

PETITION NO.....

**PUDUCHERRY POWER
CORPORATION LIMITED**

**PPCL GAS POWER STATION
(32.5 MW)**

**BEFORE THE HON'BLE JOINT ELECTRICITY REGULATORY
COMMISSION FOR THE STATE OF GOA AND UNION TERRITORIES,
GURUGRAM**

**PETITION NO.
OF 2019**

**Petition for determination and approval of tariff of PPCL Gas
Power Station (32.5 MW) for the period 2020-21 along with
Revision of Tariff for the period 01.04.2017 to 31.03.2018
after the truing up exercise and Revision of Tariff for the
period 01.04.2018 to 31.03.2019 after the Provisional
truing up exercise**

INDEX

Sl.No	Particulars	Pages
Tariff petition for the period 2020-21		
1.	Affidavit	001-004
2.	Petition	005-017
3.	Annexure-I - Tariff Format-1 G to 12 G.	018-032
4.	Annexure-II - Copy of recommendations & MOM of BHEL-GE, Copy of directions of Puducherry Pollution Control Committee & Copy of the Supply order and Report of M/s.BGGTS.	033-058
5.	Annexure-III - Copy of the heat balance diagram for design for Heat Rate.	059-060
6.	Annexure-IV - Month wise under recovery of Energy Charges on account of APC and Heat Rate.	061-062
7.	Annexure-V - Last 5 years monthly data pertaining to actual power consumption of electric motor driven Gas Booster compressors.	063-068
8.	Annexure-VI - Plant availability factor in accordance with the prevailing tariff regulation of CERC, is calculated for the months from April'18 to Mar'19.	069-070
9.	Annexure-VII - Annual Performance Review for the financial year 2019-20.	071-072
10.	Annexure-VIII - Annual Accounts for the financial year 2017-18 (Audited).	073-104

11.	Annexure-IX - Annual Accounts for the financial year 2018-19 (Unaudited).	105-114
12.	Annexure-X - Copies of GAIL (I) Ltd., Invoices from 01.04.2019 to 31.10.2019.	115-134
True up petition for the FY 2017-18		135
1.	Affidavit	136-139
2.	Petition	140-145
3.	Annexure-I - Tariff Format-1 G to 12 G	146-160
4.	Annexure-II - Copy of direction issued by Puducherry Pollution Control Committee.	161-169
5.	Annexure-III - Copy of report of M/s.BHEL to change bull gear and bearing set.	170-174
6.	Annexure-IV - Month wise under recovery of Energy Charges on account of APC and Heat Rate and Under Recovery of Capacity charges.	175-176
7.	Annexure-V - Audited Annual Accounts for the financial year 2017-18.	177-208
Provisional True up petition for the FY 2018-19		209
1.	Affidavit	210-213
2.	Petition	214-218
3.	Annexure-I - Tariff Format-1 G to 12 G	219-233
4.	Annexure-II - Supply order for procurement of Major Inspection Spares for GE Frame V Gas Turbine.	234-241
5.	Annexure-III - Annual Accounts for the financial year 2018-19 (Unaudited).	242-251
6.	Annexure-IV - Copy of the Work Order for Major Overhauling along with payment made.	252-269

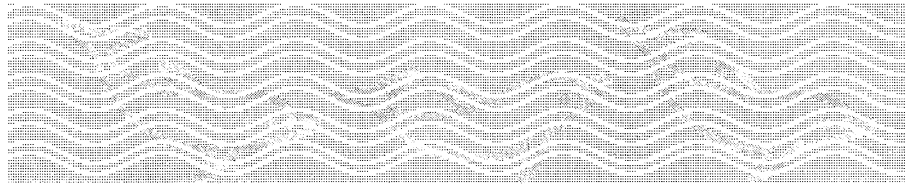
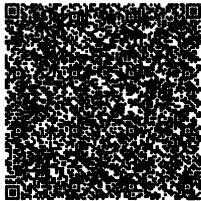
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**BEFORE THE JOINT ELECTRICITY REGULATORY COMMISSION FOR THE
STATE OF GOA AND UNION TERRITORIES
Udyog Vihar - Phase I, Sector-18, Gurugram**

PETITION NO:
of 2019

IN THE MATTER OF

: Petition under Section 62 and 83 (4) of the
Electricity Act, 2003 read with chapter-II of



A. Vikraman Raja

SR 00078211832/-

A. VIKRAMAN RAJA, IAS
Managing Director

Public Utility Joint Corporation Limited
(A Government of Puducherry Undertaking)

Statutory Alert:

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:2:

The Joint Electricity Regulatory Commission (Terms & Conditions for Determination of Tariff) Regulations, 2018 for approval of Tariff for Karaikal Gas Power Station, (32.5MW) for the period 2020-2021.

AND IN THE MATTER OF :

PETITIONER : Puducherry Power Corporation Ltd.(PPCL),
#10, Second Cross, Jawahar Nagar,
Boomiyanpet,
PUDUCHERRY-605 005.

RESPONDENT : The Superintending Engineer-cum-HOD,
Electricity Department,
Government of Puducherry,
137, NSC Bose Salai,
PUDUCHERRY - 605 001.

AFFIDAVIT OF THIRU A. VIKRANTH RAJA, IAS, SON OF SHRI ANTONYSWAMY AGED ABOUT 29 YEARS RESIDING AT GOVERNMENT HOUSE, DUPLEX STREET, KARAIKAL - 609 602.

I, the deponent above named do hereby solemnly affirm and state as under:

- 1.0 I am working as Managing Director (MD) of the Petitioner Company and I am duly authorized by the said petitioner to file this affidavit. I am conversant with the facts of the case.
- 2.0 I have read the accompanying Tariff Petition under Section 62 and 83 (4) of the Electricity Act, 2003 read with chapter-2 of the Joint Electricity Regulatory Commission (Terms & Conditions for Determination of Tariff) Regulations, 2018 and I say that the facts stated therein are based on the records of the Petitioner maintained in the ordinary course of its business and believed by me to be true.



A. Vikranth Raja
DEPONENT
A. VIKRANTH RAJA, I.A.S
Managing Director
Puducherry Power Corporation Limited
(A Government of Puducherry Undertaking)
Puducherry.

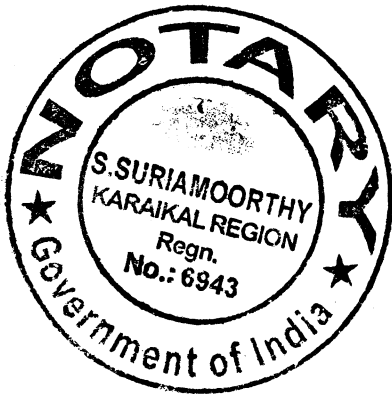
VERIFICATION:

I, the deponent above named do hereby verify that the contents of my above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed there from.

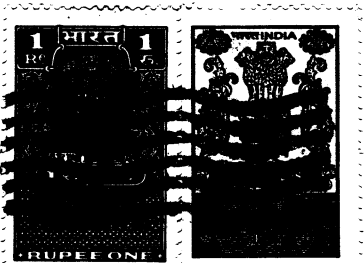
Verified at Karaikal on this 22 day of November, 2019.

PLACE : Karaikal
DATE : 22-11-2019

A. Vikranth Raja
DEPONENT
A. VIKRANTH RAJA, I.A.S.
Managing Director
Puducherry Power Corporation Limited
(A Government of Puducherry Undertaking)
Puducherry.



S. Suriamoorthy
S. SURIAMOORTHY, B.A., LL.B.,
ADVOCATE & NOTARY
No. 45/1, MARKET STREET,
KARAİKAL - 609 602.
PUDUCHERRY STATE
SOUTH INDIA




Reg. Under N.C. No. 156/2019
Date : 22-11-2019

EXTRACT OF THE RESOLUTION OF THE BOARD PASSED BY
CIRCULATION DT. **22 NOV 2019**

RESOLVED THAT the Managing Director, PPCL be and is hereby authorized to sign, file the tariff petition for the tariff period 2020-21 and subsequent tariff period and also filing the Truing up petition/ Clarification petition /Review petition / Miscellaneous petition, etc., to the earlier tariff orders for the period 2017-18, 2018-19 and Multi year Tariff Order for the tariff period 2019-20 to 2021-22, if any and Condonation of delay petition for the tariff petition for the tariff period 2020-21, if required and any other documents required for the purpose of filing tariff petition on behalf of the Corporation before JERC and also to authorize such officials of the Corporation to attend the hearings / meet clarifications, etc., to be required for the purpose.

ALSO RESOLVED THAT a sum of ₹ 15,00,000/- (Rupees fifteen lakhs only) or fees payable at the time of filing the Tariff petition / Truing up petition / Condonation of delay petition / Review petition / Miscellaneous petition, etc., be and are hereby approved towards the cost of licence fee for filing the tariff petition for the tariff period 2020-21.

ALSO RESOLVED THAT approval is hereby accorded for incurring any other incidental expenditure (or) fees other than the filing fees as may be required for filing of tariff petition for the tariff period 2020-21 and filing the Truing up petition/ Clarification petition /Review petition / Miscellaneous petition, etc., to the earlier tariff orders for the period 2017-18, 2018-19 and Multi year Tariff Order for the tariff period 2019-20 to 2021-22, if any and Condonation of delay petition for the tariff period 2020-21, if required.


A. VIKRANTH RAJA, I.A.S
Managing Director
Puducherry Power Corporation Limited
(A Government of Puducherry Undertaking)
Puducherry.

BEFORE THE JOINT ELECTRICITY REGULATORY COMMISSION
GURUGRAM

PETITION NO:
OF 2019

IN THE MATTER OF : Petition under Section 62 and 83 (4) of the Electricity Act 2003 read with chapter-II of the Joint Electricity Regulatory Commission (Terms & Conditions for Determination of Tariff) Regulations, 2018 for approval of Tariff for Karaikal Gas Power Station, (32.5 MW) for the period 2020-21.

AND IN THE MATTER OF :

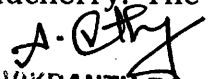
PETITIONER : Puducherry Power Corporation Ltd.(PPCL),
#10, Second Cross, Jawahar Nagar,
Boomianpet,
Puducherry-605 005

RESPONDENT : The Superintending Engineer-cum-HOD,
Electricity Department,
Govt. of Puducherry,
137, NSC Bose Salai,
Puducherry - 605 001.

MEMORANDUM OF TARIFF PETITION


MOST RESPECTFULLY SHOWETH:

- 1.0** The Petitioner herein i.e. the Puducherry Power Corporation Ltd. (PPCL) is a Government of Puducherry undertaking and is a Government Company within the meaning of the Companies Act, 1956. Further, it is a "Generating Company" as defined under Section 2(28) of the Electricity Act, 2003.
- 2.0.** The Puducherry Power Corporation Ltd was incorporated on 30.03.1993 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


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

- 3.0. The Karaikal Gas Power Station was declared commercial operation w.e.f. 03.01.2000 and is supplying power to Electricity Dept., Puducherry under a PPA signed with them on 25.02.2002. Consequent to setting up of Hon'ble Joint Electricity Regulatory Commission, the Petitioner had filed first petition for determination of tariff for the period 2011-12. The Hon'ble Commission vide Order dated 06.08.2011 had determined tariff with effect from June, 2011. At present, the Petitioner is operating at the tariff rate fixed by the Hon'ble Commission for the PPCL vide order dated 20th May 2019 on the basis of petition filed for the tariff period 2019-20.
- 4.0 Section 62 of Electricity Act, 2003 provides for determination of tariff by the Appropriate Commission for supply of electricity by a generating company. The Hon'ble Commission, under Section 83(4) of Electricity Act, 2003, is vested with the jurisdiction to regulate the tariff of the Generating Companies owned or controlled by the Govt. of Union Territories.
- 5.0 In terms of Section 61 of the Electricity Act, 2003 this Hon'ble Commission has also notified the Joint Electricity Regulatory Commission (Terms & Conditions for Tariff) Regulations, 2018 (hereinafter referred to as '**Tariff Regulations, 2018**').
- 6.0 In terms of the Tariff Regulations, 2018, the Petitioner has formulated the tariff for Karaikal Station for the year 2020-21. As per Regulation 16 of Tariff Regulations, 2018 the formats 1G to 12G as applicable to generating Companies have been filled in and placed at **Annexure-I**. The various assumptions considered for finalization of tariff brought up in the



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following paras is as per the methodologies specified by this Hon'ble Commission as well as the Hon'ble CERC as the case may be.

- 7.0 The Tariff has been calculated as fixed /capacity charges in Cr./per annum and the energy charges calculated based on cost of fuel/gas consumed for generation of electricity, as provided in Regulation 19 of the Tariff Regulations, 2018. The JERC/CERC Regulations have been kept in view as applicable while finalizing this petition and formulating tariff for instant station.


A. CAPITAL COST:

- i. The Petitioner has claimed the total capital cost as stated in Regulation 23 of the Tariff Regulations, 2018. The Petitioner has prepared the tariff for the year 2020-21 by considering the capital cost of ₹.169.01 crores as closing capital cost for the tariff period 2019-20 as per Hon'ble Commission Order dated 20.05.2019. The total Capital Cost of ₹.166.60 crores is upto 31.03.2019, as per the unaudited financial statement pertaining to the financial year 2018-19.
- ii. In the FY 2018-19, Rotor amounting to ₹.9.93 crores, Stator Vane Kit amounting to ₹.2.18 crores and Inlet Guide Vane arrangement amounting to ₹.1.09 crores, totaling to ₹.13.20 crores were installed in gas turbine during the major inspection of the gas turbine held in Dec'18-Jan'19, for which the Hon'ble Commission allowed a total cost of ₹.11.769 crores instead of ₹.13.20 crores, as a result of which, there is a difference of Capital cost amounting to ₹.1.43 crores, for which supply order is enclosed. Therefore, the difference cost amounting to ₹.1.43 crores is considered in the tariff petition 2020-21 additionally. M/s BHEL GE Gas Turbine Services in its inspection report of Extended Hot Gas Path Inspection carried out in April-


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May'2015 had recommended for i) Compressor rotor and stator blades replacement with inlet guide vanes replacement as a set. (Copy of the recommendations & MOM enclosed as **Annexure-II**) Compressor rotor blades were replaced along with turbine rotor. In view of above Stator vane kit and Inlet guide vanes were replaced. Moreover, during the financial year 2017-18, a sum of ₹.0.32 crores has been incurred towards installation of Continuous Effluent Monitoring System. The continuous effluent monitoring system was installed based on the instructions issued by Central Pollution Control Board(CPCB) vide no B-29016/04/06/PCI-1/5392 dt 05.02.2014 and as per directions issued by Puducherry Pollution Control Committee vide PPCC /CPCB/DIR/OMS/KKL/JE/2014/128 dt.09.05.2014 (Copies of directions are enclosed as **Annexure-II**). Accordingly, the same is also added to arrive at the Closing capital cost for the tariff period 2019-20 (i.e) the opening capital cost for the tariff period 2020-21. Copy of the supply order and report of M/s BGGTS regarding major inspection is enclosed as proof of installation of above items as **Annexure - II**.

- iii. As such, the said amount may also be considered while arriving the opening capital cost of the Corporation for the financial year 2020-21, as the said item are also replaced along with Rotor in order to have the better performance and efficiency which would also beneficial to the Respondent. Accordingly, the Interest on ROI and Depreciation thereon has been arrived in the respective clause.
- iv. It is submitted to the Hon'ble Commission may allow the claim of the Petitioner for a capital cost of ₹ 170.76 crores for the tariff period 2020-21.
- v. It is submitted to the Hon'ble Commission that the supply, erection, testing and commissioning of 110/11 KV 15MVA power transformer,


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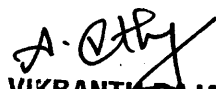
for which approval is given by the Hon'ble Commission for a sum of ₹.6.32 crores is under process and the same may be installed during the FY 2020-21.

B. RETURN ON EQUITY

- i. It is submitted that as per Regulation 26 of the 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 the 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.
- ii. The return on Equity has been calculated @ 21.868% for the year 2020-21 as per Regulation 27 of the Tariff Regulations, 2018 read with CERC Tariff Regulations, 2019.
- iii. 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 therefore, the Petitioner is claiming return on equity in the tariff petition at grossing rate @ 21.868 %.
- iv. It is respectfully prayed that the return on equity as calculated @ 21.868 % may be allowed by the Hon'ble Commission.

C. DEPRECIATION ON ASSETS

- i. The rate of depreciation has been considered as per Regulation 30 of the Tariff Regulations, 2018 read with the applicable CERC Regulations, 2019. In this regard, it is submitted before the Hon'ble Commission that


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the accumulated depreciation of the respective individual Asset has been restricted to 90% of the Capitalized value of the Assets in order to keep the 10% of the Cost as WDV as per Regulation 30 beyond which the depreciation has not been claimed in view of the provisions in the Tariff Regulations, 2018.

- ii. The station is more than 19 years old and Petitioner has calculated depreciations accordingly. The claim of the Petitioner is on the same methodology as adopted for the previous years.
- iii. It is prayed that the depreciation may be allowed as claimed by the Petitioner.

D. INTEREST ON WORKING CAPITAL


For computing the element of Interest on Working Capital (IWC) of fixed/capacity charges the rate of interest considered is SBI Base Rate as on 01.4.2019 as per CERC Regulations 2019 Regulation 34 (B). The energy charges considered while working out IWC are based on average actual fuel consumption and payments made pertaining the period commencing from July '19, August '19 and September'19 and the same as per Petitioner's unaudited annual accounts.

E. OPERATION & MAINTENANCE (O&M) EXPENSES

- i. The Operation and Maintenance expenses element of Fixed/Capacity charges has been taken @ 46.46 lac/MW* 1.068 = Rs 49.62 lac/MW as approved by the Commission in its tariff order dated 20th May 2019. It is submitted that Petitioner has proposed to implement Seventh CPC replacement scales of pay to the employees of the Corporation and the additional annual recurring financial implication would be around ₹.1 crore per year.


F. HEAT RATE AND AUXILIARY CONSUMPTION

- i. The Tariff Regulations, 2018 of the Hon'ble Commission provides that the norms and parameters of the Central Commission's Tariff Regulations


A. VIKRANTH RAJA, I.A.S
 Managing Director
 Puducherry Power Corporation Limited
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 Puducherry.

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

- ii. The Station design net heat rate is 2291 Kcal/kwh. A copy of the heat balance diagram for design heat rate is enclosed in **Annexure III**. The gross heat design heat for net station design heat rate of 2291 Kcal/kwh works out to (2291×1.1) 2520 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 regulations, the normative GSHR comes to $2520 \times 1.05 = 2646$ Kcal/kwh. The Commission approved the Gross Station Heat Rate at 2646 kcal/kWh for the FY 2015-16 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 the NCV of the gas).
- iii. 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 period from 01.04.2019 to 30.09.2019 because the station has electric Gas Booster Compressor pumps due to which APC is higher.
- iv. The 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 Hon'ble Commission and also the Hon'ble Appellate Tribunal have taken the view that in number of judgments, the vintage of power plants has to be kept in mind


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before determining the various operating parameters for the power plant and accordingly the petitioner has considered APC at 6% percentage which is around the actual

- In Gujarat State Electricity Corporation Limited v 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.***
 - In Indraprastha Power Generation Company Limited v. DERC (Judgment dated 10.01.2008 in Appeal No. 81 of 2007) wherein the Hon'ble Tribunal directed the DERC to consider relaxation in heat rate and O & M Expenses considering the vintage of the Stations.
- v. The CERC also in its order dated 19.06.2002 in Petition No.62 of 2000 has allowed relaxed operational norms in case of Takhar Thermal Power Station comprising of four units of 60 MW and two units of 110 MW.
- vi. As per the Assam Electricity Regulatory Commission (AERC) Tariff Order for the FY 2013-14 to FY 2015-16 for Assam Power Generation Corporation Limited in petition no.3/2013, the AERC has allowed APC of 4.5 % for NTPS for against CEA recommendation of APC as 4% and APC of 5.5 % for LTPS with WHRU.
- vii. It is not possible for the Petitioner to achieve the norms specified in the Regulations, which are applicable generally. It is for this specific purpose that where there is sufficient justification and taking into account the facts of a particular generator, the power to relax and the power to deviate are provided for.
- viii. It is submitted that the month wise under recovery of Energy Charges on account of APC and Heat rate is enclosed as **Annexure - IV**. For the

FY 2018-19, the under recovery is ₹ 6.38 crores. Hence, request for relaxation of APC to 6% as allowed in the case of AERC may be considered.

- ix. Applying the above analogy, the Petitioner is praying for the APC of 6%. The Petitioner is placing all the relevant pages from the above Judgments / Orders in a separate compilation
- x. The Hon'ble Commission may consider the facts and factors and allow the Petitioner to avail the actual auxiliary consumption made during the period from 01.04.2019 to 30.09.2019 (coverage of 6 months) of the tariff year 2019-20.
- xi. As directed by the Commission, the last 5 years monthly data pertaining to actual power consumption of electric motor driven Gas Booster compressors is enclosed in the **Annexure - V**.

G. FUEL COST

It is submitted that the Petitioner has considered requirement of fuel stock etc. for working out interest on working capital and the Variable Charges for power supply from Karaikal station, based on landed cost of gas for the months of July'19, August'19 and September'19 instead of landed cost of the gas for the months of Jan.'19, Feb.'19 and March'19. This has been considered to arrive the fuel cost in realistic manner. Therefore, it is prayed that Hon'ble Commission may please allow working out of capacity and variable charges based on weighted average landed cost of gas for the months of July'19, August'19 and September'19.

H. NORMATIVE ANNUAL PLANT AVAILABILITY FACTOR (NAPAF):

- i. It is submitted that PPCL is not connected to State Load Dispatch Centre (SLDC) since the inception of plant operation. So there are no


A. VIKRANTH RAJA, I.A.S
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instructions from SLDC regarding the maintenance of load. So the PPCL plant generates at full load unless the plant load is restricted due to i) islanding, ii) due to reduced gas flow from GAIL iii) due to lack of load from Electricity Department. PPCL is ready to provide the Plant Availability Factor but since it is not validated by the SLDC, it has not been given. Hence PPCL may be allowed to give the Plant Load Factor instead of Plant availability Factor. In terms of Regulation 38 of the Tariff Regulations, 2018 read with the CERC Regulations, 2014, the Petitioner is praying for **Normative Plant Load Factor** of 85% instead of NAPAFA of 85%. The CERC has specified Normative Annual Plant Availability Factor (NAPAFA) for recovery of full fixed charges at 85% for the period 2014-19 for thermal generating stations.

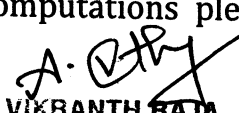
- ii. The Hon'ble Commission may be pleased to fix the norm-"Normative Annual Plant Load Factor" for the Karaikal station for recovery of full fixed charges in the FY 2020-21 at 85%.
- iii. As directed in para 5.2.3 by the commission in its tariff order dt.20.05.2019, the plant availability factor of PPCL in accordance with the prevailing tariff regulation of CERC, is calculated for the months from April'18 to Mar'19 and enclosed in **Annexure - VI**.

I. ANNUAL PERFORMANCE REVIEW FOR FY 19-20:

- i. The details of Annual Performance Review for FY 2019-20 is enclosed in the **Annexure - VII**. The cumulative Plant load Factor from April'19 to September'19 is 87.06 % and cumulative generation from April'19 to September'19 is 121.33 MU.

ii. ANNUAL FIXED CHARGES AND ENERGY CHARGES

Based on above, the Annual Fixed/Capacity charges have been worked out for the financial year 2020-21 (for detailed computations please refer


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Annexure - I). The monthly Capacity Charge payable shall be calculated as per the formula given in para 30(2) of CERC Tariff regulation 2014-19. As per regulation 42(3) of CERC tariff regulation 2019-24, "hours of peak and off peak periods during the day" shall be declared by the concerned RLDC atleast one week in advance. Further High demand season (3 months) and low demand season (9 months) shall be declared by the concerned RLDC at least 6 months in advance. Since, PPCL is not connected to RLDC, so the above data are not communicated to PPCL. Hence, PPCL may be allowed to calculate capacity charges as per the formula given in para 30(2) of CERC Tariff regulation 2014-19 with NAPA F as calculated by PPCL .

Financial Year	Annual Fixed / Capacity charge (₹ In Cr.)
2020-21	₹ 34.03 crores

The energy charges to be billed every month shall be as per following formula based on CERC Regulations 2019.

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

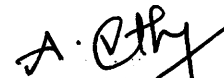
Where ECR = Energy charge rate, in INR per KWH, sent out upto three decimal charges,

GSHR= Normative Gross Station Heat Rate in Kcal/kwh,

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

CVPF= Weighted average Gross calorific value of gas, in Kcal per Cu.m, during the calendar month,

AUX= Normative Auxiliary Power Consumption in percentage


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 Puducherry.

The petitioner has considered Gross Station Heat Rate = 2646 kcal/Kwh
Auxiliary Power Consumption (AUX) = 6%.

J. STATUTORY LEVIES /TAXES ETC

It is submitted that in addition to Billing of Fixed/capacity charges & Energy charges as being submitted for approval of this Hon'ble Commission, the Petitioner may be allowed to recover statutory taxes, duties, etc., on actuals.

8.0 It is also submitted that the Petitioner is presently raising bills for the energy supplied to The Respondent - Electricity Dept., Govt. of Puducherry with normative Gross heat rate of 2646 Kcal/kwh and Auxiliary power consumption of 5.0% w.e.f. 01.04.2019 as energy charges per unit and ₹ 31.73 crores as capacity charges per annum at 85% PLF for the tariff period 2019-20 vide order dated 20th May 2019 issued by the Hon'ble Commission.

9.0 The Accounts of the Petitioner for the year 2017-18 has been audited but not adopted in the AGM, which will be held on November/December 2019 and a copy of the Accounts along with the Statutory Auditor's Report and A.G. comments are enclosed (**Annexure-VIII**) for perusal.

10.0 As regard the Accounts for FY 2018-19, the Petitioner is filing the unaudited accounts for FY 2018-19 as **Annexure - IX** since Statutory auditor would normally commence their audit after adoption of accounts for the FY 2017-18 in the Adjourned Annual General Meeting. However, the Adjourned AGM would be held within one month. The copies of invoice raised by GAIL for the period 01.04.2019 to 31.10.2019 are attached hereto as **Annexure - X**.


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PRAYER

11.0 In view of the above, the Petitioner prays as under –

- i) Approve the tariff for the year 2020-21 as brought out in this Petition as detailed below at 85% PLF.

Fixed charges/Capacity charges - ₹ **34.03 Crores per annum**

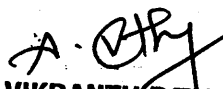
Variable Energy Charges - As per formula in CERC regulation 2019-24 clause 43(2)(b) with normative SHR of **2646 Kcal/kwh** and normative AUX of **6%**.

- ii) Allow the “Normative Annual Plant Availability Factor” @ 85% as calculated by PPCL instead of RLDC as laid down in the CERC Regulation 2014-19 vide clause No.36(A) for Karaikal Power Station for the year 2018-19 for full fixed cost recovery and allow CERC 2014-19 formula for calculation of capacity charges.
- iii) Allow capital cost as prayed by the Petitioner and additional Operation & Maintenance cost on implementation of Seventh pay.
- iv) Allow the recovery of filing fees as and when paid to the Hon'ble Commission and publication expenses from the beneficiary.
- v) Pass any other order in this regard as the Hon'ble Commission may find appropriate in the circumstances pleaded above.

**PETITIONER –
PUDUCHERRY POWER CORPORATION LIMITED**

PLACE : Puducherry

DATE : 25 NOV 2019


A. VIKRANTH RAJA, I.A.S
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Annexure - I

(Tariff Format – 1 G to 12 G)

SUMMARY SHEET

FORMAT-1G

Name of the Applicant
Name of the Generating Station


Puducherry Power Corporation LTD.
Karaikal Gas Power Station

S.No.	Particulars	Previous year (as per JERC Order)	Current year (as per JERC order)	Ensuing year
		2018-19	2019-20	2020-21 (Projections)
		2	3	4
				5
1	1 Calculation of Capacity /Fixed Charges(Rs.in cr.)			
1.1	Interest on notional Loan Capital (Notional)	0.00	0.00	0.00
1.2	Depreciation	1.88	2.35	3.21
1.3	Advance Against Depreciation	0	0	0
1.4	Return on Equity	10.89	10.88	11.20
1.5	Operation & Maintenance Expenses	14.14	15.10	16.13
1.6	Foreign Exchange Rate Variation	0	0	0
1.7	Interest on Allowed Working Capital (Loan Capital (Form 9 as applicable)	2.92	3.40	3.49
1.8	Taxes on Income			
1.9				
	TOTAL	29.83	31.73	34.03
2	2 Calculation of Energy/Variable charges			
2.1	Rate of Energy Charge from Primary Fuel (REC)- P/kwh	281.48	272.03	321.63
2.2	Rate of Energy Charge from Secondary Fuel (REC)			
2.3	Rate of Energy Charge ex-bus (REC)			
3	Total			
	Grand Total (1+2) (Rs.in cr.)	85.84	94.27	107.62

Note:

- 1 Details of calculations, considering equity as per regulation, to be furnished and Detailed Calculations of all the above components of costs be furnished in the Forms mentioned against each.
- 2 Financial years for which details are to be submitted should be adjusted in accordance with the year of filing.
- 3 If multifuel is used simultaneously, give 2.1 in respect of every fuel individually.
- 3A The rate of energy charge shall be computed for open cycle operation and combined cycle operation separately in case of gas/liquid fuel fired plants.
- 3B The total energy charge shall be worked out based on ex-bus energy scheduled to be sent out in case of plants covered by ABT, and exbus energy sent out in case of plants not covered by ABT, as the case be.
- 3C Any escalation in fuel cost to be considered for subsequent years or FPA to take care of the escalation.

Note: 1. The Fixed charges has been given for the tariff period 2018-19 & 2019-20 as per the tariff order


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FORMAT - 2G

Tariff Norms for Energy/Variable Charges


Name of the Applicant: Puducherry Power Corporation LTD.
Name of the Generating Station Karaikal Gas Power Station

Special features of the Plant Gas Booster pump

a)	Basic Characteristics & Site Specific Features	Combined Cycle Plant with frame V Gas Turbine of 22.9 MW and steam Turbine of 9.6 MW, Unfired HRSG
b)	Environmental Regulation related Features	ISO 14001 CERTIFIED
c)	Any other specific features	
d)	Date of Commercial Operation (COD)	03.01.2000
e)	Type of cooling System	Induced Draft Cooling Tower

Fuel Details		Primary Fuel	Secondary Fuel	Alternate Fuel
Mention type of fuel		Natural gas		

Sl.No.	Particulars	Unit	Ref.	Derivation	Previous Year			Current year
					2016-17	2017-18	2018-19	2019-20
1	2	3	4	5	Actual	Actual	Actual	Actual (upto 30.09.19)
					6	7	8	9
1	Installed Capacity	MW			32.5	32.5	32.5	32.5
2	PLF	%			86.63	80.9	80.63	87.92
3	Generation	MU	A		246.64	230.33	229.57	125.50
4	Auxiliary Consumption	% MU			6.21	6.79	6.70	5.97
5	Auxiliary Consumption	MU	B		15.33	15.33	15.38	7.49
6	Generation (Ex-bus)	MU	C	A-B	231.31	215	214.18	118.01
7	Station Heat Rate	Kcal/kWh	D		2668.40	2949.16	2700.56	2600.82
8	Specific Oil Consumption	M/kWh	E					
9	Calorific Value of Fuel Oil	Kcal/Litre	F					
10	Calorific Value of Gas	Kcal/scm	G		10055.65	10048.01	10065.20	10305.48
11	Overall Heat rate	Gcal	H	A X D	658134.18	679280.02	619962.63	326393.28
12	Heat from Oil	Gcal	I	(A X E X F)				
13	Heat from Coal	Gcal	J	H - I				
14	Actual Oil Consumption	KL	K					
15	Actual Gas consumption(MCM)	MT	L	(H*1000/G)	65449.19	67603.44	61794.81	31671.81
16	Cost of Oil per KL	Rs/KL	M					
17	Cost of Gas per MCM (incl. LAD)	Rs /MT	N		8.50	8.02	10.07	11.90
18	Total cost of Gas	Rs.in Cr.	O	(N*L/100)	5563.18	5421.80	6219.77	3769.01
19	Fuel cost/kwh	Rs./kwh	P	O/(C*10)	2.41	2.52	2.90	3.19


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FORMAT-3G

(Name of the Applicant) **Puducherry Power Corporation LTD.**
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2020-2021
 Information regarding amount of Equity & Loan

S.No.	Period	Amt. Of Equity		Amt. Of Loan		Ratio of equity & loan	
		(Rs. in Crores)		(Rs. in Crores)			
	1	2	3	4	5		
1	As on March 31 of previous year(2018-2019)		47.04		109.76	70	30
2	As on March 31 of current year(2019-2020)		50.02		116.71	70	30
3	As on March 31 of ensuing year(2020-2021)		51.23		119.53	70	30


FORMAT-4G

(Name of the Applicant) **Puducherry Power Corporation LTD.**
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2020-2021
 Interest Capitalised **NA**

(Rs. in crores)

S.No.	Interest Capitalised	Previous year		Current year (RE)		Ensuing year (Projections)	
		(actuals)					
	1	2	3	4	5		
1	WIP*			NA			
2	GFA* at the end of the year						
3	WIP+GFA at the end of the year						
4	Interest (excluding Interest on WCL*)						
5	Interest Capitalised						


*WIP: Works in Progress; GFA:Gross Fixed Assets;WCL:Working Capital oan


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 Puducherry.

FORMAT-5G

Puducherry Power Corporation LTD.
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2020-2021
Details of loans interest & Finance Charges for the year

S.No.	Particulars (source)	Opening Balance	Rate of Interest	Addition during the year	Repayment during the year	Closing balance	Amount of interest paid	
							Current year (RE)	Ensuing year (Projection)
1	2	3	4	5	6	7	8	9
1	SLR Bonds							
2	Non SLR Bonds							
3	LIC							
4	REC							
5	Commercial Banks							
6	Bills discounting							
7	Lease rental							
8	PFC							
9	GPF							
10	CSS							
	Working capital loan							
11	Others							
12	Total							
13	Add. Govt. loan							
	-State							
	-Central Govt. (Total)							
14	T (3+4)							
15	Less Capitalisation							
16	Net Interest							
17	Add prior period							
18	Total Interest							
19	Finance charges							
20	Total interest and							
21	finance charges							


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 Puducherry.

FORMAT-7G

Calculation of Depreciation Rate

Name of the Applicant: Puducherry Power Corporation LTD.
 Name of the Generating Station: Karaikal Power Station
 Region: Karaikal State/UT: Puducherry
 Date of Commercial Operation of the Generating Station: 03.03.2000
 Capital cost of the Generating Station(as on 01.04.2020): Rs.172.28 crores
 Additional Capitalisation
 Total Capital cost of the Generating Station (as on 01.04.2020): Rs.172.28 crores
 Estimated life of the Generating Station remaining: 5 yrs
 Rate of Depreciation: Upto (year) After (year)

(Amount in Rs.)

Sl.No.	Name of the Assets	Depreciation rates as per CERC's Depreciation Rate Schedule (Appendix-III)	Previous Year		Previous Year		Current Year		Ensuing Year		Accumulated depreciation Amount(FY 2018-2021 periods)
			Assets value at 31.03.2018	Depreciation charges	Assets value at 31.03.2019	Depreciation charges	Assets value as on 31.03.2020	Depreciation charges	Assets value as on 31.03.2021	Depreciation charges	
1	2	3	4	5	6	7	8	9	10	11	12
1	Land		79328778		79328778		79328778		79328778		
2	Land Dev		0		0		0		0		
3	Building	3.34	18688894	624209.1	18688894	624209.1	18688894	624209.1	18688894	624209.1	1872627.2
4	Furniture	6.33	3549196	224664.1	3761695	238115.3	3761695	238115.3	3761695	238115.3	714345.9
5	Office Equ	6.33	4477536	283428.0	4544536	287669.1	4544536	287669.1	4544536	287669.1	863007.4
6	Vehicle	9.5	7737921	735102.5	7083244	672908.2	7083244	672908.2	7083244	672908.2	2018724.5
7	Borewell	5.28	1427021	75346.7	1427021	75346.7	1427021	75346.7	1427021	75346.7	226040.1
8	Computer	15	2836600	425490.0	2836600	425490.0	2836600	425490.0	2836600	425490.0	1276470.0
9	P&M	5.28	3900485	205945.6	3900485	205945.6	3900485	205945.6	3900485	205945.6	617836.8
10	Factory Build	3.34	5677885	189641.4	5677885	189641.4	5677885	189641.4	5677885	189641.4	568924.1
11	P&M-Bhel	5.28	1111125224	58667411.8	1243072811	65634244.4	1243072811	65634244.4	1243072811	65634244.4	196902733.3
12	P&M-ABB	5.28	64878918	3425606.9	64878918	3425606.9	64878918	3425606.9	64878918	3425606.9	10276820.6
13	Building -IV	3.34	131393597	4388546.1	131393597	4388546.1	131393597	4388546.1	131393597	4388546.1	13165638.4
14	Sub stationABB	5.28	11568190	610800.4	11568190	610800.4	11568190	610800.4	11568190	610800.4	1832401.3
15	Bulding Sub	3.34	0	0.0	0	0.0	0	0.0	0	0.0	0.0
16	Qtr	3.34	18526021	618769.1	18526021	618769.1	18526021	618769.1	18526021	618769.1	1856307.3
17	Pipeline PWD	3.34	16074919	536902.3	16074919	536902.3	16074919	536902.3	16074919	536902.3	1610706.9
18	Pipeline Hor	3.34	57000	1903.8	57000	1903.8	57000	1903.8	57000	1903.8	5711.4
19	Pipe-water	3.34	193613	6466.7	193613	6466.7	193613	6466.7	193613	6466.7	19400.0
20	Tools	5.28	80181	4233.6	80181	4233.6	80181	4233.6	80181	4233.6	12700.7
21	High mast lighting	5.28	8275065	436923.4	8275065	436923.4	8275065	436923.4	8275065	436923.4	1310770.3
22	Ro Plant	5.28	44672932	2358730.8	44672932	2358730.8	44672932	2358730.8	44672932	2358730.8	7076192.4
	TOTAL		1,534,469,976	73,820,122	1,666,042,385	80,742,453	1,666,042,385	80,742,453	1,666,042,385	80,742,453	242,227,359


Weighed Average Depreciation Rate (%)

5.073

5.089

5.089


5.089


A. VIKRANTH RAJA, I.A.S
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 Puducherry.

FORMAT-8G

Name of the Applicant: Puducherry Power Corporation LTD.
 Name of the Power Station: Karaikal Power Station
 Calculation of Advance Against Depreciation

S.No.	Particulars	Previous Year		Current Year	Ensuing Year
		2018-19	2019-20	2020-21	
		X-2	X-1	X	X+2
		Actual	Actual	Revised	Projected
1	1/10th of the loan (s)				
2	Repayment of the Loan(s) as considered for working out Interest on Loan				
3	Minimum of the Above				
4	Less: Depreciation during the year				
	A				
5	Cumulative Repayment of the Loan (s) as considered for working out Interest on Loan			NA	
6	Less: Cumulative Depreciation				
	B				
7	Advance Against Depreciation (minimum of A or B)				


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 Puducherry.

FORMAT-9G

Name of the Applicant: Puducherry Power Corporation LTD.
Name of the Power Station: Karikal Power Station

Calculation of Interest on Working Capital for generation


S.No.	Particulars	(Amount in Rs. Cr.)		
		Previous Year	Current year	Ensuing Year
		2018-19	2019-20	2020-21
1	Cost of gas	4.56	5.34	5.34
2	Cost of Secondary Fuel Oil			
3	Fuel Cost			
4	Fuel Stock			
5	O&M expenses	1.18	1.26	1.34
6	Maintenance spares	4.24	4.53	4.84
7	Receivables	14.09	15.96	16.28
8	Total working capital	24.07	27.09	27.80
9	Rate of interest on working capital	12.15	12.55	12.75
10	Interest on working capital	2.92	3.40	3.49

1. For coal based/lignite based generating stations
2. For Gas Turbine/Combined Cycle generating stations duly taking into account the mode of operation on gas fuel and liquid fuel.

FORMAT-10G

Puducherry Power Corporation LTD.
ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2020-21
Information regarding FERV

Particulars	Amount (Rs. in crore)
Amount of Liability provided	To be provided in additional submission
Amount recovered	
Amount adjusted	


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FORMAT-11G


Name of the Applicant
Name of the Power Station

Puducherry Power Corporation LTD.
Karaikal Gas Power Station

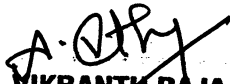
DETAILS OF OPERATION AND MAINTENANCE EXPENSE

(A)

Particulars	Previous Year	Current Year	Ensuing Year
	2018-19	2019-20	2020-21 Projected
Breakup of O&M expenses			
1 Consumption of Stores and Spares	76320559		
2 Repair and Maintenance	27112352	26790000	29469000
3 Insurance	10282927	9409000	10349900
4 Security	3648471	4000000	4000000
5 Administrative Expenses			
- Rent	527496	440000	484000
- Electricity Charges	3116468	2880000	3168000
- Travelling and conveyance	488211	242000	266200
- Telephone, telex and postage	328617	250000	275000
- Advertising	1010276	516000	567600
- Entertainment			
- Others (Specify items)	35839196	12508000	13758800
Sub-total (Administrative Expenses)	41310264	16836000	18519600
6 Employee Cost			
a) Salaries, wages and allowances	94359952	81198000	99317800
i) Basic pay			
ii) Dearness pay			
iii) Dearness allowance			
iv) House rent allowance			
v) Fixed medical allowance			
vi) Medical reimbursement charges			
vii) Over time payment			
viii) Other allowances (detailed list to be attached)			
ix) Generation incentive	3372214	4076000	4483600
x) Bonus			
Total			
b) Staff welfare expenses/Terminal Benefits	1109694	1584000	1742400
i) Leave encashment			
ii) Gratuity	1942513		
iii) Commutation of pension			
iv) Workmen compensation			
v) Ex-gratia	1427453		
Total			
c) Productivity linked incentive			
d) Pension Payments			
i) Basic pension			
ii) Dearness pension			
iii) Dearness allowance			
iv) Any other expenses			
Total			
Total Employee Cost (a+b+c+d)	102211826	86858000	105543800
Corporate/Head office expenses allocation			
7			
8 Total (1 to 7)	260886399	143893000	167882300
LESS: Recovered, if any			
Net Expenses			


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Notes:				
I) The process of allocation of corporate expenses to generating stations should be specified.				
II) An annual increase in O&M expenses under a given head in excess of 20 percent should be explained.				
III) The data should be based on audited balance sheets				
B	Breakup of corporate eapenses			
	(Aggregate)			
	- Employee expenses			
	- Repair & Maintenance			
	- Training and Recruitment			
	- Communication			
	- Travelling	NA		
	- Security			
	- Rent			
	- Others			
	Total			
C	Details of number of Employee			
	i) Executives	13	13	13
	ii) Non-exectives	32	32	32
	iii) Skilled	66	66	66
	iv) Non-skilled	18	18	18
		Total	129	129


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(Name of the Applicant) **Puducherry Power Corporation LTD.**
 Name of the Power Station:

FORMAT-12G

ANNUAL REVENUE REQUIREMENT FOR THE YEAR 2020-2021
 Date of Commercial Operation of the Generating Station:

03.01.2000

Generation Tariff Determination, Return on Equity and Tax on Income

(Rs. in million)

S.No	Particulars	Previous year (2018-19) (Actual)	Current year (as per JERC order) (2019-20)	Projected year (2020-21)
1	Gross Generation (MU)	229.570	242.000	242.000
2	Auxiliary Consumption (%)	6.70	5.00	6.00
3	Net Generation (MU)	214.170	229.900	227.480
4	Capacity Charges	255.60	317.30	344.54
	a) Interest on Loan Capital	0.00	0.00	0.00
	b) Depreciation	18.80	23.50	32.09
	c) Advance Against Depreciation			
	d) O&M Expenses	141.40	151.00	161.30
	e) Interest on Working Capital	29.20	34.00	34.89
	f) Foreign exchange Rate Variation			
	g) Return on Equity	66.20	108.80	112.03
	h) Taxes			
5	Energy/Variable Charges(Rs. Million)#	602.85	625.40	731.64
6	Total Expenses in Rs.million (4+5)	858.45	942.70	1076.18
7	Cost per Unit in Rs.(3/6)	4.01	4.10	4.73

*Energy Charges as stated in Format 2

Energy charges has been computed considering Normative PLF of 85% based on CERC Regulations, 2009

Note:

1. Year 1 is the FY in which the last unit of the generating station started Commercial Operation.



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Details/Information to be Submitted in respect of Fuel for Computation of Energy Charges¹

Name of the Company
Name of the Power Station

Puducherry Power Corporation LTD.
Karaikal station

Fuel: Natural Gas


Sl.No.	Month	Unit	For Preceeding 1st Month (July'19)	For Preceeding 2nd Month (Aug'19)	For Preceeding 3rd Month (Sep'19)
			Gas	Gas	Gas
1	Quantity of gas supplied by GAIL	Cu.m	4964819	5343541	5252928
2	Adjustment(+/-) in quantity supplied made by GAIL	Cu.m	-	-	-
3	Gas supplied by GAIL (1+2)	Cu.m	4,964,819	5,343,541	5,252,928
4	Normative Transit & Handling Losses	Cu.m	-	-	-
5	Net Gas Supplied (3-4)	Cu.m	4,964,819	5,343,541	5,252,928
6	Amount charged by the Gas Company	(Rs)	56655927	64730963	65811860
7	Adjustment(+/-) in amount charged made by Gas Company	(Rs)	-	-	-
8	Total amount charged (6+7)	(Rs)	56,655,927	64,730,963	65,811,860
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)	56,655,927	64,730,963	65,811,860
15	Weighted average GCV of Gas as fired	(kCal/Cu.m)	10058.67	10766.555	10799.85
16	Gas consumption #	KL			
17	Weighted average rate of Fuel/1000 Cu.m #	Rs/1000 cu.m	11,411.48	12,113.87	12,528.60

Note:

¹ Similar details to be furnished for natural gas/liquid fuel for CCGT station and # Additional data

12017.98

PETITIONER



A. VIKRANTH RAJA, I.A.S
 Managing Director
 Puducherry Power Corporation Limited
 (A Government of Puducherry Undertaking)
 Puducherry.

**PUDUCHERRY POWER CORPORATION LTD.
KARIKAL POWER STATION
TARIFF CALCULATION FOR THE TARIFF PERIOD 2020-21**

Months for the year			12.0	12.0	12.0	
Days			366	365	365	
PERIODS			2019-20	2020-21	2021-22	
Particulars						
Capacity	MW		32.5	32.5	32.5	
Generation	Mus		242.000	242.000	242.000	
PLF	%		85	85	85	As per JERC order dtd 31.03.2015 & 23.05.2016
Aux. Consumption	%		5.00	5.00	5.00	
Energy Sent Out	Mus		229.900	229.900	229.900	
Sp Gas Consumption	SCM/Kwh		0.257	0.257	0.257	As per actual
Price of Gas	RS/1000SCM		10065.20	11900.22	11900.22	As per enclosed fuel cost sheet for FY 2017-18
Gas GCV	Kcal/SCM		10305.48	10305.48	10305.48	As per JERC order dtd 31.03.2015 & 23.05.2016
Station Heat Rate (NET)	Kcal/Kwh		2646.00	2646.00	2646.00	As per JERC order dtd 31.03.2015 & 23.05.2016
Capital Cost	Rs/Cr		166.73	170.76	170.76	As per JERC order dtd 31.03.2015 & 23.05.2016 & 31.03.2017
Debt	%		70	70	70	As per JERC norms
Equity	%		30	30	30	As per JERC norms
Equity	Rs/Cr		50.02	51.23	51.23	
Loan	Rs/Cr		116.71	119.53	119.53	
Net Average Loan	Rs/Cr					
Depreciation Rate	%		5.06	5.06	5.06	
Rate of Interest on Loan	%		13.36%	13.36%	13.36%	
Return on Equity	%		21.868	21.868	21.868	
Interest on WC	%		12.55	12.55	12.55	As per SBI rate 01.4.2017
Energy Charge						
Total Energy Charge	p/Kwh		272.03	321.63	321.63	
Revised Annual Capacity (Fixed) Charge						
Depreciation	Rs/Cr		2.48	3.21	3.21	
Interest on Loan	Rs/Cr		0.00	0.00	0.00	
Return on Equity	Rs/Cr		10.94	11.20	11.20	
Interest on Working Capital	Rs/Cr		3.40	3.49	3.57	
Operation & Maintenance	Rs/Cr		15.10	16.13	17.23	as per CERC 2014-19 regulation 29
Total Capacity Charge	Rs/Cr		31.92	34.03	35.20	
Working Capital						
Cost of gas	1	Rs/Cr	5.34	5.34	5.34	#VALUE!
O&M Expenses	1	Rs/Cr	1.26	1.34	1.44	
Maintenance Spares		Rs/Cr	4.53	4.84	5.17	
Receivables	2	Rs/Cr	15.96	16.28	16.47	
Total Working Capital		Rs/Cr	27.09	27.80	28.41	
Interest on Working Capital		Rs/Cr	3.40	3.49	3.57	
PERIODS						
Details of Capital Cost						
Opening Cap cost		Rs/Cr	162.69	170.76	170.76	
Add Cap during the period **			8.07	0.00	0.00	
Closing Cap Cost			170.76	170.76	170.76	
Avg Cap cost to be considered			166.73	170.76	170.76	
AVG NET LOAN						
Gross Loan			116.71	119.53	119.53	

0.047661318


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A. VIKRANTH RAJA, I.A.S
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Cummulative Repayment upto prev yr					As per Regulation, Cumm repayment= actual depreciation, But PPCL have no loan in actual
		116.71	119.53	119.53	
Net Loan opening					Net loan opening taken as Zero
Addition		0.00	0.00	0.00	
Repayment for the year					
Net Loan closing		0.00	0.00	0.00	
Average Net Loan					
Interest		0.00	0.00	0.00	
		%			
Depreciation					
Capital cost		166.73	170.76	170.76	
Less cost of Freehold Land		7.93	7.93	7.93	
Capital cost excl FH Land		158.80	162.83	162.83	
Cumml dep + AAD upto prev year		128.02	130.50	133.71	As per actual depreciation recovered
					Weighted average dep. for 20-21 is Rs.3.21 crores i.e. (146.55-130.50=16.05) and Rs16.05 crores shared equal for the remaining life of the asset i.e. 5 years.
Depreciation for the year @		2.48	3.21	3.21	
Cap on dep		142.92	146.55	146.55	
Depreciation for the year		2.48	3.21	3.21	

Note:

** Add.	Capitalization	6.32 crores	110/11 KV 15 MVA Power Transformer-FY 19-20
		1.43 crores	Difference amount of (13.20 cr.-11.769 cr.= 1.43 cr.) (Rotor-9.93 cr., Inlet Guide vane-1.09 cr.& Stator Van Kit-2.18 cr. For FY 18-19
		0.32 crores	Continuous Effluent Monitoring system-FY 17-18
Total		8.07 crores	


A. VIKRANTH RAJA, I.A.S
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 Puducherry.

Annexure - II

(Copy of recommendations & MOM of BHEL-GE, Copy of directions of Puducherry Pollution Control Committee & Copy of the Supply order and Report of M/s.BGGTS)

**RECOMMENDATIONS**

- Fuel Nozzle: Assembly
Removed fuel Nozzle set can be sent to BGGTS refurbishment facility for repair.
- Combustion Liner: Assembly
Removed set of Liners can be sent to BGGTS refurbishment facility for repair.
- Combustion Liner: Crossfire Tube
Removed set of cross fire tubes can be sent to BGGTS refurbishment facility for repair
- Transition Piece, Combustion: Assembly
Removed set of Transition Pieces can be sent to BGGTS refurbishment facility for repair.
- Nozzle Arrangement, Stage 1 Assembly
The removed set of 1st stage Nozzles can be sent to BGGTS refurbishment facility for repair.

The estimated design life of compressor blades is well over 100,000 hours. Replacing the Compressor blades and wheel inspection is approximately done between 120,000 to 140,000 hours. In coastal area, it is also seen that severe damages occurred to compressor blades at around 100,000 hours.

- At current level of operation unit will be due for 3rd Major inspection at 1, 40,000 F/hrs approx.

Hence, it is recommended for

1. Compressor rotor & stator blades replacement along with the inlet guide vanes are to be Replaced as a set.
2. Since compressor rotor blades can be taken out only after de-stacking of the compressor rotor, the same need to be carried out at an authorized workshop (After replacing the rotor blades, the unit rotor is to be balanced).

As per the present condition of the rotor and stator blades it is strongly recommended to consider their replacement in due course/by next overhaul to avoid substantial damages of the downstream components.

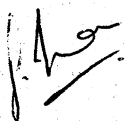
MINUTES OF THE MEETING HELD BETWEEN OFFICIALS OF PPCL AND OFFICIAL
OF BGGTS AT PPCL, PROJECT OFFICE, KARAIKAL ON 28.11.2016.


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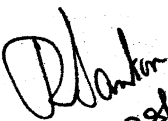
BGGGTS

PPCL

1. Sri S. Vijaya Kumar, DGM
1. Sri. R. Santosh, SE
 2. Sri. K. Rajaganapathy, EE(M)P
 3. Sri. C. Dinakaran, AEE(E)
 4. Sri. V. Shanmugam, TO(M)
 5. Sri. R. Thiruvallaban, AE(M)
 6. Sri. D. Muthukumaran, JE(M)
1. Representative of BGGTS visited the site and collected the technical details about running of the Gas Turbine. He also inspected the Exciter bearing leakage and also inspected the vent plug installed at the top of Exciter bearing as per his suggestion. He has noted that the bearing oil leakage has got reduced and advised not to open the bearing at this juncture.
 2. Discussions in detail were held regarding the change of compressor stator blades during the next Major inspection. He explained the pros and cons of shifting the existing rotor to BHEL Hyderabad vis-à-vis procurement of new rotor. From the details provided by him, it can be seen that procurement of new rotor will be cost effective compared to repair of rotor as the time duration for repair of rotor will be 121 days (max).
 3. BGGTS representative also recommended to place the order for refurbishment for the items which are sent for refurbishment.
 4. BGGTS representative also recommended to procure the following Gas Turbine Spares:
 - i) Compressor Stator Vane Kit along with Hardware. (Shim pinning kit)
 - ii) Inlet guide van arrangement complete with hardware (consist of IGV gear, rack, screw cap, spring leaf, bushing DU, Bushing set screw, tubing spacer, pin, and thrust washer
 - iii) Nozzle arrangement for second stage along with hardware.
 - iv) Bucket turbine stage-II
 - v) Shroud and seals stage-I
 - vi) Shroud and seals stage-II (uprated honey comb type) with hardware
 - vii) Liner Bearing-II
 - viii) Seal stationery oil bearing -II
 - ix) Seal, air bearing -1
 - x) Seal stationery oil bearing -1
 - xi) Deflector bearing-1
 - xii) Seal stationery oil bearing-I
 5. PPCL requested offer for the refurbishment of Stage I bucket from BGGTS at the earliest.
 6. PPCL informed that the Mist Eliminator motor is taking more current and vacuum in the lube oil tank is 17 inches of water column. In this regard, BGGTS informed that they will revert back at the earliest.




A. VIKRANTH RAJA, I.A.S
Managing Director
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Puducherry.


28/11/2016

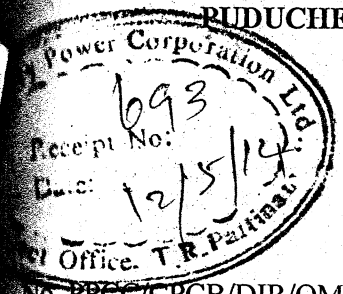
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REGISTERED POST WITH A/D

**GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE**

**3rd Floor, PHB Building, Anna Nagar
Puducherry - 605 005.



Phone : (0413) 2201256
Telefax : (0413) 2203494

No. PPCC/CPCB/DIR/OMS/KKL/IE/2014/128

Puducherry, the 9 MAY 2014

**DIRECTION FOR COMPLIANCE OF SELF MONITORING MECHANISM
UNDER THE PROVISIONS OF THE AIR (PREVENTION & CONTROL OF
POLLUTION) ACT, 1981 AND THE WATER (PREVENTION & CONTROL OF
POLLUTION) ACT, 1974**

Sub : PPCC - Issue of Direction under the Provisions of the Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 - Self Monitoring of Compliance - Reg.

Ref : Direction issued by CPCB, vide No. B-29016/04/06/PCI-I/5392 dated 05.05.2014 (Copy enclosed).

Whereas, M/s. Puducherry Power Corporation Ltd., is a Large Scale, Red Category unit, operating its Natural Gas Based Power Generation Plant, of capacity 32.5 MW, located at, Nagore Main Road, Polagam, T. R. Pattinam, Karaikal.

And whereas, a direction was received from the Central Pollution Control Board, New Delhi, vide reference cited above, to direct M/s. Puducherry Power Corporation Ltd., located at, Nagore Main Road, Polagam, T. R. Pattinam, Karaikal, to install Continuous Stack Emission and Effluent Monitoring Systems.

In view of the above, you are hereby, directed, under Section 31 A of the Air (Prevention and Control of Pollution) Act, 1981 and Section 33 A of the Water (Prevention and Control of Pollution) Act, 1974, to comply with the following conditions:

- (a) To install Online Continuous Stack Emission Monitoring System (CSEMS) in your unit, for the parameters, viz., PM₁₀, SO₂ and NO_x, not later than 31.03.2015.
- (b) To install Online Effluent Quality Monitoring System at the outlet of the discharge end, for the measurement of the Parameters, viz., Flow, pH, COD, BOD, TSS and O & G, not later than 31.03.2015.
- (c) To connect and upload the online emission and effluent monitoring data at PPCC and CPCB server in a time bound manner, not later than 31.03.2015.

A. VIKRANTH RAJA, I.A.S
Managing Director
Puducherry Power Corporation Limited
(A Government of Puducherry Undertaking)
Puducherry.

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(90)

- (d) To ensure regular maintenance and operation of the online system with temperature proof mechanism having facilities for online calibration.
- (e) To submit bank guarantee of 25% of the cost of the above said Online Monitoring Systems for Stack Emission and Effluent Quality, for timely installation of the same, within 90 days from the date of the receipt of this direction.

The Compliance in the said matter shall reach this office within 15 (Fifteen) days from the date of receipt of this direction, failing which the authority will initiate enforcement action against the unit as per the provisions of the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, without any further notice.

For and on behalf of PPCC

(Signature)
 (M. DWARAKANATH)
 MEMBER SECRETARY

PUDUCHERRY POLLUTION CONTROL COMMITTEE

✓ Encl : a/a

To
 ✓ M/s. Puducherry Power Corporation Ltd., Nagore Main Road, Polagam, T. R. Pattinam
 Commune, Karaikal - 609 606.

Copy to:

- 1. The Member Secretary
 Central Pollution Control Board
 Parivesh Bhawan
 East Arjun Nagar
 New Delhi - 110 032.

- For kind information and records, please.

- 2. Standing Guard File.

(Signature)
A. VIKRANTH RAO, I.A.S
 Managing Director
 Puducherry Power Corporation Limited
 (A Government of Puducherry Undertaking)
 Puducherry.

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D/O THE SPECIAL SECRETARY
Tapal No: 598/88 (STE) / 4
Received on: 11/2/14
Despatched on: 12/2/14

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केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
(पर्यावरण एवं वन मंत्रालय, भारत सरकार)
(MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

B-29016/04/06/PCI-1/ 5392 SPEED POST

February 05, 2014
SECRETARY

To
The Chairman
Pondicherry Pollution Control Committee
Department of Science Technology & Environment
Housing Board Complex
3rd Floor, Anna Nagar
Pondicherry - 600 005

Tapal No: _____
Received on: _____
Despatched on: _____

SUB: DIRECTIONS UNDER SECTION 18(1)(b) OF THE WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 and THE AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 IN THE MATTER OF POLLUTION CONTROL IN 17 CATEGORY OF HIGHLY POLLUTING INDUSTRIES, CETPS AND COMMON HAZRDOUS WASTE & BIOMEDICAL WASTE INCINERATORS- REGARDING SELF MONITORING OF COMPLIANCE

WHEREAS, under Section 17 of the Water (Prevention & Control of Pollution) Act, 1974, and under Section 17 of the Air (Prevention & Control of Pollution) Act, 1981, one of the function of the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) is to plan a comprehensive programme for the prevention, control or abatement of pollution of streams, wells and air pollution in the State/Union territory and to secure the execution thereof; and

WHEREAS, under section 16 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the Central Pollution Control Board (CPCB), constituted under Water (Prevention and Control of Pollution) Act, 1974 is to coordinate activities of the State Pollution Control Boards and Pollution Control Committees and to provide technical assistance and guidance to SPCBs / PCCs; and

WHEREAS, the SPCBs and PCCs are empowered to stipulate standards for discharge of environmental pollutants for various categories of industries and effluent treatment plants (CETPs), Common Hazardous waste and biomedical waste incinerators even more stringent than those notified by the Government, under the Environmental (Protection) Act, 1986 and rules there under; and

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
'Parivesh Bhawan', East Arjun Nagar, Delhi - 110032
/ Tel. : 43102030, फैक्स / Fax : 22305793, 22307078, 22307079, 22301932, 22304932
ई-मेल / e-mail : cpcb@nic.in वेबसाइट / Website : www.cpcb.nic.in

A. VIKRANTH RAJA, I.A.S.
Managing Director
Puducherry Power Corporation Ltd.

WHEREAS, Pharmaceuticals, Chlor Alkali, Fertilizers, Oil Refinery, Dye and dye intermediate, Pesticides, Petrochemical, Large Power plants, Cement, Aluminium, Zinc, Copper, Iron & steel, Large Pulp & paper, Distillery, Sugar and Tannery industries located in States/UTs have been discharging environmental pollutants directly or indirectly into the ambient air and water, which pose constant threat to cause adverse effect on the water and air quality ; and

WHEREAS, Common Hazardous waste and Biomedical waste incinerators and Common Effluent Treatment Plants(CETPs) located in States/UTs have been discharging environmental pollutants directly or indirectly into the ambient air and water; and


WHEREAS, the SPCBs and PCCs are also required to ensure installation and regular operation of the requisite pollution control facilities in the polluting industries; and

WHEREAS, there is need to inculcate habit of self monitoring mechanism within the industries for complying the prescribed standards and this can be achieved by the methods like installing online effluent and emission monitoring devices; and

WHEREAS, 07 industries under 17 category (Annexure-I) which are operating in the state/UT have been identified can be suitably directed for installation and commissioning of online monitoring systems (emission and or effluent); and

WHEREAS, 01 Common Hazardous waste and Biomedical waste incinerators and CETPs operating in the state/UT can also be considered for installation and commissioning of online monitoring systems (emission and or effluent);and

WHEREAS, for strengthening the monitoring and compliance through self regulatory mechanism ,online source and effluent monitoring systems need to be installed and operated by the developers and the industries on 'polluter pays principle' ;and


A. VIKRANTH BALA, I.A.S
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WHEREAS, some of the SPCBs have already given specific conditions in consent to operate of 17 categories of highly polluting industries/ and Common Hazardous waste and Biomedical waste incinerators to install continuous emission and effluent monitoring systems; and


WHEREAS, it is envisaged in "National Environment Policy- 2006" that to strengthen the testing infrastructure and network for monitoring ambient environmental quality and progressively ensure real-time, and online availability of the monitoring data; and

WHEREAS, CPCB had earlier issued letter dated January 12,2011 to SPCBs /PCCs to direct all the 17 categories of highly polluting industries to install automatic air and water quality stations to monitor the ambient quality; and

WHEREAS ,it is becoming a need and necessity to regulate and minimize inspection of industries on routine basis and instead efforts need to be made to bring self discipline in the industries to exercise self monitoring & compliance and transmit data of effluent and emission compliance to SPCBs/PCCs and to PCB on continuous basis; and

WHEREAS, there could be some time needed for getting such devices standardised and requiring confidence on data generated but needless to emphasize, that efforts towards setting up to continuous monitoring devices is essential; and

WHEREAS, the ground truthing of the values indicated by the online devices need to be done before bringing them in public domain for proper interpretation and such measures need to be taken at the level of SPCBs/PCCs and whereas for regulatory purposes and for purposes of actions to be taken against non complying industries /facilities, the existing methods of sampling, analysis and related procedures under the existing statutes need to be continued; and


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