\text{Energy Charge (ECR)} = \text{GHR} \times \text{LGP} \times 100 / \{ \text{GCV} \times (100 - \text{APC}) \}$$

Where,

ECR = Energy charge Rate, in Rs per kWh sent out up to three decimal charges,

GHR= Normative Gross Station Heat Rate in kcal/kWh,

LGP= Weighted average landed price of gas in Rs/scm, during the calendar month,

GCV= Gross calorific value of gas, in kcal per scm during the calendar month,

APC= Normative Auxiliary Power Consumption in percentage

The Petitioner has considered Gross Station Heat Rate = 2646 kcal/kWh and Auxiliary Power Consumption (APC) = 6% for FY 2015-16.

The Petitioner has submitted that in addition to the fixed and variable charges, the Petitioner may be allowed to recover statutory taxes, duties etc on actual basis.

Further, the Petitioner has considered the opening capital cost of Rs 148.12 Crores and additional capitalization as Rs. 3.92 Crores for FY 2014-15. The Petitioner has submitted the Annual Fixed Charge of Rs 25.91 Crores for FY 2015-16 on the basis of this capital cost.

2.3 Prayer

In view of the above submissions, the Petitioner prayed that the Commission may be pleased to:

- Approve the Tariff for the year FY 2015-16 as brought out in this Petition as detailed below at 85% PLF:

Fixed cost : Rs.25.91 Crores per annum
Variable Energy Charges : As per formula given in the Tariff Petition under Para 5.9 with normative GHR of 2646 Kcal/kWh and normative APC of 6%.

- Allow the "Normative Annual Plant Availability Factor" @ 85% as laid down in the CERC Regulation 2014-19 vide clause No.36(A) for Karaikal Power Station for the year 2015-16 for full fixed cost recovery.
- Allow capital cost as prayed by the Petitioner.
- Allow the filing fees of Rs.100,000/- towards clarification sought on the Tariff Order dt.25.04.2014 vide Petition No.145/2014.
- Allow the recovery of filing fees as and when paid to the Hon'ble Commission and publication expenses from the beneficiary.
- Allow the recovery of additional O&M expenses due to breakdown of Gas Turbine Generator as part of AFC.
- Pass any other order in this regard as the Hon'ble Commission may find appropriate in the circumstances pleaded above.

3. Objections/ Suggestions on the Tariff Petition

3.1 Objection/ Suggestions on the Tariff Petition from the Stake holders

In response to the public notice inviting objections/suggestions from stake holders on the Petition filed by Puducherry Power Corporation Limited (PPCL) for approval of tariff for Karaikal gas power station for FY 2015-16, no objections/ suggestions were received.

As scheduled the public hearing was held at Puducherry on 17th February, 2015 on the petition filed by PPCL. As already included in the tariff order under Para 1.7 there were no objections or comments received from any of the stake holders either oral or written against the tariff petition for FY 2015-16 during the public hearing.

4. Determination of Tariff for FY 2015-16

4.1 PPCL Gas Power Station

The petitioner owns and operates one combined cycle gas power station generating 32.5 MW of Electricity (22.9 MW from gas turbine and 9.6 MW from Steam turbine) at Karaikal. The details of its capacity, commercial operation data etc. are given in the Table below:

Table 4.1: Details of the PPCL Gas Power Station

S. No.	Subject	Particulars
1.	Capacity	
	a) Gas turbine	22.9 MW
	b) Steam turbine	9.6 MW
	TOTAL	32.5 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

4.2 Tariff Regulations

As per provisions of Clause 19 of the JERC (Terms and Conditions for Determination of Tariff) Regulations 2009, the Commission, while determining the cost of generation of each 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 analysis of the ARR/tariff for FY 2015-16 has considered the CERC regulations for the period FY 2014-19 issued by CERC vide notification No.L-1/144/2013/CERC dated February 21' 2014.

4.3 Operational Parameters

4.3.1 Normative Annual Plant Availability Factor (NAPAF)

Petitioner's Submission

As per JERC Regulation, the Commission shall be guided by the principle and

methodology of Regulation of CERC (Terms and conditions of Tariff) Regulations, 2014. CERC has specified Normative Annual Plant Availability Factor (NAPAF) for recovery of full fixed charges at 85% for the period 2014-19 for thermal generating stations.

The Commission may be pleased to fix the norm-"Normative Annual Plant Availability Factor" (NAPAF) for the Karaikal station for recovery of full fixed charges in the FY 2015-16 at 85% as laid down in the terms and conditions of the determination of tariff issued by JERC.

Commission's Analysis

The Commission had approved NAPAF of 85% for FY 2013-14 itself, in compliance with the Judgement of Hon'ble APTEL in Appeal no 41/2012 on November 21, 2012. The Commission has also perused the newly notified CERC Regulations for the Tariff Period 2014-19 and found NAPAF to be 85% as per Regulation 36(A)(a) and accordingly approved the same for FY 2014-15 in the last Tariff Order dated 25th April 2014.

The Commission, therefore, approves the Normative Annual Plant Availability Factor (NAPAF) at 85% for FY 2015-16 also.

4.3.2 Auxiliary Power Consumption (APC)

Petitioner's Submission

The auxiliary power consumption (APC) is considered as per actuals during the period from 01.04.2014 to 30.09.2014 because the station has electric Gas Booster Compressor pumps due to which APC is higher and CEA has also recommended higher APC for plants having electric Gas Booster Compressor. Since, Natural Gas is supplied at a lower pressure i.e., 3 to 5 kg/sq.cm. Electric driven Gas Booster compressors are required to boost up the gas pressure to 17 kg/sq.cm resulting in increase of APC. Four electric driven Gas Booster Compressor of 300 KW each has to run to achieve full load. It is imperative to submit that the Commission

had held in a number of judgments that the vintage of power plants has to be kept in mind before determining the various operating parameters for the power plant and accordingly the petitioner considered APC at 6% which is around the actual.

In Gujarat State Electricity Corporation Limited Vs Gujarat Electricity Regulatory Commission & Ors (Judgment dated 23.11.2006 in Appeal No. 129 of 2006), where, the Hon'ble Tribunal had recommended a modification in respect of the auxiliary consumption of the said generating stations viz. Gandhinagar 1 to 4, Sikka, KLTPS, Dhuravan. It is also noticed that CERC in their order dated June 19, 2002 in the petition No. 62 of 2000 had allowed relaxed operational norms in case of Talcher Thermal Power Station comprising of four units of 60 MW and two units of 110 MW.

The ATE in its judgment in appeal No. 129 of 2006 dated November 23, 2006 has also recognized that relaxation in norms needs to be allowed in case of smaller old units. A similar dispensation was also allowed by this Tribunal in appeal No. 81 of 2007 vide its judgment dated January 10, 2008 in the case of Indraprastha Power Generation Co. which also has smaller units of 4X62.5 MW in IP Station, 2X67.5 MW in Rajghat Power House and six Gas Turbines of 30 MW rating and with Waste Heat Recovery Boiler and Steam Turbine,"

The Commission may consider the facts and factors and allow the petitioners to avail the actual auxiliary consumption made during the period from 01.04.2014 to 30.09.2014 (coverage of 6 months) of the tariff year 2015-16.

In this connection, the Petitioner submits that the Commission has the power to remove difficulties and amend / deviate from the norms provided for Regulations 43 and 44 of the JERC Tariff Regulations, 2009. The power to relax is a judicial discretion vested in this Commission.

Commission's Analysis

The Commission has observed the submissions made by the Petitioner and

considered the auxiliary consumption norms as mentioned in the CERC regulations and CEA guidelines. As per the newly notified CERC (Terms and Conditions for Determination of Tariff) Regulations for the tariff period 2014-19, the norm of auxiliary consumption for gas turbine generating stations is as below. The Regulation 36 (E) (c) of CERC Regulation 2014-19 has been referred to here.

1. Combined cycle 2.5%
2. Open cycle 1.0 %

As per CEA guidelines, in cases where electric driven gas booster compressors are part of the auxiliary plant, 2.5% extra auxiliary consumption can be allowed.

In view of the above norms mentioned in CERC regulations and CEA guidelines, the norm of 2.50% auxiliary consumption for the combined cycle plus additional APC limited to 2.5% for the electric driven gas booster compressor pumps is approved as part of the auxiliary consumption.

The Hon'ble APTEL in Appeal no. 41/2012 in its judgment dated November 21' 2012 has upheld the decision and analysis of the Commission on auxiliary consumption norm of the power plant. The relevant extract of the judgment is as quoted below.

Quote:

"We have carefully considered these submissions. As a matter of fact, this point has been taken into consideration by the Joint Commission in the tariff order dated 6.8.2011.

The Joint Commission referred to the said prayer and also considered the Auxiliary Consumption actual for the previous year's 2000-01 to 2009-10 and for the projection for the year 2010-11 and 2011-12. It is specifically held by the Joint Commission in the said impugned order dated 6.8.2011 that Central Commission Regulations 2009 provided the norms of Auxiliary Consumption for gas turbine generating station as:

-
1. Combined cycle 3.0%
 2. Open cycle 1%

The Joint Commission also referred to the CEA guidelines which provided that in cases where electric driven gas booster compressor are part of the Auxiliary Plant, 2.5% extra Auxiliary Consumption can be allowed. Taking into consideration of all these factors, the Auxiliary Consumption of 5.5% was approved by the Joint Commission for the financial year 2011-12 since the Appellants gas plant is having electric driven gas booster compressor.

Thus, it is clear that the Joint Commission followed the Central Commission Regulations as well as the CEA guidelines and correctly approved Auxiliary Power Consumption at 5.5% as there was no case made out for relaxation. This finding, in our view is perfectly justified.”

Unquote

Thus, the above judgment has upheld the analysis of the Commission that the auxiliary consumption should be considered as per the CERC regulations and CEA guidelines. The Commission in its analysis for FY 2014-15 has referred to the newly notified CERC regulations for the tariff period 2014-19 and accordingly approved the auxiliary consumption at 5.0% for FY 2014-15.

The Commission, therefore, approves Auxiliary Power Consumption at 2.5% for combined cycle plus additional power consumption limited to 2.5% for electric driven gas booster pumps. Thus, 5.0% auxiliary power consumption of gross power generation is approved for FY 2015-16 also as per CERC Regulations for the Tariff Period 2014-19 and CEA guidelines.

4.3.3 Gross Station Heat Rate

Petitioner’s Submission

The Petitioner has submitted that the JERC Tariff Regulations, 2009 of the Commission provides that the norms and parameters of the Central

Commission's Tariff Regulations shall be applicable. The Central Commission's Regulations provide for determination of Station Heat Rate on the basis of Gross Calorific Value (GCV).

The station design net heat rate is 2291 kcal/kWh. A copy of the heat balance diagram for design heat rate has also been enclosed along with the petition. Considering a conversion factor of 1.1 i.e., $GCV = 110\%$ of NCV the design net heat rate of 2291 kcal/kWh works out to $(2291 \times 1.1) 2520$ kcal/kWh. Further applying the degradation factor of 5 % as per the CERC regulations, the normative GSHR comes out to $2520 \times 1.05 = 2646$ kcal/kWh. The Commission approved the Gross station Heat Rate at 2646 Kcal/KWH for FY 2014-15 on the basis of the Submission of the Performance Guarantee Report of the corporation for the guaranteed heat rate of 2291 Kcal/KWh (on the basis of NCV of gas).

Commission's Analysis:

The issue of fixing Gross Heat Rate (GHR) was dealt in the earlier Tariff Order dated 25th April 2014 after elaborately analysing the past actuals of Heat Rate for twelve years and CERC Order dated 07.06.2012 on NEEPCO's petition for revising the GHR of Assam and Agartala Gas Power Projects as analogous to PPCL Plant. The Commission approved the Gross Heat Rate of 2646 Kcal/kWh for FY 2014-15.

Accordingly, the Commission approves the Gross Heat Rate for the PPCL Gas station at 2646 Kcal/kWh for FY 2015-16 also.

4.3.4 Performance Parameters approved for FY 2015-16

Based on the above analysis, the performance parameters as approved for the PPCL gas power station for FY 2015-16 are listed in the table below.

Table 4.2: Performance Parameters approved for FY 2015-16

Sl. No.	Parameter	Projected by the petitioner	Approved by the commission
1.	Normative Plant Availability Factor	85%	85%
2.	Auxiliary Power Consumption (%)	6.00%	5.00%
3.	Gross Station Heat Rate (kcal/kWh)	2646	2646

4.4 Variable Cost Parameters

The Commission has prescribed a formula, in line with the CERC formula, for calculating Energy (Variable) charges on month to month basis for billing purpose. However, in the following paras, variable charges have been computed to workout cost of gas (one month) and receivables for two months (energy charge component) which are used for calculation of the working capital requirement.

The details of Weighted Average, GCV of gas and price of gas as submitted by PPCL and the Commission's analysis are discussed below.

4.4.1 Weighted Average Gross Calorific Value of Gas

Petitioner's Submission

The Petitioner has submitted the weighted average Gross Calorific Value 10123.34 kcal/scm for FY 2015-16 based on the landed cost of gas for the months of July'14, Aug'14 and Sept'14. This has been considered to calculate the fuel cost for working out the interest on working capital. The Commission is requested to allow weighted average GCV of gas for the months of Jul'14, Aug'14 and Sept'14.

Commission's Analysis

The CERC Regulations state that for calculating working capital requirement, the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel as per actuals for the three months preceding the first month for which tariff is to be determined shall be considered and no fuel price escalation shall be provided during the tariff period.

It is submitted by PPCL that the Gas Turbine Generator is under Breakdown From 01.10.2014 due to Catastrophic failure of Generator Stator. It also submitted that the machine will be back in service by the end of Mar'2015.

PPCL furnished in the Petition, the following details of GCV and cost of gas for the month of July, August and September 2014.

Table 4.3: GCV gas details submitted by Petitioner for July, August & September FY 2014

Sl. No.	Parameter	Unit	July'14 Gas	Aug'14 Gas	Sept'14 Gas
1	Quantity of gas supplied by GAIL	Cu.m	5795751	5755886	5677297
2	Adjustment(+/-) in quantity supplied made by GAIL	Cu.m	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	5795751	5755886	5677297
4	Normative Transit & Handling Losses	Cu.m	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	5795751	5755886	5677297
6	Amount charged by the Gas Company	(Rs)	61421427	58962909	58401901
7	Adjustment(+/-) in amount charged made by Gas Company	(Rs)	-	-	-
8	Total amount charged (6+7)	(Rs)	61421427	58962909	58401901
9	Transportation charges by rail / ship /road transport	(Rs)	-	-	-
10	Adjustment (+/-) in amount charged made by Railways/Transport company	(Rs)	-	-	-
11	Demurrage Charges, if any	(Rs)	-	-	-
12	Cost of diesel in transporting gas through other system, if applicable	(Rs)	-	-	-
13	Total Transportation Charges (9+/-10-11+12)	(Rs)	-	-	-
14	Total amount Charged for fuel supplied including Transportation (8+13)	(Rs)	61421427	58962909	58401901
15	Weighted average GCV of Gas as fired	(kCal/Cu.m)	10292.42	10127.77	10231.14
16	Weighted average rate of Gas/1000 Cu.m	Rs/1000 Cu.m	10597.67	10243.93	10286.92

The Commission has validated the fuel details submitted by the Petitioner from the fuel bills and found the above submission as regards the quantity of gas, cost of fuel and weighted average GCV of gas in order.

The Commission has considered weighted average GCV of gas for the period July'14, August'14 and September'14 in its analysis of the GCV. The Commission has computed the weighted average GCV of gas for the period from July'14 to

September'14.

Table 4.4: Weighted average GCV (kcal/scm) considered by Commission for FY 2015-16

S. No.	Parameter	July'14	Aug'14	Sept'14
1.	Weighted average GCV of gas for the month(kcal/scm)	10292.42	10127.77	10231.14
2.	Weighted average GCV of gas considered by the Commission for FY 2015-16 (kcal/scm)	10217.11		

The Commission, therefore, considers it appropriate to take GCV 10217.11 kcal/scm for the computation of energy (variable) charges, based on the additional submission of the Petitioner.

Accordingly, the Commission considers the Gross Calorific Value of Gas 10217.11 kcal/scm for the purpose of computation of the fuel cost in working capital computation for FY 2015-16.

4.4.2 Weighted Average Price of Gas

Petitioner's Submission

The Petitioner has considered the weighted average landed cost of gas for the months of July'14, August'14 and September'14 as per JERC / CERC Regulations. This has been considered to arrive at the fuel cost in a realistic manner, for working out the interest on working capital. The Petitioner has considered the weighted average price of gas Rs. 10376.17 per 1000 scm for FY 2015-16 based on the months of July'14, August'14 and September'14.

Commission's Analysis

As mentioned earlier, as the Plant is not working from 1st Oct 2014 to 31st March 2015 the weighted average price of gas is considered based on the cost for the months of July, August and September 2014, as mentioned below.

Table 4.5: Fuel details submitted by Petitioner for FY 2015-16

Sl. No.	Parameter	Unit	July'14 Gas	Aug'14 Gas	Sept'14 Gas
1	Quantity of gas supplied by GAIL	Cu.m	5795751	5755886	5677297
2	Adjustment(+/-) in quantity supplied made by GAIL	Cu.m	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	5795751	5755886	5677297
4	Normative Transit & Handling Losses	Cu.m	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	5795751	5755886	5677297
6	Amount charged by the Gas Company	(Rs)	61421427	58962909	58401901
7	Adjustment(+/-) in amount charged made by Gas Company	(Rs)	-	-	-
8	Total amount charged (6+7)	(Rs)	61421427	58962909	58401901
9	Transportation charges by rail / ship /road transport	(Rs)	-	-	-
10	Adjustment (+/-) in amount charged made by Railways/Transport company	(Rs)	-	-	-
11	Demurrage Charges, if any	(Rs)	-	-	-
12	Cost of diesel in transporting gas through other system, if applicable	(Rs)	-	-	-
13	Total Transportation Charges (9+/-10-11+12)	(Rs)	-	-	-
14	Total amount Charged for fuel supplied including Transportation (8+13)	(Rs)	61421427	58962909	58401901
15	Weighted average GCV of Gas as fired	(kCal/Cu.m)	10292.42	10127.773	10231.14
16	Weighted average rate of Gas/1000 Cu.m	Rs/1000 Cu.m	10597.67	10243.93	10286.92

The Commission has validated the fuel details submitted by the Petitioner from the fuel bills submitted alongside and found the above submission to be in order.

The Commission in its analysis has considered the weighted average (weighted by the quantity procured during the period) to arrive at Rs. 10376.21 per 1000 scm rate for the fuel.

Table 4.6: Weighted Average Cost of Gas (Rs/1000 SCM) considered for FY 2014-15

S.No.	Parameter	Jul'14	Aug'14	Sept'14
1.	Weighted average cost of gas as fired (Rs/1000 scm) for the month	10597.67	10243.93	10286.92
2.	Weighted average cost of gas (Rs/1000 scm)	10376.17		

The Commission in its analysis considers it appropriate to allow the weighted average price of gas Rs 10376.17 per 1000 scm to arrive at the weighted average cost of gas for the period from Jul'14 to Oct'14.

Accordingly, the Commission considers the weighted average cost of gas as Rs.10376.17 per 1000 scm for the purpose of computation of the fuel cost in working capital computation for FY 2015-16.

4.5 Energy (Variable) Charges for FY 2015-16

Based on the performance and cost parameters approved, the fuel cost of PPCL gas station for FY 2015-16 at 85% NAPAF, is worked out as given in the table below:

Table 4.7: Variable Charges for working capital for FY 2015-16

S. No.	Items	Unit	Approved
1.	Station Heat Rate	kcal/kWh	2646
2.	Gross Calorific value of Gas	kcal/scm	10217.11
3.	Price of Gas	Rs/1000 scm	10376.17
4.	Fuel Cost /Gross units	Rs/kWh	2.69
5.	Fuel Cost/Net units	Rs/kWh	2.83

The details of calculations of the above values are given in the Table below:

Table 4.8: Cost of Generation for FY 2015-16

Sl. No	Item	Derivation	Unit	2015-16
1	Gross Generation @85% NAPAF/PLF	A	MUs	242.660
2	Auxiliary Consumption	C	%	5.0%
3	Auxiliary Consumption	B	MUs	12.133
4	Net Generation	Y=A – B	MUs	230.527

Sl. No	Item	Derivation	Unit	2015-16
5	Station Heat Rate	D	KCal/KWH.	2,646
6	Calorific value of Gas	F	kcal/scm	10217.11
7	Overall Heat from Gas	H=A x D	G Cal	642078
8	Actual Gas Consumption	M=(H x 000)/F	M. scm	62843
9	Price of Gas	P1	Rs/scm	10376.17
10	Cost of Gas	N5=P1 x M/10 ⁵	Rs Lakh	6521
11	Fuel Cost/Unit Gross	P=N5/(A*10)	Rs/kWh	2.687
12	Fuel Cost/Unit Net	Q=N5/(Y*10)	Rs/kWh	2.829

4.6 Capacity Charges/Annual Fixed Charges

Petitioner's Submission

The Petitioner has submitted the projections of the capacity charges (fixed) comprising the following components for FY 2015-16.

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

The components of fixed charges mentioned above are discussed in detail in the following paragraphs.

4.6.1 Capital Cost for FY 2015-16

Petitioners Submission

The Petitioner has submitted that opening capital cost for FY 2015-16 is considered at Rs.148.12 crore as per Tariff Order dated 25th April 2014. The Reverse Osmosis (RO) Plant has been completed during the FY 2013-14 and till date Rs 3.92 Crore has been paid. Further the total Capital Cost of Rs 152.84 crore is upto 31.03.2014, as per the unaudited financial statement pertaining to the financial year 2013-14.

1. The Petitioner has further submitted that RO plant work was already approved by the Commission vide its order No.G.O.Ms.No.35, dt 15.12.2006. The work was completed on January'2014 at an estimated cost of Rs 4.29 crores for which the Petitioner has also obtained approval from the competent authority i.e Govt. of Puducherry and the amount has been considered as capital cost on payment basis at the time of filling of the tariff petition period 2014-15 was Rs.3.32 crore and it has now been arrived as Rs 3.92 crores on actual cash basis till date and liability on completed works which is still pending.
2. No Generation station can operate on a sustainable basis to achieve the level of performance parameters specified by the Commission without incurring capital expenditure on various items from time to time. The expenditure on capital assets to be incurred by the generating stations are therefore a necessity for the proper and effective working of the generating station and therefore are beneficial to the respondents. The incurring of additional capital expenditure from time to time towards replacement / refurbishment of old assets has been absolutely necessary to maintain the higher level of performance on a sustainable basis and is in the larger public interest. The significant improvements in the performance which the generating stations have been able to achieve were because of the investment made from time to time in the replacement / refurbishing of the assets which have served for many years.
3. The Commission is therefore requested to allow the claim of capital cost of Rs.148.12 crore as provided in the order dt. 25.04.2014 plus proposed capitalization amount of Rs 3.92 crores so far paid towards R.O Plant. The corporation considered the amount of Rs 3.32 crores on payment basis upto 31.10.2014 and the amount incurred towards R.O Plant upto September, 2014 is Rs 3.92 crores and the difference of Rs 0.60 crores (Rs 3.92 crores - Rs 3.32 crores) has been added to the Opening Capital Cost Rs 148.12 crores as the project is completed and handed over to the corporation. As such, it is submitted that the difference amount of Rs 0.60 crores may please be allowed as additional

cost to the R.O plant. In this regard it is submitted to the Commission that the PPCL will claim the total expenditure of R.O Plant after discharge/adjusting all liabilities.

Commission's Analysis

The Petitioner has wrongly quoted the figure of Rs.148.12 crore as approved by the Commission in the Tariff Order dated 25th April 2014.

The Commission approved the opening capital cost as on 1st April 2014 at Rs.146.45 crore and approved additional capitalisation towards the R.O plant of Rs.3.32 crore for FY 2014-15. Thus, the capital cost approved by the Commission as at the end of FY 2014-15 was Rs.149.77 crore in the Tariff Order dated 25th April 2014.

The Commission in the earlier Tariff Order dated 25th April 2014 considered additional capitalisation of Rs.3.32 crore on the basis of actual payment. The Petitioner has submitted that an additional payment of Rs.0.60 crore has already been paid by them towards R.O plant. The Petitioner submitted that the cumulative payments made upto September 2014 towards the R.O plant were Rs.3.92 crore. The Commission noted that the actual expenses of Rs.3.92 crore is well within the approved cost of the project at Rs.4.29 crore by the Government of Puducherry. As such, the Commission allows Rs.0.60 crore on actual payment basis as additional capitalisation during FY 2014-15. The closing balance of capital cost (including this approval) of R.O plant is Rs.150.37 crore on 31st March 2015. Therefore, the Commission approves the opening capital cost at Rs.150.37 crore for FY 2015-16.

4.6.2 Depreciation on Assets for FY 2015-16

Petitioners Submission

The Petitioner has submitted that the rate of depreciation has been considered as per Regulation 26 of the JERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 and applicable CERC Regulations 2014. It was submitted that the accumulated depreciation of the respective individual Asset has been restricted to

90% of the value of the Asset as stated in the JERC Regulations. Further the Petitioner has submitted that the generating station is more than 15 years old and has calculated depreciation accordingly. The Petitioner has claimed Rs.0.33 crore as depreciation for FY 2015-16.

Commission's Analysis

The Commission has considered the opening capital cost of Rs 150.37 Crores for FY 2015-16. The cost of the freehold land is at Rs 7.93 Crore and has been excluded from the value of capital cost for computation of depreciation. The cumulative depreciation recovered up to FY 2014-15 is Rs 124.94 Crore (as approved in Tariff Order dated 25.04.2014). It is observed that the plant is in operation for more than 15 years. Since the plant has already completed 15 years from the date of commercial operation, the remaining depreciable value of the asset has been spread over the balance useful life of the asset (i.e. 10 years) as per the CERC regulations. Relevant extract of the regulation is reproduced below.

Regulation 27(5) of the CERC Regulations for tariff period 2014-19:

Quote

“ 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.”

Unquote

The depreciable value of the asset has been capped at 90% of the capital cost of the asset as per CERC regulations and accordingly the depreciation for the year is considered at Rs 0.33 Crore (i.e Rs.128.20 – Rs.124.94= Rs.3.26 crore) to be spread over the remaining life of the asset i.e. 10 years as shown in the Table below.

Table 4.9: Depreciation approved by the Commission for FY 2015-16

(Rs Crore)

S. No.	Particulars	Petitioner's Submission	Approved for FY 2015-16
1	Capital cost	150.37	150.37
2	Less: Cost of Freehold Land	7.93	7.93
3	Capital cost excluding Free Hold Land (1-2)	142.44	142.44

S. No.	Particulars	Petitioner's Submission	Approved for FY 2015-16
4	Cap on depreciation	128.20	128.20
5	Cumulative depreciation up to previous year	124.94	124.94
6	Depreciation to be charged over the balance life of the asset (10 years) (Rs.128.20 – Rs.124.94)/10	0.33	0.33
7	Depreciation for the year	0.33	0.33

The Commission, therefore, approves the depreciation at Rs. 0.33 Crores for FY 2015-16

4.6.3 Interest Charges on loan for FY 2015-16

Petitioner's Submission

The petitioner has submitted Interest on loan charges as 'Nil' for the FY 2015-16

Commission's Analysis

CERC Regulation 26 for the tariff period 2014-19 has been referred to here for the computation of the interest on normative loan.

On the basis of the approved average capital cost of Rs 150.07 Crores, the gross normative loan amount is Rs 105.05 Crores. As per the CERC Regulations, the repayment shall be deemed to be equal to the depreciation amount. On a clarification from the Commission regarding the cumulative repayment considered for purposes of interest calculation, the Petitioner has submitted that the cumulative depreciation recovered so far is higher than the gross normative loan, so the cumulative repayment has been considered limited to the gross normative loan. The submission of the Petitioner has been found to be in order, as elaborated below.

It is observed that the cumulative depreciation so far recovered (upto FY 2013-14) is Rs 124.67 Crores as also reflected in para 7.6.2 above. The gross normative loan for FY 2014-15 on the basis of the approved average capital cost of Rs 150.07

Crores is Rs 105.05 Crores. It is seen that the cumulative depreciation so far recovered 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 below.

Table 4.10: Interest Charges approved by the Commission for FY 2015-16

(Rs Crores)

S. No.	Details	Approved by the Commission
1.	Average Capital cost for the year	150.07
2.	Loan at 70% of average capital cost	105.05
3.	Cumulative repayment upto current	105.05
4.	Average net loan outstanding	0.00
5.	Rate of Interest	13.36%
6.	Interest	0.00

4.6.4 Interest on Working Capital

Petitioners Submission

The Petitioner has stated that for computing the interest on working capital, it has considered the SBI Base rate as on 01.4.2014 in terms of CERC Regulations 2014 para 28(3). The energy charges considered while working out IWC are based on average actual fuel consumption and payments made pertaining to the period commencing from July'14, August'14 and September '14 as per unaudited annual accounts. The working capital interest computations are as given in the Table below:

Table 4.11: Projected Interest on working capital for FY 2015-16

(Rs Crores)

Sl. No	Particulars	Petitioner Submission for FY 2015-16
1.	Cost of gas (one month)	5.48
2.	Maintenance spares	3.48
3.	Receivables (two months) at NAPAF	15.29
4.	O&M expenses (one month)	0.97

Sl. No	Particulars	Petitioner Submission for FY 2015-16
5.	Total working capital	25.22
6.	Rate of interest on working capital	13.50%
7.	Interest on working capital	3.40

Commissions Analysis:

Regulation 28 (1) (b) of the CERC Regulations, 2014 specifies;

(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations

- (i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;
- (ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;
- (iii) Maintenance spares @ 30% of operation and maintenance expenses specified in Regulation 29;
- (iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel; and
- (v) Operation and maintenance expenses for one month.

As per the above regulations, fuel cost and O&M expenses are considered for 1 month and receivables at 2 months. The Commission has not considered fuel stock for ½ month as the Petitioner has no fuel stock.

The spares are considered at 30% of the O&M expenses for FY 2015-16. The rate of interest shall be considered at SBI base rate plus 350 basis points (i.e. 3.50%). The prevailing SBI Base rate is at 10% and the interest rate considered for working capital is at 13.5% (SBI base rate of 10% + 3.50%) for FY 2015-16.

The Commission, accordingly, considers interest on working capital for FY 2015-16 as given in the Table below:

Table 4.12: Interest on working capital approved for FY 2015-16

			(Rs. Crores)
S. No.	Particulars	Petitioner Submission	Approved for FY 2015-16
1.	Cost of gas (one month) at NAPAF	5.48	5.43
2.	Maintenance spares	3.48	3.48
3.	Receivables (two months) at NAPAF	15.29	15.18
4.	O&M expenses (one month)	0.97	0.97
5.	Total working capital	25.22	25.06
6.	Rate of interest on working capital	13.50%	13.50%
7.	Interest on working capital	3.40	3.38

4.6.5 Operation & Maintenance (O&M) Expenses

Petitioners Submission

The petitioner has submitted that the O&M expenses element of fixed / capacity charges has been taken @ 33.43 lac/MW as specified by CERC for small gas turbine for the year of 2014-15 and thereafter the O&M expenses for relevant year of tariff has been worked out considering escalation @ 6.7% p.a. over the base O&M charges of 2014-15 as above based on JERC Regulations 27 and applicable CERC Regulations.

It is further submitted that as intimated to the Commission vide PPCL's Lr.No.865/PPCL/MD/2014-15, dt.03.11.2014, the Gas Turbine Generator is under breakdown from 01.10.2014 due to catastrophic failure of generator Stator. Upon inspection, it was found that the Generator cooler had failed and moisture had entered the Generator. These coolers are inspected during every annual shutdown and during May-June'2014 shutdown, the coolers were cleaned and checked for leakage. In the design there is no protection to identify such leakage when the machine is running. Further, the Generator has been overhauled by M/s BHEL GE gas Turbine Services Ltd (BGGTS) twice during last 14 years as per recommendations of OEM. Subsequent to this Generator failure, the original equipment Manufacturer, M/s BHEL was called and requested to inspect the Generator and repair the Stator at site. After detailed inspection, M/s BHEL recommended to shift the Generator Stator and Rotor to their works in Hyderabad for repairs , as repair work at site was not

possible. As per the advice of BHEL, the Stator and Rotor of gas Turbine Generator has been shifted to BHEL, Hyderabad for repairs. The estimated cost of repair of Stator and Rotor as quoted (after thorough negotiation) by BHEL through BGGTS is around Rs.14.52 crore and estimated time for repairs is 90 days. The machine is expected to be back in service by the end of March'2015.

It is also submitted that PPCL plant is more than 14 years old and as per CERC Regulations, 2014 no compensatory allowances are allowed for gas station. It is further submitted that the O&M expenses for the year 2014-15 as approved by the Commission is only Rs 10.86 crore as compared to the estimated cost of repairs of approx. Rs 14.52 crores. And even this O&M expenses are not recovered during this breakdown period on account of non-recovery of AFC. It is therefore submitted that as a onetime measure, the additional expenditure being incurred on Generator repairs be allowed additionally as part of O&M expenses being recoverable through AFC only and not making it as a part of capital cos. The actual expenditure incurred shall be submitted as a part of additional submission after completion of the same by M/s BGGTS.

This is more so necessary for the survival of a small company like us whose O&M expenditure is exhausted in routine and other regular maintenance work, thereby hardly leaving any funds in the hands of the petitioner for carrying out such type of capital expenditure & repairs. Therefore the petitioner is not in a position to undertake such kind of major replacement work due to such type of catastrophic failure without the necessary of the some additional expenses under AFC and that to when due to shutdown of unit for long time , the petitioner is not in a position to recover even the normative fixed charges. So it is humbly requested the Commission to Kindly consider it as a onetime compensation.

It is further humbly requested that the Commission may kindly exercise its powers vested under the Regulations 43 and 44 (i.e. Power to Remove Difficulties and Power to amend, read with the Regulation 27), Operation & Maintenance Expenses for

granting such additional O&M expenses. The power to relax is a judicial discretion vested in with the Commission.

The Petitioner has claimed total O&M expenses of Rs.11.60 crore for FY 2015-16 @Rs.33.43 lakh/MW with escalation @ 6.7% pa.

Commission's Analysis

The Commission has examined the O&M expenses claimed by the Petitioner. As far as the request of the Petitioner for the Repairs of Stator and Rotor of the Gas Turbine generator being carried out by BHEL at an estimated cost of Rs.14.52 crore to be allowed as additional part of O&M expenses, the same will be analysed at the time of True-up of FY 2014-15 by the Commission based on audited accounts. The Petitioner has submitted the petition for review of FY 2014-15 separately much after the public hearing of the Tariff Petition for FY 2015-16 and hence, the Commission has not taken cognizance of the same in this order. During the Technical Validation session discussions with PPCL representatives, they informed the Commission that the Petitioner has taken an "Industrial All Risk" (IAR) insurance policy and "Loss of Profit" (LOP) insurance policy which are in existence during FY 2014-15. The Petitioner has lodged a claim to the insurance company after the breakdown of the plant on 01.10.2014 – (i) under the Machinery Breakdown clause for repairs and maintenance, and (ii) under loss of profit policy for getting the fixed charges and payment of the Minimum Guaranteed Off take (MGO) to GAIL as per Gas Purchase Agreements. The Commission will take a view on the request of the Petitioner based on actual expenses as per audited accounts and the settlement or admittance of insurance claim amount.

Regulation 29 (1) (c) of the CERC Regulations, 2014 specify the normative O&M expenses for Small gas turbine power generating stations shall be at Rs.35.70 lakh/MW for FY 2015-16.

The Commission accordingly considers the O&M expenses for FY 2015-16 at Rs.35.70 lakh/MW and arrived at the total O&M expenses for FY 2015-16 as given in the Table

below:

Table 4.13: O&M expenses approved for FY 2015-16

(Rs Crores)

S. No	Particulars	UoM	Petitioner's submission	Approved for FY 2015-16
1.	O&M cost per MW	Rs. crore	0.3343	0.3570
2.	Station Capacity	MW	32.50	32.50
3.	O&M expenses	Rs. crore	10.87	11.60
4.	Escalation considered	%	6.70%	--
5.	Escalation	Rs. crore	0.73	--
6.	Total O&M expenses	Rs. crore	11.60	11.60

4.6.6 Return on Equity

Petitioners Submission

The Petitioner has submitted that as per Regulation 23 of JERC Tariff Regulations, the tariff determination is by splitting the capital expenditure into debt and equity of 70:30. If the equity employed is more than 30%, the amount of equity for determination of Tariff is limited to 30% and the balance amount is considered as normative loan. In case of instant station, since the entire capital cost has been funded from own funds, the equity has been considered as 30%.

The return on equity has been calculated @23.481% for the year 2015-16 as per JERC Tariff Regulations 24 and CERC Regulations 2009. Moreover, It is submitted that Petitioner does not have tax holiday with effect from the Financial year 2010-11 as the tax holiday was applicable to the Corporation up to 2009-10. As such the Petitioner is claiming return on equity in tariff petition at grossing rate of 23.481% and requested the Commission to approve the return on equity for FY 2015-16.

Commission's Analysis

The Petitioner has claimed Return on Equity at Rs.10.57 crore for FY 2015-16.

Regulation 24(1) of the JERC Tariff Regulations, 2009 specifies "Return on Equity shall be computed on the paid up equity capital determined in accordance with

Regulation 23 and shall be guided by the CERC Regulations, 2004 as amended by the CERC from time to time.

The Regulation 23 of the JERC Tariff Regulations, 2009 specifies for the purpose of determination of tariff, Debt: Equity ratio in case of existing, ongoing as well as new projects shall be 70:30.

The Regulation 24(2) of the CERC Regulations, 2014 specifies the rate of return on equity shall be at 15.50% for thermal stations.

Regulation 25 (1) of the CERC Regulations, 2014 specifies “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 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 Commission for the purpose of computation of Return on Equity has considered the 30% of the capital cost as equity and the rate of return on equity at 15.50% as per CERC regulations, 2014 for FY 2015-16. Pending the enactment of Finance Act, 2015, the prevailing effective tax rate is at 33.99% (tax 30% + surcharge 10% + education cess 3%) and the post tax rate of return on equity works out to 23.481%.

The Commission accordingly, computed the return on equity (gross up for tax) as given in the Table below:

Table 4.14: Return on Equity approved for FY 2015-16

(Rs Crores)

S. No	Particulars	Petitioner's submission	Approved for FY 2015-16
1.	Average Capital cost/GFA	150.07	150.07
2.	Equity @ 30%	45.02	45.02
3.	Rate of Return on equity	15.50%	15.50%
4.	Effective rate of Corporate Tax	33.99%	33.99%
5.	Post Tax effective rate of Return on	23.481%	23.481%

S. No	Particulars	Petitioner's submission	Approved for FY 2015-16
	equity		
6.	Return on Equity (post tax)	10.57	10.57

The Return on Equity will be reviewed at the time of 'Review of FY 2015-16' in the light of audited accounts / True up of FY 2014-15.

4.7 Annual Fixed Charges and Energy Charges

The Commission based on the analysis of the ARR parameters in the above paragraphs approves the Annual Fixed Charge for FY 2015-16 as shown in the Table below:

Table 4.15: Annual Fixed charges approved for FY 2015-16
(Rs Crores)

S. No.	Particulars	Petitioner's submission	Approved for FY 2015-16
1.	Depreciation	0.33	0.33
2.	Interest on loan	0.00	0.00
3.	Interest on working capital	3.40	3.38
4.	Operation and Maintenance Expenses	11.60	11.60
5.	Return on Equity	10.57	10.57
6.	Annual Fixed Charge	25.91	25.88

4.8 Energy /Variable Charge (Net)

The Commission approves the computation of energy charges for payment purpose for FY 2015-16 on the basis of the following formula:

$$ECR = \frac{GHR \times LGP \times 100}{GCV \times (100 - APC)}$$

Where,

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

GHR= Normative Gross Station Heat Rate in kcal/kWh

LGP= Weighted average landed price of gas in Rs/scm, during the calendar month

GCV= Gross Calorific Value of gas, in kcal per scm during the calendar month

APC= 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.

An illustrative example is as shown below:

Assuming,

GHR = Normative Gross Station Heat Rate i.e. Rs 2646 kcal/kWh for FY 2015-16

LGP = Rs 10.376/scm

GCV = 10217 kcal/scm

APC= Normative Auxiliary power consumption, at 5.00% for FY 2015-16

ECR = $2646 \times 10.376 \times 100 / ((10217 \times (100 - 5.0)) = \text{Rs } 2.829/\text{kWh}$

So, as can be observed from the above example the energy charges for the month work out to be Rs. 2.829 /kWh assuming the above mentioned parameters.

The indicative variable charges with the actual weighted average GCV and weighted average per unit Gas cost for the months of July 2014, August 2014 and September 2014 are as shown below:

Table 4.16: Variable/Energy Charges for FY 2015-16

S. No.	Items	Unit	Approved
1.	Gross Generation	MUs	242.660
2.	Net Generation	MUs	230.527
3.	Total Variable cost	Rs.Crores	65.21
4.	Fuel Cost /Gross units	Rs/kWh	2.687
5.	Fuel Cost/Net units	Rs/kWh	2.829

4.9 Annual Fixed Charge and other charges approved for FY 2015-16

- The Commission approves the Annual Fixed Charge (AFC) at Rs. 25.88 Crores for FY 2015-16.
- **The capacity charges (fixed cost) per month to be billed shall be calculated as**

per the newly notified CERC regulations for tariff period FY 2014-19. The payment of capacity charges shall be as per the Regulation 30 of the CERC Regulations for tariff period FY 2014-19.

- The Incentive shall be governed as per Regulation 30 (4) of the CERC Regulations for the Tariff period FY 2014-19 which is reproduced below:

“Incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF) as specified in regulation 36 (B).”

Further, the Commission approves the Normative Annual Plant Load Factor (NAPLF) of 85% for the purpose of the incentive calculation as per Regulation 36 (B) (a) of the CERC Regulations for the tariff period for FY 2014-19.

- The Energy Charges (net) to be billed per month shall be based on the unit energy rate calculated on the basis of the formula provided in Section 4.8 of this Order
- In addition to the charges approved above, the Commission also allows recovery of filing fees paid to the Commission and publication expenses for FY 2015-16 from the beneficiary in twelve equal monthly instalments.

5 Directives

5.0 Directives

The Commission issued certain directives in the Tariff Order dated April 25, 2014. The PPCL has not submitted any compliance report on the directives. The Commission reiterates on compliance of those directives which are reproduced below.

5.1 Metering of the power consumption of electric gas booster compressor

The directive as given in the Tariff Order dated April 13' 2012 is as under;

Quote

In the last tariff order for FY 2011-12 dated 6th August 2011, the Commission had directed PPCL to install a separate meter for recording the power consumption of electricity by gas booster compressor so as to measure actual power consumption. PPCL have submitted that the procurement process of the meters is under progress and the meters will be installed during the plant shut down. The Commission directs PPCL to expedite installation of meters and commence recording of actual power consumption immediately thereafter.

The auxiliary consumption will be allowed at 3% plus the actual power consumption limited to 2.5% towards the gas booster compressor pumps.

Unquote

(a) Compliance/Action taken as per Tariff Order dated March 28' 2013

Petitioner's Submission

The Petitioner in its additional submission dated March 6' 2013 to the Commission had submitted that the meters have been installed in the individual GBC's and recording has been commenced from Nov'12. The details of the consumption have been submitted in the annexure to the Commission.

Commission's Comments

The Commission appreciates the efforts made by the Petitioner in installation of meters to record the actual energy consumption of the gas booster compressors. It is observed that for the period from November' 12 to February'13, the GBC consumption has been greater than 3% and the overall auxiliary consumption has been greater than 6% as per the submitted annexure. The Commission has fixed the norm of auxiliary consumption at 3% plus the actual power consumption limited to 2.5% towards the gas booster compressor pumps. The Commission would like the Petitioner to reduce the consumption of energy of the gas booster compressor pumps so that the normative norm is adhered to.

(b) Compliance/Action taken as per Tariff Order dated 25th April, 2014.

Petitioner's Submission

The Petitioner has submitted the following before the Commission:

Quote

"It is submitted that the consumption of GBC was 650 kW (approximately) in the initial stage against the present power consumption of 967 kW which is normally due to ageing of plant as it completed more than 12 years of its life and higher capital investment will also be required to replace the GBC. As a result of ageing and capital investment, it is now proposed to have a target of auxiliary consumption at 6% and necessary steps are also being taken to explore possibilities- to reduce auxiliary consumption wherever possible in the other operating areas, besides this area."

Unquote

Commission's Comments

The Commission has made note of the submissions of the Petitioner regarding fixing higher auxiliary consumption in view of the degradation and ageing of the plant. The Commission has fixed the norm of auxiliary consumption at 2.50% plus the actual power consumption limited to 2.5% towards the electric driven gas

booster compressor pumps, as per the CERC regulations and CEA guidelines for FY 2014-15. Further, the Aptel in appeal no. 41/2012 in its judgment dated November 21' 2012 has upheld the decision and analysis of the Commission on the auxiliary consumption norm of the power plant.

(c) Compliance/action taken as per ARR and Tariff Petition for FY 2015-16

There is no compliance from the Petitioner, as none was required.

Commission's comments

The directive is dropped with an advice to reduce the energy consumption of the Gas booster.

5.2 Outstanding dues from ED-Puducherry to PPCL

The directive as given in the Tariff Order for FY 2013-14 dated March 28' 2013 is as -

Quote

"The Commission has noted that there are outstanding dues of Rs 68.27 Crores from the ED, Puducherry to Puducherry Power Corporation Limited. PPCL is directed to expedite its collection from the Department and ensure that there are no arrears due. The supporting details as received from PPCL are attached as Annexure 6.

The status on the same should be reported to the Commission every quarter from the issuance of this order."

Unquote

(a) Compliance/Action taken as per Tariff Order dated 25th April,2014

Petitioner's Submission

The Petitioner on a query regarding the status of collection of outstanding dues from ED - Puducherry to PPCL has submitted that Rs 71.50 Crores are outstanding towards sale of power made to EDP from FY 2008-09 till date including variable charges, revision of tariff as per JERC order, true-up for FY 2011-12 and reimbursement of filing fees for FY 2011-12, FY 2012-13 and FY 2013-14. The details

of the outstanding amount have been submitted by the Petitioner. Further, EDP is required to pay a surcharge of 1.50% per month as per the PPA on the outstanding amount.

Commission's Comments

The Commission has made note of the repeated requests of the Petitioner regarding its pending claims from ED-Puducherry. The Petitioner has made repeated requests to EDP vide its letters dated December 23' 2013 and July 29' 2013. Further, no payment out of these outstanding dues has so far been received by the Petitioner. The Commission has made note of the submissions of the Petitioner and the efforts of the Petitioner in this regard. The Petitioner should provide the status of the same by September 30' 2014.

(b) Compliance/Action taken as per the ARR and Tariff Petition for FY 2015-16

The Petitioner has submitted that out of Rs. 71.50 Crores, they have received an amount of Rs. 5.85 Crores only. The balance amount of Rs. 65.65 Crores is still outstanding.

Commission's comments

The Petitioner is once again directed to collect the outstanding from ED-Puducherry and to provide the status of the payment of the outstanding dues from EDP by September 30, 2015.

6. Conclusion

The Commission approves the capacity (fixed) charges and energy charges for FY 2015-16 and other charges of PPCL Gas Power Station at Karaikal as given below:

1. Annual Fixed Charges for FY 2015-16 at Rs 25.88 Crores.
2. Energy Charges (net) for FY 2015-16. To be calculated in accordance with the formula given in Section 4.8 of this Order.
3. In addition to the charges approved above, the Commission also allows recovery of filing fees paid to the Commission and publication expenses for FY 2015-16 from the beneficiary in twelve equal monthly installments.
4. Copy of this order may be sent to Petitioner, Central Electricity Authority and Electricity Department, Puducherry. It shall be placed on the website of the Commission.

The order shall come into force from 01.04.2015 and shall remain effective till 31.03.2016.

-Sd-

(S. K. Chaturvedi)
Chairman

Certified Copy

(Keerti Tewari)
Secretary

Place: Gurgaon
Date: 31.03.2015