

**ODISHA POWER GENERATION CORPORATION LIMITED**  
**BHUBANESWAR**



**PETITION FOR APPROVAL OF  
GENERATION TARIFF FOR FINANCIAL YEAR 2017-18  
IN TERMS OF SECTION 62 & 86 OF THE ELECTRICITY  
ACT, 2003 READ WITH APPROVED BULK POWER SUPPLY  
AGREEMENT, AND TO THE EXTENT APPLICABLE, THE  
OERC (TERMS AND CONDITIONS OF GENERATION  
TARIFF) REGULATIONS, 2014 AND OERC (CONDUCT OF  
BUSINESS) REGULATIONS, 2004**

**NOVEMBER, 2016**



**ODISHA POWER GENERATION CORPORATION LTD.**  
(A Government Company of the State of Odisha)  
CIN : U40104OR1984SGC001429

**Regd. Off. :** Zone-A, 7th Floor, Fortune Towers, Chandrasekharapur, Bhubaneswar - 751023, Odisha  
**Ph. :** 0674-2303765 - 66, **Fax :** 0674-2303755 / 56  
**Web :** www.opgc.co.in,

Ref: OPGC Units 1&2/Tariff Filing 2017-18 /2816

29<sup>th</sup> November 2016

To

**The Secretary,**  
Odisha Electricity Regulatory Commission,  
Plot No.4, Chunokoli, Sailashree Vihar  
Bhubaneswar- 751 021

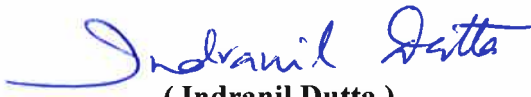
**Sub: Authorisation of Mr.Ritwik Mishra, DGM (CMG) for filing of tariff petition**

Sir,

This is to certify that Mr. Ritwik Mishra, functioning as Deputy General Manager, Corporate Monitoring Group, Odisha Power Generation Corporation Limited, posted at the corporate office at Zone-A, 7<sup>th</sup> Floor, Fortune Towers, Chandrasekharapur, Bhubaneswar-751023, Odisha, India (Petitioner), is hereby authorised to file the petition for approval of generation tariff for the year 2017–18 and appear on behalf of the petitioner for the tariff hearing and other procedure before OERC.

Thanking you,

Yours faithfully,

  
( Indranil Dutta )  
Managing Director

**Managing Director**  
Odisha Power Generation Corporation Ltd.  
Bhubaneswar



Affidavit

*29/4/16*  
**NILAMANI BEHERA**  
**NOTARY, BHUBANESWAR**  
**GOVT. OF ORISSA (INDIA)**  
**Reg. No-ON-39/2003**

**BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION,**  
**Bhubaneshwar**

File No.

Case No. \_\_\_\_\_ of 2016

IN THE MATTER OF: Application for approval of Generation Tariff for Odisha Power Generation Corporation Ltd. for FY 2017-18 under Section 62 & 86 of the Electricity Act, 2003 read with Approved Bulk Supply Agreement along with Supplemental Agreement (together referred to as the 'Amended PPA'), related provisions of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004.

AND

IN THE MATTER OF:

**Odisha Power Generation Corporation Ltd. (OPGC),**  
Zone-A, 7<sup>th</sup> Floor,  
Fortune Towers,  
Chandrasekharpur, Bhubaneswar-751023

.....The Petitioner

I, Ritwik Mishra, son of Shri. Muralidhar Mishra, aged about 48 years, residing at Flat No. E/3, Brindavan Enclave, Khandagiri Bari, Bhubaneswar-751 030, do solemnly affirm and say as follows:



1. That I am the Deputy General Manager - Corporate Monitoring Group, of Odisha Power Generation Corporation Ltd. at its Corporate Office at Zone-A, 7th Floor, Fortune Towers Chandrasekharpur, Bhubaneswar-751023, the Petitioner in the above matter and am duly authorised by the competent authority of the said Petitioner to make this affidavit on its behalf.

Contd....

*Ritwik Mishra*

2. The statements made in paragraphs to of the Petition herein now shown to me are true to the best of my knowledge and statements made in paragraphs to are based on information made available to me and I believe them to be true.

*Deponant*  
Deponent

**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 Bhubaneswar on the 29<sup>th</sup> day of November, 2016.

*Deponant*  
Deponent



*29/11/16*  
NILAMANI BEHERA  
NOTARY, BHUBANESWAR  
GOVT. OF ORISSA (INDIA)  
Regd. No-ON-39/2003

**BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION,  
BHUBANESHWAR**

CASE No. \_\_\_\_ of 2016

**IN THE MATTER OF**

Petition for approval of Generation Tariff for Odisha Power Generation Corporation Ltd. for FY 2017-18 under Section 62 & 86 of the Electricity Act, 2003 read with approved Bulk Power Supply Agreement dated 13.08.1996 along with Supplemental Agreement dated 19.12.2012 (together referred as “Amended PPA”), and to the extent applicable, the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004.

**AND**

**IN THE MATTER OF  
THE APPLICANT**

Odisha Power Generation Corporation Ltd. (OPGC Ltd.),  
Zone-A, 7<sup>th</sup> Floor, Fortune Towers, Chandrasekharpur,  
Bhubaneswar-751023, Odisha, India (Petitioner)

**ODISHA POWER GENERATION CORPORATION LIMITED (“The Petitioner”)  
RESPECTFULLY SUBMITS AS FOLLOWS:**

Odisha Power Generation Corporation Limited (herein after referred as “OPGC” or “the Petitioner”) is a company incorporated under the Companies Act, 1956 and having its registered office at Zone-A, 7<sup>th</sup> floor, Fortune Towers, Chandrasekharpur, Bhubaneswar, Odisha-751023.

GRIDCO Limited (“GRIDCO”) had entered into Bulk Power Supply Agreement (“PPA”) with OPGC dated August 13, 1996, for purchase of power from its Generating Units 1 & 2, having capacity of 420 MW (210 MW x 2) of IB Thermal Power Station. The said PPA came into force from January 1, 1995 and was approved by Government of Odisha in exercise of its power under Section 43A of the Electricity (Supply) Act, 1948.



OPGC, GRIDCO and Government of Odisha signed a Tripartite Agreement dated October 18, 1998 providing certain further amendments to the existing PPA and other provisions including those concerning the establishment of Units 3 & 4 of IB Thermal Power Station by OPGC. Further an Escrow and Securitization Agreement dated November 30, 1998 was entered between OPGC, GRIDCO and Union Bank of India. In 2001, disputes arose between the parties in respect of the enforcement of the said Escrow and Securitization Agreement.

After resolving the disputes between the parties, OPGC and GRIDCO agreed to amend existing PPA and Tripartite agreement based on Government of Odisha Notification dated June 21, 2008 and October 12, 2009. Accordingly, an agreement was signed on September 6, 2012 as Supplemental to the Tripartite Agreement executed on October 18, 1998 (together called "Amended Tripartite Agreement"). The Amended Tripartite Agreement has been made effective from October 12, 2009.

Subsequently, OPGC and GRIDCO signed an amendment to existing PPA on December 19, 2012 by amending certain clauses related to Plant Load Factor, Revision in tariff, etc. (together called the "Amended PPA").

Hon'ble OERC vide its Order dated April 27, 2015 approved the Amended PPA as under (with emphasis added by underlining):

*"9. The above stipulation in PPA provides for settlement of issues if any arise due to implementation of this PPA in a future date the same shall be resolved basing on mutual discussion keeping intent and objects of the PPA intact. Therefore, the Commission has no objection to approve the PPA including its amendment between GRIDCO and OPGC for purchase of power from Unit 1 & 2 of Ib Thermal Power Station as it stands now.*

...

*11. Since the power purchase by GRIDCO from Unit 1 & 2 of Ib Thermal Power Station has been continuing as per mutual agreement without approved PPA and the Commission has approved the same in the ARR of GRIDCO for the concerned year there is no need to reopen the same as per the above Regulation. The parties should, therefore, settle the power purchase*



process for the period prior to implementation of the above Regulation taking into account the original PPA and its supplemental one as approved by us now.”

Further, Hon’ble OERC in the said Order dated April 27, 2015 (Case No. 13/2002) directed OPGC to file an application for determination of Generation Tariff, as per approved Amended PPA, for rest of the control period starting from FY 2016-17 onwards since tariff for FY 2014-15 and FY 2015-16 has already been approved by Hon’ble OERC in ARR of GRIDCO. The relevant extract of the Order of the Hon’ble OERC is reproduced below:

*“13. Due to the above provision in the Regulation read with Regulation 7.13 of the same Regulations, OPGC shall make an application before the Commission as per the above approved PPA each year for determination of tariff for the rest of the control period starting from FY 2016-17 onwards since the tariff for the FY 2014-15 and 2015-16 has already been approved by the Commission in the ARR of GRIDCO for the said year basing on the submission of GRIDCO.”*

In compliance with the above directions of the Hon’ble OERC, OPGC filed the Petition for Approval of Generation Tariff for FY 2016-17 under Section 62 and 86 of the Electricity Act, 2003 (“the Act”), approved Amended PPA and related provision of OERC (Terms and Conditions of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004, as amended from time to time. Hon’ble OERC, vide its Order dated March 21, 2016 disposed of the above Petition (Case No. 53/2015) approving the Generation Tariff of Units 1 & 2 of IB Thermal Power Station for FY 2016-17. OPGC has filed Appeal No. 126 of 2016 before the Hon’ble Appellate Tribunal for Electricity (“APTEL”) against the said Tariff Order for FY 2016-17. The Appeal is pending adjudication. It is submitted that the instant Petition is being filed without prejudice to OPGC’s rights under law and contentions taken in Appeal No. 126 of 2016 before the APTEL. It is further submitted that the instant Petition is subject to the outcome of Appeal No. 126 of 2016 before the APTEL.

In view of the foregoing, this instant Petition for Approval of Generation Tariff for FY 2017-18 is drafted and prepared in terms of the Amended PPA duly approved vide the Hon’ble OERC’s

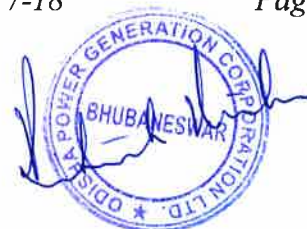


Order dated April 27, 2015. The instant Petition is being filed under Section 62 and 86 of the Electricity Act, 2003 (“the Act”) and to the extent applicable, the OERC (Terms and Conditions of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004, as amended from time to time.

### **Prayers to the Hon’ble OERC**

OPGC respectfully prays that the Hon’ble OERC may:

- i. Accept the Petition for Approval of Generation Tariff for Odisha Power Generation Corporation Ltd. for FY 2017-18 for supplying power to GRIDCO Ltd. from Units 1 & 2 of IB Thermal Power Station.
- ii. Approve the tariff, including annual fixed cost and variable charges, for supplying the power to GRIDCO Ltd. for FY 2017-18 as per the provisions of the Amended PPA executed between OPGC Ltd. and GRIDCO Ltd duly approved by the Hon’ble OERC vide order dated 27.04.2015.
- iii. Approve the other charges to be paid by GRIDCO Ltd. as per the provisions of Amended PPA signed between OPGC Ltd. and GRIDCO Ltd.
- iv. Approve reimbursement of the costs towards schemes for environment protection equipment installation incurred by OPGC Ltd. and its reimbursement in terms with Clause 10 of the Amended PPA and Clause 10.0 of Schedule II of the Amended PPA executed between OPGC Ltd. and GRIDCO Ltd.
- v. Approve the costs incurred for the purpose of compliance with statutory requirements and other costs to maintain the efficient operation of the Project.
- vi. Approve the recovery of upward and downward variation in fuel prices and calorific value including fuel mix through Fuel Price Adjustment as per the provisions of Amended PPA between OPGC Ltd. and GRIDCO Ltd.



- vii. Condone any inadvertent omissions, errors, short comings and permit OPGC to add/ change/ modify/ alter this filing and make further submissions as may be required at a future date; and
- viii. Pass such other and further Orders as deemed fit and proper in the facts and circumstances of the case.

Petitioner

Bhubaneswar  
November 29, 2016



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## 1 Introduction

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- 1.1 Odisha Power Generation Corporation Limited (herein after referred as “OPGC” or “the Petitioner”) is a company incorporated under the Companies Act, 1956 and having its registered office at Zone-A, 7<sup>th</sup> floor, Fortune Towers, Chandrasekharpur, Bhubaneswar, Odisha-751023.
- 1.2 GRIDCO Limited (“GRIDCO”) had entered into Bulk Power Supply Agreement (“PPA”) with OPGC dated August 13, 1996, for purchase of power from its Generating Units 1 & 2, having capacity of 420 MW (210 MW x 2) of IB Thermal Power Station. The said PPA came into force from January 1, 1995 and was approved by Government of Odisha in exercise of its power under Section 43A of the Electricity (Supply) Act, 1948.
- 1.3 OPGC, GRIDCO and Government of Odisha signed a Tripartite Agreement dated October 18, 1998 providing certain further amendments to existing PPA and other provisions including those concerning the establishment of Units 3 & 4 of IB Thermal Power Station by OPGC. Further, Escrow and Security Agreement dated November 30, 1998 was entered between OPGC, GRIDCO and Union Bank of India.
- 1.4 GRIDCO had approached the Hon’ble OERC for approval of the existing PPA in 2002. The jurisdiction of the Hon’ble OERC for approval of the existing PPA was challenged by OPGC before Hon’ble Orissa High Court, but was upheld by Hon’ble Orissa High Court. Further, aggrieved by this, OPGC filed a Special Leave Petition before Hon’ble Supreme Court. The proceedings of the Hon’ble OERC were stayed pursuant to an interim Order of the Hon’ble Supreme Court dated April 29, 2005.
- 1.5 Subsequently, certain disputes had arisen between the parties on issues arising from the terms of the PPA, Tripartite Agreement and other agreements between the Parties. In order to resolve these disputes, the parties entered into discussion and Government of Odisha



constituted a Task Force vide Resolution No. 3895 dated May 7, 2007 for resolving disputes regarding tariff and other related matters. Government of Odisha, based on the recommendations of Task Force, issued Notification No. 7216 dated June 21, 2008 for resolving all such disputes on terms and conditions contained therein in regard to Unit 1 & 2 and also in regard to setting up of Unit 3 & 4, as overall settlement of all such disputes.

- 1.6 Pursuant to above, OPGC and GRIDCO agreed to amend existing PPA and Tripartite agreement based on Government of Odisha Notification dated June 21, 2008. Accordingly, an agreement was signed on September 6, 2012 as Supplemental to the Tripartite agreement executed on October 18, 1998 (together called as “Amended Tripartite Agreement”). The Amended Tripartite Agreement has been made effective from October 12, 2009.
- 1.7 Subsequently, OPGC and GRIDCO signed an amendment to existing PPA on December 19, 2012 by amending certain clauses related to Plant Load Factor, Revision in tariff, etc. (together called the “Amended PPA”), which was retrospectively brought to effect from April 1, 2007.
- 1.8 With the execution of this agreement, the Parties agreed that all pending differences have been settled and OPGC shall withdraw Special Leave Petition pending before Hon’ble Supreme Court. Further, Hon’ble Supreme Court vide its Order dated February 14, 2013 dismissed the Special Leave Petition as withdrawn by OPGC and in the said order Hon’ble Supreme Court has directed OPGC to file the Amended PPA before Hon’ble OERC and the Hon’ble OERC shall consider the same appropriately in accordance with law.
- 1.9 Hon’ble OERC vide its Order dated April 27, 2015 approved the Amended PPA as under (with emphasis added by underlining):
- “9. The above stipulation in PPA provides for settlement of issues if any arise due to implementation of this PPA in a future date the same shall be resolved basing on mutual discussion keeping intent and objects of the PPA intact. Therefore, the*



Commission has no objection to approve the PPA including its amendment between GRIDCO and OPGC for purchase of power from Unit 1 & 2 of Ib Thermal Power Station as it stands now.

...

11. Since the power purchase by GRIDCO from Unit 1 & 2 of Ib Thermal Power Station has been continuing as per mutual agreement without approved PPA and the Commission has approved the same in the ARR of GRIDCO for the concerned year there is no need to reopen the same as per the above Regulation. The parties should, therefore, settle the power purchase process for the period prior to implementation of the above Regulation taking into account the original PPA and its supplemental one as approved by us now."

1.10 Further, Hon'ble OERC in the said Order dated April 27, 2015 directed OPGC to file an application for determination of Generation Tariff, as per approved Amended PPA, for rest of the control period starting from FY 2016-17 onwards since tariff for FY 2014-15 and FY 2015-16 has already been approved by Hon'ble OERC in ARR of GRIDCO. The relevant extract of the OERC Order is reproduced below:

*"12. The Regulation 2.7 of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 provides as follows:*

*"The existing generation plants of OHPC and OPGC may make an application as per the Format prescribed by the Commission for determination of tariff as per annual schedule, by November 30<sup>th</sup> of every year for determination of tariff in respect of the units of the generating station completed or projected to be completed within six months from the date of application.*

*Provided that the OHPC and OPGC shall make an application as per the prescribed Format with necessary information and explanations, for determination of tariff based on capital expenditure incurred duly certified by the auditors or projected to be incurred up to the date of commercial operation and additional capital expenditure incurred duly certified by the*



*auditors or projected to be incurred during the period for which application for determination of tariff is filed of the generating station.”*

*13. Due to the above provision in the Regulation read with Regulation 7.13 of the same Regulations, OPGC shall make an application before the Commission as per the above approved PPA each year for determination of tariff for the rest of the control period starting from FY 2016-17 onwards since the tariff for the FY 2014-15 and 2015-16 has already been approved by the Commission in the ARR of GRIDCO for the said year basing on the submission of GRIDCO.”*

- 1.11 In compliance with the above directions of the Hon’ble OERC, OPGC filed the Petition for Approval of Generation Tariff for FY 2016-17 under Section 62 and 86 of the Act, approved Amended PPA and related provision of OERC (Terms and Conditions of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004, as amended from time to time. Hon’ble OERC, vide its Order dated March 21, 2016 disposed of the above Petition (Case No. 53/2015) approving the Generation Tariff of Units 1 & 2 of IB Thermal Power Station for FY 2016-17. OPGC has filed Appeal No. 126 of 2016 before the Hon’ble Appellate Tribunal for Electricity (“APTEL”) against the said Tariff Order for FY 2016-17. The Appeal is pending adjudication. It is submitted that the instant Petition is being filed without prejudice to OPGC’s rights under law and contentions taken in Appeal No. 126 of 2016 before the APTEL. It is further submitted that the instant Petition is subject to the outcome of Appeal No. 126 of 2016 before the APTEL.
- 1.12 In light of the above, in compliance to the directions of the Hon’ble OERC, OPGC is filing the instant Petition for Approval of Generation Tariff for FY 2017-18 under Section 62 and 86 of the Act, approved Amended PPA and related provision of OERC (Terms and Conditions of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004, as amended from time to time.



1.13 Regulation 2.7 of OERC Generation Tariff Regulations, 2014 requires OPGC to file an application for determination of tariff before the OERC by November 30<sup>th</sup> of every year. Accordingly, OPGC is filing the instant Petition for approval of Generation Tariff for FY 2017-18.



## **2 Overall Approach for Filing Petition**

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- 2.1 The instant Petition has been filed for determination of Generation Tariff for IB Thermal Power Station of OPGC Ltd., having installed capacity of 420 MW (2 x 210 MW- Unit 1 & 2), located at Banharpalli in District Jharsuguda.
- 2.2 The instant Petition has been filed based on the following agreements entered between the parties:
- (a) Bulk Power Supply Agreement between OPGC and GRIDCO, dated August 13, 1996 and an agreement as Supplemental to Bulk Power Supply Agreement dated December 19, 2012. Both agreements were approved by Hon'ble OERC vide its Order dated April 27, 2015.
  - (b) Tripartite Agreement between OPGC, GRIDCO and Government of Odisha dated October 18, 1998 and an agreement as Supplemental to Tripartite Agreement dated September 6, 2012, which was approved by Hon'ble OERC vide its Order dated April 27, 2015.
  - (c) Escrow and Securitization Arrangement dated November 30, 1998 entered between OPGC, GRIDCO and Union Bank of India, which was approved by Hon'ble OERC vide its Order dated April 27, 2015.

### **Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014**

- 2.3 The Hon'ble OERC notified the Terms & Conditions for Determination of Generation Tariff, Regulations, 2014 on September 8, 2014 in exercise of the powers conferred by Section 61 and Section 62 read with Section 181 of the Act. These Regulations are valid during the Period from FY 2014-15 to FY 2018-19.
- 2.4 Further, in accordance with OERC Tariff Regulations, 2014, the existing plants of OPGC may make an application for determination of tariff as per annual schedule, by November



30<sup>th</sup> of every year for determination of tariff in respect of the units of the generating station completed. The relevant Part of the Regulations is reproduced below:

*“2.7 The existing generation plants of OHPC and OPGC may make an application as per the Format prescribed by the Commission for determination of tariff as per annual schedule, by November 30<sup>th</sup> of every year for determination of tariff in respect of the units of the generating station completed or projected to be completed within six months from the date of application.”*

2.5 Also, original PPA and its Supplementary Agreement (Amended PPA), entered between OPGC and GRIDCO for supplying the power to GRIDCO from Unit 1 and 2 of IB Thermal Power Station of OPGC have been approved by Hon’ble OERC vide its Order dated April 27, 2015. Further, in said Order, Hon’ble OERC has directed as under:

*“13. Due to the above provision in the Regulation read with **Regulation 7.13 of the same Regulations**, OPGC shall make an application before the Commission as per the above approved PPA each year for determination of tariff for the rest of the control period starting from FY 2016-17 onwards ... ..” (emphasis added)*

2.6 Further, Regulation 7.13 of OERC Generation Tariff Regulations, 2014 specifies as under:

*“POWER TO RELAX*

*7.13 The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.”*

2.7 It is noted that Hon’ble OERC, by exercising its power under Regulation 7.13 of OERC Generation Tariff Regulations, 2014, directed OPGC to file an application as per approved Amended PPA. The said Amended PPA includes Capital Cost, Operational Performance Parameters, Principles for Tariff determination, Billing Mechanism etc. This implies that, while approving the Amended PPA, Hon’ble OERC has approved the terms and conditions of Amended PPA.

2.8 Further, Hon’ble OERC in its Order dated April 27, 2015 on approval of Amended PPA



held that the OPGC and GRIDCO should settle the power purchase process for the period prior to implementation of OERC Generation Tariff Regulations, 2014 taking into account the original PPA and its Supplementary Agreement. Further, tariff for FY 2014-15 and FY 2015-16 for OPGC has already been approved by Hon'ble OERC, after scrutiny, in the ARR of GRIDCO based on submissions of GRIDCO.

2.9 In compliance with the above directions of the Hon'ble OERC, OPGC filed the Petition for Approval of Generation Tariff for FY 2016-17 under Section 62 and 86 of the Electricity Act, 2003 ("the Act"), approved Amended PPA and related provision of OERC (Terms and Conditions of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004, as amended from time to time. Hon'ble OERC, vide its Order dated March 21, 2016 disposed of the above Petition (Case No. 53/2015) approving the Generation Tariff of Units 1 & 2 of IB Thermal Power Station for FY 2016-17. OPGC has filed Appeal No. 126 of 2016 before the Hon'ble APTEL against the said Tariff Order for FY 2016-17. The Appeal is pending adjudication. It is submitted that the instant Petition is being filed without prejudice to OPGC's rights under law and contentions taken in Appeal No. 126 of 2016 before the APTEL. It is further submitted that the instant Petition is subject to the outcome of Appeal No. 126 of 2016 before the APTEL.

2.10 In view of the foregoing, this instant Petition for Approval of Generation Tariff for FY 2017-18 is drafted and prepared in terms of the Amended PPA duly approved vide the Hon'ble OERC's Order dated April 27, 2015 and other agreements as mentioned in Clause 2.2 of this Petition, which were also approved by the Hon'ble OERC.



### **3 Generation Tariff for FY 2017-18**

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3.1 This Section explains in detail the computation of Annual Fixed Cost, Energy charge and Year end charges as per the terms and conditions of the Amended PPA.

#### ***Computation of Annual Fixed Cost***

3.2 As per Clause 3.0 of Schedule II of the Amended PPA, the Annual Fixed Cost of OPGC shall consist of the following components:

- (a) Depreciation;
- (b) Return on Equity;
- (c) Interest on Loan;
- (d) Operation and Maintenance Expenses;
- (e) Interest on Working Capital.

3.3 The detailed computation of each of the above components of the Annual Fixed Cost is detailed in the subsequent paragraphs.

#### ***Capital Cost***

3.4 OPGC submits that Units 1 & 2 of the IB Thermal Power Stations were commissioned prior to notification of the Generation Tariff Regulations, 2014. The Amended PPA signed between OPGC and GRIDCO has considered the Capital Cost of the Project as Rs. 1060 Crore. It is submitted that while approving the Amended PPA vide Order dated April 27, 2015, Hon'ble OERC has approved the capital cost of the project. In view of this, OPGC has considered the capital cost of Rs. 1060 Crore for the purpose of computation of tariff for FY 2017-18.

3.5 Further, Clause 10.0 of the Amended PPA and Clause 10, Schedule II of Amended PPA, stipulates as under:



*“10.0 Any statutory taxes, levies, duties, cess or any other kind of imposition whatsoever imposed/charged by any Government (State/Central) and/or any other local bodies/authorities on generation of electricity including auxiliary consumption and sale energy, environmental protection, water charges etc. shall be billed by OPGC and will be paid by the GRIDCO. However, electricity duty payable on energy drawn by OPGC, if any, shall be payable by OPGC and reimbursed by GRIDCO.*

*If OPGC shall have to bear any such levy or levies on account of energy supplied to the GRIDCO before the same is or are paid by the GRIDCO, the OPGC shall be entitled by way of reimbursement to recover such levy or levies from the GRIDCO.”*

## “SCHEDULE II

### **TARIFF**

#### **10.0 LEVIES, TAXES, DUTIES, CESS, ETC:**

*The above tariff is exclusive of any statutory taxes, levies, duties, cess or any other kind of impositions whatsoever imposed/charged by any Government (Central/State) and/or any other local bodies/authorities on generation of electricity including auxiliary consumption or any other type of consumption, transmission, sale or on supply of power/energy and/or in respect of any of its installations associated with Generating Stations and/or Transmission System, Environmental Protection, Water, etc. However, electricity duty payable on energy drawn by OPGC, if any shall be payable by OPGC and reimbursed by GRIDCO.” (emphasis added)*

- 3.6 It is submitted that Clause 10 of the Amended PPA and Clause 10 of Schedule II of the Amended PPA inter alia provide that all impositions by statutory authorities on OPGC necessitating the upgradation or installation of new equipment in order to comply with norms for environmental protection are to be billed by OPGC and paid by GRIDCO. Thus, OPGC has sought the reimbursement of the cost of installation of equipment for the purpose of environmental protection in compliance with statutory directions and



requirements. In this regard, reference may also be had to Clause 17.01 of the Amended PPA:

*“In entering into this PPA, the parties recognise that it is impractical to provide for every contingency that may arise in the course of the performance thereof. Accordingly, the parties declare it to be their intention that this PPA shall operate between them with fairness and without detriment to the interest of any of them and if in the course of the performance of this PPA unfairness to any party hereto shall be manifest, either financially or otherwise, the parties will use their best endeavours to remove the cause or causes of the same. It is hereby agreed that any adverse impact of either party shall be mutually discussed and steps taken to ensure that the intent and the objects as set out herein are not disturbed.”*

In view of Clause 17.01 of the Amended PPA, it is submitted that OPGC ought not to bear the expenditure necessitated on account of on schemes for compliance with statutorily mandated environment protection measures. Further, if such expenditure is not reimbursed to OPGC by GRIDCO, it is submitted that it would be manifestly unfair and detrimental to OPGC’s interests.

3.7 In this regard, OPGC submits that Central Pollution Control Board (CPCB) developed a Comprehensive Environmental Pollution Index (CEPI) in order to address Environmental pollution in industrial clusters. The objective is to identify the planning needs for abatement strategies for polluted clusters and eventually bringing down the impact of pollution to an acceptable level. Increasing value of CEPI indicates adverse impact on environment. Industrial clusters having aggregated CEPI score of 70 and above is considered as critically polluted cluster. As per CPCB, the calculated CEPI score of IB valley area is 74.0 and that of Jharsuguda is 73.34, which is beyond 70. IB Thermal Power Station is situated in this critically polluted industrial cluster of IB Valley- Jharsuguda area. State Pollution Control Board, Odisha prepared the action plan for abatement of pollution in critically polluted industrial cluster in IB valley area and vide its letter No. 3625 dated



February 26, 2011 directed OPGC to submit its plans to comply the following action points:

**Table 3-1: Action Plan for abatement of pollution in IB valley area**

Sr. No	Action Plan	Issues being addressed
1	All Thermal Power Plants to install ESP/BF to meet the emission standard of 50mg/m <sup>3</sup> with one spare field <ul style="list-style-type: none"> <li>Existing Plants</li> <li>Future Plants</li> </ul>	<ul style="list-style-type: none"> <li>SPM &amp; RPM in ambient air.</li> </ul>
2	All lean slurry disposal system to be converted to HCSD (High Concentration slurry disposal) or Mine void filling.	<ul style="list-style-type: none"> <li>Water(Cd &amp; Hg)</li> <li>Land Requirement</li> </ul>
3	Online monitoring with real time display facility to be installed	<ul style="list-style-type: none"> <li>Particulate matter</li> </ul>
4	Create silo for a capacity of at least 2 to 3 days ash generation for its dry storage and subsequent utilization for cement and fly ash based products	<ul style="list-style-type: none"> <li>Fly Ash utilization</li> </ul>
5	Real time ambient air quality monitoring (SO <sub>2</sub> , NO <sub>2</sub> , CO, PM <sub>10</sub> , PM <sub>25</sub> )	<ul style="list-style-type: none"> <li>SPM, RPM, SO<sub>x</sub> &amp; NO<sub>x</sub>.</li> </ul>
6	All the thermal power plants shall adopt zero discharge.	<ul style="list-style-type: none"> <li>Water scarcity</li> </ul>

3.8 In order to comply with the above said action points, OPGC has prepared schemes for environment protection equipment installation. Some of these schemes have been rolled out progressively from 2011-12 onwards. OPGC had sought consent of GRIDCO for undertaking such schemes and GRIDCO had principally agreed for the schemes to be undertaken by OPGC, subject to the approval of the Hon'ble OERC (Annexure – VIII)..

3.9 OPGC has undertaken the following schemes for environment protection equipment installation:

- a) **Electro Static Precipitator (ESP) Up-gardation:** In compliance to the stringent emission norm of 50mg/normal M<sup>3</sup> stipulated by State Pollution Control Board vide their consent to operate, it was decided to add one more parallel pass having 6 fields with the existing passes including renovation of existing passes in both units. The same



was approved in 160<sup>th</sup> Board of Directors meeting held on October 20, 2012, resolutions made vide letter No. 2856 dated October 28, 2012 and approval of award to BHEL was approved in 162<sup>nd</sup> Board of Directors meeting held on March 21, 2013. The job is being carried out by OEM (M/s Bharat Heavy Electricals Limited). New parallel ESP construction and commissioning work has been completed in both units. Performance Guarantee test is expected to be completed before March, 2017..

- b) **HDPE lining of Ash Pond-C:** In context of running of plant and continuous discharge of ash slurry a patch of land between Ash ponds-A & B has been acquired for new Ash pond-C. In compliance with the consent to establish condition for Ash pond-C, to prevent contamination of ground water due to leaching effect of ash pond water, HDPE lining was proposed as a preventive measure. This was considered in the design phase of construction of Ash pond-C. The Construction of new ash pond-C with HDPE lining work has been completed at a cost of Rs. 17.52 Crore.
- c) **Zero Effluent Discharge:** As per consent condition to fulfil zero liquid effluent discharge and CEPI (Comprehensive Environmental Pollution Index) requirement, OPGC has to comply the requirement by constructing few recycling systems such as Cooling Tower Effluent Recycling System (RCC Sump, Recycling Pump, Pipelines , Electrical accessories, etc.), Coal Handling Plant effluent recycling (Sump, Recycling Pump & Pipeline, etc.), Fuel Oil Storage and Pump House area wash water and storm water oil separation and discharge system, Boiler area effluent recycling after oil separation (Pump, Pipelines etc.), Clarification plant sludge drying bed & recycling.
- d) **Dry Fog Dust Suppression System:** At present, coal transportation from stockyard to the bunkers is done through belt conveyors system. This is one of the major sources of fugitive coal dust emission in the plant area. In order to contain the fugitive dust as per consent to operate condition, spraying of water on coal during conveying is done. This, however, affects the combustibility of coal, thus affecting the boiler efficiency. In order to address this issue, OPGC has decided to install Dry Fog Dust Suppression



System in Coal conveying system, which will significantly reduce fugitive coal dust emission while improving the boiler efficiency. The work for this scheme is under progress and the expenditure of Rs. 1.42 Crore has already been incurred and Rs. 1.12 Crore is expected to be incurred in FY 2017-18.

- e) **Ambient Air Monitoring Systems:** Four numbers of ambient air monitoring systems were installed at different locations inside the Plant and Colony campus for measuring particulate matter of sizes PM2.5 & PM10 and SO2 & NOx concentration in ambient air for checking the air quality with an objective to maintain within permissible limits. This is an imposition from CPCB, SPCB & CEPI. The installation has been completed in FY 2015-16 at a cost of Rs. 1.13 Crore.
- f) **Dry Fly Ash handling system:** A dry fly ash handling system was installed as a part of consent to operate condition and as a part of MoEF fly ash notification. The system collects fly ash from ESP hoppers and condition the ash for transportation by trucks. The fly ash generated from the system is supplied to various off-takers as a part of ash utilisation process. The dry fly ash is also utilised for low land reclamation. The cost incurred for this scheme was Rs. 3.45 Crore in FY 2012-13.
- g) **Effluent monitoring system and real time data transfer to SPCB & CPCB Servers:** This is an imposition from CPCB, SPCB & CEPI for effluent monitoring and online transmission of data from various monitoring systems namely (a) ambient air monitoring station (b) stack monitoring station and (c) effluent monitoring station. These monitoring stations are expected to be commissioned in FY 2016-17 at an estimated cost of Rs. 0.12 Crore.

3.10 The recovery of cost towards schemes for environment protection equipment installation proposed under this Petition, as a result of statutory compliances is summarised as under:



**Table 3-2: Schemes for environment protection equipment installation (Rs. Crore)**

S. No.	Scheme	Actual expenditure incurred					Projected expenditure		Total
		FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	
1	Ambient air monitoring system	0.41	0.39	-	-	1.13	-	-	1.92
2	Effluent Monitoring System	-	-	-	-	0.12	-	-	0.12
3	ESP upgradation	-	-	12.69	-	21.56	6.00	-	40.25
4	Zero Effluent Discharge	-	-	-	-	-	0.15	-	0.15
5	HDPE lining in Ash Pond C	-	-	-	-	-	17.52	-	17.52
6	Dry Fog Dust suppression system	-	-	-	-	0.28	1.60	1.12	3.00
7	Dry fly ash handling system	-	3.45	-	-	-	-	-	3.45
	<b>Total</b>	<b>0.41</b>	<b>3.84</b>	<b>12.69</b>	<b>0.00</b>	<b>23.08</b>	<b>25.27</b>	<b>1.12</b>	<b>66.41</b>

3.11 As regards the recovery of such cost towards schemes for environment protection equipment installation, Hon'ble OERC in its Tariff Order for GRIDCO for FY 2012-13 has approved expenditure towards environmental protection equipment installation. The relevant extract of the Tariff Order for GRIDCO for FY 2012-13 is reproduced below:

*“377. GRIDCO has claimed Rs. 0.38 crore towards SOC and MOC of SLDC, Rs. 0.15 crore towards ERPC charges and Rs. 3.00 crore towards cost of environment protection equipment installation for the FY 2012-13. The Commission approves these expenses to be included in the year-end charges.”*  
(emphasis added)

3.12 OPGC while submitting the tariff calculation to GRIDCO for FY 2015-16 has claimed such costs as part of Year End charges for reimbursement, however, such costs have not been considered by GRIDCO in its ARR for FY 2015-16 while submitting to the Hon'ble OERC. The Hon'ble OERC in its Tariff Order for GRIDCO for FY 2015-16 dated March 23, 2015 has also recognised the fact as under:

*“232. Year-end Charges: In its application, GRIDCO has proposed the total year-end charges of OPGC to the tune of Rs.50.26 crore on account of water tax/cess, electricity duty, income tax, incentive, land rent/cess, Electrical Inspection Fees and*



*SOC & MOC for SLDC. GRIDCO has mentioned that, this projection of Year End Charges for FY 2015-16 is as per the projection submitted by OPGC in its tentative tariff calculation sheet for FY 2015-16 to GRIDCO. However, the expenditures towards ESP,CHP,EPE, ash pond C with HDPE lining and Ash utilisation and ash utilisation expenses as projected by OPGC in its tariff calculation, have not been considered by GRIDCO as such expenditures are subject to scrutiny after accordance of regulatory approval of amended PPA (of Unit #1 and #2) by the Commission” (emphasis added)*

- 3.13 Although the bills for reimbursement of the actual expenditure incurred in the previous years had been raised, such expenditure has not been reimbursed to OPGC. The copies of bills for claims made upto 2015-16, have been annexed to the Petition (Annexure – VIII).
- 3.14 It is to be noted that the tariff calculated in the Amended PPA has not included the impact of such expenditure towards environmental protection equipment installation. Such expenditure has to be incurred in order to comply with the directions of State Pollution Control Board and which are essential for operation of the plant.
- 3.15 In light of this, OPGC, in the present Petition, has claimed expenditure towards environmental protection equipment installation of Rs. 66.41Crore during FY 2017-18 on account of statutory compliance, separately, for reimbursement on actual basis.
- 3.16 OPGC humbly request the Hon’ble OERC to approve such expenditure towards environmental protection equipment installation and its recovery in the form of reimbursement in FY 2017-18.
- 3.17 OPGC has also incurred capital expenditure in order to maintain the efficient operation of the Project. Given the age of the Project, and in order to ensure the consistent generation levels, OPGC has incurred the following costs:

**Table 3-3: Expenditure towards schemes essential for continuous operation of the station  
(Rs. Crore)**

S. No.	Scheme	Actual expenditure incurred			Projected expenditure	Total
		FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	
1	Raising of height of Ash Pond-A from RL 202 m to 205 m	3.15	1.55	0.25		4.95



S. No.	Scheme	Actual expenditure incurred			Projected expenditure	Total
		FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	
2	Raising of height of Ash Pond-A from RL 205 m to 208 m			2.61	1.08	3.69
3	Construction of Ash Pond C				17.72	17.72
4	Modification of Pressure Reducing and Distributed System (PRDS)		0.21	3.53		3.74
	<b>Total</b>	<b>3.15</b>	<b>1.76</b>	<b>6.39</b>	<b>18.80</b>	<b>30.10</b>

3.18 It is submitted that OPGC has incurred the following expenditure in order to meet the following requirements:

*Increase of ash pond height:* OPGC plant has however been in operation from 1996 and has been managing ash generated from the power plant by stocking in ash ponds constructed for the purpose. It is a known industry practice that ash pond infrastructure is enhanced progressively in order to avoid high initial capital expenditure. As per MoEF guidelines issued in November 2009, all power plants are required to achieve 100% ash utilisation. In the instant case of OPGC, despite efforts to seek alternative means of ash utilisation, the results have not been as desired, due to the remote location of the plant and limited avenues for supplying ash for other uses. Even CEA has observed in its report on ‘Land Requirement of Thermal Power Stations’, published in December 2007, where in it has been quoted that “Fly ash utilisation not only depends on the location of the power station, but also on the agencies who are involved in this business. Since the power stations have no control over the agencies, in the field of fly ash utilisation, the task of 100% fly ash utilisation is difficult in most of the cases. Therefore, the power station authorities have no alternative except to keep sufficient space for the ash disposal without which, the power plant might have to be shut down after a few years of operation”. Given the circumstances, there is very limited option for OPGC to manage ash other than to store in ash ponds. Hence, the ash pond capacity needs to be enhanced from time to time to accommodate the ash generated, to the extent it is not able to be utilised. Without creation of such increased facility and limited options for ash utilisation, the OPGC plant would not be able to operate and will have to be shut down.



*Modification of PRDS system:* It is a known design criteria in power plants that the heat rate in power plants undergoes progressive de-gradation over the years of operation. The modification of the PRDS system taken up by OPGC has been taken up to reduce the rate of heat rate de-gradation.

3.19 OPGC humbly requests the Hon'ble OERC to consider reimbursement of the costs as incurred for maintaining consistent operation levels, to the extent of Rs.30.10 Crore as reimbursement under the tariff petition for 2017-18.

***Debt: Equity Ratio***

3.20 OPGC submits that project cost of Rs. 1060 Crore as approved in Amended PPA included equity of Rs. 450 Crore and Loan of Rs. 610 Crore. Hence, OPGC has considered actual debt: equity ratio, as approved in Amended PPA, for the purpose of determination of tariff for FY 2017-18.

***Return on Equity***

3.21 OPGC has considered the actual amount of equity of Rs. 450 Crore for computation of Return on Equity. The Clause 8.0 (10) of Schedule II of PPA provides the Return on Equity at the rate of 16%. Accordingly, OPGC submits the Return on Equity for FY 2017-18 as under:

**Table 3-4: Computation of Return on Equity for FY 2017-18 (Rs. Crore)**

Sr. No.	Particulars	FY 2017-18
1.	Actual Equity for Station	450.00
2.	Rate of Return on Equity	16.00%
3.	<b>Return on Equity</b>	<b>72.00</b>

3.22 OPGC humbly request the Hon'ble OERC to approve the Return on Equity of Rs. 72.00 Crore for FY 2017-18.

***Depreciation***

3.23 OPGC submits that Clause 3.0 (a) of Schedule II of the Amended PPA provides that



depreciation charges shall be equal to 7.5% of the Capital Cost during the year. Considering the depreciation charges computed as per the provisions of the Amended PPA, the assets of Generating Stations are fully depreciated by the financial year ending March 31, 2009.

3.24 In view of the above, OPGC does not submit any claim towards the depreciation for FY 2017-18.

#### ***Interest on Loan Capital***

3.25 OPGC submits that Clause 8.0 (7) and (11) of Schedule II of the Amended PPA provides the loan amount of Rs. 610 Crore and interest on loan as per actuals. Considering the actual repayment made against the outstanding loan, OPGC submit that loan amount of Rs. 610 Crore has been fully repaid by financial year ending March 31, 2012. In view of the above, OPGC does not submit any claim towards the Interest on Loan Capital for FY 2017-18.

#### ***Interest on Working Capital***

3.26 The Clause 3.0 (f) of Schedule II of the Amended PPA provides the Interest on working Capital as under:

*“f) Interest on Working Capital will be worked out on the following basis on normative level of generation calculated at the rate of interest applicable to OPGC for its Working capital facility as on the fixed charge computation date*

- i) Coal cost for 1.5 months*
- ii) Oil cost for 2 months*
- iii) O&M expenses for 1 month*
- iv) Receivables for 2 months ”*

3.27 As regards the rate of interest, the above said clause stipulates the interest rate applicable to OPGC for its Working Capital facility. It is submitted that OPGC has been meeting its working capital requirement through internal accruals.

3.28 In order to compute the interest on working capital, OPGC has relied on interest rate

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charged by Union Bank of India and specifically communicated to OPGC vide its letter dated May 24, 2016. The copy of the letter has been annexed to the Petition.

3.29 Accordingly, OPGC submits the Interest on Working Capital for FY 2017-18 as under:

**Table 3-5: Computation of Interest on Working Capital for FY 2017-18 (Rs. Crore)**

Sr. No.	Particulars	FY 2017-18
1.	Cost of Coal for one and half months	48.58
2.	Cost of Secondary Fuel Oil for two month	4.36
3.	O&M Expenses for one month	10.80
4.	Receivables equivalent to two month	106.93
5.	<b>Total Working Capital Requirement</b>	<b>170.68</b>
6.	Interest Rate %	14.75%
7.	<b>Interest on Working Capital</b>	<b>25.17</b>

3.30 OPGC humbly request the Hon'ble OERC to approve the Interest on Working Capital of Rs. 25.17 Crore for FY 2017-18.

#### ***O&M Expenses***

3.31 OPGC submits that Clause 3.0 (d) and (e) of Schedule II of the Amended PPA provides that O&M expenses for first year of operation at the rate of 2.5% of the capital cost and shall be escalated by 8% each year from April 1, 1996.

3.32 Accordingly, OPGC submits the O&M Expenses for FY 2017-18 after considering the escalation factor of 8% as per the methodology prescribed in Amended PPA as under:

**Table 3-6: O&M Expenses for FY 2017-18 (Rs. Crore)**

Sr. No.	Particulars		FY 2016-17
1.	Capital Cost of Project considered for O&M Expenses as per Amended PPA	a	1030.00
2.	O&M Expenses for first year @ 2.5% of Capital Cost	$b=a*2.5\%$	25.75
3.	Escalation rate	c	8.00%
4.	O&M Expenses	$d=b*((1+c)^{21})$	129.62



3.33 OPGC humbly request the Hon'ble OERC to approve O&M Expenses of Rs. 129.62 Crore for FY 2017-18.

**Summary of Annual Fixed Cost**

3.34 The Annual Fixed Cost proposed by OPGC for FY 2017-18 is summarised as under:

**Table 3-7: Annual Fixed Cost for FY 2017-18 (Rs. Crore)**

Sr. No.	Particulars	FY 2017-18
1.	Return on Equity	72.00
2.	Depreciation	0.00
3.	Interest on Loan Capital	0.00
4.	Interest on Working Capital	25.17
5.	O&M Expenses	129.62
6.	<b>Total Annual Fixed Cost</b>	<b>226.80</b>

3.35 OPGC humbly request the Hon'ble OERC to approve Annual Fixed Cost of Rs. 226.80 Crore for FY 2017-18.

**Operational Performance Parameters**

3.36 OPGC has considered the following Operational Performance parameters as under:

- (a) Plant Load Factor (PLF)
- (b) Gross Station Heat Rate
- (c) Secondary Fuel Oil Consumption
- (d) Auxiliary Energy Consumption

3.37 OPGC in Amended PPA signed with GRIDCO has agreed upon operational performance parameters. OPGC for computation of Energy charge for FY 2017-18 has considered the operational performance parameters as per provisions of Amended PPA.

**Plant Load Factor (PLF)**



- 3.38 As per Clause 3.0 (g) of Schedule II of the Amended PPA, full fixed charges will be paid to OPGC subject to adjustment provided OPGC achieves Actual Net Availability (AAN) within normal operating range of 68.49%.
- 3.39 As per Clause 3.0 (g) of Schedule II of the Amended PPA, the PLF applicable for computation of incentive shall be 80% .
- 3.40 During FY 2017-18, OPGC has proposed minor annual overhauling schedule for Unit 1 for 21 days and capital overhauling for Unit 2 for 35 days. OPGC has projected the PLF of 83.06% for FY 2017-18 as also declared to GRIDCO for their ARR purposes. Accordingly, OPGC proposes the Gross Generation of 3055.94 MU at projected PLF of 83.06% for FY 2017-18.
- 3.41 **Gross Station Heat Rate:** Gross Station Heat Rate of 2500 kCal/kWh has been considered as per the provisions of the approved Amended PPA.
- 3.42 **Secondary Fuel Oil Consumption** Secondary Fuel Oil Consumption of 3.5 ml/kWh has been considered as per the provisions of the approved Amended PPA.
- 3.43 **Auxiliary Consumption:** Auxiliary Consumption of 9.5% has been considered as per the provisions of the approved Amended PPA.
- 3.44 The Operational Performance parameters considered by OPGC are summarised as under:

**Table 3-8: Operational Performance Parameters for FY 2017-18**

Sr. No.	Particulars	Unit	FY 2017-18
1.	Plant Load Factor	%	83.06%
2.	Gross Generation	MU	3055.94
3.	Auxiliary Consumption	%	9.50%
4.	Net Generation	MU	2765.63
5.	Station Heat Rate	kcal/ kWh	2500



Sr. No.	Particulars	Unit	FY 2017-18
6.	Specific Fuel Consumption	ml/ kWh	3.50

**Fuel Cost**

3.45 At present, OPGC is meeting its requirement of Coal for Unit 1 and 2 under existing FSA with Mahanadi Coal Fields Limited (“MCL”) and proposes to meet its Coal requirement for FY 2017-18 from same source. Further, OPGC has not envisaged use of imported coal in FY 2017-18.

3.46 OPGC submits that Ministry of Environment and Forest (MoEF), Government of India, vide its Notification dated January 2, 2014 directed to use raw or blended or beneficiated coal with ash content not exceeding 34%, on quarterly average basis. The relevant extract is as under:

*“2. In the Environment (Protection) Rules, 1986, in rule 3, for sub-rule (8), the following sub-rule shall be substituted, namely :—*

*“(8) With effect from the date specified hereunder, the following coal based thermal power plants shall be supplied with, and shall use, raw or blended or beneficiated coal with ash content not exceeding thirty-four per cent, on quarterly average basis, namely :—*

*(a) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located beyond 1000 kilometres from the pit-head or, in an urban area or an ecologically sensitive area or a critically polluted industrial area, irrespective of its distance from the pit-head, except a pit-head power plant, with immediate effect;(emphasis added)*

3.47 Since, IB Thermal Power Station is situated in the critically polluted industrial area of IB Valley-Jharsuguda, the above said notification of MoEF is applicable to OPGC. After taking the cognizance of MoEF Notification, State Pollution Control Board, Odisha vide its letter dated May 2, 2015 has also directed OPGC to comply with the MoEF Notification.

3.48 As regards the quality of Coal supplied to OPGC, it is submitted that average ash content



of coal supplied during FY 2015-16 was 41.71% and 43.20% during April to October, 2016. Hence, in order to comply with MoEF Notification, OPGC has been following up with MCL for supply of beneficiated coal with ash content not exceeding 34%. It has been understood that MCL's washeries are not likely to come up in FY 2017-18 and price of such coal shall be applicable as and when applicable as per notifications of MCL.

- 3.49 In view of the above, it is noted the supply of beneficiated coal is not likely to be commenced in FY 2017-18. Hence, in the present Petition, OPGC has not considered the requirement of beneficiated coal in FY 2017-18. However, OPGC requests the Hon'ble OERC to allow the use of beneficiated coal, in order to comply MoEF notification dated February 2, 2014, as and when it commences and impact of price of such coal shall be allowed accordingly through Fuel Price Variation Adjustment mechanism.
- 3.50 Clause 7.0 of Schedule II of the existing PPA provides the computation of Fuel Cost. As per this clause, Gross Calorific Value and Price of Coal and Oil shall be considered as delivered to the Power Station.
- 3.51 For computation of the landed cost of fuel, OPGC has relied on the provisions of the Amended PPA. OPGC has considered the latest available actual weighted average price of Coal and Oil (for October 2016). LDO has been used for the operation of the plant and no actual Furnace Oil purchase was made. For computation of weighted average price of FO, price has been considered based on quotes received from supplier for the quantity equivalent to LDO. The fuel mix of FO and LDO has been considered in the ratio of 90:10.
- 3.52 OPGC submits that for computing the landed price of coal, it has considered the price of coal as billed by MCL.
- 3.53 The prices of Coal and Oil have been escalated by escalation factor of 7% (Actual growth in price from April to October, 2016) to arrive at Price of coal and Oil applicable as on April 1, 2017. The price of Oil has been considered as weighted average price of FO and



LDO in ratio of 90:10. Further, OPGC has considered weighted average Gross Calorific Value of Coal for the period from November 2015 to October 2016 (12 months). Gross Calorific value of Oil has been considered as 10,000 kCal/litre. GCV and Price of Coal and Oil considered for tariff computation is summarised below:

**Table 3-9: Price and Gross Calorific Value of Coal and Oil**

Sl. No.	Source of Coal	Projected as on April 1, 2017
1	Price of Coal (Rs. /MT)	1645.04
2	Price of Secondary Oil (Rs./kL)	29649.64
3	Gross Calorific Value of Coal (kCal/kg)	2629.10
4	Gross Calorific value of Secondary Oil (kCal/ltr.)	10000.00

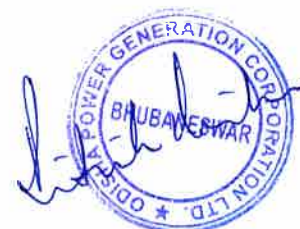
3.54 OPGC submits that an agreement has been entered into with MCL regarding appointment of agency for third party sampling of coal and GCV measurement wherein the cost incurred for the same shall be borne by OPGC and MCL in equal ratio. OPGC submits that such cost shall be claimed as a part of fuel cost as and when incurred.

### **Energy Charges**

3.55 OPGC has computed Energy Charge for FY 2017-18 as per Clause 7.0 of Schedule II of the Amended PPA. The computation of Energy Charge for FY 2017-18 is given in the Tables below:

**Table 3-10: Computation of Energy Charge for 2017-18**

Particulars	Unit	FY 2017-18
Auxiliary Consumption	%	9.50%
Gross Station Heat Rate	kCal/kWh	2500
GCV of Coal	kCal/kg	2629.10
GCV of Oil	kCal/kg	10000.00
Specific Coal Consumption	kg /kWh	0.94
Specific Oil Consumption	ml/kWh	3.50
Price of Coal	Rs. / MT	1645.04
Price of Secondary Oil	Rs. / MT	29649.64
Variable Charge for Coal	Rs./kWh	1.704
Variable Charge for Oil	Rs./kWh	0.115
Energy Charge	Rs./kWh	<b>1.819</b>



3.56 OPGC humbly request the Hon'ble OERC to approve Energy Charge of Rs. 1.819/kWh for FY 2017-18.

***Reimbursement of other charges***

3.57 Clause 11.0(vii) of the approved Amended PPA stipulates as under:

*“vii) Supplementary bills will be raised for the following.*

*a) Fuel price adjustment on half yearly basis*

*b) Incentive/disincentive at the end of year*

*c) Income Tax as per actual to be reimbursed as detailed in Para-6.0 of schedule – II*

*d) Any other charges/taxes etc.”*

3.58 Apart from the Annual Fixed Cost and Energy Charge, OPGC claims the following charges for reimbursement as per the provisions of the Amended PPA, which comprises of Incentive, Electricity duty reimbursement, rent and cess, SOC and MOC paid to SLDC, Establishment fund to EPRC, Water tax and Cess, Electricity Inspection fees, Ash Utilisation Expenses, Income tax and Fuel Adjustment Charges. OPGC submits the details of these charges in subsequent paragraphs.

3.59 **Incentive:** Incentive shall be charged as per Clause 4.0 of Schedule II of the Amended PPA, and shall be paid to OPGC by GRIDCO where the actual PLF in the financial year exceeds 80%. Incentive shall be calculated based on the following formula and shall be claimed at the end of the year.

Incentive (in Rs.) = Equity capital subject to maximum of 30% of the Project cost x 0.35 x (% PLF achieved during the year including deemed generation - 80%)/100

3.60 **Electricity Duty:** OPGC claims the electricity duty at Rs. 0.30 per unit on 9% auxiliary consumption of generation at 83.06% of PLF as under:

**Table 3-11: Electricity Duty for 2017-18**



Particulars	FY 2017-18
Gross Generation at 83.06% of PLF (MU)	3055.94
Auxiliary Consumption at 9% (MU)	275.03
Electricity Duty at Rs. 0.30 per unit (Rs. Crore)	8.25

- 3.61 **Water Cess and Water Charges:** OPGC claims the Water Cess of Rs. 0.20 Crore and Water Charges of Rs. 6.15 Crore, combined as Rs. 6.35 Crore, which is same as actually incurred in FY 2015-16.
- 3.62 **Tax and cess on land:** OPGC claims the tax and cess on land of Rs. 0.22 Crore, which is same as actually incurred in FY 2015-16.
- 3.63 **Electricity Inspection Fees:** OPGC claims the electricity inspection fees of Rs. 0.17 Crore which is same as actually incurred in FY 2015-16.
- 3.64 **System Operation Charges and Market Operation Charges for SLDC:** OPGC claims the amount of Rs. 0.35 Crore towards charges to be paid to SLDC for SOC and MOC as determined by Hon'ble OERC in its Order dated March 21, 2016 at Rs. 8259.57 per MW.
- 3.65 **ERPC Charges:** OPGC claims the ERPC charges of Rs. 0.16 Crore which is same as actually incurred in FY 2015-16.
- 3.66 **Income Tax:** As per the PPA, income tax shall be reimbursed to OPGC at actual. OPGC claims Rs. 38.11 Crore towards Income tax payment same as of FY 2015-16 on provisional basis, however, the Income Tax will be billed based on actual payment made.

**Ash Utilisation expenses:**

- 3.67 Ministry of Environment & Forest (MoEF), Government of India vide its Notification dated November 3, 2009 has directed to utilize 100% of total yearly ash generation by November 3, 2014, which is applicable to OPGC. Even though OPGC has been working with top priority to meet its Ash Utilization target by exploring various means of ash



utilization, but unfortunately the target remained far from reach due to availability of limited opportunities. Now, State Pollution Control Board, Odisha, and MoEF have been directing OPGC to take extra initiative to bring improvement in ash utilization. Some of the recent orders and directions issued from different enforcing authorities are as under:

- a) Government of Odisha formed a High Level Committee headed by Chief Secretary to increase ash utilization since this is a major environmental concern. The Committee has decided that Thermal Power Plants above 100 MW capacity are required to supply free ash within 100 km radius or to provide subsidy of Rs.150/- per tonne of fly ash to all ash brick plants and to all construction agencies using fly ash.
- b) State Pollution Control Board, Odisha vide their letter no. 1314/Ind-IV-PCP-FARC-01, dated January 20, 2015 directed OPGC to provide free transport of ash up to 100 km radius or provide a subsidy of Rs.150/- per tonne of ash to all the fly ash brick, tile or other fly ash based construction material manufacturing units and for use in road making. Subsequently, State Pollution Control Board, Odisha put special condition in the Consent to Operate of OPGC for FY 2015-16 to transport ash to the ash utilization points up to 100 km distance from IB Thermal Power Station, free of cost.

3.68 In this regard, OPGC has worked out various options to increase the utilisation of ash. The fly ash generated may be utilized in the field of construction of National Highway, Ash brick manufacturing, cement manufacturing, Asbestos manufacturing etc. Hence, ash needs to be provided to their location. It is proposed to extend subsidy at Rs. 150/MT to all ash off takers. Further, one of the methods of ash utilization is to fill the low lying area. Hence, there needs to be awareness through advertisement for ash utilization. Accordingly, OPGC claims the ash utilisation expenses of Rs. 5.17 Crore for FY 2017-18. This cost is inclusive of actual cost which was incurred in FY 2012-13, FY 2014-15 and FY 2015-16, and billed to GRIDCO but was not reimbursed to OPGC. The copies of bills have been annexed to the Petition.



### **Fuel Price Adjustment Charges**

3.69 The Clause 9.0 of Schedule II of the Amended PPA provides the mechanism for monthly fuel price adjustment for variation in price of fuel and gross calorific value of fuel against the base price and gross calorific value considered for computation of tariff. Based on the mechanism provided in the Amended PPA, OPGC proposes to compute Fuel Price Adjustment on actual variation in prices of Coal and Oil on monthly basis and claim such adjustments on half yearly basis.

### **Recovery of Tariff Petition fee**

3.70 Tariff Petition fee has been claimed as Rs. 0.21 Crore considering the specified fee of Rs. 5000/MW.

3.71 Apart from the above charges, OPGC, as per the terms and conditions of Amended PPA, is entitled to recover such additional charges from GRIDCO such as Boiler Inspection Fee, Factory Licence Fee, Stamping Fee of Water Flow Meter, Calibration Fee for Energy meter, Stamping Fee for test weight and in motion weigh bridge, Registration Fee for new fire tender, Coal Storage Licence Fee, Read Tax and Fitness Fee, VHF Licence Fee, etc. OPGC submits that these charges will be recovered during the year as and when it is incurred. OPGC humbly request the Hon'ble OERC to approve the recovery of these charges as and when it is incurred during FY 2017-18.

3.72 The other charges (provisional) claimed for reimbursement to OPGC are summarised in the following table:

**Table 3-12: Other Charges for 2017-18 (Rs. Crore)**

<b>Sr. No.</b>	<b>Particulars</b>	<b>FY 2017-18</b>
1.	Electricity Duty	8.25
2.	Water Cess and Water Charges	6.35
3.	Tax and Cess on land	0.22
4.	Electricity Inspection Fees	0.17
5.	SOC and MOC for SLDC	0.35



Sr. No.	Particulars	FY 2017-18
6.	ERPC Charges	0.16
7.	Income Tax	38.11
8.	Ash Utilisation expenses	5.17
9.	Recovery of Tariff Petition Fee	0.21
10.	<b>Total</b>	<b>58.98</b>

3.73 OPGC humbly request the Hon'ble OERC to approve other charges of Rs. 58.98 Crore for FY 2017-18.

***Summary of Generation Tariff for FY 2017-18***

3.74 The summary of Generation Tariff proposed for FY 2017-18 is as under:

**Table 3-13: Generation Tariff for 2017-18**

Sr. No.	Particulars	FY 2017-18	
		Rs. Crore	Rs./kWh
1.	Annual Fixed Cost	226.80	0.820
2.	Energy Charges	503.05	1.819
3.	<b>Tariff for Sale of Power</b>	<b>729.85</b>	<b>2.639</b>

3.75 OPGC humbly requests the Hon'ble OERC to approve Generation tariff for FY 2017-18 as mentioned in the above table and recovery of the tariff from GRIDCO as per the terms and conditions of Amended PPA. OPGC humbly requests the Hon'ble OERC to approve the other charges and the cost towards schemes for environment protection equipment installation claimed for reimbursement, as claimed in the Petition. OPGC humbly requests the Hon'ble OERC to consider reimbursement of the costs as incurred for maintaining consistent operation levels, as reimbursement under the tariff petition for 2017-18.



## 4 Prayers

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OPGC respectfully prays that the Hon'ble OERC may:

- i) Accept the Petition for Approval of Generation Tariff for Odisha Power Generation Corporation Ltd. for FY 2017-18 for supplying power to GRIDCO Ltd. from Units 1 & 2 of IB Thermal Power Station.
- ii) Approve the tariff, including annual fixed cost and variable charges, for supplying the power to GRIDCO Ltd. for FY 2017-18 as per the provisions of the Amended PPA executed between OPGC Ltd. and GRIDCO Ltd.
- iii) Approve the other charges to be paid by GRIDCO Ltd. as per the provisions of Amended PPA signed between OPGC Ltd. and GRIDCO Ltd.
- iv) Approve reimbursement of costs towards schemes for environment protection equipment installation incurred by OPGC Ltd. and its recovery through tariff of FY 2017-18 in accordance with Clause 10 of the Amended PPA and Clause 10.0 of Schedule II of the Amended PPA, executed between OPGC Ltd. and GRIDCO Ltd.
- v) Approve the costs incurred for the purpose of compliance with statutory requirements and other costs to maintain the efficient operation of the Project.
- vi) Approve the recovery of upward and downward variation in fuel prices and calorific value including fuel mix through Fuel Price Adjustment as per the provisions of Amended PPA between OPGC Ltd. and GRIDCO Ltd.
- vii) Condone any inadvertent omissions, errors, short comings and permit OPGC Ltd. to add/ change/ modify/ alter this filing and make further submissions as may be required at a future date; and
- viii) Pass such other and further Orders as deemed fit and proper in the facts and circumstances of the case.

Bhubaneswar

November 29, 2016



**Checklist of Forms and other information/ documents for tariff filing for**

Name of Utility / Company: Odisha Power Generation Corporation Limited

Form No.	Title of Tariff Filing Form	Tick
Form 1.1	Summary of Tariff Proposal(Thermal)	√
Form 1.2	Summary of Tariff Proposal(Hydro)	NA
Form 2.1	Plant Characteristics	√
Form 2.2	Details of COD, Type of hydro station, Capacity Index, Primary energy rate	NA
Form 2.3	Salient Features of Hydroelectric Project	NA
Form 3.1	Planned & Forced Outages	√
Form 4.1	Revenue from Sale of Power (Previous year actual)	√
Form 5.1	Non Tariff Income	√
Form 6.1	O&M Expenses	√
Form 6.2	Fixed Assets and Depreciation	NA
Form 6.3	Calculation of Interest on Loans	√
Form 6.4	Calculation of Interest on Working Capital Loan	√
Form 7.1 ( C )	Details/Information to be Submitted in respect of Fuel for Computation of Energy Charges for FPA(Coal)	√
Form 7.1 ( O )	Details/Information to be Submitted in respect of Fuel for Computation of Energy Charges for FPA(Oil)	√
Form 7.2	Energy Charges for Thermal Generation	√
Form 8.1	Break-up of Capital Cost for Coal based projects	NA
Form 8.2	Break up of Capital cost for hydro power generating station	NA
Form 8.3	Break up of Capital Cost for Plant & Equipment(Hydro)	NA
Form 8.4	Statement of cost towards schemes for environment protection equipment installation	√
Form 8.5	IDC Planned and actual	NA
Form 8.6	Details of Foreign loans / Equity	NA
Form 8.7	Deign energy and peaking capabilty (monthwise)- ROR with Pondage/Storgae type new stations	NA
Form 8.8	Deign energy and MW Continuous (monthwise)- ROR type new stations	NA
Form 9	Other Charges	√
<b>NA- Not Applicable</b>		
<b>Other Information/ Documents</b>		
Sl. No.	Information/Document	Tick
1	Certificate of incorporation, Certificate for Commencement of Business, Memorandum of Association, & Articles of Association ( For New Station setup by a company making tariff application for the first time to OERC)	NA
2	Stationwise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures on COD of the Station or the new station for the relevant vears.	√
3	Copies of relevant loan Agreements	NA
4	Copies of the approval of Competent Authority for the Capital Cost and Financial package.	NA
5	Copies of the Equity participation agreements and necessary approval for the foreign equity.	NA
7	Copies of the BPSA/PPA with the beneficiaries, if any	NA
8	Detailed note giving reasons for time and cost over run, if applicable.	NA
9	Details of SBI Base rate taken for calculation	NA
10	Any other relevant information, in any to be specified	√

Note: Electronic copy in the form of CD/Floppy disc shall also be furnished.



## Form 1.1

## Summary of Tariff Proposal (Generation Thermal)

Name of the Utility / Company : Odisha Power Generation Corporation Limited

Name of the Thermal Power Station: IB Thermal Power Station

(Rs. In Crore)

S.No.	Particulars	Reference	FY 2017-18
			4
1	2	3	
<b>A</b>	<b>Fixed Charge</b>		
1	O & M Expenses	Form 6.1	129.62
2	Depreciation	Form 6.2	0.00
3	Interest on Term Loans & Fin. Charges	Form 6.3	0.00
4	Interest on Working Capital Loans	Form 6.4	25.17
5	Recovery of ARR & Tariff Petition Fees*(included in Other Charges)		0.00
6	Return on Equity		72.00
7	<b>Total Fixed Charge</b>		<b>226.80</b>
8	Less: Non-Tariff Income	Form 5.1	0.00
9	<b>Net Fixed Charge</b>		<b>226.80</b>
<b>B</b>	<b>Variable Cost</b>	Form 7.2	503.05
<b>C</b>	<b>Other Charges</b>	Form 9	58.98
<b>D</b>	<b>Reimbursement of cost towards schemes for environment protection equipment installation</b>	Form 8.4A	66.41
<b>E</b>	<b>Reimbursement of cost towards schemes essential for continous operation of the station</b>	Form 8.4B	30.10
<b>F</b>	<b>Total Cost</b>		<b>885.33</b>
<b>G</b>	<b>Unit Sold to Discoms in MU</b>	Form 7.2	2765.63
<b>H</b>	<b>Rate of Fixed Charge(Paisa/kwh)</b>		82.01
<b>I</b>	<b>Rate of Variable Charge(Paisa/kwh)</b>	Form 7.2	181.89
<b>J</b>	<b>Rate of Sale of Energy (Paisa./kwh)</b>		263.90



**Revenue from Sale of Power (2017-18 Estimated)**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

FORM-4.1

Name of the Thermal Power Station: IB Thermal Power Station

Year Ending March 2018

Sl. No.	Particulars	Reference	Allocation	Unit Sold	% of total	Demand/ Fixed Charges	Energy Charges	Fuel & cost adjustment charges		Total	Average Rate (paise/kWh)
			(in % )/ contract demand								
1	2	3	4	5	6	7	8	9		10=7+8+9	11
1	Revenue from sale of Electricity (as per proposed tariff)		100%	2765.63	100%	226.80	503.05	0.00		729.85	263.90
1.1	GRIDCO		100%	2765.63	100%	226.80	503.05	0.00		729.85	263.90
5	Net revenue					<b>226.80</b>	<b>503.05</b>	<b>0.00</b>	<b>0.00</b>	<b>729.85</b>	<b>263.90</b>



**Plant Characteristics (Generation)**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

FORM 2.1

Name of the Thermal Power Station: IB Thermal Power Station

<b>Basic characteristics of the plant<sup>1</sup></b>	420 MW subcritical once through steam genertaor		
<b>Special Features of the Plant</b>			
<b>Site Specific Features<sup>2</sup></b>	MGR of 7 Km, Intake channel from Mahanadi Coalfields Limited		
<b>Special Technological Features<sup>3</sup></b>			
<b>Environmental Regulation related features<sup>4</sup></b>	ESP upgradation work completed in Units 1 & 2		
<b>Any other special features</b>			
<b>Fuel Details<sup>5</sup></b>	Primary Fuel	Secondary Fuel	Alternate Fuels
	COAL	LDO& HFO	
<b>Details</b>	<b>Module number or Unit number</b>		
1	2	3	4
	Unit # 1	Unit # 2	Unit # 3
Installed Capacity (IC) MW	210	210	NA
Date of Commercial Operation (COD)	1994	1996	NA
Type of cooling system <sup>6</sup>	Closed Circuit Cooling		
Type of Boiler Feed Pump <sup>7</sup>	Motor Driven		
Pressure (kg/cm2)			
Temperature 0C			
-At Superheater Outlet			
-At Reheater Outlet			
<b>Guaranteed Design Heat rate (kCal/kWh)<sup>8</sup></b>			
<b>Conditions on which guaranteed</b>			
% MCR			
% Makeup			
Design Fuel			
Design cooling water Temperature			
Back Pressure			

<sup>1</sup> Describe the basic characteristics of the plant e.g. in the case of a coal based plant whehter it is a conventional steam generator or circulating fludized bed combustion generator or sub-critical once through steam generator etc.

<sup>2</sup> Any site specific feature such as Merry-Go-Round, Vicinity to sea, Intake /makeup water systems etc. scrubbers etc. Specify all such features.

<sup>3</sup> Any Special Technological feature like Advanced class FA technology in Gas Turbines, etc.

<sup>4</sup> Environmental regulation related features like FGD, ESP etc.

<sup>5</sup> Coal , oil etc.

<sup>6</sup> Closed circuit cooling, once through cooling, sea cooling etc.

<sup>7</sup> Motor driven, Steam turbine driven etc.

<sup>8</sup> In case guaranteed unit heat rate is notavailable then furnish the guaranteed turbine cycleheat rate and guaranteed boiler efficiencysseparately along with condition of guar



**Planned & Forced Outages**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

FORM-3.1

Name of the Thermal Power Station: IB Thermal Power Station

Year Ending March 2018

(Rs. In Crore)

S.No.	Particulars	Reference	2017-18
	<b>1</b>	<b>2</b>	<b>9</b>
	<b>1</b>	<b>Unit 1</b>	
	<b>A.</b>	<b>Planned Outages</b>	
		No of days of outage	21
		Number of Outage	1
		Reasons for Outage	Annual Overhauling
	<b>B.</b>	<b>Forced Outages</b>	
		No of days of outage	2.29
		Number of Outage	11
		Reasons for Outage	Forced outage
	<b>2</b>	<b>Unit 2</b>	
	<b>A</b>	<b>Planned Outages</b>	
		No of days of outage	35
		Number of Outage	1
		Reasons for Outage	Capital Overhauling
	<b>B</b>	<b>Forced Outages</b>	
		No of days of outage	2.29
		Number of Outage	11
		Reasons for Outage	Forced outage



<b>Non-Tariff Income</b>		<b>FORM-5.1</b>
<b>Name of the Utility / Company : Odisha Power Generation Corporation Limited</b>		
<b>Name of the Thermal Power Station: IB Thermal Power Station</b>		<b>Year Ending March 2018</b>

S.No.	Particulars	Reference	FY 2017-18
			1
A)	<b>Other Non tariff income</b>		
1	Int. on loans and advances to employees		0
2	Int. and other income from investments and deposits		0
3	Income from sale of scrap		0
4	Int. on subvention received from govt.		0
5	Income from sale of power to its staff		0
6	Income from sale of ash		0
7	Miscellaneous receipts		0
	<b>Total</b>		<b>0.00</b>

\* Non-Tariff Income is not applicable as per Bulk Supply Agreement signed between OPGC and GRIDCO



**O&M Expenses**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

FORM 6.1

Name of the Thermal Power Station: IB Thermal Power Station

S.No.	Particulars	Units	FY 2017-18
1	O&M Expnese norms for Unit (per MW)	Rs. Cr.	-
2	No of Units	No.	2
3	O&M expense in Rs. Cr	Rs. Cr.	129.62
4	Allocation of corporate O&M Expense %	%	0.000
5	Allocation of corporate O&M Expense in Rs. Cr	Rs. Cr.	0.000
6	<b>Total O&amp;M expense</b>	<b>Rs. Cr.</b>	<b>129.62</b>

**O&M Expenses Computation for OPGC**

S.No.	Particulars	Units	FY 2017-18
1	Capital Cost of Project considered for O&M Expenses as per Amended PPA	Rs. Cr.	1030.00
2	O&M Expenses for first year @ 2.5% of Capital Cost	Rs. Cr.	25.75
3	Escalation rate	%	8%
4	<b>O&amp;M Expenses</b>	<b>Rs. Cr.</b>	<b>129.62</b>



FORM- 6.3

## Calculation of Interest on Loans

Name of the Utility / Company : Odisha Power Generation Corporation Limited

Name of the Thermal Power Station: IB Thermal Power Station

(Rs. in Crore)

Sl. No	Particulars	2017-18
1	2	3
A	<b>Total Loan</b>	
1	Gross loan - Opening	610
2	Cumulative repayments of Loans upto previous year	610
3	Net loan - Opening	0
4	Receipts during the year	0
5	Repayment during the year	0
6	Net loan - Closing	0
7	Average Net Loan	0
8	Rate of Interest on Loan	0
9	Interest on loan	0
10	Add : Finance Charges	0
11	Less: Interest During Construction	0
12	<b>Total Interest on Loan</b>	<b>0</b>

<sup>1</sup> In case of Foreign Loans, the calculations in Indian Rupees is to be furnished. However, the calculations in Original currency is also to be furnished separately in the same form.



FORM-6.4

## Calculation of Interest on Working Capital Loan

Name of the Utility / Company: Odisha Power Generation Corporation Limited

Name of the Thermal Power Station: IB Thermal Power Station

(Rs. In Crore)

Sl. No.	Particulars	Norms considered	2017-18
1	Coal Cost ( Non pit head)	-	
2	Coal Cost ( Pit head)	1.5 months	48.58
3	Sec.Fuel Oil	2 months	4.36
4	Liquid Fuel Stock	-	
5	O & M expenses	1 month	10.80
6	Maintenance Spares	-	
7	Recievables	2 months	106.93
8	<b>Working capital Loan Requirement</b>		<b>170.68</b>
9	Rate of Interest		14.75%
10	Interest on Working Capital		25.17

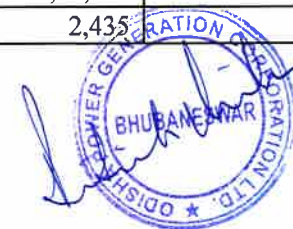


**Details/Information to be Submitted in respect of Fuel for Computation of Energy Charges for FPA**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

Name of the Thermal Power Station: IB Thermal Power Station

S.No	Month	Unit	Aug-16	Sep-16	Oct-16
			Domestic coal	Domestic coal	Domestic coal
1	2	3	6	8	10
1	Quantity of coal in stock at the beginning of the month	(MMT)	1,39,884	1,18,396	87,277
2	Quantity of Coal supplied by Coal Company	(MMT)	2,32,793	2,21,962	2,39,015
3	Adjustment (+/-) in quantity supplied made by Coal Company for diversion of wagons etc.	(MMT)	-	-	-
4	Coal supplied by Coal Company (2+3)	(MMT)	2,32,793	2,21,962	2,39,015
5	Normative Transit & Handling Losses (For coal based Projects)	(MMT)			-
6	Net coal Supplied (4-5)	(MMT)	2,32,793	2,21,962	2,39,015
7	<b>Total coal (Receipts &amp; Opening Stock) (1)+(6)</b>	(MMT)	3,72,677	3,40,358	3,26,292
8	<b>coal burnt/consumed</b>	(MMT)	2,54,281	2,53,081	2,55,976
9	<b>Coal in stock at the end of the month</b>	(MMT)	1,18,396	87,277	70,316
10	<b>Value of coal in stock (Landed cost of 1)op.stock</b>	(Rs.)	2127,35,754	1814,47,341	1341,57,679
11	<b>Value of coal (Receipt)</b>	(Rs.)	3584,09,990	3417,34,709	3679,90,002
12	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	-
13	<b>Total amount Charged (11+12)</b>	(Rs.)	3584,09,990	3417,34,709	3679,90,002
14	Transportation charges by rail/ship/road transport	( Rs.)	-	-	-
15	Adjustment (+/-) in amount charged made by Railways/Transport Company	( Rs.)	-	-	-
16	Demurrage Charges, if any	( Rs.)	-	-	-
17	Cost of diesel in transporting coal through MGR system, if applicable	( Rs.)	-	-	-
18	<b>Total Transportation Charges (14+/-15+16+17)</b>	( Rs.)	-	-	-
19	<b>Total amount Charged for coal supplied including Transportation (13+18)</b>	( Rs.)	3584,09,990	3417,34,709	3679,90,002
20	<b>Average cost of coal (Opening stock + receipts) (19+10)/7</b>	(Rs/MMT)	1,533	1,537	1,539
21	<b>Cost of coal in stock at the end of the month (20)x(9)</b>	(Rs.)	1814,47,341	1341,57,679	1082,12,927
22	<b>Weighted average GCV of coal as fired</b>	(kCal/Kg)	2,622	2,435	2,544



**Details/Information to be Submitted in respect of Fuel for Computation of Energy Charges for FPA**

Name of the Utility / Company : Odisha Power Generation Corporation Limited

FORM-7.1 ( O )

Name of the Thermal Power Station: IB Thermal Power Station

S.NO	PARTICULARS	Unit	Aug-16		Sep-16			Oct-16	
			FO	LDO	FO	HSD	LDO	FO	LDO
1	Quantity of Sec. Fuel oil(FO, HSD,LDO) in stock at the begning of the month	KL	434	434	502	108	502	480	480
2	Quantity of Sec. Fuel oil(FO, HSD,LDO) supplied by company	KL							
3	Adjustment (+/-) in quantity of Sec. Fuel oil(FO, HSD,LDO) supplied by company	KL		0			0	0	0
4	Gross Oil(FO, HSD,LDO) supplied by company(2+3)	KL	68	68	56	54	56	21	21
5	Normative/Transit Loss	KL	0	0	0		0	0	0
6	Net Oil(FO, HSD,LDO) supplied by company(4-5)	KL	68	68	56	54	56	21	21
7	Total oil receipt & in stock (1+6)	KL	502	502	558	162	558	501	501
8	Total Oil Consumed	KL	0	0	79	23	79	90	90
9	Oil in stock at the end of month	KL	502	502	480	139	480	410	410
10	Value of oil in stock (Landed cost of 1)OP STOCK	RS	11320504	17004211	13090591	5026766	19546735	12653198	18724088
11	Value of FO,HSD,LDO(Purchase)	RS	1770086	2542524	1639437	2519457	2250633	605589	785191
12	Adjustment (+/-) in Amount charged by company	RS	0	0	0		0	0	0
13	Total amount charged(11+12)	RS	1770086	2542524	1639437	2519457	2250633	605589	785191
14	Transportation charges	RS	0	0	0		0	0	0
15	Adjustment (+/-) in Transportation charges	RS	0	0	0		0	0	0
16	Demmorage charges if any	RS	0	0	0		0	0	0
17	Cost of diesel in transporting oil through MGR System if applicable	RS	0	0	0		0	0	0
18	Total Transportation charges(14+15+16+17)	RS	0	0	0		0	0	0
19	Total amount charged for oil including Transportation(13+18)	RS	1770086	2542524	1639437	2519457	2250633	605589	785191
20	Avarage cost of oil(in stock+receipt)	RS./KL	26056	38906	26379	46713	39035	26482	38966
21	Cost of Oil in stock at the end of month	RS	13090591	19546735	12653194	6477233	18724088	10862704	15983629
22	WTG AVG GCV of oil fired	(Kcal/ltr)	10000	10000	10000	10000	10000	10000	10000



Energy Charges for Thermal Generation				
Name of the Utility / Company : Odisha Power Generation Corporation Limited			FORM-7.2	
Name of the Thermal Power Station: IB Thermal Power Station				
Year Ending March 2018				
Particulars	Units	Reference	FY 2017-18	
			At normative level	At projected PLF
<b>Operational Parameter</b>				
<b>Number of Units</b>				
Upto 250 MW			2	2
More than 250 MW			0	0
Total Capacity	MW		420	420
Availability	%		68.49%	87.88%
PLF	%		68.49%	83.06%
Gross Generation	MU		2519.88	3055.94
Auxiliary Energy Consumption	%		9.50%	9.50%
Auxiliary Energy Consumption	MU		239.39	290.31
Net Generation	MU		2280.50	2765.63
Heat Rate	kcal/kwh		2500	2500.00
Fly Ash Utilization	%			50%
Other By product utilization (with List)	%			-
<b>Fuel Parameters</b>				
<b>Calorific Value for Different Fuels</b>				
Domestic Coal -MCL	kcal/Kg	From 7.1 ( C )	2629.10	2629.10
Secondary Fuel Oil	kcal/Ltr.	From 7.1 ( O )	10000.00	10000.00
<b>Landed Fuel Price for different fuels</b>				
Domestic Coal -MCL	Rs/MT	From 7.1 ( C )	1645.04	1645.04
Secondary Fuel Oil	Rs/KL	From 7.1 ( O )	29649.64	29649.64
<b>Specific Fuel Consumption</b>				
Domestic Coal -MCL	Kg/kWh		0.94	0.94
Secondary Fuel Oil	ml/kWh		3.50	3.50
<b>Total Fuel Consumption</b>				
Domestic Coal -MCL	MT		2362599.34	2865199.31
Secondary Fuel Oil	KL		8819.59	10695.80
<b>Heat Content (each fuel separately)</b>				
Domestic Coal -MCL	Million kcal		6211514.26	7532900.78
Secondary Fuel Oil	Million kcal		88195.94	106958.02
<b>Total</b>	Million kcal		<b>6299710.20</b>	<b>7639858.80</b>
<b>Total Fuel Cost</b>				
Domestic Coal -MCL	Rs Crore		388.66	471.34
Secondary Fuel Oil	Rs Crore		26.15	31.71
Total fuel Cost			<b>414.81</b>	<b>503.05</b>
<b>Other Charges and Adjustments</b>				
Other Charges FOR WATER CESS & WATER CONSUMPTION*	Rs Crore	As per actual	0.00	0.00
Other Adjustments	Rs Crore		0.00	0.00
<b>Total Cost</b>	<b>Rs Crore</b>		<b>414.81</b>	<b>503.05</b>
Cost of Generation per unit ( Coal +oil+water)			1.646	1.646
Energy Charges per unit			1.819	1.819

\* Separately considered under Other Charges



**Statement of cost towards schemes for environment protection equipment installation**

Name of the Utility / Company : Odisha Power Generation Corporation ]

FORM-8.4A

Name of the Thermal Power Station: IB Thermal Power Station

Cost in Rs. Crores

Sl.No.	Scheme	Actual expenditure incurred					Projected expenditure		Total
		FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	
1	Ambient air monitoring system	0.41	0.39	-	-	1.13	-	-	1.92
2	Effluent Monitoring System	-	-	-	-	0.12	-	-	0.12
3	ESP upgradation	-	-	12.69	-	21.56	6.00	-	40.25
4	Zero Effluent Discharge	-	-	-	-	-	0.15	-	0.15
5	HDPE lining in Ash Pond C	-	-	-	-	-	17.52	-	17.52
6	Dry Fog Dust suppression system	-	-	-	-	0.28	1.60	1.12	3.00
7	Dry fly ash handling system	-	3.45	-	-	-	-	-	3.45
	<b>Total</b>	<b>0.41</b>	<b>3.84</b>	<b>12.69</b>	<b>0.00</b>	<b>23.08</b>	<b>25.27</b>	<b>1.12</b>	<b>66.41</b>

\*Justification has been submitted in the Petition



**Statement of cost towards schemes essential for continuous operation of station**

Name of the Utility / Company : Odisha Powe

**FORM-8.4B**

Name of the Thermal Power Station: IB Ther

Cost in Rs. Crores

Sl.No.	Scheme	Actual expenditure incurred			Projected expenditure	Total
		FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	
1	Raising of height of Ash Pond-A from RL 202 m to 205 m	3.15	1.55	0.25		4.95
2	Raising of height of Ash Pond-A from RL 205 m to 208 m			2.61	1.08	3.69
3	Construction of Ash Pond C				17.72	17.72
4	Modification of Pressure Reducing and Distributed System (PRDS)		0.21	3.53		3.74
	<b>Total</b>	<b>3.15</b>	<b>1.76</b>	<b>6.39</b>	<b>18.80</b>	<b>30.10</b>



**FORM- 9****Other Charges****Name of the Utility / Company : Odisha Power Generation Corporat****Name of the Thermal Power Station: IB Thermal Power Station****(Rs. in Crore)**

<b>Sl. No</b>	<b>Particulars</b>	<b>2017-18</b>
<b>1</b>	<b>2</b>	<b>3</b>
1	Electricity Duty	8.25
2	Water Cess and Water Charges	6.35
3	Tax and Cess on land	0.22
4	Electricity Inspection Fees	0.17
5	SOC and MOC for SLDC	0.35
6	ERPC Charges	0.16
7	Income Tax	38.11
8	Ash Utilisation expenses	5.17
9	Recovery of ARR and Tariff Petition Fees	0.21
10	Total	58.98



**List of Annexures**

<b>Annexure</b>	<b>Description</b>
I	Copy of Audited Annual Accounts for FY 2015-16
II	Copy of Ministry of Environment and Forest (MoEF), Government of India, Notification dated January 2, 2014 regarding use of washed coal
III	Copy of Ministry of Environment & Forest (MoEF), Government of India Notification dated November 3, 2009 regarding ash utilization
IV	Copy of Minutes of Meeting of High Level Committee formed by Government of Odisha, regarding ash utilisation
V	Copy of State Pollution Control Board, Odisha, letter dated January 20, 2015 to OPGC Ltd. for directives regarding ash utilisation
VI	Copy of State Pollution Control Board, Odisha, letter dated June 4, 2015 to OPGC Ltd. for directives regarding ash utilisation
VII	Copies of Work Orders
VIII	Copies of bills raised on GRIDCO for the cost incurred towards schemes for environment protection equipment installation
IX	Documentary evidence for rate of interest on working capital
X	Copy of Year End Adjustment Bill raised on GRIDCO for FY 2015-16
XI	Fuel Prices and GCV from April to October, 2016