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To,

Lt No: APNRL/CERC/FY23-24/31

**Dt: 31.07.2023**

**Harpreet Singh Pruthi**

**(Secretary- CERC)**

**Sub: Comments/Suggestions on "Approach Paper on TERMS AND CONDITIONS OF TARIFF REGULATIONS, 2024 for the tariff period from 1.4.2024 to 31.3.2029"**

Dear Sir,

This is in reference to the public notice issued by CERC seeking comments on "Approach Paper On TERMS AND CONDITIONS OF TARIFF REGULATIONS, 2024 for the tariff period from 1.4.2024 to 31.3.2029" having reference no: No. L-1/268/2022/CERC dated 26.05.2023 inviting comments/suggestions on the same.

APNRL is pleased to share its comments/suggestions on the same. We request the Hon'ble Commission to allow us to submit additional comments, if any, by 15th August 2023. We further request the Hon'ble Commission to grant an opportunity to all stakeholders to share their views by conducting a public hearing on the above matter.

Yours Sincerely,

Adhunik Power & Natural Resources Ltd.

**Amit Griwan**

**DGM**

Power Trading & Business Development

Adhunik Power & Natural Resources Ltd.

# Annexure-A

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# 1. Comments / Suggestions on the Approach Paper

## I. Background

APNRL (herein after as "APNRL") is a company incorporated under the provisions of the Indian Companies Act, 1956 having its registered office at 5th Floor, Lansdowne Towers, 2/1A Sarat Bose Road, Kolkata- 700020.. APNRL being a generating company within the meaning of section 2 (28) of the Electricity Act, 2003 ("EA 2003") is submitting the comments / suggestion on the approach paper. The APNRL had developed 540 MW (2x270 MW) coal based thermal power plant situated at Padampur and Srirampur in Seraikela-Kharsawan district in the State of Jharkhand. The Unit-1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. The Unit-2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

The APNRL had entered into Four long term PPA, which is as follows:

- JBVNL- 122.85MW under Sec.62 of EA 2003
- JBVNL- 66MW under Sec.62 of EA 2003
- PTC-TANGEDCO – 100MW under Sec.63 of EA 2003
- PTC-WBSEDCL – 100MW under Sec.62 of EA 2003

## II. Comments on Approach Paper

APNRL has been operating under the Regulated Tariff regime and submits that the alternative approach for Generation Tariff Determination. However, these are certain aspects that needs further deliberation for the benefit of all stakeholders. This will provide clarity on the regulatory principles that will sense as guidance for the tariff mechanism.

## 2. Ensuring recovery of full capacity charges

Within the country, a number of thermal power stations are obligated to supply a part of their capacity only on a variable charge to the home state without getting any assured long-term fuel support from the home state. A list of some such stations is provided below:

***Table 1:List of thermal plants having obligation to provide some share of its net capacity only on variable charge***

| S.no | Station | State | Case |
|---|---|---|---|
| 1 | Adhunik Power and Natural Resource Ltd. | Jharkhand | 12% net capacity only on a variable cost |
| 2 | Inland Power Ltd. | Jharkhand | 12% net capacity only on a variable cost |
| 3 | Lanco Amarkantak Pvt. Ltd. | Chhattisgarh | 5% net capacity only on a variable cost |
| 4 | DB Power | Chhattisgarh | 5% net capacity only on a variable cost |
| 5 | Vedanta Ltd. (Jharsuguda) | Odisha | 5% / 7% net capacity only on a variable cost |
| 6 | JITPL (Jindal India Thermal Power Ltd.) | Odisha | 12% power at variable cost |

In this regard, APNRL submits as follows:

a. APNRL had signed the Memorandum of Understanding (MoU) with the Government of Jharkhand in October 2005 for the development of a coal-based thermal power plant. According to the provisions of the MoU and its extension, the Government of Jharkhand or authorized Distribution Licensees have the first right to claim the purchase of up to 25% of the power delivered by the power station. Additionally, the extension of the MoU required the Government of Jharkhand to seek a policy decision from the Government of India for the arrangement of making 12% of the total power generated by the Petitioner available to the state at a variable cost.

b. As per the terms of the MoU and its extension, the Jharkhand State Electricity Board (JSEB) is purchasing 25% of the power delivered to the system. Out of this, 12% of the total net power generation is made available to the state at a variable cost. Considering the normative auxiliary consumption of 9%, the net capacity of the plant is determined to be 491.4 MW (i.e.,540 MW-9% of 540 MW). The relevant excerpt from the MoU is reproduced herein below:

*"1 The parties hereto agree and confirm that the validity period of the MoU dated 31st October 2006 with the following additional clauses.*

*"10.5 ATEL further understands that the Government of Jharkhand has moved Government of India for the following policy support; namely:-*

*(a) A policy decision through suitable arrangements for making available to state 12% of the total power generated at variable cost by ATEL operating within its territory."*

The Copy of MoU and subsequent extension is herein attached as Annexure-1

c. The aforementioned provision contained within the Memorandum of Understanding (MoU) is considered as an important condition precedent for the establishment of the plant within the jurisdiction of Jharkhand state. As per APNRL it can recover its capacity charge from remaining 88% of total net capacity i.e., 432.432 MW [88% of 491.4 MW]. The said consideration has further been provided in the PPA dated 28.12.2012 signed between the APNRL and JBVNL, which states as follows:

*"3.1(ii)**The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC** in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time**. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".*** **(Emphasis Supplied)**

Accordingly, the APNRL is recovering certain portion of its capacity charge from net saleable capacity of 432.43 MW from contracted capacity of 63.882 MW (122.85MW-

12% of 491.4MW). However, APNRL has entered into two long-term Power Purchase Agreements (PPAs) with other state DISCOM as follows:

a) PTC-TANGEDCO – 100MW under Sec.63 of EA2003

b) PTC-WBSEDCL – 100MW under Sec.62 of EA 2003

The APNRL requires the Tariff Regulations to address the aspect that a generating station like APNRL can recover the fixed cost pertaining to 13% supply of power to Jharkhand from its other PPAs, which are outside its home state . The same can be compared with provisions for hydroelectric plants, where 12% of free power is mandated to be provided to the home state and full capacity charge is recoverable from the remaining available power capacity, which amounts to 88% (100% - 12%), and same has been stated in the CERC Tariff Regulation 2019.

*"(1) The fixed cost of a hydro generating station shall be computed on annual basis, based on norms specified under these regulations, and shall be recovered on monthly basis under capacity charge (inclusive of incentive) and energy charge,* ***which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station, i.e., in the capacity excluding the free power to the home State:"***

On the similar grounds, we request this Hon'ble Commission to specifically provide the following provisions in the Tariff Regulations for Thermal Power Projects suggesting that *"the station be allowed to recover the capacity charges from the balance capacity across all other long term PPAs."*

It may be appreciated that as per Tariff norms, the generator is allowed to get 15.5% RoE on its investments. However, assuming a situation where APNRL is not able to recover the fixed charges from other long term PPAs, the same will lead to deterioration in financial health.

APNRL is supplying the power to Jharkhand since FY 2013-14. From FY 2013-14 to FY 2019-20 (Upto FY 2019-20 has been trued-up by the Hon'ble Jharkhand State Regulatory Commission, the orders are attached as Annexure 1a herein), APNRL had incurred the loss of Rs. 647.74 Crore as delivering the 12% of net capacity only on variable charges, which means on an average the loss of Rs. 92.53 Crore per year has been incurred by the APNRL due to aforesaid reason, the computation of the loss is depicted below and same is attached as Annexure 1b:

***Table 2: Loss in fixed cost recovery due to supply of 12% of net capacity only on variable charges.***

| SL No | Particulars | Derivation | Values (In Rs. Crore) |
|---|---|---|---|
| 1 | Recovery of Fixed Cost from FY 2013-14 to FY 2019-20 (in case capacity charge is recoverable from full contracted capacity i.e., 188.85 MW) | | 1538.36 |
| 2 | Actual Recovery of Fixed Cost from FY 2013-14 to FY 2019-20 (After net off 12% of total net capacity only on variable charges) | | 935.62 |
| 3 | Total Loss Incurred (From FY 2013-14 to FY 2019-20) | (1)-(2) | (647.74) |
| 4 | Average Loss Incurred per year | | (92.53) |

(Note: The Hon'ble Jharkhand State Electricity Regulatory Commission had approved the fixed cost for the Petitioner from FY 2013-14 to 2019-20 through various orders, attached as **Annexure-1a**)

The average loss incurred by the APNRL resulting in further depletion of actual RoE.

The abovementioned loss is only recoverable when the capacity charge is recoverable from balance available capacity (i.e., 88% of net capacity) from other state (other than home state). Otherwise, the viability of the project becomes a questionable affair.

## 3. Allow discount offered under SHAKTI Scheme as a pass through in tariff

The Ministry of Coal (MoC), under the SHAKTI (Scheme to Harness and Allocate Koyla Transparently in India), has effectively established a mechanism for the allocation of coal linkages to power plants lacking fuel supply agreements (FSAs) through coal auctions. This policy implementation can be construed as the promulgation of an Indian law, thereby as per the CERC Tariff Regulation 2019, SHAKTI Scheme can be considered as a "Change in Law."

*"10) 'Change in Law' means occurrence of any of the following events:*

***(a) enactment, bringing into effect or promulgation of any new Indian law; or***

*(b) adoption, amendment, modification, repeal or re-enactment of any existing Indian law; or*

*(c) change in interpretation or application of any Indian law by a competent court, Tribunal or Indian Governmental Instrumentality which is the final authority under law for such interpretation or application; or*

*(d) change by any competent statutory authority in any condition or covenant of any consent or clearances or approval or licence available or obtained for the project; or*

*(e) coming into force or change in any bilateral or multilateral agreement or treaty between the Government of India and any other Sovereign Government having implication for the generating station or the transmission system regulated under these regulations."*
**(Emphasis Supplied)**

In the matter of Maharashtra State Electricity Distribution Company Limited Vs Adani Power Maharashtra Limited and another, the Hon'ble Supreme Court of India has also deemed the SHAKTI scheme as a "Change in Law". The relevant excerpt from the judgement of the Hon'ble Supreme Court of India is reproduced herein below and attached as Annexure-2 as well.

*"22. It can thus be seen that this Court has held that if there is a Change in any consent, approval or licence available or obtained for the project, otherwise than for the default of the seller, which results in any change in any cost of the business of selling electricity, then the said seller will be governed under Clause 13.1.1 of the PPA. As already discussed hereinabove, this Court has consistently held that modification to NCDP 2007 by the communication dated 31st July 2013 would amount to Change in Law and the generating companies would be entitled to compensation on account of such Change in Law.* ***Undisputedly, SHAKTI Policy also reduces the ACQ as was assured under the 2007 NCDP. Consequently, SHAKTI Policy will also have to be held to be Change in Law."***
**(Emphasis Supplied)**

Furthermore, in order to obtain coal under the SHAKTI Scheme, the generators are required to provide a discount under the competitive bid process.

***Hence, it is requested to this Hon'ble Commission that a discount offered based on the architecture of SHAKTI Scheme shall be considered as "Change in Law".***

In addition to the aforementioned, it is important to mention here that thermal generating stations bears no inherent obligation to acquire coal under the SHAKTI Scheme, as the actual cost of coal is passed through under the regulatory regime under section 62. However, with the objective of safeguarding the interests of beneficiaries and ensuring a reliable long term coal supply, the generating stations are voluntarily procuring coal under the SHAKTI Scheme.

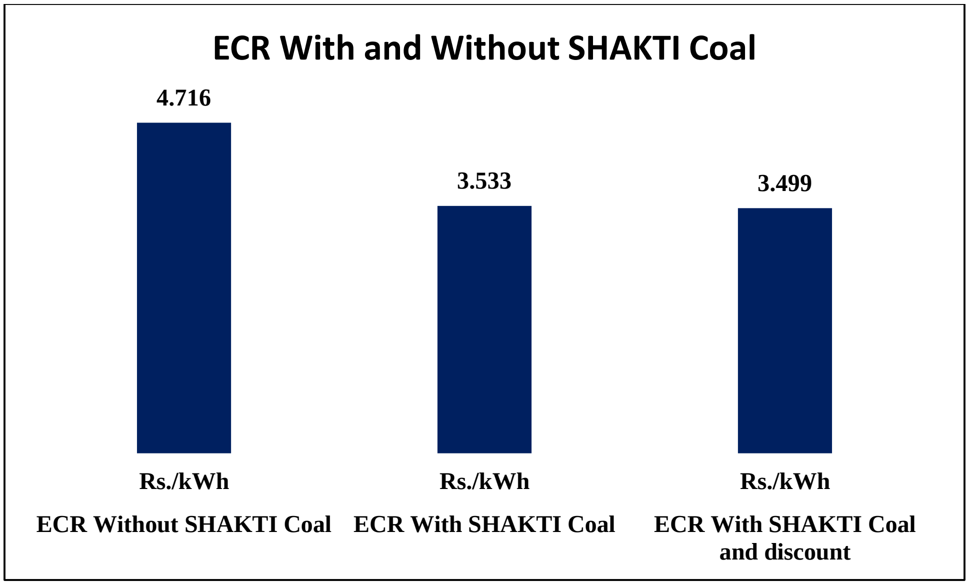
Presently, the APNRL (Adhunik Power and Natural Resource Limited) is procuring approximately 10,92,000 metric tons of coal to fulfil the contracted capacity of 122.85 MW for JBVNL and 100 MW for TANGEDCO (Tamil Nadu Generation and Distribution Company). The details of the coal procurement are shown below:

***Table 3: SHAKTI Schemes under which Coal is procuring by APNRL***

| **Sl No** | SHAKTI Scheme | Source | Grade | Quantity allocated (Tonne) | Offered discount (Paise / kWh) | Reference (Annexure-3) |
|---|---|---|---|---|---|---|
| 1 | SHAKTI b(ii) 1st round | Central Coalfields Limited | G11 | 900000 | 3 | CERC Order: 216/MP/2018, dated: August 10, 2018 |
| 2 | SHAKTI b(ii)-3rd Round | Central Coalfields Limited | G9-G14 | 99000 | 8 | LOI:CCL/HQ/C-4/M&S/SHAKTIb(ii)-3rd round/APNRL/2020-21/2124 |
| 3 | SHAKTI b(ii)-4th Round | Central Coalfields Limited / Eastern coalfield Limited. | G9-G13 | 93200 | 10 | LOI:CCL/HQ/C-4/FSA/2022-23/2350 dated-December 07, 2022<br>LOI: ECL / HQ / M&S / Commercial / 968 (A) |

Currently, the entirety of the benefit derived from the SHAKTI Scheme is being passed through to long-term procurer, notwithstanding the financial losses incurred by the company that is already grappling with sustainability issues.

Considering the example of Jharkhand, where the APNRL has the contracted capacity of 122.85 MW, the impact of SHAKTI Coal on the ECR for FY 2022-23 (for APNRL) is shown below:




(The detail calculation of the above figure is attached as **Annexure-4)**

When the APNRL utilizes coal sourced from E-Auction, imports, or the open market, the ECR amounts to Rs. 4.716/kWh for FY 2022-23. However, by blending SHAKTI Coal, the ECR can be reduced to Rs. 3.533/kWh for FY 2022-23. It is important to note that the APNRL is required to provide a discount corresponding to the use of SHAKTI Coal as mentioned above, resulting in a loss of approximately 3.33 Paise/kWh, which is amounting of Rs. 2.63 Crore for FY 2022-23. The detail of the same is attached as **Annexure-4**

The aforementioned amount of Rs. 2.63 Crore has an additional impact on the Return on Equity (RoE) of the project. To support this claim, the Petitioner has calculated the percentage reduction in the rate of return compared to the normative value of 15.5% allowed in the CERC Tariff Regulation 2019. This reduction in RoE is directly attributable to the discount provided for the utilization of SHAKTI Coal, the same is depicted below.

***Table 4:Depletion in RoE due to SHAKTI Discount***

| Particular | Units | Figures (Actual for FY 2022-23) |
|---|---|---|
| Normative Rate of return | % | 15.50% |
| Return on Equity | Rs. Crore | 159.03 |
| RoE for 122.85 Contracted Capacity | Rs. Crore | 39.76 |
| RoE for 63.882 MW (after deducting 12% of net capacity) | Rs. Crore | 23.49 |
| SHAKTI Discount | Rs. Crore | 2.63 |
| RoE after SHAKTI Discount | Rs. Crore | 20.86 |

| Particular | Units | Figures (Actual for FY 2022-23) |
|---|---|---|
| **Rate of Return after SHAKTI Discount** | **%** | **8.13%** |

It is elaborated in earlier submission, APNRL is obliged to provide 12% of net capacity only on variable charges and further providing the SHAKTI discount of Rs. 2.63 Crore., which resulted in the reduced rate of return of 8.13% from 15.5%.

It is pertinent to mention here that the APNRL is currently paying interest on debt at an interest rate of 9% (CA Certificate for the same is attached as **Annexure-5)** which is more than the rate of return which is more than the above computed rate of return.

It is important to mention here that as per the Tariff Regulation 2019, the RoE of the generating company will be calculated on the base rate of 15.5%, which will be further grossed up considering the effective tax rate. The relevant Regulation is reproduced herein below:

*"**30 Return on Equity:***

*(1)……*

*(2) **Return on equity shall be computed at the base rate of 15.50% for thermal generating station**, transmission system including communication system and run-of-river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:……..*

***31 Tax on Return on Equity**. (1) **The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year**………*

*(2) **Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:***

***Rate of pre-tax return on equity = Base rate / (1-t)***

***Where "t" is the effective tax rate in accordance with clause (1)** of this Regulation and shall be calculated at the beginning of every financial year based on the estimated profit* *and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon…………*

*Illustration-*

***(i) In case of a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:***

***Rate of return on equity = 15.50/(1-0.2155) = 19.758%". (Emphasis Supplied)***

It is evident from the above that even in case of tax, the Hon'ble Commission is ensuring the recovery of minimum RoE of 15.5%, which further stipulate the intention of the Hon'ble Commission that nothing should be deducted from the RoE of 15.5%.

Considering the above stated grounds, unless the SHAKTI discount is allowed as pass through, it will distort the intention of the law maker including the Hon'ble Commission, which ensure the minimum RoE of 15.5% even after the tax to investor of the projects.

It is important to recognize that a decrease in RoE can greatly discourage and it is worth mentioning that a considerable number of companies have recently gone bankrupt as a result of financial crises.

Hence, considering the above grounds it is requested to this Hon'ble Commission to kindly allow the SHAKTI Scheme discount as a pass-through in the Regulation.

## 4. Assuring the minimal RoE of 15.5% as per Regulations

As per Tariff Regulations 2019, the generating companies are allowed a post-tax return of 15.50%. The relevant excerpt of the Regulations is provided below for reference:

*"30 Return on Equity:*

*(1)……*

*(2)* ***Return on equity shall be computed at the base rate of 15.50% for thermal generating station****, transmission system including communication system and run-of-river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:……..”* **(Emphasis Supplied)**

While the above aspect do provide an assurance that generating companies can earn a RoE of 15.50%, however in real sense, as evident in case of APNRL, the effective RoE is only 8.13% (In case of Jharkhand) (depicted above in table no. 4). The key reason for the same are:

a) 12% power only at variable cost
b) Discounts to be offered under SHAKTI Scheme to get the required coal for the operation.

In this regard, it is submitted as follows:

**a) SHAKTI schemes considered as change in law under Section 63 PPAs**

It has been already stated above in Paragraph 3 that in the matter of Maharashtra State Electricity Distribution Company Limited Vs Adani Power Maharashtra Limited and another, the Hon'ble Supreme Court of India has deemed the SHAKTI scheme as a "Change in Law". The relevant excerpt from the judgement again reproduced herein below:

*"22. It can thus be seen that this Court has held that if there is a Change in any consent, approval or licence available or obtained for the project, otherwise than for the default of the seller, which results in any change in any cost of the business of selling electricity, then the said seller will be governed under Clause 13.1.1 of the PPA. As already discussed hereinabove, this Court has consistently held that modification to NCDP 2007 by the communication dated 31st July 2013 would amount to Change in Law and the generating companies would be entitled to compensation on account of such Change in Law****. Undisputedly, SHAKTI Policy also reduces the ACQ as was assured under the 2007 NCDP. Consequently, SHAKTI Policy will also have to be held to be Change in Law."*** **(Emphasis Supplied)**

b) **Section 63 PPAs allows to restore same economic position of affected parties as if Change in law has not occurred.**

In the multiple cases, where Change in Law is approved, the economic position prior to bid due date has been protected by the judgement of the Hon'ble Supreme Court / APTEL / CERC.

Accordingly, the bidders under Section-63 have been getting pass through of additional cost which eventually protects their returns from the generation business.

In the current regime, the tariff elements do not give any cognizance to discount offered under SHAKTI Scheme. It may be noted that the beneficiaries of power get an assured reliable supply of power using Shakti coal. For projects under Section-62, the fuel cost is allowed as a pass-through. Therefore, there was no obligation as such on generating companies to apply for coal under SHAKTI by offering discount.

Adding to the above, non recovery of fixed charges of power supplied only at variable charges depletes the return which is not in alignment to Section 61 of the Electricity Act 2003 which provides 'safeguarding of consumers' interest and the recovery of electricity costs in a reasonable manner.The relevant excerpt from the Electricity Act is reproduced herein below:

*"Section 61 (Tariff Regulations):*

*The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-*

*(a)……*

*(b)……*

*(c)…….*

***(d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;****…………"* **(Emphasis Supplied)**

Similarly, the National tariff policy, 2016 states the rate of return should be attractive enough to encourage investments comparable to or even preferable to other sectors. This will ensure that the electricity sector can create sufficient capacity. Additionally, the rate of return should be set at a level that allows for the generation of a reasonable surplus to foster the growth of the sector. The relevant excerpt from the policy is reproduced herein below:

*"5.11…….*

*a) Return on Investment*

*Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector."*

In light of the above argument, it is therefore proposed as follows:-

a. Allow pass-through of SHAKTI discount under Tariff elements as a separate cost.
b. Allow recovery of fixed charges for power supplied only at a variable cost from the balance quantum of generating station.
c. Develop a mechanism similar to 'Change in Law' under the tariff structure, which can acknowledge discounts such as the SHAKTI discount and conditions like a certain share of power being available only at a variable cost to the home state. This way, any financial impact arising due to these conditions/situations can be passed through under the regulatory regime, while ensuring a minimum RoE of 15.50%.

It is imperative that the above will help in retaining the returns which will support the financial viability of the station. Given the stress in the thermal sector and several units already under NCLT, a positive consideration will help APNRL to sustain its operation in the long run.

## 5. Inclusion of LPS Rules in the Regulations

Apart from the above suggestions, we earnestly suggest that this Hon'ble Commission includes the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022, which were notified by the Ministry of Power (MoP) on 03.06.2022 in the existing regulations. We firmly believe that incorporating these rules will prove beneficial to all stakeholders involved and contribute to the overall efficiency and transparency of the industry.

The rules provide comprehensive guidelines for the late payment surcharge, rescheduling of dues, payment security mechanisms, and regulation of access to defaulting entities. By integrating these provisions into the existing regulatory framework, we anticipate several advantages:

a. Streamlined Payment Process: The inclusion of these rules will streamline the payment process for outstanding dues, reducing delays and promoting timely payments.
b. Clear Guidance on Surcharge Calculation: The rules outline a structured approach for calculating the late payment surcharge, ensuring clarity and fairness in the assessment.
c. Enhanced Financial Discipline: The provision for rescheduling outstanding dues in equated monthly instalments will encourage distribution licensees to maintain financial discipline and promptly settle their obligations.
d. Improved Market Stability: Regulating access to defaulting entities will contribute to market stability by encouraging compliance and responsible payment practices.
e. Strengthened Payment Security Mechanism: Ensuring distribution licensees maintain adequate payment security mechanisms will mitigate financial risks and safeguard the interests of generating companies and electricity trading licensees.
f. Facilitated Dispute Resolution: By providing clear rules for handling outstanding dues and payment security, these regulations will facilitate smoother dispute resolution between stakeholders.

In light of the above benefits, we respectfully request the Hon'ble Commission to consider the incorporation of the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022, into the prevailing regulations.

**Annexure-1**

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**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

**THE GOVERNMENT OF JHARKHAND (1st Party)**

**AND**

**M/S ADHUNIK THERMAL ENERGY LTD. (2nd Party)**

**FOR**

**ESTABLISHMENT OF 1000 MW POWER PLANT**

**(in two phases)**

**IN THE STATE OF JHARKHAND**

This memorandum of understanding is made this 31st day of October 2005 between Government of Jharkhand on the one part and M/s Adhunik Thermal Energy Ltd., 14, Netaji Subhash Road, 2nd Floor, Kolkata 700001 ( Which expression shall include its successors and assignees and hereinafter referred as "ATEL") on the other part

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Whereas,.

1. The Government of Jharkhand is desirous of utilization of its natural resources and rapid industrialization of the state, so as to bring prosperity and well being to its people and has been making determined efforts to facilitate setting up of new Power Projects in the state. In this context the Government of Jharkhand is willing to extend possible assistance to M/s ATEL to set up 1000 MW Power Plant in the state of Jharkhand.

2. M/s ATEL is desirous of setting up a 1000 MW (4 X250 MW) Power project in the State of Jharkhand along with suitable Coal blocks.

   a) A suitable site in Chandil in the District of Saraikela - Kharsawan
   b) A suitable site in the District of Godda
   c) A suitable site in the District of Latehar

   ATEL would carry out necessary pre-feasibility studies within six (6) months from the date of this MOU to select one of the above three sites as the site for the proposed Power Station hereinafter referred to as the "Power Project Site". The criteria for selection will be based on availability of land, water, suitable captive coal block(s), and other infrastructure e.g. road and railway connections etc. Government of Jharkhand will offer all reasonable help to ATEL for facilitating such studies.

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3. The project will be set in conformity with various constitutional and statutory provisions and policies of the Government of India and Government of Jharkhand.

Now Therefore,

4.0 **DESCRIPTION OF PROGRAMME / ACTIVITY**

4.1 M/s ATEL is desirous of setting up **1000 MW (4 X 250 MW)** Power Station, at the power project site, in the state of Jharkhand with proposed investment of nearly **Rs 4,500 Crores,** in two phases in the following manner:

4.2 **COMMISSIONING SCHEDULE**

The tentative commissioning schedule for the different phases of the power station would be as follows:

| | | | |
|---|---|---|---|
| i. | First phase: | 2 X 250 MW: | Unit # 1 in Jan 2010 |
| ii | | | Unit # 2 in Jul 2010 |
| iii | Second phase: | 2 X 250 MW: | Unit # 3 in Jul 2011 |
| iv | | | Unit # 4 in Jan 2012 |

भारतीय गैर न्यायिक

भारत

दस रुपये रु.10

TEN RUPEES Rs.10

सत्यमेव जयते

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

00AA 297901

4.3 M/s ATEL requires help and cooperation from the Government of Jharkhand in several areas to enable them to construct, commission and operate the proposed power project. The Govt. of Jharkhand shall extend all possible help and cooperation. The major areas of co-operation between the Govt. of Jharkhand and M/s ATEL are listed in clauses 5 to 15 below.

## 5.0 SINGLE WINDOW CLEARANCE

5.1 All the State level clearances will be provided to M/s ATEL by the Government of Jharkhand or by the appropriate authorities as empowered by the Government of Jharkhand.

## 6.0 COAL FOR PROPOSED 1000 MW POWER PLANT

6.1 Coal being a nationalized property the Government of Jharkhand shall assist in selecting the coal blocks within the State and agrees to recommend to the Government of INDIA for allocation of suitable coal blocks in favour of M/s ATEL for captive coal mining for the proposed project as per existing provisions of the Mines & Minerals (Development & Regulation) Act 1957 and other existing provisions.

भारतीय गैर न्यायिक

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TEN RUPEES Rs.10

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झारखण्ड JHARKHAND

00AA 298989

**7.0 LAND**

The Government of Jharkhand will assist in acquiring land required for putting up a 1000 MW power plant at the power project site and related activities to complete the project. The cost of land acquisition and related expenses shall be borne by ATEL. Regarding rehabilitation of project affected persons (PAPs) ATEL agrees to abide by the extant of rehabilitation policy of the State Government with regard to the project affected persons at their cost. All rehabilitation work shall be completed within the project schedule.

**8.0 WATER**

The Government of Jharkhand will permit drawl of required quantity of Water for the 1000 MW proposed Power Project, from the nearby river, dam and / or reservoirs in accordance with the rules, policies and tariff rates fixed from time to time by Government of Jharkhand and within the overall allocation of water earmarked for industrial, commercial and domestic use.

In case, ATEL desires to meet the water requirement through tube wells ATEL, shall also make necessary provisions for recharging the ground water and shall be subject to the provision of any law / rules for the purpose.

भारतीय गैर न्यायिक

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झारखण्ड JHARKHAND

00AA 298990

## 9.0 EVACUATION

The State Government will facilitate connecting the proposed power station to PGCIL Grid at a convenient point for evacuation of power from the proposed power station.

## 10.0 SALE OF POWER

10.1 The Government of Jharkhand or distribution licensees authorized by it will have the first right of claim on purchase up to 25% of power delivered to the system by the proposed Power Station under terms of a Power Purchase Agreement to be mutually agreed on the basis of existing laws and regulations in force and the tariff for such power purchase will be determined by the appropriate Regulatory Commission.

10.2 ATEL will have the right to sell the balance power outside the State of Jharkhand.

10.3 In case the Government of Jharkhand or its designated licensee is unable to honor the terms of the power purchase agreement above mentioned, then ATEL will have the right to sell the entire power outside the State of Jharkhand.

भारतीय गैर न्यायिक

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TEN RUPEES

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झारखण्ड JHARKHAND

00AA 298991

10.4 In order to support the Industrial development in the State of Jharkhand, ATEL can supply power directly to the bulk consumers with in the State of Jharkhand at mutually agreed tariff and terms and conditions within the frame work of the applicable Laws and Regulation

**11.0 INFRASTRUCTURE FACILITIES**

The Government of Jharkhand will facilitate strengthening / constructing necessary roads, obtaining right of way and make available necessary power on payment during construction phase of the proposed power project.

**12.0 ENVIRONMENT**

(a) M/s ATEL will arrange to conduct a rapid Environment Impact Assessment (EIA) and detailed EIA and prepare an Environment Management Plan (EMP) for the project. The Government of Jharkhand agrees to extend any assistance in the shape of providing data / information available with it during the time when the EIA is conducted and EMP is prepared.

(b) The Government of Jharkhand agrees to forward proposal of M/s ATEL in obtaining NOC through the State Pollution Control Board and Forest Department for the construction of Power Plant at proposed site, laying of transmission lines, pipeline, development of mines and laying tracks for railway siding etc.

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TEN RUPEES Rs.10

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झारखण्ड JHARKHAND

00AA 298992

(c) Government of Jharkhand agrees to forward proposal of M/s ATEL for obtaining necessary clearance from the Government of India and offer any help reasonably required by ATEL for obtaining such clearance.

**13.0 <u>INCENTIVES & CONCESSIONS</u>**

The Government of Jharkhand shall extend applicable incentives and concessions as envisaged in Mega Investment Scheme notified vide notification no 1885 dt. 10.06.2003 and Jharkhand Industrial Policy 2001.

**14.0 <u>IMPROVED INCENTIVES</u>**

14.1 Any new or improved incentives, which may be announced by the Government of Jharkhand after signing this MOU, shall be additionally extended to M/s ATEL, as per the provision therein.

14.2 The Generating Company will pay all taxes, duties / cess as applicable from time to time in the State of Jharkhand.

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**15.0 GENERAL CLAUSE**

(a) The Government of Jharkhand appreciates that M/s ATEL is a responsible corporate house with a high involvement in employees welfare and social development. The Government of Jharkhand, therefore, expects that ATEL will bring this philosophy to its proposed power project.

Suitable man power for the proposed power project will be engaged / recruited as far as possible from the State of Jharkhand and in terms of any policy of the State Government issued in this regard.

For employment, preference will be given to the displaced persons subject to need and their possessing the necessary qualification and their employability.

(b) The government of Jharkhand has no objection if ATEL inducts suitable foreign or Indian joint venture partners, chooses any appropriate financial options, credit options and technologies in the best interest of the project.

(c) The areas of Co-Operation mentioned above highlights only the major issues involved in setting up of the plant. Other issues as and when they arise and sharing of the responsibilities between parties shall be decided if necessary through mutual agreement on case-to-case basis.

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झारखण्ड JHARKHAND

00AA 298994

(d) Each party shall indemnify and hold harmless the other party and their directors, executives, officers, supervisors, employees, agents, representatives and contractors from and against any all costs, losses, claims, damages, liabilities and expenses (including reasonable attorney fees) incurred by the indemnified person, indemnifying party or its agents, relating to matter arising out of this MOU.

(e) The parties hereby agree to abide by all Acts, policies, regulations and directives notified by Government of India as well as Government of Jharkhand from time to time.

(f) This MOU is an instrument of understanding and shall be valid for 12 months from the date of signing of the MOU, during which period this MOU would be converted into definitive agreements. Further extensions, if necessary, shall be as per mutual agreement.

भारतीय गैर न्यायिक

दस रुपये रु.10

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TEN RUPEES Rs.10

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 00AA 298995

IN WITNESS WHEREOF THE DULY AUTHORISED REPRESENTATIVES OF THE PARTIES HAVE SET THEIR HANDS UNTO THIS MOU ON THIS DAY 31st October 2005.

SIGNED AND AGREED TO BY:

**FOR M/S ATEL**

31/10/05

VICE PRESIDENT (ENERGY)

Vice President (Energy)
Adhunik Thermal Energy Ltd.

WITNESSES:

1. Uma Kant
2. Barun Kumar

**FOR THE GOVERNMENT OF JHARKHAND**

31/10/05

DY. SECRETARY
ENERGY DEPARTMENT

WITNESSES:

1.
2.

भारतीय गैर न्यायिक

दस रुपये

रु.10

भारत

सत्यमेव जयते

INDIA

TEN RUPEES

Rs.10

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 01AA-445135

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE GOVERNMENT OF JHARKHAND
AND
M/S ADHUNIK THERMAL ENERGY LTD.
FOR ESTABLISHMENT OF 1000MW
COAL BASED POWER PROJECT
IN THE STATE OF JHARKHAND.

The Memorandum of Understanding (MoU) is made on this EIGHTEENTH day of January Two Thousand and Seven by and between:

Government of Jharkhand ( hereinafter referred to as "GoJ"), State of Jharkhand (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns ) of the First Part.

**AND**

M/S ADHUNIK THERMAL ENERGY LTD, a company incorporated under the Indian Companies Act. VII of 1913 and having its Registered

भारतीय गैर न्यायिक

भारत

दस रुपये

TEN RUPEES

रु.10

Rs.10

सत्यमेव जयते

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 01AA 048938

-Office at 14,N,S.ROAD, 2nd FLOOR, KOLKATA-700 001 (hereinafter referred to as "ATEL", (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns) of the Second Part.

WHEREAS:

A. The parties hereto executed a Memorandum of Understanding (MoU) dated 31st October 2005 for exploring the possibility of developing power project in the State of Jharkhand.

B The said MoU vide Clause 15 (f) inter alia agreed that the understanding reached therein shall be valid for a period of 12 months from 31st October 2005.

C Since the aforesaid period of 12 months has expired and the respective obligations of the parties are yet to be complied with, the parties hereto mutually agree and desire to extend the said period by 12 more months effective from 31st October, 2006.

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दस रुपये रु.10

भारत

सत्यमेव जयते

INDIA

TEN RUPEES Rs.10

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

01AA-445127

NOW THEREFORE IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1 The parties hereto agree and confirm that the validity period of the MoU dated 31st October 2005 is hereby extended for a further period of 12 months from 31st October 2006 with the following additional clauses.

"10.5 ATEL further understands that the Government of Jharkhand has moved Government of India for the following policy support; namely:-

(a) A policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by **ATEL** operating within its territory.

(b) An appropriate legal mechanism to allow generating States to levy duty on power produced so that there is equitable distribution of resources generated between consuming and generating States.

भारतीय गैर न्यायिक

भारत

दस रुपये

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TEN RUPEES

Rs.10

सत्यमेव जयते

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

01AA-445129

Therefore, as and when the Government of Jharkhand succeed in levying such duty as per item (b) above or obtain concession as per item (a) above, such duties or concessions would be applicable to this power plant of **ATEL**"

**And**

"**12(d) ATEL** understands that the Government of Jharkhand in order to carry out the required environmental amelioration activities in a sustained manner, intend to set up an Environmental Management Fund. In view of the necessity to maintain a clean environment in the State in the vicinity of the Project and its hinterland, **ATEL** does hereby agree to support the efforts of the Government of Jharkhand in the following manner:-

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TEN RUPEES

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INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 01AA 445131

(a) An annual contribution @ 6 paise per unit of the energy sent out from the Thermal Power Plant, during the relevant year to be made by **ATEL** towards the Environment Management Fund.

(b) The contribution as stated above will not be made for energy sold in the State of Jharkhand."

2 The parties further confirm and agree that save and except the abovementioned additional clauses 10.5 and 12(d) and save and except the validity period of the MoU as above, all other terms and conditions as agreed in the said MoU shall remain unchanged . A photocopy of the said MoU is annexed herewith and marked Annexure I.

भारतीय गैर न्यायिक

दस रुपये रु.10

भारत INDIA सत्यमेव जयते

TEN RUPEES Rs.10

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 01AA 445134

IN WITNESS WHEREOF THE DULY AUTHORISED REPRESENTATIVES OF THE PARTIES HAVE SET THEIR HANDS UNTO THIS MoU ON THIS EIGHTEENTH DAY OF JANARY 2007

SIGNED AND AGREED TO BY

| FOR THE ATEL | FOR THE GOVERNMENT OF JHARKHAND |
|---|---|
| 18/01/07 | 18/1/07 |
| Authorized Signatory, For Adhunik Thermal Energy | SECRETARY ENERGY DEPARTMENT |
| Auth. Si<br>18/01/07 | 18/1/07 |
| WITNESSES : | WITNESSES: |
| 18/01/07 | |
| WITNESSES: | WITNESSES: |

ऊर्जा विभाग, झारखण्ड सरकार, राँची

भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

01AA 410150

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE GOVERNMENT OF JHARKHAND
AND
M/S ADHUNIK THERMAL ENERGY LTD.
FOR ESTABLISHMENT OF
COAL BASED POWER PROJECT
IN THE STATE OF JHARKHAND.

The Memorandum of Understanding (MoU) is made on this FIRST day of February Two Thousand and Eight by and between: Government of Jharkhand (herein after referred to as "GoJ"), State of Jharkhand (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns ) of the First Part.

AND

M/S ADHUNIK THERMAL ENERGY LTD, a company incorporated under the Indian Companies Act. VII of 1913 and having its Registered Office at 14, N.S.ROAD, 2nd FLOOR, KOLKATA-700 001.

भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND 01AA 410148

(herein after referred to as "ATEL", (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns) of the Second Part.

WHEREAS:

A. The parties hereto executed a Memorandum of Understanding (MoU) dated 31st October 2005 for exploring the possibility of developing power project in the State of Jharkhand.

B The said MoU vide Clause 15 (f) inter alia agreed that the understanding reached therein shall be valid for a period of 12 months from 31st October 2005, which was further extended for a period of 12 months from $31^{st}$ October 2006.

C Since the aforesaid period of 12 months has expired and the respective obligations of the parties are yet to be complied with, the parties hereto mutually agree and desire to extend the said period by 36 months (Three Years) effective from $31^{st}$ October, 2007.

भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

01AA 410147

NOW THEREFORE IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1 The parties hereto agree and confirm that the validity period of the MoU dated 31st October 2007 is hereby extended for a further period of Three years i.e.upto 31st October 2010 with the following additional clauses.

"**10.5** ATEL further understands that the Government of Jharkhand has moved Government of India for the following policy support; namely:-

(a) A policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by ATEL operating within its territory.

(b) An appropriate legal mechanism to allow generating States to levy duty on power produced so that there is

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रु.20

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TWENTY RUPEES

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झारखण्ड JHARKHAND

01AA 410144

equitable distribution of resources generated between consuming and generating States.

Therefore, as and when the Government of Jharkhand succeed in levying such duty as per item (b) above or obtain concession as per item (a) above, such duties or concessions would be applicable to this power plant of ATEL"

**And**

"12(d) **ATEL** understands that the Government of Jharkhand in order to carry out the required environmental amelioration activities in a sustained manner, intend to set up an Environmental Management- Fund. In view of the necessity to maintain a clean environment in the State in the vicinity of the Project and its hinterland.

**ATEL** does hereby agree to support the efforts of the Government of Jharkhand in the following manner:-

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TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

झारखण्ड JHARKHAND

01AA 410199

(a) An annual contribution @ 6 paise per unit of the energy sent out from the Thermal Power Plant, during the relevant year to be made by ATEL towards the Environment Management Fund.

(b) The contribution as stated above will not be made for energy sold in the State of Jharkhand."

2. The parties further confirm and agree that save and except the abovementioned additional clauses 10.5 and 12(d) and save and except the validity period of the MoU as above, all other terms and conditions as agreed in the said MoU shall remain unchanged . A photocopy of the said MoU is annexed herewith and marked Annexure I.


झारखण्ड JHARKHAND 01AA 410197

IN WITNESS WHEREOF THE DULY AUTHORISED REPRESENTATIVES OF THE PARTIES HAVE SET THEIR HANDS UNTO THIS MoU ON THIS FIRST OF FEBRUARY, 2008.

<u>SIGNED AND AGREED TO BY</u>

| FOR THE ATEL | FOR THE GOVERNMENT OF JHARKHAND |
|---|---|
| Authorized Signatory | 1.2.08<br>SECRETARY ENERGY DEPARTMENT |
| WITNESSES: | WITNESSES: |
| WITNESSES: | 1.2.08<br>WITNESSES: |

**ANNEXURE 1: Copies of all MoUs with amendments**

Adhunik Power & Natural Resources Ltd


झारखण्ड JHARKHAND 00AA 298934

**MEMORANDUM OF UNDERSTANDING**
**BETWEEN**
**THE GOVERNMENT OF JHARKHAND (1st Party)**
**AND**
**M/S ADHUNIK THERMAL ENERGY LTD. (2nd Party)**
**FOR**
**ESTABLISHMENT OF 1000 MW POWER PLANT**
**(in two phases)**
**IN THE STATE OF**
**JHARKHAND**

This memorandum of understanding is made this 31st day of October 2005 between Government of Jharkhand on the one part and M/s Adhunik Thermal Energy Ltd., 14, Netaji Subhash Road, 2nd Floor, Kolkata 700001 ( Which expression shall include its successors and assignees and hereinafter referred as "ATEL") on the other part

Adhunik Power & Natural Resources Ltd

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झारखण्ड JHARKHAND

00AA 298986

Whereas,.

1. The Government of Jharkhand is desirous of utilization of its natural resources and rapid industrialization of the state, so as to bring prosperity and well being to its people and has been making determined efforts to facilitate setting up of new Power Projects in the state. In this context the Government of Jharkhand is willing to extend possible assistance to M/s ATEL to set up 1000 MW Power Plant in the state of Jharkhand.

2. M/s ATEL is desirous of setting up a 1000 MW (4 X250 MW) Power project in the State of Jharkhand along with suitable Coal blocks.

   a) A suitable site in Chandil in the District of Saraikela - Kharsawan
   b) A suitable site in the District of Godda
   c) A suitable site in the District of Latehar

   ATEL would carry out necessary pre-feasibility studies within six (6) months from the date of this MOU to select one of the above three sites as the site for the proposed Power Station hereinafter referred to as the "Power Project Site". The criteria for selection will be based on availability of land, water, suitable captive coal block(s), and other infrastructure e.g. road and railway connections etc. Government of Jharkhand will offer all reasonable help to ATEL for facilitating such studies.

Adhunik Power & Natural Resources Ltd

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झारखण्ड JHARKHAND

00AA 299000

3. The project will be set in conformity with various constitutional and statutory provisions and policies of the Government of India and Government of Jharkhand.

Now Therefore,

4.0 **DESCRIPTION OF PROGRAMME / ACTIVITY**

4.1 M/s ATEL is desirous of setting up **1000 MW (4 X 250 MW)** Power Station, at the power project site, in the state of Jharkhand with proposed investment of nearly **Rs 4,500 Crores,** in two phases in the following manner:

4.2 **COMMISSIONING SCHEDULE**

The tentative commissioning schedule for the different phases of the power station would be as follows:

| | | | |
|---|---|---|---|
| i. | First phase: | 2 X 250 MW: | Unit # 1 in Jan 2010 |
| ii | | | Unit # 2 in Jul 2010 |
| iii | Second phase: | 2 X 250 MW: | Unit # 3 in Jul 2011 |
| iv | | | Unit # 4 in Jan 2012 |

Adhunik Power & Natural Resources Ltd

भारतीय गैर न्यायिक

भारत

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झारखण्ड JHARKHAND 00AA 297901

4.3 M/s ATEL requires help and cooperation from the Government of Jharkhand in several areas to enable them to construct, commission and operate the proposed power project. The Govt. of Jharkhand shall extend all possible help and cooperation. The major areas of co-operation between the Govt. of Jharkhand and M/s ATEL are listed in clauses 5 to 15 below.

## 5.0 SINGLE WINDOW CLEARANCE

5.1 All the State level clearances will be provided to M/s ATEL by the Government of Jharkhand or by the appropriate authorities as empowered by the Government of Jharkhand.

## 6.0 COAL FOR PROPOSED 1000 MW POWER PLANT

6.1 Coal being a nationalized property the Government of Jharkhand shall assist in selecting the coal blocks within the State and agrees to recommend to the Government of INDIA for allocation of suitable coal blocks in favour of M/s ATEL for captive coal mining for the proposed project as per existing provisions of the Mines & Minerals (Development & Regulation) Act 1957 and other existing provisions.

Adhunik Power & Natural Resources Ltd.

भारतीय गैर न्यायिक

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झारखण्ड JHARKHAND

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**7.0 LAND**

The Government of Jharkhand will assist in acquiring land required for putting up a 1000 MW power plant at the power project site and related activities to complete the project. The cost of land acquisition and related expenses shall be borne by ATEL. Regarding rehabilitation of project affected persons (PAPs) ATEL agrees to abide by the extant of rehabilitation policy of the State Government with regard to the project affected persons at their cost. All rehabilitation work shall be completed within the project schedule.

**8.0 WATER**

The Government of Jharkhand will permit drawl of required quantity of Water for the 1000 MW proposed Power Project, from the nearby river, dam and / or reservoirs in accordance with the rules, policies and tariff rates fixed from time to time by Government of Jharkhand and within the overall allocation of water earmarked for industrial, commercial and domestic use.

In case, ATEL desires to meet the water requirement through tube wells ATEL, shall also make necessary provisions for recharging the ground water and shall be subject to the provision of any law / rules for the purpose.

Adhunik Power & Natural Resources Ltd

भारतीय गैर न्यायिक

दस रुपये रु.10

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INDIA

TEN RUPEES Rs.10

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झारखण्ड JHARKHAND                                   00AA 298990

**9.0 EVACUATION**

The State Government will facilitate connecting the proposed power station to PGCIL Grid at a convenient point for evacuation of power from the proposed power station.

**10.0 SALE OF POWER**

10.1 The Government of Jharkhand or distribution licensees authorized by it will have the first right of claim on purchase up to 25% of power delivered to the system by the proposed Power Station under terms of a Power Purchase Agreement to be mutually agreed on the basis of existing laws and regulations in force and the tariff for such power purchase will be determined by the appropriate Regulatory Commission.

10.2 ATEL will have the right to sell the balance power outside the State of Jharkhand.

10.3 In case the Government of Jharkhand or its designated licensee is unable to honor the terms of the power purchase agreement above mentioned, then ATEL will have the right to sell the entire power outside the State of Jharkhand.

Adhunik Power & Natural Resources Ltd

भारतीय गैर न्यायिक

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INDIA

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झारखण्ड JHARKHAND

00AA 298991

10.4 In order to support the Industrial development in the State of Jharkhand, ATEL can supply power directly to the bulk consumers with in the State of Jharkhand at mutually agreed tariff and terms and conditions within the frame work of the applicable Laws and Regulation

11.0 <u>INFRASTRUCTURE FACILITIES</u>

The Government of Jharkhand will facilitate strengthening / constructing necessary roads, obtaining right of way and make available necessary power on payment during construction phase of the proposed power project.

12.0 <u>ENVIRONMENT</u>

(a) M/s ATEL will arrange to conduct a rapid Environment Impact Assessment (EIA) and detailed EIA and prepare an Environment Management Plan (EMP) for the project. The Government of Jharkhand agrees to extend any assistance in the shape of providing data / information available with it during the time when the EIA is conducted and EMP is prepared.

(b) The Government of Jharkhand agrees to forward proposal of M/s ATEL in obtaining NOC through the State Pollution Control Board and Forest Department for the construction of Power Plant at proposed site, laying of transmission lines, pipeline, development of mines and laying tracks for railway siding etc.



Adhunik Power & Natural Resources Ltd.

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00AA 298992

(c) Government of Jharkhand agrees to forward proposal of M/s ATEL for obtaining necessary clearance from the Government of India and offer any help reasonably required by ATEL for obtaining such clearance.

## 13.0 INCENTIVES & CONCESSIONS

The Government of Jharkhand shall extend applicable incentives and concessions as envisaged in Mega Investment Scheme notified vide notification no 1885 dt. 10.06.2003 and Jharkhand Industrial Policy 2001.

## 14.0 IMPROVED INCENTIVES

14.1 Any new or improved incentives, which may be announced by the Government of Jharkhand after signing this MOU, shall be additionally extended to M/s ATEL, as per the provision therein.

14.2 The Generating Company will pay all taxes, duties / cess as applicable from time to time in the State of Jharkhand.

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**15.0 GENERAL CLAUSE**

(a) The Government of Jharkhand appreciates that M/s ATEL is a responsible corporate house with a high involvement in employees welfare and social development. The Government of Jharkhand, therefore, expects that ATEL will bring this philosophy to its proposed power project.

Suitable man power for the proposed power project will be engaged / recruited as far as possible from the State of Jharkhand and in terms of any policy of the State Government issued in this regard.

For employment, preference will be given to the displaced persons subject to need and their possessing the necessary qualification and their employability.

(b) The government of Jharkhand has no objection if ATEL inducts suitable foreign or Indian joint venture partners, chooses any appropriate financial options, credit options and technologies in the best interest of the project.

(c) The areas of Co-Operation mentioned above highlights only the major issues involved in setting up of the plant. Other issues as and when they arise and sharing of the responsibilities between parties shall be decided if necessary through mutual agreement on case-to-case basis.

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(d) Each party shall indemnify and hold harmless the other party and their directors, executives, officers, supervisors, employees, agents, representatives and contractors from and against any all costs, losses, claims, damages, liabilities and expenses (including reasonable attorney fees) incurred by the indemnified person, indemnifying party or its agents, relating to matter arising out of this MOU.

(e) The parties hereby agree to abide by all Acts, policies, regulations and directives notified by Government of India as well as Government of Jharkhand from time to time.

(f) This MOU is an instrument of understanding and shall be valid for 12 months from the date of signing of the MOU, during which period this MOU would be converted into definitive agreements. Further extensions, if necessary, shall be as per mutual agreement.

Adhunik Power & Natural Resources Ltd

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IN WITNESS WHEREOF THE DULY AUTHORISED REPRESENTATIVES OF THE PARTIES HAVE SET THEIR HANDS UNTO THIS MOU ON THIS DAY 31st October 2005.

SIGNED AND AGREED TO BY:

**FOR M/S ATEL**

J S Aru
31/10/05

VICE PRESIDENT (ENERGY)

Vice President (Energy)
Adhunik Thermal Energy Ltd.

WITNESSES:

1. Uma kant Sw
2. Barun Kumar

**FOR THE GOVERNMENT OF JHARKHAND**

31/10/05

DY. SECRETARY
ENERGY DEPARTMENT

WITNESSES:

1.
2.

Adhunik Power & Natural Resources Ltd

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MEMORANDUM OF UNDERSTANDING
BETWEEN
THE GOVERNMENT OF JHARKHAND
AND
M/S ADHUNIK THERMAL ENERGY LTD.
FOR ESTABLISHMENT OF 1000MW
COAL BASED POWER PROJECT
IN THE STATE OF JHARKHAND.

The Memorandum of Understanding (MoU) is made on this EIGHTEENTH day of January Two Thousand and Seven by and between:

Government of Jharkhand ( hereinafter referred to as "GoJ"), State of Jharkhand (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns ) of the First Part.

AND

M/S ADHUNIK THERMAL ENERGY LTD, a company incorporated under the Indian Companies Act. VII of 1913 and having its Registered

Adhunik Pow

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-Office at 14,N,S.ROAD, 2nd FLOOR, KOLKATA-700 001 (hereinafter referred to as "ATEL", (which expression shall unless it is repugnant to the meaning or context thereof, be deemed to mean and include its successors and permitted assigns) of the Second Part.

WHEREAS:

A. The parties hereto executed a Memorandum of Understanding (MoU) dated 31st October 2005 for exploring the possibility of developing power project in the State of Jharkhand.

B The said MoU vide Clause 15 (f) inter alia agreed that the understanding reached therein shall be valid for a period of 12 months from 31st October 2005.

C Since the aforesaid period of 12 months has expired and the respective obligations of the parties are yet to be complied with, the parties hereto mutually agree and desire to extend the said period by 12 more months effective from 31st October, 2006.

Adhunik Power & Natural Resources Ltd.

भारतीय गैर न्यायिक

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01AA 445127

NOW THEREFORE IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1 The parties hereto agree and confirm that the validity period of the MoU dated 31st October 2005 is hereby extended for a further period of 12 months from 31st October 2006 with the following additional clauses.

"10.5 ATEL further understands that the Government of Jharkhand has moved Government of India for the following policy support; namely:-

(a) A policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by ATEL operating within its territory.

(b) An appropriate legal mechanism to allow generating States to levy duty on power produced so that there is equitable distribution of resources generated between consuming and generating States.

Adhunik Power & Natural Resources Ltd

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Therefore, as and when the Government of Jharkhand succeed in levying such duty as per item (b) above or obtain concession as per item (a) above, such duties or concessions would be applicable to this power plant of ATEL"

**And**

"12(d) ATEL understands that the Government of Jharkhand in order to carry out the required environmental amelioration activities in a sustained manner, intend to set up an Environmental Management Fund. In view of the necessity to maintain a clean environment in the State in the vicinity of the Project and its hinterland, ATEL does hereby agree to support the efforts of the Government of Jharkhand in the following manner:-

Adhunik Power & Natural Resources Ltd

Annexure-1a

# Jharkhand State Electricity Regulatory Commission

Order

on

Petition for

Approval of Final Capital Cost,

True Up of ARR for FY 2012-13 and FY 2013-14

and

Annual Performance Review for FY 2014-15

And

ARR and Tariff Determination for FY 2015-16

for

Adhunik Power and Natural Resources Limited

(APNRL)

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# BEFORE
## Jharkhand State Electricity Regulatory Commission, Ranchi

**Case (Tariff) No.: 05 of 2015**

**In the matter of:**

**Petition for Approval of Capital Cost of 540 MW (2x 270 MW) coal based thermal power plant in Jharkhand, True up of Aggregate Revenue Requirement for FY 2012-13 & FY 2013-14;**
**And**
**Annual Performance Review for FY 2014-15;**
**And**
**Aggregate Revenue Requirement and Tariff determination for FY 2015-16;**

**In the matter:**
Adhunik Power and Natural Resources Limited (APNRL),
Connaught Place, New Delhi ……………….. ……………… Petitioner

**PRESENT**

**Hon'ble Mr Justice Narendra Nath Tiwari - Chairperson**
**Hon'ble Mr R.N. Singh - Member (T)**

**Order dated 01st September 2016**

In this Petition, Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL) has prayed for Approval of Capital Cost of 540 MW (2x 270 MW) coal based thermal power plant in Jharkhand, True up of Aggregate Revenue Requirement for FY 2012-13 & FY 2013-14. Annual Performance Review for FY 2014-15 and Aggregate Revenue Requirement and Tariff determination for FY 2015-16

# List of Abbreviations

| Abbreviation | Description |
|---|---|
| A&G | Administrative and General |
| ARR | Aggregate Revenue Requirement |
| COD | Commercial Operation Date |
| IDC | Interest during Construction |
| FY | Financial Year |
| GCV | Gross Calorific Value |
| GFA | Gross Fixed Assets |
| GoI | Government of India |
| JSERC | Jharkhand State Electricity Regulatory Commission |
| Kcal | Kilocalorie |
| Kg | Kilogram |
| kWh | Kilowatt-hour |
| MAT | Minimum Alternative Tax |
| Ml | Millilitre |
| MT | Million Tonnes |
| MUs | Million Units |
| MW | Megawatt |
| NAPAF | Normative Annual Plant Availability Factor |
| O&M | Operations and Maintenance |
| PLF | Plant Load Factor |
| PPA | Power Purchase Agreement |
| R&M | Repair and Maintenance |
| RoE | Return on Equity |
| Rs | Rupees |
| SBI | State Bank of India |
| SERC | State Electricity Regulatory Commission |
| SLM | Straight Line Method |
| CERC | Central Electricity Regulatory Commission |
| DTS | Dedicated Transmission System |

# A1: INTRODUCTION

## Jharkhand State Electricity Regulatory Commission

1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the "JSERC" or "the Commission") was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003.

1.2 The Government of Jharkhand vide its notification dated August 22, 2002 had defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:-

- to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;
- to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;
- to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;
- to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.3 The Electricity Act, 2003 (hereinafter referred to as "the Act" or "EA, 2003") came into force with effect from June 10, 2003; and the Commission is now deemed to have been constituted and functioning under the provisions of the Act as the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the functions of SERCs are now defined under Section 86 of the Act.

1.4 The JSERC discharges the functions to be discharged by the State Commission as specified under Section 86 of the Act, which are to: -

- determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:

(a) Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;

- regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

- facilitate intra-state transmission and wheeling of electricity;

- issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

- promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

- adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;

- levy fee for the purposes of this Act;

- specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;

- specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

- fix the trading margin in the intra-state trading of electricity, if considered, necessary;

- discharge such other functions as may be assigned to it under this Act.

1.5 The Commission has to also advise the State Government as per sub section 2 of Section 86 of the Act, on all or any of the following matters, namely :-

- promotion of competition, efficiency and economy in activities of the electricity industry;
- promotion of investment in electricity industry;
- reorganisation and restructuring of electricity industry in the State;
- matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.6 The State Commission ensures transparency while exercising its powers and discharging its functions.

1.7 In discharge of its functions, the State Commission is also guided by the National Tariff Policy as brought out by GoI in compliance to Section 3 of the Act. The objectives of the National Tariff Policy are to:

- ensure availability of electricity to consumers at reasonable and competitive rates;
- ensure financial viability of the sector and attract investments;
- promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
- promote competition, efficiency in operations and improvement in quality of supply.

## Adhunik Power and Natural Resources Limited

1.8 Adhunik Power and Natural Resources Limited (hereinafter referred to as “the Petitioner” or “APNRL” is a company incorporated under the provisions of the Indian Companies Act, 1956.

1.9 Originally incorporated as “Adhunik Thermal Energy Ltd.” (ATEL), in the year 2007, ATEL was renamed to “Neepaz Thermal Energy Limited” (NTEL) and subsequently renamed as “Adhunik Power & Natural Resources Ltd.” (APNRL) in the year 2008 after complying with the applicable provisions of the Companies Act, 1956.

1.10 ATEL signed a Memorandum of Understanding (hereinafter referred to as “the MoU”) with Government of Jharkhand in October 2005 to develop a 1,000 MW coal based thermal power plant in October 2005. Further in January 2007, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of 12 months. In February 2008, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of three years upto October 31, 2010. Subsequently in May 2011, the validity of the MOU was again extended for a period of three years from November 1, 2010 to October 31, 2013. In November 2013, the validity of MoU was again extended for a period of three years from November 1, 2013 to October 31,2016.

1.11 Accordingly, APNRL has set up a 540 MW coal based power plant in Stage-1 (consisting of Unit 1 and Unit 2 of 270 MW each) and is planning to develop an additional 540 MW coal based power plant in Stage-2. Unit 1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. Unit 2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

1.12 Further, as per the provisions of the MOU, the Government of Jharkhand or Distribution Licensees authorized by it will have the first right of claim on purchase upto 25% of power delivered to the system by the proposed power station.

1.13 Further, the extension of the MoU stipulates that the Government of Jharkhand moved to Government of India for the policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by APNRL. Hence, as stated above, as per MoU and its extension's conditions, JSEB will have first right of claim on purchase upto 25% of power delivered to the system, out of which 12% power will be made available to the state at variable cost only.

1.14 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as "the PPA") with Jharkhand State Electricity Board (now Jharkhand Urja Vikash Nigam Limited or "JUVNL"/ Jharkhand Bijli Vitran Nigam Limited "JBVNL") on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption) from Stage 1 of the Project on long term basis.

1.15 As per the terms of the PPA 63.882 MW capacity, i.e., 13% of Net Capacity of Stage 1 shall be supplied to JUVNL/JBVNL at total tariff and the balance 58.968 MW capacity, i.e., 12% of total Net Capacity of Stage 1 shall be supplied at variable cost only.

1.16 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner quoted below and JSEB (now JUVNL/JBVNL) the tariff payable shall be determined by the State Commission :

*3.1(ii)"The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".*

*3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010", as amended from time to time."*

## Overview of the Thermal Station

1.17 The Petitioner has achieved COD of its two units of 270 MW each. Both these units are subject to ARR and Tariff determination. The following table summarizes the information pertaining to both the units:

| S. No. | Unit | Installed Capacity( MW) | Status of Operation | Actual Date of Commercial Operation |
|---|---|---|---|---|
| 1 | Unit 1 | 270 | Operational | January 21, 2013 |
| 2 | Unit 2 | 270 | Operational | May 19, 2013 |

## The Petitioner's Prayers

1.18 The Petitioner in its tariff petition dated April 30th, 2015 has prayed before the Commission for the following:

a) Accept the Petition for Approval of Final Capital Cost of 540 MW (2x270MW) coal based thermal power plant in Jharkhand. True-up of ARR for FY 2012-13 and FY 2013-14, Annual Performance Review for FY 2014-15 and Final ARR and Tariff Determination for FY 2015-16 for supplying the regulated Contracted Capacity of 122.85 MW from both the Units 1 & 2 to JUVNL/JBVNL [erstwhile JSEB] as proposed by APNRL.

b) Approve the True-up of ARR for 540MW (2x270) Stage I coal based thermal power plant in Jharkhand, for supplying the regulated contracted capacity of 122.85MW to JUVNL/JBVNL [erstwhile JSEB] for FY 2012-13 and FY 2013-14

c) Approve the Annual Performance Review of ARR for supplying the regulated contracted capacity of 122.85MW to JUVNL/JBVNL [erstwhile JSEB] for FY 2014-15

d) Approve the tariff for supplying the regulated contracted capacity of 122.85 MW to JUVNL/JBVNL [erstwhile JSEB] for FY 2015-16.

e) Approve the recovery of upward and downward variation in fuel prices and calorific value including fuel mix through Fuel Price Adjustment as part of monthly Energy Charges.

## Scope of the present order

1.19 The Commission in this tariff order has approved the final capital cost of the 540 (2x270) MW coal based thermal power plant in Jharkhand, True up of ARR for FY 2012-13 and FY 2013-14, Annual Performance Review of FY 2014-15, ARR and Tariff Determination for FY 2015-16 for Unit 1 and Unit 2 of the Petitioner.

1.20 While conducting the True-up of ARR for FY 2012-13, FY 2013-14 and APR for FY 2014-15 the Commission has taken into consideration:

- Material placed on record
- Provisions of the Electricity Act, 2003;
- Provisions of the National Electricity Policy;
- Provisions of the Tariff Policy;
- Principles and provisions laid down in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 (hereinafter referred to as 'Generation Tariff Regulations, 2010');

1.21 Accordingly, the Commission has scrutinized the Petition in detail and hereby issues the Tariff Order on True-up of ARR for FY 2012-13, FY 2013-14, APR for FY 2014-15, ARR and Tariff Determination for FY 2015-16.

# A2: PROCEDURAL HISTORY

## Background

2.1 The Commission had notified Provisional Order on Petition for approval of Capital Cost, Business Plan and MYT Petition for FY 2012-13 to FY 2015-16 for Adhunik Power and Natural Resources Limited (APNRL) on 26th May, 2014

2.2 The Petitioner has now submitted the Petition for approval of final Capital Cost of 540MW (2x270) Coal Based Thermal Power Plant in Jharkhand, True Up of ARR for FY 2012-13 and FY 2013-14, Annual Performance Review of FY 2014-15 and ARR and Tariff Determination for FY 2015-16 on 30th April, 2015

## Information Gaps in the ARR Petition

2.3 In accordance with Section 64(3) of the Act, the State Electricity Regulatory Commission, within one hundred and twenty days of the filing of application for determination of tariff, is required to either accept it and issue a tariff order or reject the application for reasons to be recorded in writing. The Commission accepted the application submitted by the Petitioner for approval of final capital cost, true up and determination of tariff. As part of tariff determination exercise for the Control Period, several deficiencies/information gaps were observed in the tariff petition submitted by the Petitioner.

2.4 These information gaps were communicated to the Petitioner vide letter no.

(a) JSERC/Case (T) No 05 of 2015/276 dated 24th July, 2015

(b) JSERC/Case (T) No 05 of 2015/864 dated 2nd February, 2016

(c) JSERC/Case (T) No 05 of 2015/899 dated 24th February, 2016

2.5 The Commission also communicated the requisite clarifications required vide e-mail to the Petitioner.

2.6 The Petitioner subsequently submitted its response to the aforesaid letters and e-mails and provided the requisite additional data/information vide letter no.

(a) APNRL/JSERC/2015-16/595 dated 28th December 2015,

(b) APNRL/JSERC/2015-16/621 dt. 1st March, 2016

(c) APNR/JSERC/2016-17/631 dated 30th April, 2016

2.7 The Commission scrutinized the additional data/information and on its validation, has passed this Order on the petition filed by the Petitioner.

## Inviting Public Comments/Suggestions

2.8 The Commission directed the Petitioner to make available copies of the petition to the members of general public on request, and also issue a public notice inviting comments/ suggestions on the petition for approval of the final Capital Cost, True Up of FY 2012-13 & FY 2013-14, APR for FY 2014-15 and ARR and tariff determination of FY 2015-16.

2.9 The aforesaid public notice was issued by the Petitioner in various newspapers on Further, a period of twenty one (21) days was given to the members of the general public for submitting their comments/suggestions.

**Table 1 List of newspapers and dates on which the public notice by Adhunik appeared**

| Sl. No. | Newspaper (Jharkhand edition) | Date of Publication |
|---|---|---|
| 1 | Jharkhand News Line | 26.01.2016 & 28.01.2016 |
| 2 | Rshtriya Sagar | 26.01.2016 & 28.01.2016 |
| 3 | Morning India | 26.01.2016 & 28.01.2016 |
| 4 | The Pioneer | 26.01.2016 & 28.01.2016 |

2.10 Subsequently, the Commission also issued a notice on its website www.jserc.org and various newspapers for conducting the public hearing on the Petition. The details of the newspapers where the notice was issued by the Commission are as under:

**Table 2: List of newspapers and dates on which the public notice by JSERC appeared**

| Sl. No. | Newspaper (Jharkhand edition) | Date of Publication |
|---|---|---|
| 1 | Times of India (English) | 15.07.2016 |
| 2 | Hindustan | 15.07.2016 |
| 3 | Dainik Bhaskar | 15.07.2016 |
| 4 | Morning India (English) | 16.07.2016 |
| 5 | Dainik Jagran | 16.07.2016 |
| 6 | Prabhat Khabar | 16.07.2016 |

## Submission of Comments/Suggestions and Conduct of Public Hearing

2.11 A public hearing was held on August 03, 2016 at Ranchi and many respondents voiced their views on the petition filed by the Petitioner. The comments/suggestions submitted by the respondents and the Petitioner's response thereon along with the Commission's views on the response provided by the Petitioner are detailed in the Section A4: of this Order.

# A3: SUMMARY OF THE PETITION

## Capital cost of the project

3.1 In its petition dated April 30th, 2015, the Petitioner submitted that the capital cost of Unit-1 and Unit-2 of the project as on COD based on the audited annual accounts is Rs. 3,344.21 Crore. The project is funded through a combination of debt and equity. The summary of capital cost of the project as submitted is given in the table below.

**Table 3: Summary of capital cost**

| Particulars | Unit-1 | | Unit-2 | | Total Project Cost | |
|---|---|---|---|---|---|---|
| | Rs Crore | % | Rs Crore | % | Rs Crore | % |
| Debt | 1,243.53 | 74.79% | 1,257.63 | 74.79% | 2,501.17 | 74.79% |
| Equity | 419.14 | 25.21% | 423.90 | 25.21% | 843.04 | 25.21% |
| Total | 1,662.68 | 100.00% | 1,681.53 | 100.00% | 3,344.21 | 100.00% |

## Revenue requirement for FY 2012-13 to FY 2015-16

3.2 The summary of operational performance, fixed cost, energy charges and annual revenue requirement for Unit-1 and Unit-2 as submitted by the Petitioner in its tariff petition dated April 30th, 2015 is given below:

**Table 4: Petitioner's Submission for operational performance, fixed cost, energy charges and annual revenue requirement for FY 2012-13 to FY 2015-16 for Unit 1**

| Particulars | Units | True Up FY 2012-13 | True Up FY 2013-14 | APR FY 2014-15 | FY 2015-16 |
|---|---|---|---|---|---|
| Operational Parameters | | | | | |
| Capacity | MW | 270 | 270 | 270 | 270 |
| Gross Generation | MUs | 284.09 | 1,368.20 | 2,010.42 | 2,015.93 |
| Plant Load Factor | % | 58.12% | 57.85% | 51.88% | 85% |
| Aux Power Consumption | % | 10.85% | 9.30% | 9.00% | 9.00% |
| Ex-Bus Generation | MUs | 253.26 | 1,241.02 | 1,829.48 | 1,834.49 |
| Weighted Average GCV of primary fuel | kCal/kg | 3,565.64 | 3,570.87 | 3,377.40 | 3,348.20 |
| Station Heat Rate | kcal/kWh | 2,387.00 | 2,387.00 | 2,387.00 | 2,387.00 |
| Calorific value of secondary fuel | Kcal/litre | 9346.83 | 9346.83 | 9346.83 | 9346.83 |
| Specific Coal Consumption | Kg/kWh | 0.67 | 0.67 | 0.70 | 0.71 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 |
| Details of Annual Fixed Cost | | | | | |
| Depreciation | Rs. Cr. | 15.35 | 80.06 | 80.06 | 80.06 |
| Interest on Loan | Rs. Cr. | 31.07 | 159.57 | 148.82 | 138.06 |

| Particulars | Units | True Up FY 2012-13 | True Up FY 2013-14 | APR FY 2014-15 | FY 2015-16 |
|---|---|---|---|---|---|
| Return on Equity | Rs. Cr. | 15.58 | 81.22 | 82.20 | 82.20 |
| Interest on working Capital | Rs. Cr. | 6.85 | 34.55 | 34.16 | 34.53 |
| O&M Expenses (including water charges) | Rs. Cr. | 15.32 | 71.15 | 74.66 | 78.38 |
| Cost of Secondary fuel oil | Rs. Cr. | 1.82 | 8.62 | 13.00 | 12.92 |
| Annual Fixed Cost | Rs. Cr. | **86.00** | **435.16** | **432.89** | **426.16** |
| Variable Charge | | | | | |
| Per Unit Variable Cost | Rs per kWh | **2.23** | **2.31** | **2.26** | **2.28** |
| Total Variable Charge | Rs Cr | **56.39** | **286.57** | **413.15** | **419.02** |

**Table 5: Petitioner's Submission for operational performance, fixed cost, energy charges and annual revenue requirement for FY 2013-14 to FY 2015-16 for Unit 2**

| Particulars | Units | True Up FY 2013-14 | APR FY 2014-15 | FY 2015-16 |
|---|---|---|---|---|
| Capacity | MW | 270 | 270 | 270 |
| Gross Generation | MUs | 1,157.26 | 2,010.42 | 2,015.93 |
| Plant Load Factor | % | 59.24% | 41.66% | 85% |
| Aux Power Consumption | % | 9.41% | 9.00% | 9.00% |
| Ex-Bus Generation | MUs | 1,048.32 | 1,829.48 | 1,834.49 |
| Weighted Average GCV of primary fuel | kCal/kg | 3,618.47 | 3,431.46 | 3,348.20 |
| Station Heat Rate | kcal/kWh | 2,387.00 | 2,387.00 | 2,387.00 |
| Calorific value of secondary fuel | Kcal/litre | 9,346.83 | 9,346.83 | 9,346.83 |
| Specific Coal Consumption | Kg/kWh | 0.66 | 0.69 | 0.71 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| Details of Annual Fixed Cost | | | | |
| Depreciation | Rs. Cr. | 70.43 | 81.09 | 81.09 |
| Interest on Loan | Rs. Cr. | 141.52 | 152.85 | 142.04 |
| Return on Equity | Rs. Cr. | 71.34 | 83.13 | 83.13 |
| Interest on working Capital | Rs. Cr. | 31.60 | 34.26 | 33.97 |
| O&M Expenses (including water charges) | Rs. Cr. | 63.07 | 74.66 | 78.57 |
| Cost of Secondary fuel oil | Rs. Cr. | 7.27 | 12.78 | 12.92 |
| Annual Fixed Cost | Rs. Cr. | **385.23** | **438.76** | **431.72** |
| Variable Charge | | | | |
| Per Unit Variable Cost | Rs per kWh | **2.25** | **2.33** | **2.28** |
| Total Variable Charge | Rs Cr | **236.27** | **426.90** | **419.01** |

## Tariff for supply of energy to JUVNL

3.3 The tariff for supply of Regulated Capacity to JUVNL (erstwhile JSEB) for the first Control Period at Normative Availability submitted by the Petitioner in its petition is summarised in the tables below:

**Table 6: Fixed Charges and rate of Energy Charges for JUVNL for Unit 1**

| Particulars | Units | True up FY 2012-13 | True Up FY 2013-14 | APR FY 2014-15 | ARR FY 2015-16 |
|---|---|---|---|---|---|
| Capacity Charges for 13% of Capacity at 85% Plant Availability Factor | Rs Crore | 12.70 | 64.29 | 63.95 | 62.95 |
| Rate of Energy Charges | Rs/kWh | 2.23 | 2.31 | 2.26 | 2.28 |

**Table 7: Fixed Charges and rate of Energy Charges for JUVNL for Unit 2**

| Particulars | Units | True Up FY 2013-14 | APR FY 2014-15 | ARR FY 2015-16 |
|---|---|---|---|---|
| Capacity Charges for 13% of Capacity at 85% Plant Availability Factor | Rs Crore | 56.91 | 64.82 | 63.78 |
| Rate of Energy Charges | Rs/kWh | 2.25 | 2.33 | 2.28 |

3.4 The Petitioner has submitted additional information in subsequent submissions as mentioned in paragraph 2.6 which have also been considered by the Commission while passing this Order

## A4: PUBLIC CONSULTATION PROCESS

**Injection Charges and Injection Losses**

*Public Comments/Suggestions*

4.1 The objector submitted that regarding injection charges and injection losses, a case (13 of 2014) is still pending before the Hon'ble Commission. The objector further stated that Hon'ble Commission may not consider the injection losses and injection charges in the current petition.

*Petitioner's Response*

4.2 The petitioner responded as follows

"*As per the directions of Hon'ble JSERC in the provisional order dated May 26, 2014, the Transmission Charges are to be borne by Procurer. Transmission Charges means full Transmission Charges not part Transmission Charges, which itself includes Injection and withdrawal charges & losses altogether. JBVNL has made mis-interpretation that part of Transmission Charges would be borne by JBVNL not full, which is a violation of the directions of Hon'ble Commission. Because of such denial by JBVNL, APNRL went to Hon'ble Commission vide Case No. 13, next hearing of which is scheduled on 19th Aug.'16 before Hon'ble Commission".*

*Commission's View*

4.3 Commission understands that this issue is subject matter in Case No 13 of 2014 and the final judgement is still pending. The issue will be dealt in the case currently open before the Commission.

**Dedicated Transmission System**

*Public Comments/Suggestions*

4.4 The objector submitted that it is continuously perusing Jharkhand Urja Sancharan Nigam Ltd and the petitioner for completing the work. It further requested Hon'ble Commission to direct Jharkhand Urja Sacharan Nigam Ltd and M/s APNRL to complete the work immediately.

*Petitioner's Response*

4.5 The petitioner responded as follows

"*The Hon'ble Commission in its provisional order dated May 26, 2014 directed JUVNL to carry out a cost benefit analysis of routing the power from the power station through the Dedicated Transmission System vis-à-vis routing the power through the CTU as is being done currently and submit a report regarding the same to the Commission within two months of issuance of this Order. The Hon'ble Commission further directed the Petitioner and JUVNL to constitute a joint committee to resolve all the issues regarding the transmission of power from the power station to JUVNL. The Hon'ble Commission further mentioned that committee should look into the need for the proposed Dedicated Transmission System, the technical configuration of the proposed line and the sharing of costs of the transmission line and the Petitioner and JUVNL should, after mutual discussions and agreement, arrive at a way forward vis-à-vis the issue of the Dedicated Transmission System, and should submit a status report regarding the same to the Commission within two months of issuance of this Order*

*JUVNL is yet to submit the Cost-Benefit Analysis report for the same. As directed by Hon'ble Commission, the Committee has met and the last meeting was held on 26th July 2016. The Committee is addressing matters in accordance with their requirements. Construction of DTS would follow such cost – benefit analysis,*

*In the meantime, we request the Hon'ble Commission to direct JUVNL/JBVNL to pay transmission charges (injection & withdrawal) & losses (injection & withdrawal) till suitable directions are issued by Hon'ble Commission regarding DTS…".*

*Commission's View*

4.6 Commission had in its Tariff Order dated May 2014 for the petitioner has detailed the principle for constructing the dedicated transmission system for evacuation of power from the project. The rationale for construction of DTS should be a net reduction in the cost of power purchase.

4.7 The Commission directs the petitioner and JUVNL to expedite the resolution to this issue. The decision regarding construction of dedicated transmission system may be taken as per the provisions of the power purchase agreement signed by petitioner with JUVNL

**Capital Cost**

*Public Comments/Suggestions*

4.8 The objector submitted that the detailed break up of capital cost is showing the interest during construction and finance charges and the procurer is not liable to pay interest during construction and financing charges. Objector further requested Hon'ble Commission not to consider the interest during construction and finance charges.

*Petitioner's Response*

4.9 The petitioner responded as follows

"*The capital cost as per the PPA shall mean the capital cost approved by the State Commission. The State Commission determines the capital cost as per the Tariff Regulations framed by it. IDC and financing charges are calculated based on the regulations of Hon'ble Commission.*

*As per clause 7.3(a) of JSERC Generation Tariff Regulations, 2010, IDC and Financing Charges are to be considered as part of Capital Cost. Clause 7.3(a) of JSERC Regulations, 2010 is reproduced below:*

*"7.3Capital cost for a Project shall include:*

*(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan ....."*

*It is submitted that in any Project, Interest During Construction and Financing Charges is considered as integral part of Capital Cost as per industry practice. Further, the same practice is adopted by Central Electricity Regulatory Commission (CERC) as well as most of the State Electricity Regulatory Commissions (SERCs) across the country while approving the Capital Cost of the Project.*

*In view of the above, we request the Hon'ble Commission to kindly consider IDC and financing charges as per its notified regulation".*

*Commission's View*

4.10 Commission has verified the claims of the petitioner in respect of the capital cost. The Commission has approved the capital cost in accordance with regulation 7.3 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 which states that capital cost shall include interest during construction and financing charges. The details of capital cost approved by Commission can be found out in Chapter A5 of this order.

**Apportioning of Cost of Land**

*Public Comments/Suggestions*

4.11 The objector submitted that the PPA between JBVNL and petitioner is to purchase power of 25% of generation and hence are liable to their part of land cost and land development cost as per PPA. The objector further requested Hon'ble Commission to consider part land cost and land development cost as per PPA for finalizing the order.

*Petitioner's Response*

4.12 The petitioner responded as follows

"The total Capital Cost is approved by the Hon'ble Commission and thereafter the Annual Capacity Charges are determined based on the regulations framed by the State Commission. It is pointed out that the tariff charged from the Respondent is only proportionate to the contracted capacity. In view of the same, the contention of the Respondent is without merits and ought to be rejected. It is also pointed out that as per the methodology adopted by Hon'ble JSERC in its Provisional Tariff Order dated May 26, 2014, the total fixed charges are computed for entire capacity and then tariff for regulated capacity is computed based on allocation of power as per PPA. Hence, this is a settled issue as per Hon'ble JSERC Order. Further, similar practice is adopted across the country by Central Electricity Regulatory Commission (CERC) as well as most of the State Electricity Regulatory Commissions (SERCs)*"*.

*Commission's View*

4.13 The Commission has calculated and allocated the fixed charges to JBVNL as per the contracted capacity stated in the PPA. The methodology of fixed capacity allocated to JBVNL has been detailed in Chapters A6 and A7 of this order.

**Best Practices for Optimization of Capital Cost**

*Public Comments/Suggestions*

4.14 The objector submitted that petitioner has stated about adopting best practices for optimization of capital cost. Objector further requested Commission to verify whether the best practices for procurement of materials and equipment were use or not as evidence are not given

*Petitioner's Response*

4.15 The petitioner responded as follows

"*APNRL has tried its level best to optimize Capital cost. Some of the steps taken are given below:*

- *For implementation of the Project, APNRL has opted for EPC and Non EPC mode of awarding Contract to optimise the project cost, as implementing project through only EPC route leads to the higher cost because there is a higher degree of risk of non-completion of project on scheduled time.*
- *APNRL endeavoured to optimise the project cost through negotiation with various BOP vendors to award the Contract on best competitive rates instead of placing an Order for entire BoP to a single Contractor.*
- *APNRL made a sincere effort to implement the Project on schedule. However, the implementation of the Project was delayed due to the reasons not attributable to APNRL project implementation planning, such as change in plant configuration due to adoption of proven technology and delay due to Land Acquisition which has been detailed in the earlier Petition filed by APNRL.*

- *APNRL's project is funded by several PSU Banks and Financial Institutions and as a matter of financial appraisal system followed by such institutions, each and every expenditure on the project has been verified and approved which also includes verification of purchase procedures and expenditures*."

*Commission's View*

4.16 Commission had earlier approved the provisional capital cost for the project in its order dated May 2014. The final capital cost as approved in Chapter A5 of this order after exercising due prudence check in accordance with the JSERC (Generation) Tariff Regulations 2010.

**Consideration of Injection Losses for Finalization of Variable Energy Charge**

*Public Comments/Suggestions*

4.17 The objector submitted that petitioner has factored the injection loss for computation of variable energy charge. Objector further requested Hon'ble Commission that it may not consider injection loss for finalizing the variable energy charge for FY 2012-13 and FY 2013-14 and asked Commission to consider variable energy charge as per the provisional order for FY 2012-13 and FY 2013-14.

*Petitioner's Response*

4.18 The petitioner responded as follows

*"The Annual Fixed charges and Variable charges approved in the Provisional Tariff Order dated May 26, 2014, are on provisional basis. The numbers in the provisional petition was partially on actual figures and partially on estimation basis. Further, the Hon'ble Commission in provisional tariff order dated May 26, 2014 directed APNRL to file a petition for approval of final capital cost of the plant along with the audited accounts for the power plant. APNRL filed its final capital cost petition in compliance to the directions issued by Hon'ble JSERC in its provisional Tariff Order dated May 26, 2014. All the principles as well as operational norms adopted have been considered as approved by Hon'ble JSERC in the Provisional Tariff Order dated May 26, 2014. The variations are only on account of revision in final capital cost upon finalisation of cost and fuel parameters.*

*Further, APNRL has submitted the Audited financial statements and CA certificate with details of Unit wise Capital Cost separately for Unit 1 and Unit 2 to the Hon'ble Commission. Hence the True up for FY 2012-13 & FY 2013-14 and ARR & Tariff claimed for FY 2014-15 & FY 2015-16 is in accordance with the relevant provisions of JSERC Generation Tariff Regulations, 2010.*

*Auxiliary consumption for calculation is taken as Normative Auxiliary Consumption (i.e. 9.0%) as per the regulations of Hon'ble Commission.*

*JBVNL has denied paying the Injection losses by mis-interpreting the directions of Hon'ble Commission. The amount under this head have reached to more than Rs. 7.0 Cr. (without Interest) till March 2016. So APNRL have requested Hon'ble Commission for considering the injection losses for approving variable cost."*

*Commission's View*

4.19 Commission has considered the claims of the petitioner for computation of energy charge. While determining the variable charge component, Commission has relied on the components of variable charge as stated in regulation 8.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010.

**Apportioning of Depreciation, Working Capital Cost**

*Public Comments/Suggestions*

4.20 The objector submitted that PPA between JBVNL and APNRL is to purchase power of 25% of generation. The objector requested Hon'ble Commission to consider part of depreciation cost as per PPA and to approve depreciation as per the provision order for FY 2012-13 and FY 2014-15

*Petitioner's Response*

4.21 The petitioner responded that the total capital cost is approved by Commission and the annual capacity charges are determined based on regulations framed by State Commission. They also submitted that the tariff charged from objector is only proportionate to the contracted capacity. The petitioner further requested the Commission to consider depreciation as per its notified regulations.

*Commission's View*

4.22 The Commission has calculated and allocated the fixed charges to JBVNL as per the contracted capacity stated in the PPA. All the components of the fixed charges are calculated for the Unit as a whole and then apportioned according to the contracted capacity with the beneficiary. The details of fixed capacity allocated to JBVNL has been detailed in Chapters A6 and A7 of this order.

**Annual Fixed Charges, Regulated Capacity Charges and Variable Charges**

*Public Comments/Suggestions*

4.23 The objector submitted that annual fixed charges, regulated capacity charges and variable charges shall be taken as per provisional order given by Hon'ble Commission for FY 2012-13 and FY 2013-14. The objector further submitted that any increase in such charges will affect the power purchase cost of JBVNL and this will affect the JBVNL tariff to consumers.

*Petitioner's Response*

4.24 The petitioner responded that the petition was filed in accordance with provisions of Tariff Regulations of State Commission and the charges were calculated based on the regulations of the Commission.

*Commission's View*

4.25 The Commission observes that the charges as approved in the order dated May 2014 were provisional in nature and was subjected to finalization at the time of true up. The nature of claims of the petitioner was studied and the costs were finalized as per the relevant provisions of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010. The details of charges allocated to JBVNL have been included in Chapters A6 and A7 of this order.

**Disallowance of Gap for FY 2012-13 and FY 2013-14**

*Public Comments/Suggestions*

4.26 The objector submitted that the gap calculated Unit 1 – Rs 1.68Cr (FY 2012-13), Unit 1 – Rs 12.28Cr and Unit 2 – Rs 10.73Cr (FY 2013-14) is irrational and the gap should be avoided. The inefficiencies of the petitioner should not be passed on as it may affect the consumers of the state.

*Petitioner's Response*

4.27 The petitioner responded that the petition was filed in accordance with provisions of tariff regulations of State Commission and considering the directions passed by Commission. The petitioner further requested the Commission to consider revenue gap as per its notified regulations. The petitioner also denied the contention of the objector that the gap is due to inefficiency of the petitioner.

*Commission's View*

4.28 The Commission has studied the claims of the petitioner and has approved the capital cost, fixed and energy charges as per the provisions of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010. The details of charges allocated to JBVNL and the final gap or surplus arrived at have been included in Chapters A6 and A7 of this order.

**Procurement of Cheaper Coal**

*Public Comments/Suggestions*

4.29 The objector submitted that petitioner must use optimal method to procure cheaper coal as the increase in coal cost may increase the tariff to be paid to APNRL. The objector further stated that the variable charges should be taken as per provisional order given for FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16.

*Petitioner's Response*

4.30 The petitioner responded as follows.

*"APNRL would like to humbly submit that the fuel requirement of the Project was planned to be fulfilled from the captive Ganeshpur coal block, which was allotted to APNRL and Tata Steel on a 50:50 Joint Allocation basis. The Hon'ble Supreme Court in its Judgment in September 24, 2014 has cancelled the captive mine allocation to APNRL. APNRL has also received tapering coal linkage for 540 MW (2 x 270 MW) from Coal India Ltd. and FSAs have been signed with Central Coalfields Ltd.*

*APNRL requested Ministry of Coal (MoC) for conversion of its Tapering Linkage into Long Term Linkage vide its various letters. The same was followed up with request for waiver of premium towards coal supplied under tapering linkage to the company. MoC have considered the same and accordingly, decreased the premium from 40% to 20% and have also increased the quantum of tapering linkage, i.e. 50% from 25% of the contracted capacity and the tenure of tapering linkage of the Petitioner was also extended till June 2015.*

*APNRL has always endeavored to procure the cheaper coal available for operating the plant. APNRL has also complied with the Directive of Hon'ble Commission and hereby confirm that, the energy charge has not exceeded by more than 30% of base energy charge as approved by the Hon'ble Commission in the Order in any month and the weighted average price of use of fuel including alternative sources of fuel have never exceeded 20% of the energy charge rate based on weighted average fuel price for the previous month.*

*Hence, APNRL is making all efforts to procure the cheaper coal from alternate sources in the market."*

*Commission's View*

4.31 The Commission has considered the objections and claims in this regard. Commission understands that the captive coal block allocated to the petitioner was cancelled vide an Hon'ble Supreme Court judgement. The petitioner has sourced coal from a tapering linkage allowed by Ministry of Coal. The coal blending of the petitioner in FY 2012-13 and FY 2013-14 has been considered by Commission and it could be seen that the petitioner relied on the cheapest source of coal.

4.32 However, the coal blend mix allowed by Commission for FY 2014-15 and FY 2015-16 is on a provisional basis and the petitioner is directed to ensure that the coal is sourced from the cheapest means available. The quantum of costly imported coal should be reduced to the maximum possible extent. At the same time the petitioner should bring an end to ambiguity prevailing over fuel supply by resorting to Long term linkages.

**Incentive related to plant availability factor**

*Public Comments/Suggestions*

4.33 The objector submitted that issue of incentive should be considered by Commission as per the regulations. The objector stated that it has executed PPA for 122.85MW and the petitioner has billed the objector for capacity charges as per the contracted capacity availability. The objector further stated that this practice is not in line with the regulations and the plant availability is not being furnished by ERLDC/ERPC.

4.34 The objector also enclosed the note of discussion held in 116th OCC meeting ERPC regarding plant availability of Maithon Power Limited (Similar to APNRL who has part of its full capacity tide under long term PPA and allocations are in MW) in which it was suggested to follow existing regulation.

4.35 The objector further requested that the petitioner may be directed to bill capacity charges with respect to total plant availability in accordance to the regulation.

*Petitioner's Response*

4.36 The petitioner responded as follows.

*"As per the PPA between APNRL and JBVNL(erstwhile JSEB), definition of Availability is reproduced below (copy of the captioned PPA is attached as Annexure-3):*

<u>*Availability Factor" or "Availability": shall have the meaning ascribed thereto in ABT (provided that in place of Installed capacity and Normative auxiliary consumption it shall be Contracted Capacity);*</u>

*Thus, for power supply to JBVNL, APNRL's availability have to be contract specific not plant specific. APNRL have honored its contract 92.14% & 92.81% in FY 2012-13 & FY 2013-14 respectively (after the consent for offtake by JBVNL).*

*APNRL being a CTU connected plant selling power to more than one State, it come under preview of ERLDC. ERLDC denied giving Availability Certificate to APNRL because APNRL is not a Central Generating Unit (CGS), its contract are not based on plant capacity but are fixed quantum contracts and it have not signed 100% PPA in Long-term basis. Kindly note, APNRL also requested availability certificate from Jharkhand SLDC, which went unresponsive from Jharkhand SLDC.*

*Thus, for power supply to JBVNL, Contract Availability is applicable for the captioned PPA. Under the present PPA, the state draws power at a concessional rate as per the MOU between Government of Jharkhand and the Petitioner. The Petitioner has always supplied power based on Monthly Dispatch Schedule provided to JBVNL, which has not been rejected at any time. In the event of change in interpretation of Availability Factor departing from the PPA, it would have significant impact on the revenue realization from the power supplied at variable cost. Power has been supplied based on availability and hence the basis is Contracted Capacity"*

*Commission's View*

4.37 The Commission has considered the calculation of incentive as per the provisions specified in JSERC (Generation Tariff) regulations, 2010. The petitioner failed to submit the requisite documents such as availability certificates from load dispatch centre / ERPC even after Commission pointing out the same in its data gaps. Due to non-availability of requisite documents Commission has considered the information submitted and approved the availability of 85% according to normative parameters. Incentive calculation has been done based on approved availability, of the Generation Station of the petitioner, against contracted capacity (as per provisions of the power purchase agreement between petitioner and JBVNL (erstwhile JSEB)).

# A5: CAPITAL COST OF THE PROJECT

5.1 The Commission in its Provisional Order on Petition for approval of Capital Cost, Business Plan and MYT Petition for FY 2012-13 to FY 2015-16 for Adhunik Power and Natural Resources Limited (APNRL) dated 26th May, 2014 provisionally approved the capital cost of the project.

5.2 The Commission has analyzed the submissions of the Petitioner with respect to the approval of final Capital Cost of Unit-1 and Unit-II of its project and has undertaken the approval exercise in accordance with the applicable regulations. The component-wise description of the Petitioner's submission and the Commission's analysis thereof is provided hereunder.

*Petitioner's submission*

5.3 The Petitioner in the petition dated April 30th, 2015 submitted the total projected capital cost as on COD for Unit-1 and Unit-2 at Rs 3,344.21Cr. The major components of the capital cost submitted by the Petitioner are detailed hereunder:

a) Land and Site Development

b) Preliminary & Preoperative Expenses

c) Plant and Machinery

d) Civil Works & Infrastructure

e) Interest During Construction and Financing Charges

5.4 The break up summary of the total projected capital cost and the unit wise capital cost as submitted by the Petitioner in the Petition dated April 30th, 2015 is shown in the table below:

**Table 8 Summary of the Capital Cost submitted by the Petitioner (Rs Cr)**

| Particulars | Unit 1 Estimated Cost till COD of the Project | Unit 2 Estimated Cost till COD of the Project | Total Cost till CoD of the Project |
|---|---|---|---|
| Land and Land Development | 49.12 | 49.12 | 98.24 |
| Pre operative Expenses | 156.66 | 168.63 | 325.29 |
| Plant & Machinery | 990.31 | 981.60 | 1,971.91 |
| Civil Works and Infrastructure | 171.14 | 171.14 | 342.27 |
| **Total Project Hard Cost** | **1,367.23** | **1,370.49** | **2,737.72** |
| Interest during Construction(IDC & Financing Charges) | 295.44 | 311.04 | 606.49 |
| **Total Project Cost(Including IDC)** | **1,662.68** | **1,681.53** | **3,344.21** |

5.5 The Petitioner in the petition dated April 30th, 2015 submitted that COD of the plant was declared on January 21, 2013 for Unit 1 and on May 19, 2013 for Unit 2.

5.6 The Petitioner also submitted that the Petitioner has endeavored to optimize the capital cost of the Project. For implementation of the Project, the Petitioner has opted for EPC and Non EPC mode of awarding contract to optimize the project cost, as implementing project through only EPC route leads to the higher cost because there would be a higher degree of risk of non-completion of project on scheduled time. Further the Petitioner endeavored to optimize the project cost through negotiation with various BOP vendors to award the contract on best competitive rates instead of placing an Order for entire BoP to a single contractor.

5.7 The Petitioner claims to have made a sincere effort to implement the Project on schedule. However, the Petitioner submitted that the implementation of the Project was delayed due to the reasons such as change in plant configuration due to adoption of proven technology and delay due to Land Acquisition.

5.8 The Petitioner further quoted the CERC order dated June 04, 2012 which approved the benchmark norms as on December, 2011 for thermal power station / unit size(s) 500/600/ 660/800 MW. The order states that the hard cost of 500MW to 800 MW unit size varies from Rs 4.30 Cr/MW to Rs 5.40 Cr/MW project

5.9 The Petitioner further stated that the hard cost (total cost excluding IDC and financing charges) of the project works out to around Rs 5.07 Cr/MW.

*Commission's Analysis*

5.10 As per the provisions specified in Regulation 7.3 of the Generation Tariff regulations, 2010 (quoted below), the Commission shall approve the capital cost of a power project based on the actual expenditure incurred by the developer (including IDC) upto COD subject to prudence check by the Commission.

*"7.3 Capital cost for a Project shall include:*

*(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the date of commercial operation of the project, as admitted by the Commission, as admitted by the Commission after prudence check shall form the basis for determination of tariff;*

*(b) capitalised initial spares subject to the ceiling norms specified as under:*

*i. Coal-based/lignite fired thermal generating stations – 2.5 % of original project cost* *ii. Gas Turbine/Combined Cycle thermal generating stations- 4.0% of original project cost*

*iii. Hydro Generating stations – 1.50% of the original project cost*

*Provided that where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost under first proviso to clause 7.4 of these Regulations, such norms shall apply to the exclusion of the norms specified herein.*

*(c) additional capital expenditure determined under clause 7.5 and 7.6 of these Regulation*

*Provided that the assets forming part of the Project, but not in use shall be taken out of the capital cost:*

*7.4 The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:*

*Provided that in case of the thermal generating station prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Central Commission from time to time:*

*Provided further that in cases where benchmark norms have not been specified by the Central Commission, the Commission may specify the benchmark norms or allow the capital cost on the basis of a prudence check which shall include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff:*

*Provided also that the Commission may issue guidelines for vetting of capital cost of hydro-electric projects by independent agency or expert and in that event the capital cost as vetted by such agency or expert may be considered by the Commission while determining the tariff for the hydro generating station:*

*...*

*Provided also that where the power purchase agreement entered into between the Generating Company and the Beneficiaries, provide for a ceiling of actual expenditure, the capital expenditure admitted the Commission shall take into consideration such ceiling for determination of tariff:"*

5.11 The Petitioner submitted the capital cost of Unit 1 and Unit 2 as on COD at Rs 3344.21 Cr. The Petitioner also submitted the CA certificate for capital cost incurred as on COD i.e. Rs 3344.21 Cr.

5.12 The Commission observed that the audited accounts for FY 2013-14 states an amount of Rs 3,310.82 Cr in Gross Block as on 31st March 2014. The Commission directed the Petitioner to clarify the mismatch between gross block and the amount specified in the CA certificate. The Petitioner responded by submitting the following

- CA certificate with details of unit wise capital cost separately for Unit 1 and Unit 2 has already been submitted
- Amount of Rs 33.28Cr is a part of capital work in progress in the audited accounts.

5.13 The Commission observed that the CA certificate produced by the Petitioner states the capital cost incurred till COD of the project. However it does not provide any detail of capital work in progress. As per the CA certificate submitted by the Petitioner, the total incurred amount of Rs 3344.21 Cr has been distributed among cost of land, cost of mechanical works, BoP electrical, civil works and other assets.

5.14 Even after directions from the Commission vide the letters on discrepancy and additional information requirements, the Petitioner has been unable to provide adequate justification as to why the 'capital works in progress' have been considered as part of the capital cost of each of the Units and provide reliable details of the capital cost as on CoD of each unit of the project.

5.15 In light of the above issues the Commission is constrained to rely on the audited accounts of the Petitioner for prudence check and approval of the capital cost of the Petitioner. Accordingly the capitalisation achieved as on March 31$^{st}$ 2014 has been considered for approval of the capital cost of project. As per the accounts of FY 2013-14, the capitalised amount was Rs 3314.24 including intangible assets and excluding work in progress. The Commission has apportioned this capital cost further for Unit-I and Unit-II of the project the ratio in which the total amount is divided among the two units as per the CA certificate for capital cost incurred up to CoD of the Units.

5.16 The petitioner had also submitted the break-up of total capital cost into soft and hard costs. As per the submission the hard cost constituted 2737.37 Cr (81.86%) and soft cost constituted 606.49 Cr (18.13%). Commission further checked the audited accounts of the petitioner to study the nature and actual expenditure on interest during construction. Apropos the audited accounts the finance charges incurred during construction is coming under the account head pre-operative expenses.

5.17 The definition of pre-operative expenses as per the audited accounts of petitioner is shown below

*The expenditure incurred during the construction period is classified as pre-operative expenditure, pending capitalization and will be apportioned to the assets on the completion of project*

Pre-operative expenses by its very nature is capital in nature. Hence, Commission has verified the costs booked under this head in the accounts of petitioner till FY 2013-14. Commission found that an amount of Rs 889.23 Cr was booked under pre-operative expenses as per the audited accounts till FY 2013-14. This amount also includes the interest charges incurred during construction.

5.18 The total of interest during construction and pre-operative expenses as per the submission of petitioner vide its petition amounted to Rs 931.78 Cr whereas the actual cost booked under petitioner's account in the head of preoperative expense (including interest during construction) is Rs 889.23 Cr. This translates to an amount of Rs 42.54 Cr being claimed over and above the actual expenditure.

5.19 The total cost claimed by petitioner before apportioning soft costs and after apportioning soft costs is the same. The summary of petitioners claim of capital cost through separate heads of cost are shown in the below table

**Table 9: Summary of Capital Cost by Petitioner**

| Particulars | Unit 1 Estimated Cost till COD of the Project | Unit 2 Estimated Cost till COD of the Project | Total Cost till CoD of the Project |
|---|---|---|---|
| **Cost components before apportionment of soft costs** | | | |
| Land and Land Development | 49.12 | 49.12 | 98.24 |
| Pre operative Expenses | 156.66 | 168.63 | 325.29 |
| Plant & Machinery | 990.31 | 981.60 | 1,971.91 |
| Civil Works and Infrastructure | 171.14 | 171.14 | 342.27 |
| **Total Project Hard Cost** | **1,367.23** | **1,370.49** | **2,737.72** |
| Interest during Construction(IDC & Financing Charges) | 295.44 | 311.04 | 606.49 |
| **Total Project Cost(Including IDC)** | **1,662.68** | **1,681.53** | **3,344.21** |
| **Cost components after apportionment of soft costs** | | | |
| Land & Site Development | 49.12 | 49.12 | 98.24 |
| Plant & Machinery in generating stations including plant foundations | 1,330.46 | 1,351.12 | 2,681.58 |
| Building & Civil Engineering works of a permanent character | 283.10 | 281.29 | 564.39 |
| **Total Project Cost** | **1,662.68** | **1,681.53** | **3,344.21** |

5.20 Hence from the table and above findings it can be concluded that the amount of Rs 42.54 has been erroneously charged to asset components which has not been incurred. The Commission has reduced the capital cost to this amount from the gross block considered for approving the capital cost.

5.21 As discussed in para 5.15 an amount of Rs 3,314.24 Cr was considered towards capital cost which is further reduced by the amount of Rs 42.54 as stated in para 5.20. The approved capital cost is as shown in the table below.

**Table 10: Capital Cost approved by Commission**

| Particulars | Unit 1 Cost till COD of the Project | Unit 2 Cost till COD of the Project | Total Cost till CoD of the Project |
|---|---|---|---|
| **Land and Land Development** | 48.49 | 48.49 | 96.98 |

| Particulars | Unit 1 Cost till COD of the Project | Unit 2 Cost till COD of the Project | Total Cost till CoD of the Project |
|---|---|---|---|
| Land owned under full title | 37.43 | 37.43 | 74.86 |
| Land held under lease | 11.06 | 11.06 | 22.12 |
| Plant & Machinery | 1359.99 | 1381.11 | 2741.10 |
| Civil Works and Infrastructure | 209.94 | 208.57 | 418.51 |
| Other Assets | 7.55 | 7.55 | 15.11 |
| **Total Project Cost** | **1625.98** | **1645.72** | **3271.69** |

5.22 Based on the observations made above, the Commission has approved capital cost for Unit 1 and Unit 2 of the power plant at Rs 1625.98 Cr and Rs 1645.72 Cr respectively. Accordingly, the total capital cost of Stage-I of project is approved at Rs 3271.69 Cr.

# A6: TRUE UP FOR FY 2012-13 AND FY 2013-14

## Operational Parameters
## Availability

*Petitioner's submission*

6.1 The Petitioner in the petition dated April 30$^{th}$, 2015 did not submit the availability for Unit 1 and Unit 2. Further as a reply to the data gaps pointed out by Commission, the Petitioner has submitted that they have approached Jharkhand SLDC for issuing the monthly availability certificates but have not received the same.

*Commission's Analysis*

6.2 Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the availability of a new generating station.

*"8.6 The norms of operation for generating stations other than existing stations shall be as under:*

*(a) Normative Annual Plant Availability Factor (NAPAF): All thermal generating stations, NAPAF shall be 85%."*

6.3 The petitioner was unable to submit requisite certificates from SLDC/ERPC for certifying the availability.

6.4 Accordingly, the Commission approves availability for Unit 1 and Unit 2 at Normative Annual Plant Availability Factor i.e. at 85%. The Commission also directs the petitioner to submit requisite certificates certifying availability against contracted capacity for FY 2012-13 and FY 2013-14 along with its next tariff petition. Commission may make appropriate adjustments as it deems appropriate.

## Generation

*Petitioner's submission*

6.5 The Petitioner in the petition dated April 30$^{th}$, 2015 submitted that the Petitioner has signed PPA with JUVNL/JBVNL (earlier JSEB) for the 122.85 MW capacity (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption).

6.6 Further the Petitioner has submitted that the average PLF for Generation plant was 62.63% for Unit 1 in FY 2012-13, 57.85% for Unit 1 and 56.34% for Unit 2 in FY 2013-14.

6.7 The gross generation submitted by the Petitioner in its petition dated April 30th, 2015 is shown in the following table.

**Table 11 Gross generation submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Unit 1 | MW | 270 | 270 | 270 |
| Plant Load Factor | % | 62.63% | 57.85% | 56.34% |
| Gross Generation | MU | 284.09 | 1,368.20 | 1,157.26 |

*Commission's Analysis*

6.8 The Commission has considered the actual COD of Unit 1 and Unit 2, and the actual PLF as submitted by the Petitioner (for Unit 1 and Unit 2) for arriving at the gross generation for the year in which the Units were commissioned.

6.9 Accordingly, the generation for Unit 1 is approved at 280.03 MU for FY 2012-13 considering 69 days of operation and 1,368.20 MU for FY 2013-14 towards true up of gross generation.

6.10 Similarly, the gross generation from Unit 2 for FY 2013-14 is approved at 1,153.66 MU towards true up for 316 days of operation.

6.11 The table below shows the gross generation approved by the Commission for both the units towards true up of FY 2012-13 and FY 2013-14:

**Table 12 Gross Generation of both units approved by the Commission towards True up**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| Generation(MU) | 2012-13 | | | 2013-14 | | |
| Unit 1 | 380.05 | 284.09 | 280.03 | 2,010.42 | 1,368.20 | 1,368.20 |
| Unit 2 | - | - | | 1,740.53 | 1,157.26 | 1,153.66 |

## Auxiliary Consumption, Station heat rate and Secondary Fuel Oil Consumption

*Petitioner's submission*

6.12 The Petitioner in the petition dated April 30th, 2015, submitted that the auxiliary consumption both for Unit 1 at 10.85% for FY 2012-13 and at 9.30% for FY 2013-14. Further, the Petitioner submitted the auxiliary consumption for Unit 2 for FY 2013-14 at 9.41%.

6.13 The Petitioner in the petition dated April 30th, 2015 submitted that the Station Heat rate both for Unit 1(FY 2012-13 and FY 2013-14) and Unit 2 (FY 2013-14) at 2,387 kCal/kWh.

6.14 The Petitioner also submitted the Secondary Fuel Oil Consumption for both for Unit 1(FY 2012-13 and FY 2013-14) and Unit 2 (FY 2013-14) at 1 ml/kWh.

*Commission's Analysis*

6.15 Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the operational parameters including auxiliary consumption, station heat rate and secondary fuel oil consumption of a generating station.

*"Auxiliary Energy Consumption*

*8.6(c) (i)* ***Coal Based generating Stations***

| | | |
|---|---|---|
| *200 MW Series* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |
| *500 MW Series- Steam Driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *6%* |
| *500 MW Series- Electrically driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

*Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:*

*(b) Gross Station Heat Rate:*

*(i) Coal-based and lignite-fired Thermal Generating Stations = 1.065 X Design*

***Heat Rate (kCal/kWh)***

*Where, the Design Heat Rate of a unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.*

*Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:*

| *Pressure Rating(kg/cm2* | *150* | *170* | *170* | *247* | *247* |
|---|---|---|---|---|---|
| *SHT/RHT (0C)* | *535/535* | *537/537* | *537/565* | *537/565* | *565/593* |
| *Type of BFP* | *Electrical Driven* | *Turbine driven* | *Turbine Driven* | *Turbine Driven* | *Turbine Driven* |
| *Max Turbine Cycle Heat rate (kCal/kWh)* | *1955* | *1950* | *1935* | *1900* | *1850* |
| *Min. Boiler Efficiency* | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| *Sub-Bituminous Indian Coal* | *0.85* | *0.85* | *0.85* | *0.85* | *0.85* |
| *Bituminous Imported Coal* | *0.89* | *0.89* | *0.89* | *0.89* | *0.89* |
| *Max Design Unit Heat rate (kCal/kWh)* | | | | | |
| *Sub-Bituminous Indian Coal* | *2300* | *2294* | *2276* | *2235* | *2176* |
| *Bituminous Imported Coal* | *2197* | *2191* | *2174* | *2135* | *2079* |

***Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken;***

***Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;***

*Provided also that if one or more units were declared under commercial operation prior to 1.4.2011, the heat rate norms for those units as well as units declared under commercial operation on or after 1.4.2012 shall be lower of the heat rate norms arrived at by above methodology and the norms as per clause 8.4 of these Regulations;*

*Note: In respect of units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven BFP.*

*...*

*(d) Secondary Fuel Oil Consumption for Coal based generating stations: 1.0 ml/kWh."*

6.16 The Commission approves the auxiliary consumption as per the norms towards true up of FY 2012-13 and FY 2013-14. The Commission feels that the plant is relatively new and higher auxiliary consumption leads to reduced net generation from the plant. Hence, the auxiliary consumption is approved at 9%.

6.17 As per Regulation 8(i)(b) cited in paragraph 6.15 above, the Commission has determined the design heat rate considering the plant specifications mentioned in the performance guarantee provided by the manufacturer (M/s Bharat Heavy Electricals Ltd.) in "Annexure-B Performance Guarantee Schedule" of the services contract between the Petitioner and M/s Bharat Heavy Electricals Ltd. The manufacturer has guaranteed the Turbine Cycle Heat Rate (at 100% TMCR with zero percent make up) at 1943 kCal/kWh and boiler efficiency at 86.7% for both Unit 1 and Unit 2. The unit design heat rate has been arrived at 2241 kCal/kWh by using guaranteed turbine cycle heat rate and boiler efficiency. By multiplying the unit design heat rate with the factor specified in the said regulations i.e. 1.065, the Commission arrived at the heat rate of 2387 kCal/kWh and accordingly approves the same.

6.18 The Commission also approves the Secondary Fuel Oil Consumption at 1 ml/kWh as specified in the regulation cited in paragraph 6.15 above.

## Coal Mix, Coal Cost, Transit loss and GCV

*Petitioner's submission*

6.19 The Petitioner submitted that the fuel requirement of the project was planned to be fulfilled from the captive Ganeshpur coal block which was allotted to the Petitioner and Tata Steel on a 50:50 joint allocation basis. Further the Petitioner submitted that the Hon'ble Supreme Court in its judgement dated September 24$^{th}$, 2014 has cancelled the captive mine allocation to the Petitioner.

6.20 The Petitioner stated that it received tapering coal linkage for 540MW (2x270MW) from Coal India Ltd and FSAs have been signed with central coal field ltd (CCL). As per the tapering linkage policy of Ministry of Coal, coal is to be supplied on tapering basis, i.e, 75%, 50%, 25%, 0% in 1$^{st}$ , 2$^{nd}$, 3$^{rd}$, 4$^{th}$ year from year of normative date of production of coal respectively. The coal supplied herein was supplied at 40% premium to the price of coal of CCL which was subsequently revised to 20% premium. Further, pursuant to the cancellation of coal blocks by Hon'ble Supreme Court, Ministry allowed 50% coal to be supplied at 20% premium, which has been further extended till June 2015 only. The Petitioner hence submitted that it was forced to meet its coal requirement through combination of tapering linkage, spot market, washery rejects, imported coal etc.

6.21 In its petition dated April 30th , 2015, the Petitioner submitted the following coal mix towards the true up of ARR for FY 2012-13 and FY 2013-14 for Unit 1 and Unit 2:

**Table 13 Coal Mix during the Control Period submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Domestic Coal-Linkage | 83.56% | 67.13% | 70.65% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 16.44% | 27.75% | 24.50% |

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Washery Rejects | 0.00% | 0.72% | 1.03% |
| Imported Coal | 0.00% | 4.40% | 3.82% |

6.22 With regards to the landed cost of coal, the submission of the Petitioner is summarised in the following table as shown below:

**Table 14 Landed Cost of coal (Rs/MT) of Unit 1 & Unit 2 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | 2012-13 | 2013-14 | 2013-14 |
| Domestic Coal-Linkage | 2,914.39 | 2,906.01 | 2,877.64 |
| Captive Coal Allocation | 0.00 | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 2,910.12 | 3,299.43 | 3,323.76 |
| Washery Rejects | 0.00 | 1,689.71 | 1,689.98 |
| Imported Coal | 0.00 | 4,683.71 | 4,770.88 |

6.23 With regards to the GCV of coal, the Petitioner in its petition dated April 30th, 2015 submitted the projected GCV of coal from various sources as shown in the following table.

**Table 15: GCV of Coal (kcal/kg) from various sources for Unit 1 and Unit 2 submitted by Petitioner**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | 2012-13 | 2013-14 | 2013-14 |
| Domestic Coal-Linkage | 3,469.16 | 3,717.90 | 3,761.42 |
| Captive Coal Allocation | 0.00 | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 4,055.90 | 3,215.24 | 3,230.68 |
| Washery Rejects | 0.00 | 2,647.00 | 2,647.00 |
| Imported Coal | 0.00 | 3,721.05 | 3,724.05 |

*Commission's Analysis*

6.24 The Petitioner was allotted a captive coal block (Ganeshpur) along with Tata Steel for supply of coal to the power plant. However, the captive mine allocation to the Petitioner was cancelled after the judgement made by Hon'ble Supreme Court on writ petition (CRL) No 120 of 2012. As per the latest information submitted by the Petitioner, the Petitioner has obtained a tapering coal linkage from Coal India limited and fuel supply agreements have been signed with Central Coal fields Ltd. Petitioner also submitted that it is forced to meet its coal requirement through combination of tapering linkage, spot market, washery rejects and imported coal.

6.25 The Commission understands that the captive coal block allocated to the Petitioner has been cancelled vide the Supreme Court judgement stated as above. Hence, the Petitioner is largely depending on the domestic linkage by means of tapering linkage with CCL. Meanwhile, the Commission observes that the Petitioner primarily used domestic coal from the CCL linkage and spot market to meet its coal requirements during FY 2012-13 and FY 2013-14. The percentage of coal requirement met through the CCL linkage was 83.56% in FY 2012-13 and 67.13% in FY 2013-14 for Unit 1 and 70.65% for Unit 2 in FY 2013-14. The Petitioner has also used imported coal in FY 2013-14.

6.26 The Commission approves the coal mix for FY 2012-13 and FY 2013-14 equal to the actual coal mix achieved by the Petitioner during the year. The summary of the coal mix approved by Commission towards true up of FY 2012-13 and FY 2013-14 is shown in the table below.

**Table 16 Coal Mix for FY 2012-13 and FY 2013-14 approved by the Commission – Unit 1**

| Coal Mix – Unit 1 | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13 | | | 2013-14 | | |
| Domestic Coal-Linkage | 83.56% | 83.56% | 83.56% | 65.00% | 67.13% | 67.13% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 16.44% | 16.44% | 16.44% | 35.00% | 27.75% | 27.75% |
| Washery Rejects | 0.00% | 0.00% | 0.00% | 0.00% | 0.72% | 0.72% |
| Imported Coal | 0.00% | 0.00% | 0.00% | 0.00% | 4.40% | 4.40% |

**Table 17 Coal Mix for FY 2013-14 approved by the Commission – Unit 2**

| Coal Mix – Unit 2 | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | 2013-14 | | |
| Domestic Coal-Linkage | 65.00% | 70.65% | 70.65% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 35.00% | 24.50% | 24.50% |

| Coal Mix – Unit 2 | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | 2013-14 | | |
| Washery Rejects | 0.00% | 1.03% | 1.03% |
| Imported Coal | 0.00% | 3.82% | 3.82% |

6.27 The Commission approves normative transit loss of 0.8% for coal procured from domestic sources (other than coal obtained from captive coal block) in accordance with Generation Tariff Regulations, 2010. The Commission also notes that the Central Commission, in the CERC (Terms and Conditions of Tariff) Regulations, 2014, has set a norm of 0.2% for transit loss on imported coal. The Commission approves the same for any imported coal that may be used by the plant too.

**Table 18 Coal Cost (Rs/MT) of Unit 1 approved by the Commission**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13 | | | 2013-14 | | |
| Domestic Coal-Linkage | 2914 | 2,914.39 | 2,914.39 | 2914 | 2,906.01 | 2,906.01 |
| Captive Coal Allocation | - | 0.00 | 0.00 | - | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 2910 | 2,910.12 | 2,910.12 | 2910 | 3,299.43 | 3,299.43 |
| Washery Rejects | - | 0.00 | 0.00 | - | 1,689.71 | 1,689.71 |
| Imported Coal | - | 0.00 | 0.00 | - | 4,683.71 | 4,683.71 |

**Table 19 Coal Cost (Rs/MT) of Unit 2 approved by the Commission**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | 2013-14 | | |
| Domestic Coal-Linkage | 2914 | 2,877.64 | 2,877.64 |
| Captive Coal Allocation | - | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 2910 | 3,323.76 | 3,323.76 |
| Washery Rejects | - | 1,689.98 | 1,689.98 |
| Imported Coal | - | 4,770.88 | 4,770.88 |

**Table 20 GCV (Kcal/L) of coal for Unit 1 approved by the Commission**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13 | | | 2013-14 | | |
| Domestic Coal-Linkage | 3,469.00 | 3469.16 | 3469.16 | 3,469 | 3,717.90 | 3,717.90 |
| Captive Coal Allocation | - | 0.00 | 0.00 | - | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 4,056.00 | 4055.90 | 4055.90 | 4,056 | 3,215.24 | 3,215.24 |
| Washery Rejects | - | 0.00 | 0.00 | - | 2,647.00 | 2,647.00 |

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13 | | | 2013-14 | | |
| Imported Coal | - | 0.00 | 0.00 | - | 3,721.05 | 3,721.05 |

**Table 21 GCV (Kcal/L) of coal for Unit 2 approved by the Commission**

| Particulars | As Per Petition | Revised submitted by the Petitioner | Approved in MYT Order |
|---|---|---|---|
| | 2013-14 | | |
| Domestic Coal-Linkage | 3,469.00 | 3761.42 | 3761.42 |
| Captive Coal Allocation | 0.00 | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 4,056 | 3230.68 | 3230.68 |
| Washery Rejects | 0.00 | 2647.00 | 2647.00 |
| Imported Coal | 0.00 | 3724.05 | 3724.05 |

## Base Energy Charge Rate (ECR) and Cost of Primary Fuel

*Petitioner's submission*

6.28 The Petitioner has in the Petition dated April 30th, 2015 projected the energy charge for the period FY 2012-13 & FY 2013-14 has made the following submission

*"5.2. The energy charges of Rs. 2.134/kWh and Rs. 2.071 /kWh was approved by the Commission for Unit 1 for FY 2012-13 and FY 2013-14 in Provisional Order dated May 26, 2014. The energy charges considering the normative performance parameters and actual fuel prices and calorific value are in variation with the energy charges approved by the Commission. Such variation in the energy charges approved by the Commission and as claimed for the purpose of Truing up is only due to the variation in the actual prices and GCV of the fuel, which are not attributable to APNRL. Though the actual performance parameters were higher than the normative performance parameters, the Petitioner has computed the energy charges for truing up based on actual generation, actual auxiliary consumption, normative heat rate and normative secondary fuel oil consumption."*

6.29 The Petitioner has submitted the following claim towards base energy charge rate of both units towards true up as shown below:

**Table 22 Energy Charge Rate submitted by the Petitioner for Unit 1 & Unit 2**

| Particulars | Uom | Unit 1 FY 2012-13 | Unit 1 FY 2013-14 | Unit 2 FY 2014-15 |
|---|---|---|---|---|
| Operational Parameters | | | | |
| Aux Consumption | % | 10.85% | 9.30% | 9.41% |
| Heat Rate | kCal/ kWh | 2,387 | 2,387 | 2,387 |

| Particulars | Uom | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2014-15 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| Secondary Oil Consumption | kL/year | 284.09 | 1,368.20 | 1,157.26 |
| Calorific Value of Oil | kCal/L | 9,346.83 | 9,346.83 | 9,346.83 |
| Coal | | | | |
| Weighted Average Calorific Value of Indian Coal | kCal/kg | 3,565.64 | 3,570.87 | 3,618.47 |
| Weighted Average cost of Indian Coal | Rs/Tonne | 2,913.69 | 3,084.78 | 3,047.04 |
| Energy Charge Rate considering coal Cost only | Rs/kWh | 2.20 | 2.28 | 2.23 |
| Injection Loss Considered | % | 1.39% | 1.15% | 1.15% |
| Energy Charge rate | Rs/kWh | 2.23 | 2.31 | 2.25 |

*Commission's Analysis*

6.30 As per the Generation Tariff Regulation, 2010, the energy (variable) charge shall cover primary fuel costs and shall be payable by every Beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month.

6.31 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.17 and 8.18 of the Generation Tariff Regulation, 2010 as quoted below:

*"8.17 Total Energy charge payable to the Generating Company for a month shall be: = (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

*8.18 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formula:*

*(a) For coal based stations*

*ECR = (GHR – SFC x CVSF) x LPPF x 100/ {CVPF x (100 – AUX)}*

*Where, AUX - Normative auxiliary energy consumption in percentage*

*CVPF - Gross calorific value of primary fuel as fired, in KCal per kg, per litre or per standard cubic metre, as applicable.*

*CVSF - Calorific value of secondary fuel, in KCal per ml*

*ECR - Energy charge rate, in Rupees per kWh sent out.*

*GHR - Gross station heat rate, in KCal per kWh.*

*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.*

*SFC - Specific fuel oil consumption, in ml per kWh" .*

6.32 The Commission notes that the Petitioner, while calculating ECR, considered the cost of coal without including the transit loss of coal, and later grossed up ECR by 0.80%. This calculation is not in accordance with the Generation Tariff Regulations, 2010. As per the formula specified in the said regulations, the landed cost of coal, inclusive of any transit loss, shall be used for calculation of ECR. Further, no grossing up of ECR by transit loss is required.

6.33 The Commission further observed that the Petitioner has escalated the energy charge rate with the injection loss (%). However, Commission finds no merit in its submission in this regard and feels that the calculation of ECR after grossing up the injection loss is against the provisions of regulations. Commission hence has not considered the injection loss for grossing up the ECR.

6.34 Accordingly, the Commission has calculated the base ECR for the Control Period as per the formula stated above and after considering the operational parameters as approved in this order. The table below contain the base ECR approved by the Commission for the period FY 2012-13 & FY 2013-14 towards true up.

**Table 23 Approved Energy Charge Rate for Unit 1**

| Parameters | UoM | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|---|
| | | FY 2012-13 | | | FY 2013-14 | | |
| Gross Generation | MU | 380.05 | 284.09 | 280.03 | 2010.42 | 1368.20 | 1368.20 |
| Heat Rate | KCal/kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | KCal/l | 9,553 | 9,346.83 | 9,346.83 | 9,553 | 9,346.83 | 9,346.83 |
| Weighted average cost of coal | Rs/MT | 2,913 | 2,914 | 2,914 | 2,913 | 3,085 | 3,085 |
| Weighted average GCV of coal | kCal/L | 3,566 | 3,566 | 3,566 | 3,674 | 3,571 | 3,571 |
| **Energy Charge Rate** | **Rs/kWh** | **2.134** | **2.23** | **2.114** | **2.071** | **2.31** | **2.234** |

**Table 24 Approved Energy Charge Rate for Unit 2**

| Parameters | UoM | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|
| | | FY 2013-14 | | |
| Gross Generation | MU | 1,740.53 | 1,157.26 | 1,153.66 |
| Heat Rate | KCal/ kWh | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | KCal/l | 9,553 | 9,346.93 | 9,346.83 |
| Weighted average cost of coal | Rs/MT | 2,913 | 3,047.04 | 3,047.04 |
| Weighted average GCV of coal | kCal/L | 3,674 | 3,618.47 | 3,618.47 |
| Energy Charge Rate | **Rs/kWh** | **2.071** | **2.25** | **2.178** |

6.35 The energy charge rate as shown above has been approved by the Commission towards the true up of FY 2012-13 & FY 2013-14 for Unit 1 and Unit 2.

## Determinants of Fixed Charges

## Depreciation

*Petitioner's submission*

6.36 In its petition dated April 30th, 2015, the Petitioner submitted the depreciation for Unit 1 and Unit 2 has been computed on the basis of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 and the depreciation rate has been considered same as notified in the Appendix – I of the regulations.

6.37 Further the Petitioner submitted that the depreciation for Unit 1 for FY 2012-13 has been computed on a pro-rata basis based on the number of days of operation in FY 2012-13 and the same methodology has been used for computation of depreciation for FY 2013-14 too.

6.38 The depreciation submitted by the Petitioner is given in the table below:

**Table 25 Depreciation (Rs Cr) submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Depreciation | 15.35 | 80.06 | 70.43 |

*Commission's Analysis*

6.39 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Depreciation are given below:

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station."*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis.*

6.40 Accordingly, the Commission calculated the depreciation for Unit 1 and Unit 2 by considering the approved final capital cost for Unit I and Unit II, and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2010.

6.41 Further, the Commission calculated the depreciation for Unit 1 for FY 2012-13 on pro-rata basis (for 69 days) considering the actual COD of unit i.e. January 21, 2013. Similarly the Commission calculated the depreciation for Unit 2 for FY 2013-14 on pro-rata basis (for 316 days) considering the actual COD of unit i.e. May 19, 2013.

6.42 The following table shows the depreciation for Unit 1 and Unit 2 as calculated by the Commission as against that submitted by the Petitioner:

**Table 26 Depreciation approved by the Commission for Unit 1**

| Asset Type | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13 (Rs Cr) | | | 2013-14 (Rs Cr) | | |
| Land owned under full title | - | - | - | - | - | - |
| Land held under lease | 0.07 | 0.07 | 0.07 | 0.37 | 0.36 | 0.37 |
| Plant and machinery | 13.11 | 13.47 | 13.57 | 69.34 | 70.25 | 71.81 |
| Building & civil works | 1.82 | 1.81 | 1.33 | 9.61 | 9.46 | 7.01 |
| Other Assets | | | 0.08 | | | 0.40 |
| **Sub Total** | **15.00** | **15.35** | **15.05** | **79.33** | **80.06** | **79.59** |

**Table 27 Depreciation approved by the Commission for Unit 2**

| Asset Type | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | 2013-14 (Rs Cr) | | |
| Land owned under full title | - | - | - |
| Land held under lease | 0.36 | 0.31 | 0.32 |
| Plant and machinery | 57.84 | 61.96 | 63.13 |
| Building & civil works | 8.42 | 8.16 | 6.03 |
| Other Assets | | | 0.35 |
| Sub Total | **66.63** | **70.43** | **69.83** |

## Debt Equity Ratio

*Petitioner's submission*

6.43 The Petitioner in the petition dated April 30th, 2015 submitted that 74.79% of the project cost has been funded from debt and remaining 25.21% is the equity contribution. The following table shows the unit wise debt equity ratio submitted by the Petitioner.

**Table 28 Debt Equity submitted by the Petitioner for Unit 1**

| Particulars | % | Amount (Rs Cr) |
|---|---|---|
| Debt | 74.79% | 1,243.53 |
| Equity | 25.21% | 419.14 |
| Total | **100.00%** | **1,662.68** |

**Table 29 Debt Equity submitted by the Petitioner for Unit 2**

| Particulars | % | Amount (Rs Cr) |
|---|---|---|
| Debt | 74.79% | 1,257.63 |
| Equity | 25.21% | 423.90 |
| Total | **100.00%** | **1,681.53** |

6.44 However, the Petitioner later vide letter No APNRL/JSERC/2016-17/631 (reply to discrepancies) submitted that the debt-equity ratio is 72.95%:27.05% for total project cost of Rs 3,344.21 Cr. The Petitioner submitted that as per the audited accounts of FY 2014-15 the equity of Petitioner is Rs 904.51Cr (Share Capital of Rs 649.37Cr and Securities Premium Account of Rs 255.44Cr).

*Commission's Analysis*

6.45 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Debt Equity Ratio are quoted below:

*"7.14 For the project declared under commercial operation on or after 1.04.2011, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment"*

*Explanation:-*

*Any expenditure incurred or projected to be incurred on or after 1.04.2011 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

6.46 As per the relevant Regulation under Generation Tariff Regulations, 2010 quoted above the Commission may approve equity contribution upto 30% of the capital cost. The Petitioner has submitted the actual equity contribution at 25.21% for Unit 1 and Unit 2 respectively and later through additional submission revised it upwards to 27.05%.

6.47 The Commission has verified the actual equity contribution in the year at which the CoD was achieved. The equity contribution as per the audited accounts has been taken as the equity funding towards the capital cost of the project. The Commission observed an equity contribution of Rs 787 Cr in FY 2012-13 and Rs 859 Cr in FY 2013-14 as per the audited accounts for FY 2012-13 and FY 2013-14. Thus considering the approved capital cost of Rs 3,271.69 Cr the equity contribution will be 24.06% for FY 2012-13 and 26.25% for FY 2014-15. The remaining amount of the capital cost approved has been considered to be funded through debt.

6.48 The Commission has considered the debt: equity ratio of 75.94%:24.06% for FY 2012-13 and 73.75%:26.25% for FY 2013-14. Since Unit 1 achieved COD in FY 2012-13, debt-equity ratio of FY 2012-13 is applied to the capital cost of Unit. However, the debt-equity ratio will change as per the actual debt-equity ratio for FY 2013-14. This will be applicable for both the units. Accordingly, the Commission approves the debt equity ratio as shown in the table below for both units:

**Table 30 Debt Equity ratio of Unit 1 (FY 2012-13) approved by the Commission**

| Particulars | Approved in MYT Order | | Submitted by APNRL | | Approved True Up By JSERC | |
|---|---|---|---|---|---|---|
| | % | Amount (Rs Cr) | % | Amount (Rs Cr) | % | Amount (Rs Cr) |
| Debt | 72.86% | 1,211.12 | 74.79% | 1,243.53 | 75.94% | 1234.78 |
| Equity | 27.14% | 451.14 | 25.21% | 419.14 | 24.06% | 391.20 |

| Particulars | Approved in MYT Order | | Submitted by APNRL | | Approved True Up By JSERC | |
|---|---|---|---|---|---|---|
| **Total** | **100.00%** | **1,662.26** | **100.00%** | **1,662.68** | **100.00%** | **1,625.98** |

**Table 31 Debt Equity ratio of Unit 2 (FY 2013-14) approved by the Commission**

| Particulars | Approved in MYT Order | | Submitted by APNRL | | Approved True Up By JSERC | |
|---|---|---|---|---|---|---|
| | % | Amount (Rs Cr) | % | Amount (Rs Cr) | % | Amount (Rs Cr) |
| Debt | 72.32% | 1,174.74 | 74.79% | 1,257.63 | 73.75% | 1213.64 |
| Equity | 27.68% | 449.63 | 25.21% | 423.90 | 26.25% | 432.08 |
| **Total** | **100.00%** | **1,624.37** | **100.00%** | **1,681.53** | **100.00%** | **1,645.72** |

## Interest on Debt

*Petitioner's submission*

6.49 The Petitioner, in the petition dated April 30th, 2015, submitted that the interest on debt has been claimed as per relevant clause of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations 2010.

6.50 The Petitioner submitted that the project has been funded with total debt of Rs. 2,501.17 Cr and 843.04 Cr from equity contribution of the Petitioner.

6.51 The interest rates as submitted by the Petitioner for the computation of the interest on debt are based on the actual interest rates payable i.e. 13.11% and 13.43% for Unit 1 in FY 2012-13 and FY 2013-14 and 13.33% for Unit 2 in FY 2013-14. The following tables shows the interest on debt submitted by the Petitioner :

**Table 32 Interest on Debt of both units as submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2014-15 |
| Unit 1 | 31.07 | 159.57 | 141.52 |

*Commission's Analysis*

6.52 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Debt as quoted as under:

*"7.19 The loans arrived at in the manner indicated in clause 7.13, 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

*7.20 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.*

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered*

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

6.53 The Commission has calculated the debt for each year based on the approved capital cost and considering the approved depreciation as repayment in line with the methodology specified in Generation Tariff Regulations, 2010.

6.54 In its additional submissions to the Commission, the Petitioner submitted the actual weighted average interest rate on its loan portfolio at 13.11% for FY 2012-13, 13.43 % for FY 2013-14 for Unit I and at 13.33% for FY 2013-14 for Unit 2. The Commission has considered the same for approving interest on debt for FY 2012-13, FY 2013-14 and FY 2014-15. The interest on debt approved by the Commission is shown in the tables below for both Units:

**Table 33 Interest on Debt (Rs Cr) approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| Opening Balance | 1,211.12 | 1,243.53 | 1,234.78 | 1196.13 | 1,228.18 | 1,219.73 |
| Additions | - | | | - | - | (35.69) |
| Repayment | 15.00 | 15.35 | 15.05 | 79.33 | 80.06 | 79.59 |
| Closing Balance | 1196.13 | 1,228.18 | 1,219.73 | 1116.80 | 1,148.12 | 1,104.45 |
| Interest on Debt % | 13.11% | 13.11% | 13.11% | 13.43% | 13.43% | 13.43% |
| Rs Cr | **29.83** | **31.07** | **30.42** | **155.31** | **159.97** | **156.07** |

**Table 34 Interest on Debt approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14(Rs Cr) | | |
| Opening Balance | 1,174.74 | 1,257.63 | 1,213.64 |

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14(Rs Cr) | | |
| **Additions** | - | | |
| **Repayment** | 66.63 | 70.43 | 69.83 |
| **Closing Balance** | 1108.12 | 1,187.20 | 1,143.81 |
| **%** | 13.33% | 13.33% | 13.33% |
| **Amount in Rs. Cr** | **131.73** | **141.52** | **136.03** |

## Return on Equity

*Petitioner's submission*

6.55 The Petitioner has submitted that the return on equity has been claimed as per the relevant clauses (7.15, 7.16, 7.17 & 7.18) of JSERC Generation Tariff Regulations, 2010.

6.56 The Petitioner submitted that it has calculated return on equity considering a post-tax return of 15.50% as per Generation Tariff Regulations, 2010.

6.57 The Return on equity for both units submitted by the Petitioner is shown in the following table:

**Table 35 Return on Equity (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2014-15 |
| **Unit 1** | 15.58 | 81.22 | 71.34 |

*Commission's Analysis*

6.58 The provisions specified in the Generation Tariff Regulations, 2010 for approval of Return on Equity are as under:

*"7.15 Return on equity shall be computed in rupee terms, on the equity base determined in accordance with clause 7.13, 7.14 of these Regulations. Petition for Approval of Capital Cost and Business Plan and MYT Petition for MYT Control Period for FY 2012-13 to FY 2015-16*

*7.16 Return on equity shall be computed on pre-tax basis at the base rate of 15.50%, to be grossed up as per clause 7.17 of these Regulations.*

*……………*

*Provided that in case of Projects commissioned on or after 1st April, 2011, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:*

*Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever:*

*7.17 The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate applicable to the Generating Company as per details shown as under:*

*(i)……….*

*(ii) MYT period: Base rate to be grossed by the applicable tax rate for the Year 2011-12*

*Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective year during the Control period shall be trued up separately for each year of the Control period along with the tariff petition filed for the next Control period.*

*7.18 Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*

*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where 't' is the applicable tax rate in accordance with clause 7.17 of these Regulations."*

6.59 The Commission has worked out the gross normative equity of both Unit 1 and Unit 2 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010. The Commission has considered the return on equity at 15.50%.

6.60 However, while checking the audited accounts of the petitioner it has been observed that the petitioner has not paid any tax for the years FY 2012-13 and FY 2013-14. As such, Return on equity cannot be allowed to be grossed up with tax rate as considered by the petitioner. Further, the debt-equity considered by Commission ratio has been determined as detailed in the sections above.

6.61 The return on equity approved by the Commission is shown in the tables below:

**Table 36 Return on Equity approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| **Equity** | | | | | | |
| **Opening Balance** | 451.14 | 419.14 | 391.20 | 451.14 | 419.14 | 391.20 |
| **Net Additions** | - | - | - | - | - | 35.69 |

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| Closing Balance | 451.14 | 419.14 | 391.20 | 451.14 | 419.14 | 426.89 |
| Average Equity | 451.14 | 419.14 | 391.20 | 451.14 | 419.14 | 409.05 |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (t%) | 20.01% | 20.01% | | 20.01% | 20.01% | |
| Grossed Up rate of return on equity | 19.40% | 19.38% | 15.50% | 19.40% | 19.38% | 15.50% |
| Return on equity | **16.54** | **15.58** | **11.46** | **87.52** | **81.22** | **63.40** |

**Table 37 Return on Equity approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14 (Rs Cr) | | |
| Equity | | | |
| Opening Balance | 449.63 | 423.90 | 432.08 |
| Net Additions | - | - | - |
| Closing Balance | 449.63 | 423.90 | 432.08 |
| Average Equity | 449.63 | 423.90 | 432.08 |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (t%) | 20.01% | 20.01% | |
| Grossed Up rate of return on equity | 19.40% | 19.38% | 15.50% |
| Return on equity | **75.52** | **71.34** | **57.98** |

## O&M Expenses

*Petitioner's submission*

6.62 The Petitioner in the petition dated April 30th 2015 submitted that while calculating O&M Expenses for Unit 1 & Unit 2, norms corresponding to 200/210/250 MW sets have been considered as the norm for estimating O&M expenses, as the unit size and characteristics are similar to 250 MW in line with the Hon'ble Commission's provisional order dated 26th May 2014.

6.63 The Petitioner also submitted that Unit-1 of the project got commissioned in January 2013 and, accordingly O&M expenses have been estimated on pro-rata basis for 4 months of the first financial year i.e. FY 2012-13 of COD of Unit 1 of the project.

6.64 The Summary of the O&M submitted by the Petitioner for both units in the said Petition is shown in the following table:

**Table 38 O&M Expenses (Rs Cr) submitted by the Petitioner**

| O&M Expenses | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Unit 1 | 11.14 | 61.40 | 53.32 |

*Commission's Analysis*

6.65 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of O&M expenses are as under:

*"New Generating Stations:*

*7.44 The O&M expenses (in Rs lakhs/ MW) permissible towards determination of tariff for Coal and Lignite fired (including those based on CFBC technology) shall be as follows:*

| *Year* | *200/ 210/ 250 MW sets* | *300/330/350 MW sets* | *500 MW sets* | *500 MW and above sets* |
|---|---|---|---|---|
| *2011-12* | *20.34* | *17.88* | *14.53* | *13.08* |
| *2012-13* | *21.51* | *18.91* | *15.36* | *13.82* |
| *2013-14* | *22.74* | *19.99* | *16.24* | *14.62* |
| *2014-15* | *24.04* | *21.13* | *17.17* | *15.46* |
| *2015-16* | *25.42* | *22.34* | *18.15* | *16.34* |

6.66 The Generation Tariff Regulations, 2010 do not specify any norms specifically for 270 MW sets. Accordingly, the Commission has approved the O&M expenses based on the norms specified for 200/210/250 MW sets. The O&M expenses for the first year after commissioning have been approved on pro-rata basis.

6.67 The O&M expenses approved by the Commission for Unit 1 and Unit 2 are shown in the table below.

**Table 39 O&M expenses approved by the Commission**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | 2012-13(Rs Cr) | | | 2013-14(Rs Cr) | | |
| Unit 1 | 10.98 | 11.14 | 10.98 | 61.40 | 61.40 | 61.40 |
| Unit 2 | - | - | - | 53.16 | 53.32 | 53.16 |
| Total | **10.98** | **11.14** | **10.98** | **114.55** | **114.72** | **114.55** |

## Interest on Working Capital

*Petitioner's submission*

6.68 The Petitioner while computing the working capital and Interest thereon as per the Generation Tariff Regulations, 2010 has considered the working capital as the sum of the following:

(a) Cost of Coal for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(b) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(c) Maintenance spares @ 20% of operation and maintenance expenses;

(d) Operation and Maintenance expenses for 1 month; and

(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.

6.69 The Petitioner has considered the operation and maintenance expenses including water charges for the computation of interest on working capital.

6.70 The Petitioner in the petition dated April 30th, 2015 submitted that for calculation of Interest on Working Capital, the rate of interest has been considered at 14.75% for Unit 1 and 14.45% for Unit 2.

6.71 The Interest on working capital submitted by the Petitioner is shown in the table below:

**Table 40 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Coal Cost for 2 months | 77.17 | 69.37 | 77.86 |
| Cost of secondary fuel oil for 2 months | 2.53 | 2.11 | 2.42 |
| Receivables for 2 months | 152.85 | 142.57 | 152.82 |
| O&M Expenses for 1 month | 6.66 | 5.93 | 6.05 |
| Maintenance Spares | 3.06 | 14.23 | 12.61 |
| Total Working Capital | 242.26 | 234.21 | 251.77 |
| Rate of Interest | 14.75% | 14.75% | 14.45% |
| Interest on Working Capital | **6.85** | **34.55** | **31.60** |

*Commission's Analysis*

6.72 The Commission has computed the interest on working capital for both Units 1 and 2 by considering values of related components. The working capital requirement for the Petitioner has been determined by considering the following components as per Regulation 7.34 of the Generation Tariff Regulation, 2010:

(a) Cost of Coal for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(b) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(c) Maintenance spares @ 20% of operation and maintenance expenses;

(d) Operation and Maintenance expenses for 1 month; and

(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.

6.73 The Commission outlines the provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Working Capital as under:

*"7.38 Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2011 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation, whichever is later during Transition period.*

*During Control Period rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2012 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."*

6.74 Accordingly the Commission calculated the Interest on Working Capital on the rates prevailing on the 21st January 2013 i.e. at 14.50% for Unit 1 as its actual COD occurred on January 21, 2013 and at 14.45% for Unit 2 which was the prevailing rate on April 1, 2013 considering the actual COD on May 19, 2013. The detailed calculation made by the Commission is shown in the tables below:

**Table 41 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13 | | | FY 2013-14 | | |
| Coal Cost for 2 months | 65.07 | 77.17 | 46.53 | 63.15 | 69.37 | 46.36 |
| Cost of secondary fuel oil for 2 months | 2.13 | 2.53 | 1.58 | 2.13 | 2.11 | 1.44 |
| Receivables for 2 months | 136.16 | 152.85 | 112.02 | 134.34 | 142.57 | 112.14 |
| O&M Expenses for 1 month | 4.84 | 6.66 | 4.93 | 5.12 | 5.93 | 5.12 |
| Maintenance Spares | 2.20 | 3.06 | 2.20 | 12.28 | 14.23 | 12.28 |
| Total Working Capital | **210.39** | **242.26** | **167.26** | **217.02** | **234.21** | **177.33** |
| Rate of Interest | 14.75% | 14.75% | 14.50% | 14.75% | 14.75% | 14.45% |
| Interest on Working Capital | **5.87** | **6.85** | **4.58** | **32.01** | **34.55** | **25.62** |

**Table 42 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14 | | |
| Coal Cost for 2 months | 63.15 | 77.86 | 44.02 |
| Cost of secondary fuel oil for 2 months | 2.46 | 2.42 | 1.40 |
| Receivables for 2 months | 133.40 | 152.82 | 110.58 |
| O&M Expenses for 1 month | 5.12 | 6.05 | 5.21 |
| Maintenance Spares | 10.63 | 12.61 | 10.63 |
| Total Working Capital | **214.76** | **251.77** | **171.84** |
| Rate of Interest | 14.45% | 14.45% | 14.45% |
| Interest on Working Capital | **26.87** | **31.60** | **21.50** |

## Cost of Secondary Fuel Oil

*Petitioner's submission*

6.75 The Petitioner in the petition dated April 30th, 2015 submitted that the secondary fuel would be procured through local suppliers. The cost of LDO is considered at Rs 64,176.41/kL and at Rs 62,997.01/kL for FY 2012-13 and FY 2013-14 as per the audited accounts.

6.76 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for both Unit 1 and Unit 2:

**Table 43 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 1 and Unit 2 towards True Up**

| Particulars | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Unit Capacity | MW | 270 | 270 | 270 |
| Gross Generation | MU | 284.09 | 1,368.20 | 1,157.26 |
| Normative Secondary Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| Secondary Fuel Oil Consumption at Normative Plant Availability | kL | 284.09 | 1,368.20 | 1,157.26 |
| Secondary Fuel Oil Landed Cost | Rs./kL | 64,176.41 | 62,997.01 | 62,851.21 |
| Secondary Fuel Oil Cost at Normative Plant availability | Rs. Cr. | **1.82** | **8.62** | **7.27** |

*Commission's Analysis*

6.77 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of cost of secondary fuel oil are as under:

*"7.49 Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause 8.4, 8.6 of these Regulations, in accordance with the following formula:*

*= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10*

*Where,*

*SFC – Normative Specific Fuel Oil consumption in ml/kWh*

*LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs./ml considered initially*

*NAPAF – Normative Annual Plant Availability Factor in percentage*

*NDY – Number of days in a year*

*IC - Installed Capacity in MW"*

*7.50 Initially, the landed cost incurred by the Generating Company on secondary fuel oil shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of landed costs for the three preceding months, latest procurement price for the generating station, before the start of the year."*

6.78 The Petitioner has submitted the CA certificate towards month wise cost incurred towards secondary fuel oil. The Commission has considered the same for the purpose of projection of cost of secondary fuel oil for Unit 1 and Unit 2.

**Table 44 Cost of secondary fuel oil approved by the commission for Unit 1**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| Gross Generation at NAPF (MU) | 380.05 | 284.09 | 280.03 | 2010.42 | 1,368.20 | 1,368.20 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPF (kL) | 380.05 | 284.09 | 280.03 | 2010.42 | 1,368.20 | 1,368.20 |
| LDO Landed Cost (Rs/kL) | 63503 | 64,176.41 | 64,176 | 63503 | 62,997.01 | 62,997.01 |
| LDO Cost (Rs Cr) | **2.41** | **1.82** | **1.80** | **12.77** | **8.62** | **8.62** |

**Table 45 Cost of secondary fuel oil approved by the commission for Unit 2**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14(Rs Cr) | | |
| Gross Generation at NAPF (MU) | 1740.53 | 1,157.26 | 1,154 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPF (kL) | 1740.52 | 1,157.26 | 1,154 |
| LDO Landed Cost (Rs/kL) | 63,503 | 62,851.21 | 62,851.21 |
| LDO Cost (Rs Cr) | **11.05** | **7.27** | **7.25** |

## Additional Water Charges

*Petitioner's submission*

6.79 The Petitioner further stated that CERC (Terms and Conditions of Tariff) Regulations, 2014 stipulates that water charges for thermal generating stations shall be allowed separately. The relevant extracts of the regulation as submitted by the Petitioner is reproduced as below

"*29. Operation and Maintenance Expenses:*

*(1) Normative Operation and Maintenance Expenses of Thermal Generating Stations…*

*(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc, subject to prudence check. The details regarding the same shall be furnished along with the petition…"*

6.80 The Petitioner in its petition dated April 30th, 2015 has stated that it incurred additional water charges to the extent of Rs 4.18 Cr and Rs 9.75Cr for Unit 1 in FY 2012-13 and FY 2013-14 and Rs 9.75Cr for Unit 2 in FY 2013-14.

6.81 The Petitioner submitted that an agreement was signed between Adhunik and Govt of Jharkhand for supply of water vide agreement dated 29th Aug'08. The required water was to be withdrawn or pumped by the company from the river Subarnarekha.

6.82 The Petitioner further submitted that the Water Department of Gov. of Jharkhand vide its Notification No: 2/PMC/jalapurti175/2007 dated 01.04.2011 devised various categories for water offtake and the Petitioner was asked to pay @ Rs 26.40 per thousand gallon. The same was opposed by the Petitioner and a stay order was issued by Hon'ble High Court of Jharkhand. The Petitioner submitted that it is paying the water charges at the pre-revised rate of Rs 4.50 per thousand gallons and accordingly they have claimed water charges.

**Table 46: Additional Water Charges (Rs Cr) Claimed by the Petitioner for FY 2012-13 and FY 2013-14**

| Particulars | Unit 1 | | Unit 2 |
|---|---|---|---|
| | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Additional Water Charges | 4.18 | 9.75 | 9.75 |

*Commission's Analysis*

6.83 The Commission has reviewed the submissions of the Petitioner as far as additional water charges as concerned.

6.84 JSERC Generation Tariff Regulations, 2010 clearly specify that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR. The relevant extracts from the regulation are reproduced below.

*"True Up during Control period*

*6.14:*

*The true up across various controllable parameters shall be conducted as per principles stated below: -*

(a) any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR; and"

6.85 The Commission states that the normative O&M cost per MW as approved in the JSERC (Generation Tariff) regulations, 2010 has been arrived after duly considering all such cost parameters and any further variation on the O&M cost towards any component is not considered by Commission.

## Annual Fixed Charges

6.86 Regulation 8.2 of the Generation Tariff Regulations, 2010 states that the annual fixed charges of a thermal generating station shall consist of the following

(a) Return on Equity;

(b) Interest and Financing Charges on Loan Capital;

(c) Depreciation;

(d) Operation and Maintenance Expenses;

(e) Interest Charges on Working Capital; and

(f) Cost of Secondary Fuel Oil.

6.87 The tables below show the annual fixed charges submitted by the Petitioner and approved by the Commission for each unit for the entire capacity of 270 MW.

**Table 47 Annual Fixed Charges of Unit 1 for 270 MW**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| O&M Expenses | 10.98 | 15.32 | 10.98 | 61.40 | 71.15 | 61.40 |
| Depreciation | 15.00 | 15.35 | 15.05 | 79.33 | 80.06 | 79.59 |
| Interest on Loan | 29.83 | 31.07 | 30.42 | 155.31 | 159.57 | 156.07 |
| Return on Equity (pre -tax) | 16.54 | 15.58 | 11.46 | 87.52 | 81.22 | 63.40 |
| Cost of Secondary Fuel | 2.41 | 1.82 | 1.80 | 12.77 | 8.62 | 8.62 |
| Interest on Working Capital | 5.87 | 6.85 | 4.58 | 32.04 | 34.55 | 25.62 |

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|---|---|---|
| | FY 2012-13(Rs Cr) | | | FY 2013-14(Rs Cr) | | |
| Annual Fixed Charges | **80.63** | **86.00** | **74.28** | **428.36** | **435.16** | **394.70** |

**Table 48 Annual Fixed Charges of Unit 2 for 270 MW**

| Particulars | Approved in MYT Order | Submitted by APNRL | Approved True Up By JSERC |
|---|---|---|---|
| | FY 2013-14(Rs Cr) | | |
| O&M Expenses | 53.16 | 63.07 | 53.16 |
| Depreciation | 66.63 | 70.43 | 69.83 |
| Interest on Loan | 131.73 | 141.52 | 136.03 |
| Return on Equity (pre tax) | 75.52 | 71.34 | 57.98 |
| Cost of Secondary Fuel | 11.05 | 7.27 | 7.25 |
| Interest on Working Capital | 26.87 | 31.60 | 21.50 |
| Annual Fixed Charges | **364.95** | **385.23** | **345.74** |

## Trued Up Tariff for Unit 1 and Unit 2 and Impact of True Up

*Petitioner's Submission*

6.88 The Petitioner has submitted in the petition dated April 30th , 2015 that the following charges as shown in the table may be approved towards the tariff for regulated capacity for JUVNL/JBVNL for Unit 1 & Unit 2

**Table 49 Claim of Petitioner towards tariff for regulated capacity for JUVNL/JBVNL**

| Description | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Capacity Charges for 13% of Capacity at 85% PLF | Rs Crore | 12.70 | 64.29 | 56.91 |
| Rate of Energy Charges (considering the injection losses) | Rs/kWh | 2.23 | 2.31 | 2.25 |

6.89 The Petitioner has also claimed incentive for higher plant availability factor. The Petitioner submitted that the capacity charges have been computed at the PAF equivalent to NAPAF of 85%. The Petitioner also submitted that the capacity charges have been claimed as per JSERC Generation Tariff Regulations, 2010 Clause 8.12.

6.90 Further the Petitioner submitted that the revenue billed by the Petitioner to JUVNL/JBVNL consists of the incentive too.

6.91 The Petitioner submitted that an amount of Rs 33.01 Cr was billed, towards consumption of power from Unit 1in FY 2012-13, to JUVNL/JBVNL. Further an amount of Rs 165.39 Cr and Rs 145.55 Cr was billed, for consumption of power from Unit 1 and Unit 2 (respectively) in FY 2013-14, to JUVNL/JBVNL.

6.92 The Petitioner further submitted a revenue gap of Rs 1.68Cr towards true up of FY 2012-13, for the power supplied to JUVNL. Similarly a revenue gap of Rs 12.28 Cr for power supplied from Unit 1 and Rs 10.73 Cr for power supplied from Unit 2 was claimed by Petitioner towards true up of FY 2013-14.

6.93 The Petitioner further submitted that the interest on under recovered amount shall be claimed as per the relevant provisions of JSERC Generation Tariff Regulations, 2010.

6.94 The Petitioner has submitted the following entitlement and amount to be recovered from JUVNL/JBVNL towards true up of FY 2012-13 and FY 2013-14

**Table 50 Computation of Net Amount Payable by JUVNL/JBVNL by the Petitioner towards the regulated capacity**

| Description | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Gap/ (Surplus) | Rs Crore | 1.68 | 12.28 | 10.73 |
| Total Interest (Simple Interest) | Rs Crore | 0.67 | 3.62 | 3.06 |
| Total Amount Payable by JUVNL/JBVNL | Rs Crore | **2.35** | **15.90** | **13.79** |

*Commission's Analysis*

*Tariff for 12% of total net capacity*

6.95 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) approved by the Commission in this order is given below:

**Table 51 Approved tariff for 12% of total net capacity**

| Description | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.114 | 2.234 | 2.178 |

*Tariff for 13% of total net capacity*

6.96 The tariff for 13% of the total net capacity shall be the total tariff i.e. variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) and fixed charges as approved by the Commission in this order as noted below:

**Table 52 Approved tariff for 13% of total net capacity – variable cost**

| Description | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|
| | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.114 | 2.234 | 2.178 |

**Table 53 Approved tariff for 13% of total net capacity – fixed charges**

| Description | Derivation | Unit | Unit 1 | | Unit 2 |
|---|---|---|---|---|---|
| | | | FY 2012-13 | FY 2013-14 | FY 2013-14 |
| Gross Capacity | A | MW | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C= A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Total Annual Fixed Charge | F | Rs Crore | **74.28** | **394.70** | **345.74** |
| Annual Fixed Charges/MW | G=F/E | Rs Crore/MW | 0.34 | 1.83 | 1.60 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | I= G x H | Rs Crore | **10.97** | **58.31** | **51.08** |

## Impact of True Up

6.97 Commission has verified the bills the petitioner has issued to JUVNL/JBVNL for FY 2012-13 and FY 2013-14 for supply of power from Unit 1 and Unit 2 of the petitioner. The revenue billed by the petitioner to JUVNL/JBVNL has been taken as total revenue raised by the petitioner.

6.98 The commission has approved the impact of true up as shown in the following table considering the approved annual fixed charges, the per unit variable charges approved for the year and other factors.

6.99 **In accordance with Regulation 6.18 of JSERC 'Generation Tariff Regulations, 2010' the Petitioner shall recover/refund the gap/surplus in 6 equal monthly instalments from the beneficiary starting from September 2016.**

**Table 54: Impact of True Up as Approved by Commission**

| Particulars | | Petitioner Submission | | | Approved True Up by JSERC | | |
|---|---|---|---|---|---|---|---|
| | | Unit 1 | | Unit 2 | Unit 1 | | Unit 2 |
| | | FY 13 | FY 14 | FY 14 | FY 13 | FY 14 | FY 14 |
| Net Energy Supplied to JUVNL/JBVNL | MU | 95.84 | 473.33 | 422.81 | 95.84 | 473.33 | 422.81 |
| Rate of Energy Charge | Rs/kWh | 2.23 | 2.31 | 2.25 | 2.114 | 2.234 | 2.178 |
| AFC Entitlement on True Up | Rs Cr | 12.7 | 64.29 | 56.91 | 10.97 | 58.31 | 51.08 |
| Incentive | Rs Cr | 0.65 | 4.08 | 4.08 | 0.00 | 0.00 | 0.00 |
| Energy Charge Entitlement upon True up | Rs Cr | 21.34 | 109.3 | 95.29 | 20.26 | 105.74 | 92.09 |
| Total Entitlement | Rs Cr | 34.69 | 177.67 | 156.28 | 31.23 | 164.05 | 143.17 |
| Revenue Billed | | | | | | | |
| AFC | Rs Cr | 11.91 | 63.28 | 53.91 | 11.91 | 63.28 | 53.91 |
| EC | Rs Cr | 20.45 | 98.03 | 87.56 | 20.70 | 108.36 | 95.60 |
| Incentive | Rs Cr | 0.65 | 4.08 | 4.08 | 0.65 | 4.08 | 4.08 |
| Total Revenue Billed to JUVNL/JBVNL | Rs Cr | 33.01 | 165.39 | 145.55 | 33.26 | 175.73 | 153.59 |
| Gap/(Surplus) | | 1.68 | 12.28 | 10.73 | (2.02) | (11.68) | (10.42) |
| Rate of Interest | % | 14.75% | 14.75% | 14.75% | 14.45% | 14.59% | 14.59 % |
| From COD to 31st March of the respective FY | Days | 70 | 365 | 317 | 69 | 365 | 316 |
| Allowable Interest for the year | Rs Cr | 0.05 | 0.91 | 0.69 | (0.06) | (1.70) | (0.66) |
| Interest for the remaining period till September 30, 2015* | Rs Cr | 0.62 | 2.72 | 2.37 | (0.57) | (3.31) | (2.95) |
| Total Interest (Simple Interest) | Rs Cr | 0.67 | 3.63 | 3.06 | (0.63) | (5.01) | (3.61) |

| Particulars | | Petitioner Submission | | | Approved True Up by JSERC | | |
|---|---|---|---|---|---|---|---|
| | | Unit 1 | | Unit 2 | Unit 1 | | Unit 2 |
| | | FY 13 | FY 14 | FY 14 | FY 13 | FY 14 | FY 14 |
| Total Amount to be additionally recovered / (paid back to JUVNL) | Rs Cr | 2.35 | 15.91 | 13.79 | (2.65) | (16.69) | (14.03) |

*Till March 31st, 2016 for Commission approved numbers

# A7: ANNUAL PERFORMACE REVIEW OF FY 2014-15 AND ARR & TARIFF DETERMINATION FOR FY 2015-16

## Operational Parameters

## Availability

*Petitioner's submission*

7.1 The Petitioner in the petition dated April 30th, 2015 submitted that the availability for both Unit 1 and Unit 2 was maintained at 85%.

*Commission's Analysis*

7.2 Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the availability of a new generating station.

*"8.6 The norms of operation for generating stations other than existing stations shall be as under:*

*(a) Normative Annual Plant Availability Factor (NAPAF): All thermal generating stations, NAPAF shall be 85%."*

7.3 Accordingly, the Commission approves availability for Unit 1 and Unit 2 at Normative Annual Plant Availability Factor i.e. at 85%.

## Generation

*Petitioner's submission*

7.4 The Petitioner in the petition dated April 30th, 2015 submitted that the Commission had approved the operational parameters for Unit 1 and Unit 2 vide its provisional order dated May 26, 2014. The Petitioner submitted that the same operational parameters as approved by the Commission in its provisional order has been considered by the Petitioner for the purpose of Annual Performance Review of FY 2014-15 and determination of ARR and Tariff for FY 2015-16.

7.5 The projected generation submitted by the Petitioner in its petition dated April 30th, 2015 is shown in the following table

**Table 55 Gross generation submitted by the Petitioner for Unit 1**

| Particulars | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Unit 1 | MW | 270 | 270 | 270 | 270 |

| Particulars | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Gross Generation | MU | 2010.42 | 2015.93 | 2010.42 | 2015.93 |

*Commission's Analysis*

7.6 The Commission has considered the actual COD of Unit 1 and Unit 2, and the actual PLF achieved by the Petitioner for Unit 1 at 51.88% and for Unit 2 at 41.66% in FY 2014-15.

7.7 The Commission has further considered the PLF for FY 2015-16 at normative PFL (85%)

7.8 The table below shows the projected generation approved by the Commission for both the units:

**Table 56 Gross Generation of both units approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| Generation(MU) | 2014-15 | | | 2015-16 | | |
| Unit 1 | 2,010.42 | 2,010.42 | 1,227.07 | 2,015.93 | 2,015.93 | 2,010.42 |
| Unit 2 | 2,010.42 | 2,010.42 | 985.34 | 2,015.93 | 2,015.93 | 2,010.42 |

## Auxiliary Consumption, Station heat rate and Secondary Fuel Oil Consumption

*Petitioner's submission*

7.9 The Petitioner in the petition dated April 30th, 2015, submitted that the auxiliary consumption both for Unit 1 and Unit 2 at 9 % for FY 2014-15 and FY 2015-16.

7.10 The Petitioner in the petition dated April 30th, 2015 submitted that the Station Heat rate both for Unit 1 and Unit 2 at 2387 kCal/kWh and Secondary Fuel Oil Consumption for both for Unit 1 and Unit 2 at 1 ml/kWh.

*Commission's Analysis*

7.11 Regulation 8.6 of the Generation Tariff Regulations, 2010 prescribes the norm for approving the operational parameters including auxiliary consumption, station heat rate and secondary fuel oil consumption of a generating station.

*"Auxiliary Energy Consumption*

*8.6(c) (i)* ***Coal Based generating Stations***

| | | |
|---|---|---|
| *200 MW Series* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |
| *500 MW Series- Steam Driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *6%* |
| *500 MW Series- Electrically driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

*Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:*

(*b) Gross Station Heat Rate:*

*(i) Coal-based and lignite-fired Thermal Generating Stations = 1.065 X Design*

***Heat Rate (kCal/kWh)***

*Where, the Design Heat Rate of a unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.*

*Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:*

| *Pressure Rating(kg/cm2* | *150* | *170* | *170* | *247* | *247* |
|---|---|---|---|---|---|
| *SHT/RHT (0C)* | *535/535* | *537/537* | *537/565* | *537/565* | *565/593* |
| *Type of BFP* | *Electrical Driven* | *Turbine driven* | *Turbine Driven* | *Turbine Driven* | *Turbine Driven* |
| *Max Turbine Cycle Heat rate (kCal/kWh)* | *1955* | *1950* | *1935* | *1900* | *1850* |
| *Min. Boiler Efficiency* | | | | | |
| *Sub-Bituminous Indian Coal* | *0.85* | *0.85* | *0.85* | *0.85* | *0.85* |
| *Bituminous Imported Coal* | *0.89* | *0.89* | *0.89* | *0.89* | *0.89* |
| *Max Design Unit Heat rate (kCal/kWh)* | | | | | |
| *Sub-Bituminous Indian Coal* | *2300* | *2294* | *2276* | *2235* | *2176* |
| *Bituminous Imported Coal* | *2197* | *2191* | *2174* | *2135* | *2079* |

***Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken;***

***Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;***

*Provided also that if one or more units were declared under commercial operation prior to 1.4.2011, the heat rate norms for those units as well as units declared under commercial operation on or after 1.4.2012 shall be lower of the heat rate norms arrived at by above methodology and the norms as per clause 8.4 of these Regulations;*

*Note: In respect of units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven BFP.*

...

*(d) Secondary Fuel Oil Consumption for Coal based generating stations: 1.0 ml/kWh."*

7.12 The Commission has considered the station heat rate as per its methodology in its last MYT tariff order for the Petitioner. The relevant extracts of the order is reproduced below

*"As per regulation 8(i)(b) cited in paragraph above, the Commission has determined the design heat rate considering the plant specifications mentioned in the performance guarantee provided by the manufacturer (M/s Bharat Heavy Electricals Ltd.) in "Annexure-B Performance Guarantee Schedule" of the services contract between the Petitioner and M/s Bharat Heavy Electricals Ltd. The manufacturer has guaranteed the Turbine Cycle Heat Rate (at 100% TMCR with zero percent make up) at 1943 kCal/kWh and boiler efficiency at 86.7% for both Unit 1 and Unit 2. The unit design heat rate has been arrived at 2241 kCal/kWh by using guaranteed turbine cycle heat rate and boiler efficiency. By multiplying the unit design heat rate with the factor specified in the said regulations i.e. 1.065, the Commission arrived at the heat rate of 2387 kCal/kWh and accordingly approves the same."*

7.13 Hence the SHR of the both the units are approved at 2387 kCal/kWh for FY 2014-15 and FY 2015-16.

7.14 The Commission approves the Secondary Fuel Oil Consumption at 1 ml/kWh as specified in the regulation cited in paragraph 7.1168 above.

## Coal Mix, Coal Cost, Transit loss and GCV

*Petitioner's submission*

7.15 The Petitioner vide the petition dated April 30th, 2015 has submitted that the cost of coal has been projected as per the relevant clauses (8.19) of JSERC Generation Tariff Regulations, 2010.

7.16 The Petitioner submitted that the fuel requirement of the project was planned to be fulfilled from the captive Ganeshpur coal block which was allotted to the Petitioner and Tata Steel on a 50:50 joint allocation basis. Further the Petitioner submitted that the Hon'ble Supreme Court in its judgement dated September 24th, 2014 has cancelled the captive mine allocation to the Petitioner.

7.17 The Petitioner has received tapering coal linkage for 540MW (2x270MW) from Coal India Ltd and FSAs have been signed with central coal field ltd (CCL). As per the tapering linkage policy of Ministry of Coal, coal is to be supplied on tapering basis, i.e, 75%, 50%, 25%, 0% in 1st , 2nd, 3rd, 4th year from year of normative date of production of coal respectively. The coal supplied herein was supplied at 40% premium to the price of coal of CCL which was subsequently revised to 20% premium. Further, pursuant to the cancellation of coal blocks by Hon'ble Supreme Court, Ministry allowed 50% coal to be supplied at 20% premium, which has been further extended till June 2015 only. The Petitioner hence submitted that it is forced to meet its coal requirement through combination of tapering linkage, spot market, washery rejects, imported etc.

7.18 The Petitioner further submitted that coal price and GCV estimated for FY 2014-15 and FY 2015-16 has been considered as actual weighted average price and GCV of coal for the period from April 2014 to February 2015

7.19 The Petitioner submitted that the fuel supply agreement (tapering coal linkage from CCL) price includes the base price of coal, additional mark-up for tapering linkage, breaking & stowing charges, excise duty, royalties, loading//unloading charges, transportation charges etc

7.20 Similarly the Petitioner submitted that the price of spot market coal includes tge base price of coal, breaking & stowing charges, excise duty, royalties, loading/unloading charges, transportation charges etc.

7.21 Further the Petitioner submitted that the price of washer rejects and imported coal includes the base price, excise duty, loading/unloading charges, transportation charges etc

7.22 The projected coal mix by the Petitioner during the Control Period is given in the table below:

**Table 57 Coal Mix during the Control Period submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Domestic Coal-Linkage | 51.23% | 50.00% | 49.91% | 50.00% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 34.17% | 30.00% | 32.37% | 30.00% |
| Washery Rejects | 7.16% | 10.00% | 5.16% | 10.00% |
| Imported Coal | 7.44% | 10.00% | 12.55% | 10.00% |

7.23 With regards to the landed cost of coal, the Petitioner in its petition dated April 30th, 2015 submitted the projected landed cost of coal from various sources as shown in the table below.

**Table 58 Landed Cost of coal (Rs/MT) of Unit 1 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | 2014-15 | 2015-16 | 2014-15 | 2015-16 |
| Domestic Coal-Linkage | 2,417.66 | 2,438.26 | 2,458.87 | 2,438.26 |
| Captive Coal Allocation | 0.00 | 0.00 | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 3,470.86 | 3,525.59 | 3,580.33 | 3,525.59 |
| Washery Rejects | 1,766.25 | 1,719.92 | 1,673.58 | 1,719.92 |
| Imported Coal | 4,184.57 | 4,212.42 | 4,240.27 | 4,212.42 |

7.24 With regards to the GCV of coal, the Petitioner in its petition dated April 30th, 2015 submitted the projected GCV of coal from various sources as shown in the table below.

**Table 59: GCV of coal (kcal/kg) from various sources submitted by Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | 2014-15 | 2015-16 | 2014-15 | 2015-16 |
| Domestic Coal-Linkage | 3,753.53 | 3,747.63 | 3,741.73 | 3,747.63 |
| Captive Coal Allocation | 0.00 | 0.00 | 0.00 | 0.00 |
| Domestic Coal-Spot Market | 3,101.86 | 3,125.02 | 3,148.18 | 3,125.02 |
| Washery Rejects | 1,760.09 | 1,753.22 | 1,746.35 | 1,753.22 |
| Imported Coal | 3,609.71 | 3,615.36 | 3,621.00 | 3,615.36 |

*Commission's Analysis*

7.25 The Petitioner was allotted a captive coal block (Ganeshpur) along with Tata Steel for supply of coal to the power plant. However, the captive mine allocation to the Petitioner was cancelled after the judgement made by Hon'ble Supreme Court on writ petition (CRL) No 120 of 2012. As per the latest information submitted by the Petitioner, the Petitioner has obtained a tapering coal linkage from Coal India limited and fuel supply agreements have been signed with Central Coal fields Ltd. It has been further proposed that the Petitioner is forced to meet its coal requirement through combination of tapering linkage, spot market, washer rejects and imported coal.

7.26 Commission understands that the captive coal allocated to the Petitioner has been cancelled vide the Supreme Court judgement stated as above. Hence, the Petitioner is largely depending on the domestic linkage by means of tapering linkage with CCL.

7.27 Meanwhile, the Commission observes that the Petitioner primarily used domestic coal from the CCL linkage and spot market to meet its coal requirements during FY 2012-13 and FY 2013-14. However, the Petitioner has proposed to procure coal from spot market for FY 2014-15 and FY 2015-16 and remaining from coal washery rejects and imported coal.

7.28 The Commission provisionally approves the coal mix for FY 2014-15 and FY 2015-16 equal to the actual coal mix as submitted by the Petitioner subject to finalisation at the time of true up exercise.

**Table 60 Coal Mix for FY 2014-15 and FY 2015-16 (Unit 1) approved by the Commission**

| Coal Mix | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 | | | 2015-16 | | |
| Domestic Coal-Linkage | 65.00% | 51.23% | 51.23% | 65.00% | 50.00% | 50.00% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 35.00% | 34.17% | 34.17% | 35.00% | 30.00% | 30.00% |
| Washery Rejects | 0.00% | 7.16% | 7.16% | 0.00% | 10.00% | 10.00% |
| Imported Coal | 0.00% | 7.44% | 7.44% | 0.00% | 10.00% | 10.00% |

**Table 61 Coal Mix for FY 2014-15 and FY 2015-16 (Unit 2) approved by the Commission**

| Coal Mix | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 | | | 2015-16 | | |
| Domestic Coal-Linkage | 65.00% | 49.91% | 49.91% | 65.00% | 50.00% | 50.00% |
| Captive Coal Allocation | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Domestic Coal-Spot Market | 35.00% | 32.37% | 32.37% | 35.00% | 30.00% | 30.00% |
| Washery Rejects | 0.00% | 5.16% | 5.16% | 0.00% | 10.00% | 10.00% |

| Coal Mix | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | | 2014-15 | | | 2015-16 | |
| Imported Coal | 0.00% | 12.55% | 12.55% | 0.00% | 10.00% | 10.00% |

7.29 The Commission further notes that in view of the shortage of domestic coal the Petitioner may have to utilize coal from other sources including imported coal to achieve the targeted generation. The Central Electricity Regulatory Commission (CERC) has also recognized the requirement of blending of coal and has including provisions for the same in CERC (Terms and Conditions of Tariff) Regulations, 2014. The relevant clauses of the said regulation are quoted below:

*"30 (10) In case of part or full use of alternative source of fuel supply by coal based thermal generating stations other than as agreed by the generating company and beneficiaries in their power purchase agreement for supply of contracted power on account of shortage of fuel or optimization of economical operation through blending, the use of alternative source of fuel supply shall be permitted to generating station:*

*Provided that in such case, prior permission from beneficiaries shall not be a precondition, unless otherwise agreed specifically in the power purchase agreement:*

*Provided further that the weighted average price of use of alternative source of fuel shall not exceed 30% of base price of fuel computed as per clause (11) of this regulation:*

*Provided also that where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel exceeds 30% of base energy charge rate as approved by the Commission for that year or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on based on weighted average fuel price for the previous month, whichever is lower shall be considered and in that event, prior consultation with beneficiary shall be made not later than three days in advance."*

7.30 Accordingly, the Commission directs the Petitioner that in case where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel (other than coal through CCL linkage) exceeds 30% of base energy charge rate as approved by the Commission in this Order or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month (whichever is lower), prior consultation with JUVNL should be made not later than three days in advance.

7.31 With regards to landed cost of coal, as per Generation Tariff Regulations, 2010, the landed price of coal includes the following:

*"8.19 The landed cost of coal shall include:*

*(a) Base cost of coal;*

*(b) Royalty;*

*(c) Taxes and duties;*

*(d) Transport cost by rail / ocean / road / pipeline or any other means; and*

*(e) Clean energy cess as per Ministry of Coal, Govt. of India Notification.*

....

*For the purpose of computing energy charges, landed cost of coal shall be arrived at after considering normative transit and handling loss of 0.8% on the quantity of coal dispatched by the coal supplier in case of non-pit-head generating stations and 0.2% on the quantity of coal dispatched by the coal supplier in case of pit-head generation stations."*

7.32 Further, as per Clause 7.37 of Generation Tariff Regulations, 2010, *"the cost of fuel in cases covered ... shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period."*

7.33 The Commission approves normative transit loss of 0.8% for coal procured from domestic sources (other than coal obtained from captive coal block) in accordance with Generation Tariff Regulations, 2010. The Commission also notes that the Central Commission, in the CERC (Terms and Conditions of Tariff) Regulations, 2014, has set a norm of 0.2% for transit loss on imported coal. The Commission approves the same for any imported coal that may be used by the plant subject to the conditions mentioned in paragraph 7.30 of this Order.

**Table 62 Coal Cost (Rs/MT) of Unit 1 approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 | | | 2015-16 | | |
| Domestic Coal-Linkage | 2914 | 2418 | 2418 | 2914 | 2438 | 2438 |
| Captive Coal Allocation | - | - | - | - | - | - |
| Domestic Coal-Spot Market | 2910 | 3471 | 3471 | 2910 | 3526 | 3526 |
| Washery Rejects | - | 1766 | 1766 | - | 1720 | 1720 |
| Imported Coal | - | 4185 | 4185 | - | 4212 | 4212 |

**Table 63 Coal Cost (Rs/MT) of Unit 2 approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 | | | 2015-16 | | |
| Domestic Coal-Linkage | 2914 | 2459 | 2459 | 2914 | 2438 | 2438 |
| Captive Coal Allocation | - | - | - | - | - | - |
| Domestic Coal-Spot Market | 2910 | 3580 | 3580 | 2910 | 3526 | 3526 |
| Washery Rejects | - | 1674 | 1674 | - | 1720 | 1720 |
| Imported Coal | - | 4240 | 4240 | - | 4212 | 4212 |

**Table 64 GCV (Kcal/L) of coal for Unit 1 approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | **2014-15** | | | **2015-16** | | |
| Domestic Coal-Linkage | 3,469 | 3,754 | 3,754 | 3,469 | 3,748 | 3,748 |
| Captive Coal Allocation | - | - | - | - | - | - |
| Domestic Coal-Spot Market | 4,056 | 3,102 | 3,102 | 4,056 | 3,125 | 3,125 |
| Washery Rejects | - | 1,760 | 1,760 | - | 1,753 | 1,753 |
| Imported Coal | - | 3,610 | 3,610 | - | 3,615 | 3,615 |

**Table 65 GCV (Kcal/L) of coal for Unit 2 approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | **2014-15** | | | **2015-16** | | |
| Domestic Coal-Linkage | 3,469 | 3,742 | 3,742 | 3,469 | 3,748 | 3,748 |
| Captive Coal Allocation | - | - | - | - | - | - |
| Domestic Coal-Spot Market | 4,056 | 3,148 | 3,148 | 4,056 | 3,125 | 3,125 |
| Washery Rejects | - | 1,746 | 1,746 | - | 1,753 | 1,753 |
| Imported Coal | - | 3,621 | 3,621 | - | 3,615 | 3,615 |

7.34 The Commission shall also true up the fuel cost of the Petitioner for FY 2014-15 and FY 2015-16 taking into account the actual coal cost incurred by the Petitioner after due prudence check.

## Base Energy Charge Rate (ECR) and Cost of Primary Fuel

*Petitioner's submission*

7.35 The Petitioner has in the Petition dated April 30th , 2015 projected the energy charge for FY 2014-15 and FY 2015-16 of both units as below:

**Table 66 Energy Charge Rate submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Uom | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Operational Parameters | | | | | |
| Normative Aux Consumption | % | 9% | 9% | 9% | 9% |
| Heat Rate | kCal/kWh | 2387 | 2387 | 2387 | 2387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/Kg | 9346.83 | 9346.83 | 9346.83 | 9346.83 |
| Secondary Oil Consumption | kL/Year | 2010.42 | 2015.93 | 2010.42 | 2015.93 |
| Coal | | | | | |
| Weighted Average Calorific Value of Coal | kCal/kg | 3,377.40 | 3,348.20 | 3,431.46 | 3,348.20 |
| Weighted Average cost of Coal | Rs/Tonne | 2,862.39 | 2,870.07 | 3,005.01 | 2,870.07 |
| Energy Charge Rate | Rs/kWh | 2.23 | 2.26 | 2.31 | 2.26 |
| Injection Losses (based on notified PoC losses) | % | 1.15% | 1.15% | 1.15% | 1.15% |
| Energy Charge rate (considering injection losses) | Rs/kWh | 2.26 | 2.28 | 2.33 | 2.28 |

*Commission's Analysis*

7.36 As per the Generation Tariff Regulation, 2010, the energy (variable) charge shall cover primary fuel costs and shall be payable by every Beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month.

7.37 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.17 and 8.18 of the Generation Tariff Regulation, 2010 as quoted below:

*"8.17 Total Energy charge payable to the Generating Company for a month shall be: = (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

*8.18 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formula:*

*(a) For coal based stations*

*ECR = (GHR – SFC x CVSF) x LPPF x 100/ {CVPF x (100 – AUX)}*

*Where, AUX - Normative auxiliary energy consumption in percentage*

*CVPF - Gross calorific value of primary fuel as fired, in KCal per kg, per litre or per standard cubic metre, as applicable.*

*CVSF - Calorific value of secondary fuel, in KCal per ml*

*ECR - Energy charge rate, in Rupees per kWh sent out.*

*GHR - Gross station heat rate, in KCal per kWh.*

*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.*

*SFC - Specific fuel oil consumption, in ml per kWh" .*

7.38 The Commission notes that the Petitioner, while calculating ECR, considered the cost of coal without including the transit loss of coal, and later grossed up ECR by 0.80%. This calculation is not in accordance with the Generation Tariff Regulations, 2010. As per the formula specified in the said regulations, the landed cost of coal, inclusive of any transit loss, shall be used for calculation of ECR. Further, no grossing up of ECR by transit loss is required.

7.39 Accordingly, the Commission has calculated the base ECR for the Control Period as per the formula stated above and after considering the operational parameters as approved in this order. The table below contain the base ECR approved by the Commission for the period FY 2012-13 to FY 2015-16

**Table 67 Approved Energy Charge Rate for Unit 1**

| Parameters | | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|---|
| | | | FY 2014-15 | | | FY 2015-16 | |
| Gross Generation Heat Rate | MU | 2,010.42 | 2,010.42 | 1,227.07 | 2,015.93 | 2,015.93 | 2,010.42 |
| | KCal/kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | KCal/l | 9,553 | 9346.83 | 9346.83 | 9,553 | 9346.83 | 9,346.83 |
| Weighted average cost of coal | Rs/MT | 2,913 | 2,862.39 | 2,862.39 | 2,913 | 2,870.07 | 2,870.07 |

| Parameters | | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|---|
| | | FY 2014-15 | | | FY 2015-16 | | |
| Weighted average GCV of coal | kCal/L | 3,674 | 3,377.40 | 3,377.40 | 3,674 | 3,348.20 | 3,348.20 |
| Energy Charge Rate | **Rs/kWh** | **2.071** | **2.26** | **2.192** | **2.071** | **2.28** | **2.217** |

**Table 68 Approved Energy Charge Rate for Unit 2**

| Parameters | UoM | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|---|
| | | FY 2014-15 | | | FY 2015-16 | | |
| Gross Generation | MU | 2,010.42 | 2,010.42 | 985.34 | 2,015.93 | 2,015.93 | 2,010.42 |
| Heat Rate | KCal/kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | KCal/l | 9,553 | 9346.83 | 9346.83 | 9,553 | 9346.83 | 9346.83 |
| Weighted average cost of coal | Rs/MT | 2,913 | 3,005.01 | 3,005.01 | 2,913 | 2,870.07 | 2,870.07 |
| Weighted average GCV of coal | kCal/L | 3,674 | 3,431.46 | 3,431.46 | 3,674 | 3,348.20 | 3,348.20 |
| Energy Charge Rate | **Rs/kWh** | **2.071** | **2.33** | **2.265** | **2.071** | **2.28** | **2.217** |

7.40 The Energy Charge Rate (ECR) approved by the Commission as above shall be the base energy charge rate for the year. Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal shall be adjusted on a monthly basis on the basis of weighted average GCV of coal in stock, received and burnt, and weighted average landed cost incurred by the Petitioner for procurement of coal, utilizing the fuel price adjustment mechanism given in the Generation Tariff Regulations, 2010.

## Determinants of Fixed Charges

## Depreciation

*Petitioner's submission*

7.41 In its petition dated April 30th, 2015, the Petitioner submitted the depreciation for Unit 1 and Unit 2 for FY 2014-15 and FY 2015-16. The depreciation submitted by the Petitioner is given in the table below:

**Table 69 Depreciation (Rs Cr) submitted by the Petitioner for both units**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Depreciation | 80.06 | 80.06 | 81.09 | 81.09 |

*Commission's Analysis*

7.42 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Depreciation are given below:

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station."*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis.*

7.43 The Commission has approved the depreciation for Unit 1 and Unit 2 for FY 2014-15 and FY 2015-16 in lines with the provisions of the regulations as stated above and considering the approved capital cost.

7.44 The following table shows the depreciation for Unit 1 and Unit 2 as calculated by the Commission as against that submitted by the Petitioner:

**Table 70 Depreciation approved by the Commission for Unit 1**

| Asset Type | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 (Rs Cr) | | | 2015-16 (Rs Cr) | | |
| Land owned under full title | - | - | - | - | - | - |
| Land held under lease | 0.37 | 0.36 | 0.37 | 0.37 | 0.36 | 0.37 |
| Plant and machinery | 71.20 | 70.25 | 71.81 | 73.07 | 70.25 | 71.81 |
| Building & civil works | 10.15 | 9.46 | 7.01 | 10.70 | 9.46 | 7.01 |
| Other Assets | | | 0.40 | | | 0.40 |
| Sub Total | **81.73** | **80.06** | **79.59** | **84.13** | **80.06** | **79.59** |

**Table 71 Depreciation approved by the Commission for Unit 2**

| Asset Type | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15 (Rs Cr) | | | 2015-16 (Rs Cr) | | |
| Land owned under full title | - | - | - | - | - | - |
| Land held under lease | 0.42 | 0.36 | 0.37 | 0.42 | 0.36 | 0.37 |
| Plant and machinery | 66.81 | 71.34 | 72.92 | 68.66 | 71.34 | 72.92 |
| Building & civil works | 9.73 | 9.40 | 6.97 | 10.27 | 9.40 | 6.97 |
| Other Assets | | | 0.40 | | | 0.40 |
| Sub Total | **76.96** | **81.09** | **80.66** | **79.34** | **81.09** | **80.66** |

## Interest on Debt

*Petitioner's submission*

7.45 The Petitioner submitted that the interest rates have been considered based on prevailing interest rates.

7.46 The interest rates as submitted by the Petitioner for the computation of the interest on debt are based on the actual interest rates payable i.e. 13.43% for Unit 1 and 13.33% for Unit 2. The following tables shows the interest on debt submitted by the Petitioner :

**Table 72 Interest on Debt of both units as submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Unit 1 | 148.82 | 138.06 | 152.85 | 142.04 |

*Commission's Analysis*

7.47 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Debt as quoted as under:

*"7.19 The loans arrived at in the manner indicated in clause 7.13, 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

*7.20 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.*

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered*

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

7.48 The Commission has calculated the debt for each year based on the approved capital cost and considering the approved depreciation as repayment in line with the methodology specified in Generation Tariff Regulations, 2010.

7.49 The debt-equity ratio has been retained as the one approved for FY 2013-14 at 74.06%:25.94%.

7.50 The Commission has provisionally approved the interest rates as submitted by the Petitioner towards APR and ARR determination for FY 2014-15 and FY 2015-16 respectively. The interest on debt approved by the Commission is shown in the tables below for both Units:

**Table 73 Interest on Debt (Rs Cr) approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| Opening Balance | 1116.80 | 1,148.12 | 1,104.45 | 1112.31 | 1,068.06 | 1,024.86 |

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| Additions | 77.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment | 81.73 | 80.06 | 79.59 | 84.13 | 80.06 | 79.59 |
| Closing Balance | 1112.31 | 1,068.06 | 1,024.86 | 1028.18 | 987.99 | 945.28 |
| Interest on Debt % | 13.47% | 13.43% | 13.43% | 13.47% | 13.43% | 13.43% |
| Amount in Rs Cr | **150.13** | **148.82** | **142.98** | **144.16** | **138.06** | **132.29** |

**Table 74 Interest on Debt approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| Opening Balance | 1108.12 | 1,187.20 | 1,143.81 | 1031.16 | 1,106.11 | 1,063.16 |
| Additions | - | 0.00 | 0.00 | 76.05 | 0.00 | 0.00 |
| Repayment | 76.96 | 81.09 | 80.66 | 79.34 | 81.09 | 80.66 |
| Closing Balance | 1031.16 | 1,106.11 | 1,063.16 | 1027.87 | 1,025.02 | 982.50 |
| % | 13.31% | 13.33% | 13.33% | 13.31% | 13.33% | 13.33% |
| Amount in Rs. Cr | **142.37** | **152.85** | **147.09** | **137.03** | **142.04** | **136.34** |

## Return on Equity

*Petitioner's submission*

7.51 The Petitioner submitted that it has calculated return on equity considering a post-tax return of 15.50% as per Generation Tariff Regulations, 2010. The Petitioner has submitted that it has considered a MAT rate of 20.01%.

7.52 The Return on equity for both units submitted by the Petitioner is shown in the following table:

**Table 75 Return on Equity (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Return on Equity | 82.20 | 82.20 | 83.13 | 83.13 |

*Commission's Analysis*

7.53 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Return on Equity are as under:

*"7.15 Return on equity shall be computed in rupee terms, on the equity base determined in accordance with clause 7.13, 7.14 of these Regulations. Petition for Approval of Capital Cost and Business Plan and MYT Petition for MYT Control Period for FY 2012-13 to FY 2015-16 63*

*7.16 Return on equity shall be computed on pre-tax basis at the base rate of 15.50%, to be grossed up as per clause 7.17 of these Regulations.*

*……………*

*Provided that in case of Projects commissioned on or after 1st April, 2011, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:*

*Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever:*

*7.17 The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate applicable to the Generating Company as per details shown as under:*

*(i)……….*

*(ii) MYT period: Base rate to be grossed by the applicable tax rate for the Year 2011-12*

*Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective year during the Control period shall be trued up separately for each year of the Control period along with the tariff petition filed for the next Control period.*

*7.18 Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*

*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where 't' is the applicable tax rate in accordance with clause 7.17 of these Regulations."*

7.54 The Commission has worked out the gross normative equity of both Unit 1 and Unit 2 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010. The Commission has considered the return on equity at 15.50%.

7.55 The MAT rate considered by Commission is 20.96% which is subjected to true up. The return on equity approved by the Commission is shown in the table below:

**Table 76 Return on Equity approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 (Rs Cr) | | | FY 2015-16 (Rs Cr) | | |
| Equity | | | | | | |
| Opening Balance | 451.14 | 419.14 | 426.89 | 479.91 | 419.14 | 426.89 |
| Net Additions | 28.77 | 0.00 | 0.00 | | 0.00 | 0.00 |
| Closing Balance | 479.91 | 419.14 | 426.89 | 479.91 | 419.14 | 426.89 |
| Average Equity | 465.52 | 419.14 | 426.89 | 479.91 | 419.14 | 426.89 |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (t%) | 20.96% | 20.96% | 20.96% | 20.96% | 20.96% | 20.96% |
| Grossed Up rate of return on equity | 19.60% | | 19.61% | 19.60% | | 19.61% |
| Return on equity | **91.24** | **82.20** | **83.72** | **94.06** | **82.20** | **83.72** |

**Table 77 Return on Equity approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 (Rs Cr) | | | FY 2015-16 (Rs Cr) | | |
| Equity | | | | | | |
| Opening Balance | 449.63 | 423.90 | 432.08 | 449.63 | 423.90 | 432.08 |
| Net Additions | - | 0.00 | 0.00 | 29.11 | 0.00 | 0.00 |
| Closing Balance | 449.63 | 423.90 | 432.08 | 478.73 | 423.90 | 432.08 |
| Average Equity | 449.63 | 423.90 | 432.08 | 507.84 | 423.90 | 432.08 |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (t%) | 20.96% | 20.96% | 20.96% | 20.96% | 20.96% | 20.96% |
| Grossed Up rate of return on equity | 19.60% | | 19.61% | 19.60% | | 19.61% |
| Return on equity | **88.13** | **83.13** | **84.73** | **90.98** | **83.13** | **84.73** |

## O&M Expenses

*Petitioner's submission*

7.56 The Petitioner in the petition dated April 30th , 2015 submitted that it has computed the O&M expenses for FY 2014-15 and FY 2015-16 based on the norms specified for 200/210/250 MW sets in the JSERC Generation Tariff Regulations, 2010.

7.57 is shown in the following table:

**Table 78 O&M Expenses (Rs Cr) submitted by the Petitioner**

| O&M Expenses | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| | 64.91 | 64.91 | 68.63 | 68.63 |

*Commission's Analysis*

7.58 The Generation Tariff Regulations, 2010 for approval of O&M expenses specify as under:

*"New Generating Stations:*

*7.44 The O&M expenses (in Rs lakhs/ MW) permissible towards determination of tariff for Coal and Lignite fired (including those based on CFBC technology) shall be as follows:*

| *Year* | *200/ 210/ 250 MW sets* | *300/330/350 MW sets* | *500 MW sets* | *500 MW and above sets* |
|---|---|---|---|---|
| *2011-12* | *20.34* | *17.88* | *14.53* | *13.08* |
| *2012-13* | *21.51* | *18.91* | *15.36* | *13.82* |
| *2013-14* | *22.74* | *19.99* | *16.24* | *14.62* |
| *2014-15* | *24.04* | *21.13* | *17.17* | *15.46* |
| *2015-16* | *25.42* | *22.34* | *18.15* | *16.34* |

7.59 The Generation Tariff Regulations, 2010 do not specify any norms specifically for 270 MW sets. Accordingly, the Commission has approved the O&M expenses based on the norms specified for 200/210/250 MW sets. The O&M expenses for the first year after commissioning have been approved on pro-rata basis.

7.60 The O&M expenses approved by the Commission for Unit 1 and Unit 2 are shown in the table below.

**Table 79 O&M expenses approved by the Commission**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | 2014-15(Rs Cr) | | | 2015-16(Rs Cr) | | |
| Unit 1 | 64.91 | 64.91 | 64.91 | 68.63 | 68.63 | 68.63 |
| Unit 2 | 64.91 | 64.91 | 64.91 | 68.63 | 68.63 | 68.63 |
| Total | **129.82** | **129.82** | **129.82** | **137.27** | **137.27** | **137.27** |

## Interest on Working Capital

*Petitioner's submission*

7.61 The Petitioner while computing the working capital and Interest thereon as per the Generation Tariff Regulations, 2010 vide regulations 7.34, 7.38 & 7.39

7.62 The Petitioner in the petition dated April 30th, 2015 submitted that for calculation of Interest on Working Capital, the rate of interest has been considered at 14.75% for Unit 1 and 14.45% for Unit 2.

7.63 The Interest on working capital submitted by the Petitioner is shown in the table below:

**Table 80 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Total Working Capital | 231.60 | 233.45 | 237.07 | 234.43 |
| Interest on Working Capital | **34.16** | **34.53** | **34.26** | **33.97** |

*Commission's Analysis*

7.64 The Commission has computed the interest on working capital for both Units 1 and Unit 2 by considering values of related components. The working capital requirement for the Petitioner has been determined by considering the following components as per Regulation 7.34 of the Generation Tariff Regulation, 2010:

(a) Cost of Coal for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(b) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(c) Maintenance spares @ 20% of operation and maintenance expenses;

(d) Operation and Maintenance expenses for 1 month; and

(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.

7.65 The Commission outlines the provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Working Capital as under:

*"7.38 Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2011 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation, whichever is later during Transition period.*

*During Control Period rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2012 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."*

7.66 Accordingly the Commission calculated the Interest on Working Capital on the rates prevailing on the April 1, 2014 and April 1, 2015 i.e. at 14.75% and 14.05% respectively for FY 2014-15 and FY 2015-16. The detailed calculation made by the Commission is shown in the tables below:

**Table 81 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 1**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| Coal Cost for 2 months | 63.15 | 68.06 | 40.79 | 63.32 | 69.03 | 67.60 |
| Cost of secondary fuel oil for 2 months | 2.13 | 2.17 | 1.30 | 2.13 | 2.15 | 2.13 |
| Receivables for 2 months | 135.33 | 140.21 | 108.10 | 136.05 | 140.06 | 135.70 |
| O&M Expenses for 1 month | 5.41 | 6.22 | 5.41 | 5.72 | 6.53 | 5.72 |
| Maintenance Spares | 12.98 | 14.93 | 12.98 | 13.73 | 15.68 | 13.73 |
| Total Working Capital | **218.99** | **231.60** | **168.59** | **220.95** | **233.45** | **224.87** |

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| Rate of Interest | 14.75% | 14.75% | 14.75% | 14.75% | 14.75% | 14.05% |
| Interest on Working Capital | **32.30** | **34.16** | **24.87** | **32.59** | **34.53** | **31.59** |

**Table 82 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 2**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| Coal Cost for 2 months | 63.15 | 70.33 | 33.85 | 63.32 | 69.03 | 67.60 |
| Cost of secondary fuel oil for 2 months | 2.13 | 2.13 | 1.04 | 2.13 | 2.15 | 2.13 |
| Receivables for 2 months | 132.54 | 143.46 | 101.60 | 133.38 | 140.98 | 136.75 |
| O&M Expenses for 1 month | 5.41 | 6.22 | 5.41 | 5.72 | 6.55 | 5.72 |
| Maintenance Spares | 12.98 | 14.93 | 12.98 | 13.73 | 15.71 | 13.73 |
| Total Working Capital | **216.21** | **237.07** | **154.88** | **218.28** | **234.43** | **225.92** |
| Rate of Interest | 14.45% | 14.45% | 14.75% | 14.45% | 14.45% | 14.05% |
| Interest on Working Capital | **31.24** | **34.26** | **22.84** | **31.54** | **33.97** | **31.74** |

## Cost of Secondary Fuel Oil

*Petitioner's submission*

7.67 The Petitioner in the petition dated April 30th, 2015 submitted that the secondary fuel would be procured through local suppliers. The cost of LDO is considered at Rs 64,874.11/kL and Rs 63,380.80/kL for Unit 1 and Unit 2 respectively for FY 2014-15 and FY 2015-16, based on the prevailing market rates for the entire Control Period.

7.68 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for both Unit 1 and Unit 2:

**Table 83 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 0031**

| Particulars | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Unit Capacity | MW | 270 | 270 | 270 | 270 |
| Gross Generation at Normative Plant Availability | MU | 2,010.42 | 2,015.93 | 2,010.42 | 2,015.93 |
| Normative Secondary Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 |
| Secondary Fuel Oil Consumption at Normative Plant Availability | kL | 670.14 | 2,010.42 | 2,010.42 | 2,015.93 |
| Secondary Fuel Oil Landed Cost | Rs./kL | 64,647.69 | 64,103.97 | 63,560.24 | 64,103.97 |
| Secondary Fuel Oil Cost at Normative Plant availability | Rs. Cr. | **13.00** | **12.92** | **12.78** | **12.92** |

*Commission's Analysis*

7.69 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of cost of secondary fuel oil are as under:

*"7.49 Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause 8.4, 8.6 of these Regulations, in accordance with the following formula:*

*= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10*

*Where,*

*SFC – Normative Specific Fuel Oil consumption in ml/kWh*

*LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs./ml considered initially*

*NAPAF – Normative Annual Plant Availability Factor in percentage*

*NDY – Number of days in a year*

*IC - Installed Capacity in MW"*

*7.50 Initially, the landed cost incurred by the Generating Company on secondary fuel oil shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of landed costs for the three preceding months, latest procurement price for the generating station, before the start of the year."*

7.70 The Commission has considered the last approved figures of weighted average landed cost of secondary fuel as in MYT order for the purpose of projection of cost of secondary fuel oil for Unit 1 and Unit 2 in FY 2014-15 and FY 2015-16.

**Table 84 Cost of secondary fuel oil approved by the commission for Unit 1**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| Gross Generation at NAPF (MU) | 2010.42 | 2010.42 | 1227.07 | 2015.93 | 2015.93 | 2010.42 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPF (kL) | 2010.42 | 2010.42 | 1227.07 | 2015.93 | 2015.93 | 2010.42 |
| LDO Landed Cost (Rs/kL) | 63503 | 64647.69 | 63503 | 63503 | 64103.97 | 63503 |
| LDO Cost (Rs Cr) | **12.77** | **13.00** | **7.79** | **12.80** | **12.92** | **12.77** |

**Table 85 Cost of secondary fuel oil approved by the commission for Unit 2**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| Gross Generation at NAPF (MU) | 2010.42 | 2010.42 | 985.34 | 2015.93 | 2015.93 | 2010 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPF (kL) | 2010.42 | 2010.42 | 985.34 | 2015.93 | 2015.93 | 2010 |
| LDO Landed Cost (Rs/kL) | 63503 | 63560.24 | 63503 | 63503 | 64103.97 | 63503 |
| LDO Cost (Rs Cr) | **12.77** | **12.78** | **6.26** | **12.80** | **12.92** | **12.77** |

## Additional Water Charges

*Petitioner's submission*

7.71 The Petitioner stated that CERC (Terms and Conditions of Tariff) Regulations, 2014 stipulates that water charges for thermal generating stations shall be allowed separately. The relevant extracts of the regulation as submitted by the Petitioner is reproduced as below

*"29. Operation and Maintenance Expenses:*

*(3) Normative Operation and Maintenance Expenses of Thermal Generating Stations…*

*(4) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc, subject to prudence check. The details regarding the same shall be furnished along with the petition…"*

7.72 The Petitioner in its petition dated April 30th , 2015 has stated that it incurred additional water charges to the extent of Rs 9.75 Cr each for Unit 1 and Unit 2 in FY 2014-15 and FY 2015-16 respectively.

7.73 The Petitioner submitted that an agreement was signed between Adhunik and Govet of Jharkhand for supply of water vide agreement dated 29th Aug'08. The required water was to be withdrawn or pumped by the company from the river Subarnarekha.

7.74 The Petitioner further submitted that the Water Department of Gov. of Jharkhand vide its Notification No: 2/PMC/jalapurti175/2007 dated 01.04.2011 devised various categories for water offtake and the Petitioner was asked to pay @ Rs 26.40 per thousand gallon. The same was opposed by the Petitioner and a stay order was issued by Hon'ble High Court of Jharkhand. The Petitioner submitted that it is paying the water charges at the pre0revised rate of Rs 4.50 per thousand gallons and accordingly they have claimed water charges.

**Table 86: Additional Water Charges (Rs Cr) Claimed by the Petitioner for FY 2012-13 and FY 2013-14**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Additional Water Charges | 9.75 | 9.75 | 9.75 | 9.75 |

*Commission's Analysis*

7.75 The Commission has reviewed the submissions of the Petitioner as far as additional water charges as concerned.

7.76 The Commission finds that the normative cost per MW as specified in the Generation Tariff Regulations, 2010 has been arrived after duly considering all such cost parameters and any further variation on the O&M cost towards any component may not be entertained.

## Annual Fixed Charges

7.77 Regulation 8.2 of the Generation Tariff Regulations, 2010 states that the annual fixed charges of a thermal generating station shall consist of the following

(a) Return on Equity;

(b) Interest and Financing Charges on Loan Capital;

(c) Depreciation;

(d) Operation and Maintenance Expenses;

(e) Interest Charges on Working Capital; and

(f) Cost of Secondary Fuel Oil.

7.78 The tables below show the annual fixed charges submitted by the Petitioner and approved by the Commission for each unit for the entire capacity of 270 MW.

**Table 87 Annual Fixed Charges of Unit 1 for 270 MW**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| O&M Expenses | 64.91 | 74.66 | 64.91 | 68.63 | 78.38 | 68.63 |
| Depreciation | 81.73 | 80.06 | 79.59 | 84.13 | 80.06 | 79.59 |
| Interest on Loan | 150.13 | 148.82 | 142.98 | 144.16 | 138.06 | 132.29 |
| Return on Equity (pre - tax) | 91.24 | 82.20 | 83.72 | 94.06 | 82.20 | 83.72 |
| Cost of Secondary Fuel | 12.77 | 13.00 | 7.79 | 12.80 | 12.92 | 12.77 |
| Interest on Working Capital | 32.30 | 34.16 | 24.87 | 32.59 | 34.53 | 31.59 |
| Annual Fixed Charges | **433.08** | **432.89** | **403.85** | **436.38** | **426.16** | **408.59** |

**Table 88 Annual Fixed Charges of Unit 2 for 270 MW**

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| O&M Expenses | 64.91 | 74.66 | 64.91 | 68.63 | 78.57 | 68.63 |
| Depreciation | 76.96 | 81.09 | 80.66 | 79.34 | 81.09 | 80.66 |
| Interest on Loan | 142.37 | 152.85 | 147.09 | 137.03 | 142.04 | 136.34 |
| Return on Equity (pre tax) | 88.13 | 83.13 | 84.73 | 90.98 | 83.13 | 84.73 |
| Cost of Secondary Fuel | 12.77 | 12.78 | 6.26 | 12.80 | 12.92 | 12.77 |

| Particulars | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC | Approved in MYT Order | Submission by APNRL | Approved Now By JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
| Interest on Working Capital | 31.24 | 34.26 | 22.84 | 31.54 | 33.97 | 31.74 |
| **Annual Fixed Charges** | **416.37** | **438.76** | **406.49** | **420.33** | **431.72** | **414.87** |

## Approved Tariff for Unit 1 and Unit 2

*Tariff for 12% of total net capacity*

7.79 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) approved by the Commission in this order and as noted below:

**Table 89 Approved tariff for 12% of total net capacity**

| Description | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.192 | 2.217 | 2.265 | 2.217 |

*Tariff for 13% of total net capacity*

7.80 The tariff for 13% of the total net capacity shall be the total tariff i.e. variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) and fixed charges as approved by the Commission in this order as noted below:

**Table 90 Approved tariff for 13% of total net capacity – variable cost**

| Description | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.192 | 2.217 | 2.265 | 2.217 |

**Table 91 Approved tariff for 13% of total net capacity – fixed charges**

| Description | Derivation | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|---|
| | | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Gross Capacity | A | MW | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9% | 9% | 9% | 9% |
| Net Capacity | C= A x (1-B) | MW | 245.7 | 245.7 | 245.7 | 245.7 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Total Annual Fixed Charge | F | Rs Crore | **403.85** | **408.59** | **406.49** | **414.87** |
| Annual Fixed Charges/MW | G=F/E | Rs Crore/MW | 1.87 | 1.89 | 1.88 | 1.92 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | I= G x H | Rs Crore | **59.66** | **60.36** | **60.05** | **61.29** |

# A8: ADDITIONAL CAPITALIZATION CLAIMED BY PETITIONER

*Petitioner's Submission*

8.1 With regards to additional capitalization, Hon'ble Commission in its provisional order dated May 26th, 2014 gave the following direction.

*"The Commission has provisionally approved an additional capitalisation of Rs 211.18 Cr for Unit 1 and Unit 2 during the Control Period. In this regard, the Petitioner is directed to submit the detailed project report and cost benefit analysis of each of the schemes prior to taking up the scheme for execution."*

8.2 In response to this directive the Petitioner has submitted certain details of the various schemes that it proposes to undertake as part of additional capital expenditure for the project:

8.3 <u>Reservoir Construction Scheme:</u>

The Petitioner submitted the following:

"*The aggregate water requirement for the power station is 3,510 m3 per hour and APNRL has permission to draw 4,064 m3 per hour water from Subarnarekha River. As on the date, the raw water supply to the plant is made through 8 Km cross-country pipeline. The water is required for cooling of electrical and mechanical auxiliaries, steam condenser cooling, fire fighting, ventilation etc.*
*APNRL intake pump house is strategically located in a manner that it is the first industrial facility to withdraw water downstream of Subarnarekha River once the same has been released from Chandil dam. The reservoir facility present in main plant area currently caters to storage of water for 21 days and could not be made bigger on account of scarcity of land at the time of Financial Closure. Following points necessitate the justification to augment current water arrangement facilities for the plant:*

- *Excavation of sand from the river by local population has resulted in decline in bed level of the river which could have impact on pumping operation in near future.*
- *Subarnarekha River feeds many adjacent industries and for irrigation purposes that water availability at times falls short in lean season.*
- *Availability of water is likely to be interrupted temporarily for repairs or other such other maintenance works on the basis of jointly signed protocol among M/s. APNRL and State Govt. of Jharkhand. Such interruption shall not ordinarily exceed fifteen days*.

*The interruption in release of water shall adversely affect the power generation.*
*APNRL thus intends to construct additional water reservoir and raw water pumping system to ensure continued and efficient operation of the plant. The additional water reservoir will also act as a back-up mechanism for functioning of plant in case of any planned / unplanned maintenance of existing pipeline.*

*Construction of storage intervention needed for uninterrupted drawl of water is covered under the protocol signed between APNRL and the Govt of Jharkhand.*

*The technical specification as estimated by the Owner's Engineer is as follows:*

- *Rectangular shaped water reservoir having depth of 8 m would be constructed with elevated embankment where excavated soil will be utilized. HDPE geomembrane liner of suitable thickness shall be provided at bottom as well as the embankment surfaces to arrest the seepage of water into the ground water. A pump house will be constructed for pumping the water to the raw water reservoir at plant location.*

- *APNRL would be required to acquire 50 acres of land for construction of this reservoir. Land has already been identified in the village Giddibeda owing to its proximity to the already laid pipeline of APNRL. Advantage of having proximity to the pipeline shall avoid Right of Way issues. Identified land is completely private land for single crop agricultural purpose. The company is in discussion with land owners and does not foresee any major issues with land acquisition.*

*The Petitioner submitted the total construction cost of additional water reservoir as follows*

***Table 92 Construction Cost – Additional Water Reservoir (Rs Cr)***

| *Particulars* | *Water Reservoir* |
|---|---|
| *Land* | *9.50* |
| *Mechanical & Structural Works* | *3.00* |
| *Civil Work* | *35.00* |
| *Electrical Works* | *2.00* |
| *Total* | ***49.50*** |

8.4 <u>Gated Weir Construction Scheme:</u>

The Petitioner submitted that it needs to construct a gated weir facility downstream of intake well for impounding the water during the period of receding rains and ensuring adequate depth of water for trouble free pumping operation.

Petitioner further submitted the technical specification as provided by the Owner's Engineer and the schematic diagram for the gated weir. Further the Petitioner submitted the cost of the scheme at Rs 39.32Cr.

**Table 93 Construction Cost – Additional Water Reservoir (Rs Cr)**

| Particulars | Gated Weir |
|---|---|
| Land | - |
| Mechanical & Structural Works | 0.18 |
| Civil Work | 34.14 |
| Electrical Works | 5.00 |
| Total | **39.32** |

8.5 <u>Critical Spares Scheme:</u>

The submission of the Petitioner in this regard is as follows.

*"Currently each unit of 270 MW of the plant is operating with 1 no. of 16.5/ 400 KV, 340/330 MVA Generator Transformer, 1 no. of 16.5/6.6 KV, 40 MVA Station Transformer and 2 nos. of 16.5/ 6.6 KV Unit transformer without any spare Transformers. In case of failure of any of the afore-mentioned transformer, it will substantially affect the generation and supply of power. The repair and replacement of such critical parts have taken 10-12 months in the past.*

*Following examples indicate the instances in various thermal power projects of India wherein mishap has occurred due to Transformer failure and corresponding loss to stakeholders:*

- *Maithon Power Limited - R-Phase of Generator Transformer (GT) for 525 MW (Unit 1) failed on 06-July-2013 resulting in loss of generation from unit for a period of 6 months.*

- *Meja Thermal Power Station - Y-Phase of GT for Unit-8 failed on 30-April-2013 and BPhase bushing of GT for Unit-7 failed on 09-October-2011.*

- *Bhushan Power and Steel Limited – Failure of 220 MVA Transformer*

- *Adani Power Ltd. – GT of Unit-3 of 5x660 MW Tiroda plant failed. However, due to availability of spare GT, the operations were resumed in very short duration of time.*

*Taking into consideration situations as highlighted above, APNRL has identified all Power Transformers as critical spares.*

*On November 29, 2013, APNRL GT-I had caught fire wherein the bushing area suffered damages. APNRL mobilized various agencies and maintenance activities are under progress. Unit restored operations on 14-February-2014.*

*On March 3, 2014, Unit II tripped. Testing is being carried out by ABB for analyzing the fault. The unit has been synchronized & has commenced operation from 2nd week of May 2014. However, with the long lead time associated with such repairs and replacements, APNRL intends to procure 1 no. of each 16.5/ 400 KV, 340 MVA Generator Transformer, 16.5/6.6 KV, 40 MVA Station Transformer and 16.5/ 6.6 KV Unit transformer as additional capital spare to meet such exigencies. Certain spares for other major packages such as Coal Handling Plant, Ash Handling Plant etc. have also been identified.*

*APRNL expects the completion of supply of spares to happen in 18 months from the Purchase Order and release of payment, whichever is later."*

The Petitioner submitted the cost of the scheme as follows

**Table 94 Construction Cost – Additional Water Reservoir (Rs Cr)**

| Sr No | Particulars | Unit | Qty | Value |
|---|---|---|---|---|
| 1. | 16.5/ 400 KV, 340 MVA Generator Transformer | No | 1 | 16.00 |
| 2. | 16.5/6.6KV,40MVAStation Transformer | No | 1 | 3.00 |
| 3. | 16.5/6.6KV, 16MVA Unit Transformer | No | 1 | 2.00 |
| 4. | Total Ex-Works for CHP | Lot | 1 | 3.29 |
| 5. | Total Ex-Works for AHP | Lot | 1 | 1.29 |
| | **Total Ex-Works Price** | | | 25.58 |
| A | Excise Duty @ 12.36% | | | 3.16 |
| B | Sales Tax@ 2% | | | 0.58 |
| C | Freight & Transit Insurance | | | 1.28 |
| | **TOTAL** | | | **30.59** |

8.6 Brick Making Plant Scheme:

The submissions of the Petitioner in this regard is as follows.

*"As per the Environment Clearance received from MoEF for 2x270 MW TPP, APNRL has to utilize 100% fly ash generated from the plant from fourth year of operation.*

*As estimated by owner' engineer, APNRL will be setting up 6 nos. of brick making units producing solid fly ash brick of 250 x 120 x 75 dimension at a capacity of 12,000 bricks per day on 85% unit availability of operation and 12 hours per day of operational hours. Aggregate production capacity from 6 units would be ~ 2.6 Crore bricks per annum. Each brick produced from the facility would weigh 4.20 kg and is expected to sell at a price of Rs. 4.00 per brick.*

*Primary raw material required for brick making plant is fly ash (60%) which is generated from the power plant. Other raw materials include sand, lime, gypsum and cement which would be locally procured by APNRL. Following table highlights the raw material requirement and corresponding cost for this facility (6 units of brick making plant):"*

**Table 95 Raw Material Requirement and Cost Estimate (Qty in Tonne)**

| Particulars | Ratio | Daily Req. (1 Plant) | Yearly Req. (1 Plant) | Yearly Req. (6 Plants) | Raw Material Cost (Rs./ Tonne) | Annual Cost (Rs. Crore for 6 Plants) |
|---|---|---|---|---|---|---|
| Fly ash | 60% | 25.20 | 9,189 | 55,188 | 50 | 0.28 |
| Sand | 30% | 12.60 | 4,599 | 27,594 | 350 | 0.97 |
| Lime & Gypsum | 8% | 3.36 | 1,226.40 | 7,358.40 | 1,350 | 0.99 |

| Particulars | Ratio | Daily Req. (1 Plant) | Yearly Req. (1 Plant) | Yearly Req. (6 Plants) | Raw Material Cost (Rs./ Tonne) | Annual Cost (Rs. Crore for 6 Plants) |
|---|---|---|---|---|---|---|
| Cement (OPC 53 Grade) | 2% | 0.84 | 306.60 | 1,839.60 | 7000 | 1.29 |
| Total Raw Material | | | | | | **3.52** |
| Manpower Cost | | | | | 19,914 | 4.36 |
| **Total** | | | | | | **7.88** |

The Petitioner submitted that it expects to make operating profit of Rs 2.63 Crore per annum from this facility. The Petitioner also submitted the estimate of hard cost as shown below.

**Table 96 Hard Cost – Brick making Plants (Rs Crore)**

| Particulars | Value |
|---|---|
| Mechanical & Structural Works | 3.25 |
| Civil Work | 0.50 |
| Electrical Works | 0.25 |
| **Total** | **4.00** |

8.7 Bottom Ash Handling system including dewatering bin to feed HCSD system

The submission of the Petitioner in this regard is as follows.

*"In the current system existing at project site, the fly ash generated is extracted in dry form and stored in fly ash silos while bottom ash is disposed in lean slurry form to ash disposal area (temporary ash-dyke). Temporary ash dyke facility admeasuring 17 acres was used owing to challenges in land acquisition. Company has employed pumps to extract the water from the surface of settled ash slurry and dispose it to the nearby land.*

*APNRL is in process of setting up permanent ash dyke facility as envisaged at the time of Financial Closure. Land acquisition of 125 acres in villages of Padampur and Jagnathpur has been completed for permanent ash dyke construction and work is expected to start at the earliest.*

*As per the Environment Clearance obtained from MoEF, APNRL has to establish High Concentration Slurry Disposal (HCSD) system to dispose fly ash and bottom ash into the ash pond. As per report from owner's engineer, implementing a HCSD system would lead to saving in terms of total land uses for Ash Dyke vís-a-vís existing system of lean slurry disposal. Considering station head rate of 2300 kCal / kWh, Coal GCV of 3450 kCal / kg and Ash content in coal ~46%, the land requirement for lean slurry disposal system for 540 MW operational plant is 153.15 acres. Land required for corresponding HCSD* *system is 114.86 acres. Certain other advantages of HCSD system over lean slurry disposal is as under:*

- *Layered ash spreads enables vertical filing thereby requirement less land.*
- *Pumping is done at higher concentration resulting in low water consumption and correspondingly operating power usage reduces.*
- *Due to concentrated slurry and less water, ground water pollution shall be minimized.*
- *Slurry flow rate is drastically reduced, hence lower pipeline sizes. Further, with lower velocity the pipe-line life increases.*
- *Reduced leaches at the ash disposal area.*

*Further, HCSD system was originally designed to take care of only Fly Ash while bottom ash was disposed directly into a separate ash pond. APNRL intends to use the system for both fly ash and bottom ash disposal and thus it is required to install dewatering bins, crusher and conveying system to transfer wet bottom ash to the mixing tank. On installation of HCSD system with dewatering bins, there would be no requirement of separate ash dyke areas for the facility.*

*The complete system will be installed within 18 months from the date of order placement."*

Petitioner has submitted the highlights of the hard cost as per report from DCPL for HCSD system with dewatering bins. The hard cost as submitted by Petitioner is as follows

**Table 97 Hard Cost – HCSD + Dewatering Bins (Rs Crore)**

| Particulars | Value |
|---|---|
| Civil Work | 9.54 |
| Electrical Works | 17.00 |
| Total | **26.54** |

8.8 Railway Siding

The submission of Petitioner in this regard is as follows

"*APNRL is in process of setting up private railway siding at the site and has obtained necessary clearances for construction of railway siding at Captive mine end and at Birajpur (plant end). Further, AAPL, one of the Adhunik group companies having plant very near to the APNRL site, is having their private railway siding which can be used for coal unloading. The Company expects to incur a cost of Rs. 13.82 Crore & Rs. 10.00 Crore for Railway Siding Works (Tori) & Railway Siding Works (Plant) respectively."*

8.9 Additional Ash Dyke

The submission of the Petitioner in this regard is as follows.

*"Owing to challenges in land acquisition, APNRL is currently using temporary ash dyke facility admeasuring 17 acres for ash disposal. This facility is expected to remain adequate till 2015, by when APNRL shall complete the permanent ash dyke construction. Land aggregating to 125 acres required for building permanent ash dyke, has already been acquired for the same and work on permanent ash dyke is expected to commence at the earliest."*

*Commission's Analysis*

8.10 The Commission has reviewed the submissions of Petitioner regarding the proposed schemes for additional capitalisation. The Commission has also reviewed the Detailed Project Report (DPR) and cost benefit analysis submitted by the Petitioner.

8.11 The Commission finds the Detailed Project Reports (DPR) and the Cost Benefit Analysis submitted by the Petitioner to be incomplete and inadequate for the purpose of undertaking a review of the additional capital expenditure proposed. The Cost Benefit Analysis submitted by the Petitioner states benefits only in qualitative terms and is not accompanied by any analysis of the quantitative benefit to the Petitioner and its beneficiaries on account of the proposed schemes.

8.12 The Petitioner is required to employ established methods of conducting cost benefit analysis (such as NPV, IRR and Payback Period) and quantitatively evaluate the need for a proposed investment as compared to other alternatives. Accordingly the Commission directs the Petitioner to undertake the cost benefit analysis of each of the proposed schemes and submit the same along with its next Tariff Petition. In addition to the cost benefit analysis the Petitioner is also directed to submit the impact of each scheme on the tariff (Rs/kWh) of its generating station (considering normative availability).

8.13 The Commission observed that the Petitioner has not claimed the additional capitalization as per Regulation 7.5 and Regulation 7.6 of the Generation Tariff Regulation, 2010. The Petitioner is required to provide the appropriate Regulation under which the Additional Capitalization of each scheme is being claimed. Accordingly the Commission directs the Petitioner that any additional capitalization that it claims in its subsequent Tariff Petition shall be claimed under the appropriate Regulation of the prevailing Generation Tariff Regulations.

8.14 As the first MYT control period is already over and certain changes have taken place such as the Petitioner no longer having access to its coal block, the Petitioner is directed to re-evaluate the need and costing of the schemes proposed and submit a capital investment plan in line with Regulation 6.6 of the Generation Tariff Regulations 2015.

# A9: DIRECTIVES

## Capital Cost

9.1 Directive as per MYT Order

"The Commission has provisionally approved the capital cost for Unit 1 and Unit 2 at Rs 3286.62 Cr in this order. The Commission however directs the Petitioner to file a petition for approval of final capital cost of the plant along with the audited accounts for the power plant for FY 2013-14 and statutory auditor's certificate for actual cost incurred upto COD. The Petitioner is also required to submit details of the final capital cost of the plant in the format specified in Annexure 2 for prudence check by the Commission".

*Petitioner's Submission*

The Petitioner submitted that the capital cost has been considered as per the audited annual accounts of FY 2012-13 and FY 2013-14. The Petitioner has submitted the capital cost has been submitted as per the format specified by Commission was attached as Annexure along with the petition.

*Commission's Observation*

The Commission has discussed this matter in its approval of final capital cost of Unit- I and Unit II as on CoD in paragraph 5.10 to paragraph 5.22 of this Tariff Order. As the Capital Cost as on CoD of Unit-I and Unit-II has been approved in this Tariff Order, this directive has been dropped.

## Additional capitalization

9.2 Directive as per MYT Order

"The Commission has provisionally approved an additional capitalisation of Rs 211.18 Cr for Unit 1 and Unit 2 during the Control Period. In this regard, the Petitioner is directed to submit the detailed project report and cost benefit analysis of each of the schemes prior to taking up the scheme for execution."

*Petitioner's Submission*

The Petitioner has submitted the detailed project report and the cost benefit analysis of each of the schemes along with the petition.

*Commission's Observation*

The Petitioner has not appropriately complied with this Directive. The Commission has discussed this issue in detail in Paragraph 8.10 to Paragraph 8.14 of this Tariff Order. The additional directives in the aforesaid paragraphs need to be complied with by the Petitioner and compliance shall be submitted along with its next Tariff Petition.

## Coal Block development and usage of imported coal

9.3 Directive as per MYT Order

*"The Commission directs the Petitioner to expedite the production from the allocated coal block. Further, pending the commencement of production from the coal block, the Petitioner should exercise due prudence at the time of procuring coal from alternate sources so as to minimize the weighted average coal cost.*

*The Commission also directs the Petitioner to approach the appropriate authority and seek extension of the coal linkage from CCL-CIL till such time the captive coal block of the Petitioner is developed. The Petitioner should submit compliance report regarding the same to the Commission.*

*The Commission directs the Petitioner that in case where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel (other than coal through CCL linkage) exceeds 30% of base energy charge rate as approved by the Commission in this Order or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month (whichever is lower), prior consultation with JUVNL should be made not later than three days in advance."*

*Petitioner's Submission*

9.4 The Petitioner submitted that the fuel requirement of the project was planned to be fulfilled from the captive Ganeshpur coal block which was allotted to the Petitioner and Tata Steel on a 50:50 joint allocation basis. The Petitioner further submitted that the Hon'ble Supreme Court in its judgement dated September 24$^{th}$, 2014 has cancelled the captive mine allocation to the Petitioner. The Petitioner has received tapering coal linkage for 540MW (2x270MW) from Coal India Ltd and FSAs have been signed with central coal field ltd. (CCL). The coal supplied herein was supplied at 40% premium to the price of coal of CCL which was subsequently revised to 20% premium. Further, pursuant to the cancellation of coal blocks by Hon'ble Supreme Court, Ministry allowed 50% coal to be supplied at 20% premium, which has been further extended till June 2015 only.

9.5 The Petitioner further submitted that it has complied with the directive of the Hon'ble Commission that the base energy charge has not varied by more than 30% in any month and the weighted average price of use of fuel have never exceeded 20% of the energy charge rate based on weighted average fuel price for the previous month.

*Commission's Observation*

The Commission notes the submission of the Petitioner and is concerned with the lack of efficient and sustainable long term source of primary fuel for the power plant. The Commission directs the Petitioner to develop an action plan to secure reliable and efficient long term source of primary fuel for its plant.

The Commission again directs the Petitioner that in case where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel (other than coal through CCL linkage) exceeds 30% of base energy charge rate as approved by the Commission in this Order or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month (whichever is lower), prior consultation with JUVNL should be made not later than three days in advance

## Dedicated transmission system

9.6 Directive as per MYT Order

*With regards to construction of the Dedicated Transmission System (DTS), the Commission believes that the rationale for construction of the DTS from the power station to JSEB's Ramchandrapur 220 KV sub-station should be a net reduction in the cost of power purchase to the consumers. The Commission directs JUVNL to carry out a cost benefit analysis of routing the power from the power station through the Dedicated Transmission System vis-à-vis routing the power through the CTU as is being done currently and submit a report regarding the same to the Commission within two months of issuance of this Order.*

*With regards to the non-payment of injection charges by JUVNL, the Commission notes that as per the prevalent practice in the industry, transmission charges for procurement of power under the long term contract are to be borne by the procurer. The Commission directs that the injection charges must be paid by JUVNL.*

*The Commission further directs the Petitioner and JUVNL to constitute a joint committee to resolve all the issues regarding the transmission of power from the power station to JUVNL. The committee should look into the need for the proposed Dedicated Transmission System, the technical configuration of the proposed line and the sharing of costs of the transmission line. The Petitioner and JUVNL should, after mutual discussions and agreement, arrive at a way forward vis-à-vis the issue of the Dedicated Transmission System, and should submit a status report regarding the same to the Commission within two months of issuance of this Order.*

*Petitioner's Submission*

The Petitioner submitted that as per its information JUVNL is yet to submit the Cost-Benefit Analysis report for the dedicated transmission system. It further submitted that as per the directions of the Commission a Joint Committee was constituted and several rounds of discussion have taken place between JUVNL and the Petitioner on the issue of DTS with last meeting held on 26$^{th}$ July 2016 but due to delay in data facilitation and other issues the final decision is yet to be taken.

The Petitioner requested the Commission to direct the JUVNL/JBVNL to pay transmission charges (injection/ withdrawal) & losses (injection/ withdrawal) till suitable directions regarding DTS are issued by the Commission.

*Commission's Observation*

Commission had in its Tariff Order dated May 2014 for the petitioner has detailed the principle for constructing the dedicated transmission system for evacuation of power from the project. The rationale for construction of DTS should be a net reduction in the cost of power purchase.

The Commission directs the petitioner and JUVNL to expedite the resolution to this issue. The decision regarding construction of dedicated transmission system may be taken as per the provisions of the power purchase agreement signed by petitioner with JUVNL

The Commission observes with concern that even after two years of commissioning of the power station, the Petitioner and JUVNL have been unable to resolve the issues related to the transmission of power from the power station to JUVNL/JBVNL.

The matter of payment of injection charges is already under consideration of the Commission through Petitions submitted by the APNRL.

## Landed Cost of Coal

9.7 Directive as per the MYT Order

"*The Commission directs the Petitioner to get the month-wise landed cost of coal separately showing Base cost of coal; Royalty; Taxes and duties; Transport cost by rail / ocean / road / pipeline or any other means; and Clean energy cess as per Ministry of Coal, Govt. of India Notification with respect to Unit 1 and Unit 2 certified by the Statutory Auditor of the Company and submit the same along with the petition for truing up of ARR for FY 2012-13 and FY 2013-14.*"

*Petitioner's Submission*

9.8 Petitioner stated that it has submitted the month-wise landed cost of coal separately showing the base cost of coal for Unit 1 and Unit 2 certified by the Statutory Auditor.

*Commission's Observation*

Commission has observed Petitioner's compliance and this regard and directs the Petitioner to comply with the directive in the next tariff petition also.

## Submission of Availability Certificates against the contracted capacity

9.9 The Commission directs the Petitioner to produce the availability certificates for Unit 1 and Unit 2 against the contracted capacity to JBVNL for FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16 along with its next tariff/true-up petition.

## Filing of True Up Petition

9.10 The Commission directs the Petitioner to file the true up for the FY 2014-15 and APR petition for FY 2015-16 within two months from the date of issuance of this order.

## Data adequacy in next Tariff petition and timelines

9.11 The Commission directs the Petitioner to come up with the next tariff petition removing the various data deficiencies highlighted throughout the tariff order along with the unit-wise audited accounts for the FY 2014-15 and FY 2015-16.

**This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 01st of September, 2016.**

Date: 01st of September, 2016
Place: Ranchi

| | |
|---|---|
| **Sd/-** | **Sd/-** |
| **(Mr R.N Singh)** | **(N.N Tiwari, J)** |
| **MEMBER (T)** | **CHAIRPERSON** |

# A10: ANNEXURES

## Annexure 1: List of participating members of public in the public hearing

| Sl. No. | Name S/Shri | Address / Organization if any |
|---|---|---|
| 1 | Munna Thakur | Ramgarh |
| 2 | Kanhaiya Manda | Ramgarh |
| 3 | Shivaji Patel | Ramgarh |
| 4 | C. Singh | Ramgarh |
| 5 | Diwakar Lohar | Ramgarh |
| 6 | Santosh Kumar | Ramgarh |
| 7 | Sanjay Mandal | Ramgarh |
| 8 | Ravi Shankar | Ranchi |
| 9 | Niraj Kumar | Hazaribagh |
| 10 | A. Tripathi | Ranchi |
| 11 | R. K. Singh | Ranchi |
| 12 | Narendra Munda | Ranchi |
| 13 | Paavan Bhargave | Ranchi |
| 14 | Aaron | Ranchi |
| 15 | Vineet Sarawagi | APNRL |
| 16 | Arun K. Palit | APNRL |
| 17 | Suresh Gehari | APNRL |
| 18 | Smarajit Sahoo | APNRL |
| 19 | Dinesh Mehta | APNRL |
| 20 | Sanjiv Mahto | APNRL |
| 21 | Mani Shankar | APNRL |
| 22 | Sachin Agarwal | APNRL |
| 23 | Rajesh Sharma | APNRL |
| 24 | P. K. Biswas | APNRL |
| 25 | Sanjiv Shaudhary | APNRL |
| 26 | Himanshu Kumar | APNRL |
| 27 | Anita Prasad | JBVNL |
| 28 | Ranishar Kumar | JBVNL |
| 29 | A.K. Palit | APNRL |
| 30 | Aachin Agarwal | APNRL |
| 31 | Manoj Sharma | Ranchi |
| 32 | B.N.P. Singh | Ranchi |
| 33 | S.K. Chaoudhary | Ranchi |

| Sl. No. | Name S/Shri | Address / Organization if any |
|---|---|---|
| **34** | K.K. Verma, CE (C&R) | JBVNL |
| **35** | S.S. Kujur | Ranchi |

# Jharkhand State Electricity Regulatory Commission

Order

on

True-Up for FY 2014-15 & FY 2015-16,

Business Plan, Aggregate Revenue Requirement

and

Tariff for Multi Year Tariff Period from
FY 2016-17 to FY 2020-21

for
Adhunik Power and Natural Resources Limited

(APNRL)

Ranchi

February 2018

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ANNEXURE 1: LIST OF PARTICIPATING MEMBERS OF PUBLIC IN THE PUBLIC HEARING....88

## List of Abbreviations

| Abbreviation | Description |
|---|---|
| A&G | Administrative and General |
| ARR | Aggregate Revenue Requirement |
| COD | Commercial Operation Date |
| IDC | Interest during Construction |
| FY | Financial Year |
| GCV | Gross Calorific Value |
| GFA | Gross Fixed Assets |
| GoI | Government of India |
| JSERC | Jharkhand State Electricity Regulatory Commission |
| Kcal | Kilocalorie |
| Kg | Kilogram |
| kWh | Kilowatt-hour |
| MAT | Minimum Alternative Tax |
| Ml | Millilitre |
| MT | Million Tonnes |
| MUs | Million Units |
| MW | Megawatt |
| NAPAF | Normative Annual Plant Availability Factor |
| O&M | Operations and Maintenance |
| PLF | Plant Load Factor |
| PPA | Power Purchase Agreement |
| R&M | Repair and Maintenance |
| RoE | Return on Equity |
| Rs | Rupees |
| SBI | State Bank of India |
| SERC | State Electricity Regulatory Commission |
| SLM | Straight Line Method |
| CERC | Central Electricity Regulatory Commission |
| DTS | Dedicated Transmission System |

# BEFORE

## Jharkhand State Electricity Regulatory Commission, Ranchi

**Case (T) No: 15 of 2016 and 01 of 2017**

**In the matter of:**

**Petition for True-up for FY 2014-15 and FY 2015-16,<br>Approval of Business Plan, ARR<br>and<br>Tariff for the MYT Control Period<br>FY 2016-17 to FY 2020-21**

**In the matter:**

Adhunik Power and Natural Resources Limited (APNRL),
Connaught Place, New Delhi ……………….. ……………… Petitioner

**PRESENT**

| | | |
|---|---|---|
| **Hon'ble Dr. Arbind Prasad** | - | **Chairperson** |
| **Hon'ble Mr. R N Singh** | - | **Member (Engg.)** |

**Order dated 19.02.2018**

In these Petitions, Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL) has prayed for the True-up for FY 2014-15 and FY 2015-16, approval of Business Plan, Aggregate Revenue Requirement and Tariff for the MYT Control Period FY 2016-17 to FY 2020-21.

# A1: INTRODUCTION

## Jharkhand State Electricity Regulatory Commission

1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as "JSERC" or "the Commission") was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003.

1.2 The Government of Jharkhand vide its notification dated August 22, 2002 defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:-

(a) to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;

(b) to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;

(c) to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;

(d) to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.3 After the Electricity Act, 2003 came into force, the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the JSERC is discharging its functions as prescribed in Section 86 of the Act.

1.4 In accordance with the provisions of the said Act, the JSERC discharges the following functions: -

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:

Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;

(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

(c) facilitate intra-state transmission and wheeling of electricity;

(d) issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

(f) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;

(g) levy fee for the purposes of this Act;

(h) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;

(i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

(j) fix the trading margin in the intra-state trading of electricity, if considered, necessary;

(k) discharge such other functions as may be assigned to it under this Act.

1.5 The Commission advises the State Government on all or any of the following matters, namely :-

(a) promotion of competition, efficiency and economy in activities of the electricity industry;

(b) promotion of investment in electricity industry;

(c) reorganisation and restructuring of electricity industry in the State;

(d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.6 The State Commission ensures transparency while exercising its powers and discharging its functions.

1.7 In discharge of its functions, the State Commission is guided by the National Tariff Policy framed and published by Government of India under the provisions of Section 3 of the Act. The objectives of the National Tariff Policy are to:

(a) ensure availability of electricity to consumers at reasonable and competitive rates;

(b) ensure financial viability of the sector and attract investments;

(c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;

(d) promote competition, efficiency in operations and improvement in quality of supply.

## Adhunik Power and Natural Resources Limited

1.8 Adhunik Power and Natural Resources Limited (hereinafter referred to as "the Petitioner" or "APNRL" is a company incorporated under the provisions of the Indian Companies Act, 1956.

1.9 Originally incorporated as "Adhunik Thermal Energy Ltd." (ATEL), in the year 2007, ATEL was renamed to "Neepaz Thermal Energy Limited" (NTEL) and subsequently renamed as "Adhunik Power & Natural Resources Ltd." (APNRL) in the year 2008 after complying with the applicable provisions of the Companies Act, 1956.

1.10 ATEL, in October 2005, had signed a Memorandum of Understanding (hereinafter referred to as "the MoU") with Government of Jharkhand to develop a 1,000 MW coal based thermal power plant. Further in January 2007, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of 12 months. In February 2008, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of three years upto October 31, 2010. Subsequently in May 2011, the validity of the MOU was again extended for a period of three years from November 1, 2010 to October 31, 2013. In November 2013, the validity of MoU was again extended for a period of three years from November 1, 2013 to October 31, 2016.

1.11 Accordingly, APNRL has set up a 540 MW coal based power plant in Stage-1 (consisting of Unit 1 and Unit 2 of 270 MW each) and is planning to develop an additional 540 MW coal based power plant in Stage-2. Unit 1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. Unit 2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

1.12 Further, as per the provisions of the MOU, the Government of Jharkhand or Distribution Licensees authorized by it will have the first right of claim on purchase upto 25% of power delivered to the system by the proposed power station.

1.13 Further, the extension of the MoU stipulates that the Government of Jharkhand moved to Government of India for the policy decision through suitable arrangements for making available to the State, 12% of the total power generated at variable cost, by APNRL. Hence, as stated above, as per MoU and its extension's conditions, JSEB will have first right of claim on purchase upto 25% of power delivered to the system, out of which 12% power will be made available to the state at variable cost only.

1.14 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as "the PPA") with Jharkhand State Electricity Board (now Jharkhand Urja Vikas Nigam Limited or "JUVNL") on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., gross capacity of 2 units of 270 MW each, totaling to 540 MW less normative auxiliary consumption) from Stage-1 of the Project on long term basis.

1.15 As per the terms of the PPA, 63.882 MW capacity, i.e., 13% of Net Capacity of Stage-1 shall be supplied to JSEB (now JUVNL) at total tariff and the balance 58.968 MW capacity, i.e. 12% of total Net Capacity of Stage-1 shall be supplied at variable cost only.

1.16 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner and JSEB (now JUVNL), the tariff payable shall be determined by the State Commission:

*3.1(ii)"The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".*

*3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff ) Regulations, 2010", as amended from time to time."*

## Overview of the Thermal Station

1.17 The Petitioner achieved COD of its two units of 270 MW each in the year 2013. Both these units are subject to ARR and Tariff determination. The following table summarizes the information pertaining to both the units:

| S. No. | Unit | Installed Capacity( MW) | Status of Operation | Actual Date of Commercial Operation |
|---|---|---|---|---|
| 1 | Unit 1 | 270 | Operational | January 21, 2013 |
| 2 | Unit 2 | 270 | Operational | May 19, 2013 |

## The Petitioner's prayers

1.18 The Petitioner, in its tariff petitions, has prayed before the Commission to:

a) Approve the True-up of ARR for FY 2014-15 and FY 2015-16 for 540 MW (2x270) Stage-I coal based thermal power plant in Jharkhand, for supplying the regulated contracted capacity of 122.85MW to JUVNL/JBVNL [erstwhile JSEB];

b) Approve the Business Plan and Multi Year Generation Tariff for supplying the regulated Contracted Capacity of 122.85 MW for both the Units 1 and 2 to Jharkhand State Electricity Board (now JUVNL) for the Control Period from FY 2016-17 to FY 2020-21

c) Approve the proposed additional capitalization for the MYT period claimed by the Petitioner on account of schemes approved by the Commission in the previous tariff order.

d) Approve the recovery of upward and downward variation in fuel prices and calorific value including fuel mix through Fuel Price Adjustment as part of monthly Energy Charges.

e) Allow the petitioner to bill and recover the cost incurred towards water charges from the Discom

f) Permit the petitioner to recover from the Discom, any additional water charges which may be imposed upon the petitioner based on the outcome of the writ petition pending before the Hon'ble High Court of Jharkhand in the matter of revision of water charges.

g) Allow the Petitioner to bill and recover the cost incurred for transportation of fly ash in lieu with the amendment notification issued by Ministry of Environment, Forests and Climate Change on January 25th, 2016

h) Allow the Petitioner to bill and recover the Market Operation Charges (MoC) and System Operating Charges (SoC) paid to ERLDC based on the regulations and orders of Hon'ble CERC.

i) Allow the Petitioner to bill and recover the cost incurred towards capital spares in line with the Regulation 7.46 of JSERC Generation Regulations, 2015.

j) To present their case prior to the finalization of the tariff order.

k) Condone any inadvertent omissions/ errors/ rounding off difference/ shortcomings and permit the Petitioner to add/alter this filing and make further submissions as may be required by the Commission; and

l) Pass such further and other Order, as the Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

## Scope of the Present Order

1.19 The Commission, in this Order, has approved the True-up of ARR for FY 2014-15 and FY 2015-16. The Commission has also approved the Business Plan, ARR and Tariff for 2$^{nd}$ MYT control period from FY 2016-17 to FY 2020-21 for Unit 1 and Unit 2 of the Petitioner.

1.20 While approving the above, the Commission has taken into consideration the following:

a) Material placed on record

b) Provisions of the Electricity Act, 2003,

c) Principles laid down in the National Electricity Policy,

d) Principle laid down in the National Tariff Policy;

e) Provisions of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 (hereinafter referred to as 'Generation Tariff Regulations, 2010') for True-Up for FY 2014-15 and FY 2015-16;

f) Provisions of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 (hereinafter referred to as 'Generation Tariff Regulations, 2015') for Business Plan, ARR & Tariff Determination from FY 2016-17 to FY 2020-21.

1.21 Accordingly, the Commission has scrutinized the Petitions in detail and hereby issues the Order on True-up of ARR for FY 2014-15, FY 2015-16, Business Plan, ARR and Tariff from control period FY 2016-17 to FY 2020-21.

# A2: PROCEDURAL HISTORY

2.1 The Commission had notified Provisional Order on Petition for approval of Capital Cost, Business Plan and MYT Petition for FY 2012-13 to FY 2015-16 for Adhunik Power and Natural Resources Limited (APNRL) on 26th May, 2014

2.2 The Commission had notified Order on Petition for approval of final Capital Cost of 540MW (2x270) Coal Based Thermal Power Plant in Jharkhand, True Up of ARR for FY 2012-13 and FY 2013-14, Annual Performance Review of FY 2014-15 and ARR and Tariff Determination for FY 2015-16 on 1st September, 2016. Further, the Petitioner filed a petition on 29th September, 2016, seeking review of the Order dated September 01st, 2016. The Order, against the Review Petition, was issued by the Commission on 09, January, 2018.

2.3 The Petitioner had filed the instant Petition for True-up of ARR for FY 2014-15 and FY 2015-16 on 28th September, 2016. Subsequently, the Petition for approval of Business Plan, ARR & Tariff for the 2nd MYT Control Period FY 2016-17 to FY 2020-21 was filed on 31st January, 2017,

## Information Gaps in the Petitions

2.4 As part of tariff determination exercise for the Control Period, several deficiencies/ information gaps were observed in the tariff petitions submitted by the Petitioner.

2.5 These information gaps were communicated to the Petitioner vide letter nos.

(a) JSERC/Case (Tariff) No. 15 of 2016 & 01 of 2017/18 dt. 26.04.2017,
(b) JSERC/Case (Tariff) No. 15 of 2016 & 01 of 2017/215 dt. 28.06.2017
(c) Email dated 13.09.2017

2.6 The Petitioner subsequently submitted its response to the aforesaid letters and e-mails vide letter nos.

(a) APNRL/PT/JSERC/2017-18/913 dt. 19.05.2017,
(b) APNRL/PT/JSERC/2017-18/932 dt. 16.08.2017
(c) APNRL/PT/JSERC/2017-18/943 dt. 13.10.2017
(d) Email dated 03.11.2017

2.7 The Commission has scrutinized the additional data/ information and on its validation, has passed this Order on the Petitions filed by the Petitioner.

2.8 In order to provide adequate opportunities to all stakeholders and general public, as mandated under Section 64 (3) of the Electricity Act 2003 and in relevant provisions of Regulation(s) framed by the Commission and in order to ensure transparency in the process of tariff determination, the Commission decided to hold public hearing.

## Inviting Public Comments/Suggestions

2.9 The Commission directed the Petitioner to make available copies of the petition to the members of general public on request, and also issue a public notice inviting comments/ suggestions on the petitions for approval of True Up for FY 2014-15, FY 2015-16, Business Plan, ARR and tariff determination for the MYT control period (FY 2016-17 to FY 2020-21).

2.10 The aforesaid public notice was issued by the Petitioner in various newspapers and a period of twenty one (21) days was given to the members of the general public for submitting their comments/suggestions.

**Table 1 List of newspapers and dates on which the public notice by Adhunik appeared**

| Sl. No. | Newspaper (Jharkhand edition) | Date of Publication |
|---|---|---|
| 1 | Rashtriya Sagar | 21.09.2017 & 22.09.2017 |
| 2 | Sanmarg | 21.09.2017 & 22.09.2017 |
| 3 | Avenue Mail | 21.09.2017 & 22.09.2017 |
| 4 | Morning India | 21.09.2017 & 22.09.2017 |

2.11 Subsequently, the Commission also issued a notice on its website www.jserc.org and various newspapers for conducting the public hearing on the Petition. The details of the newspapers where the notice was issued by the Commission are as under:

**Table 2: List of newspapers and dates on which the public notice by JSERC appeared**

| Sl. No. | Newspaper (Jharkhand edition) | Date of Publication |
|---|---|---|
| 1 | Hindustan | 02.12.2017 |
| 2 | Times of India | 02.12.2017 |
| 3 | Prabhat Khabar | 03.12.2017 |
| 4 | Hindustan Times | 03.12.2017 |

## Submission of Comments/ Suggestions and conduct of Public Hearing

2.12 A public hearing was held on 11th December, 2017 at Ranchi and many respondents voiced their views on the petition filed by the Petitioner. The comments/ suggestions voiced by the respondents and the Petitioner's response thereon along with the Commission's views on the response provided by the Petitioner are detailed in the Section A4: of this Order.

# A3: SUMMARY OF THE PETITIONS

## True-Up for FY 2014-15 and FY 2015-16

3.1 The true-up of ARR for FY 2014-15 and FY 2015-16, as proposed by the Petitioner, is summarised in the following table:

**Table 3: True-up of Operational Parameters and ARR submitted by the Petitioner for Unit 1 (Rs Cr)**

| Particulars | Units | FY 2014-15 | FY 2015-16 |
|---|---|---|---|
| **Operational Parameters** | | | |
| Gross Generation | MUs | 1231.24 | 1680.29 |
| Aux Power Consumption | % | 9% | 9% |
| Availability | % | 81.37% | 75.24% |
| Net Generation | MU | 1120.42 | 1529.07 |
| Weighted Average GCV of primary fuel | kCal/kg | 3338.42 | 3362.35 |
| Station Heat Rate | kcal/kWh | 2387 | 2387 |
| Calorific value of secondary fuel | Kcal/litre | 9374 | 9325 |
| Specific Coal Consumption | Kg/kWh | 0.712 | 0.707 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 |
| **Details of Annual Fixed Cost** | | | |
| Depreciation | Rs. Cr. | 80.05 | 80.87 |
| Interest on Loan | Rs. Cr. | 148.39 | 129.94 |
| Return on Equity | Rs. Cr. | 68.06 | 69.79 |
| Interest on working Capital | Rs. Cr. | 25.50 | 30.77 |
| O&M Expenses (including water charges) | Rs. Cr. | 66.69 | 70.34 |
| Cost of Secondary fuel oil | Rs. Cr. | 7.92 | 7.77 |
| **Annual Fixed Cost** | Rs. Cr. | **396.60** | **389.47** |
| **Total Variable Charge** | Rs Cr | **259.62** | **367.32** |
| **Regulated Capacity to JBVNL** | | | |
| Gross Capacity | MW | 270 | 270 |
| Auxiliary Consumption | % | 9.00% | 9.00% |
| Net Capacity | MW | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | MW | 29.48 | 29.48 |
| Remaining capacity from which Fixed Charges are to be recovered | MW | 216.22 | 216.22 |
| Total AFC | Rs. Cr | 396.60 | 389.47 |
| **Annual Fixed Charges/ MW** | **Rs./MW** | **1.83** | **1.80** |

| Particulars | Units | FY 2014-15 | FY 2015-16 |
|---|---|---|---|
| 13% of Net Capacity for supply to JUVNL at full tariff | MW | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | Rs. Cr | 58.59 | 57.54 |
| **Calculation of (Surplus)/ Gap** | | | |
| Net Energy Supplied to JUVNL/ JBVNL | MU | 440.26 | 533.82 |
| Rate of Energy Charge | Rs./kWh | 2.32 | 2.40 |
| AFC Entitlement on True Up | Rs. Cr | 58.59 | 57.54 |
| Energy Charge Entitlement upon True up | Rs. Cr | 102.02 | 128.24 |
| Total Entitlement | **Rs. Cr** | **160.60** | **185.78** |
| **Revenue Billed** | | | |
| AFC | Rs. Cr | 60.22 | 64.48 |
| EC | Rs. Cr | 100.19 | 125.14 |
| Incentive | Rs. Cr | - | - |
| Total Revenue Billed to JUVNL/ JBVNL | **Rs. Cr** | **160.41** | **189.63** |
| **Gap/(Surplus)** | **Rs. Cr** | **0.19** | **(3.85)** |

**Table 4: True-up of ARR Requirement submitted by the Petitioner for FY 2015-16 for Unit 2 (Rs Cr)**

| Particulars | Units | FY 2014-15 | FY 2015-16 |
|---|---|---|---|
| **Operational Parameters** | | | |
| Gross Generation | MUs | 981.39 | 1245.59 |
| Aux Power Consumption | % | 9% | 9% |
| Availability | % | 98.92% | 98.90% |
| Net Generation | MU | 893.07 | 1133.49 |
| Weighted Average GCV of primary fuel | kCal/kg | 3485.03 | 3352.34 |
| Station Heat Rate | kcal/kWh | 2387 | 2387 |
| Calorific value of secondary fuel | Kcal/litre | 9372 | 9332 |
| Specific Coal Consumption | Kg/kWh | 0.682 | 0.709 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 |
| **Details of Annual Fixed Cost** | | | |
| Depreciation | Rs. Cr. | 80.82 | 81.67 |
| Interest on Loan | Rs. Cr. | 153.16 | 143.03 |
| Return on Equity | Rs. Cr. | 68.66 | 70.46 |
| Interest on working Capital | Rs. Cr. | 22.41 | 25.72 |
| O&M Expenses (including water charges) | Rs. Cr. | 66.69 | 70.34 |
| Cost of Secondary fuel oil | Rs. Cr. | 6.23 | 5.82 |
| Annual Fixed Cost | **Rs. Cr.** | **397.97** | **397.04** |

| Particulars | Units | FY 2014-15 | FY 2015-16 |
|---|---|---|---|
| Total Variable Charge | **Rs Cr** | **206.51** | **272.81** |
| **Regulated Capacity to JBVNL** | | | |
| Gross Capacity | MU | 270 | 270 |
| Auxiliary Consumption | % | 9.00% | 9.00% |
| Net Capacity | MU | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | MU | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MU | 216.22 | 216.22 |
| Total AFC | **Rs. Cr** | 397.97 | 397.04 |
| Annual Fixed Charges/MW | Rs./MW | 1.84 | 1.84 |
| 13% of Net Capacity for supply to JUVNL at full tariff | MU | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | Rs. Cr | 58.79 | 58.65 |
| **Calculation of (Surplus)/Gap** | | | |
| Net Energy Supplied to JUVNL/JBVNL | MU | 403.93 | 533.82 |
| Rate of Energy Charge | Rs./kWh | 2.31 | 2.41 |
| AFC Entitlement on True Up | Rs. Cr | 58.79 | 58.65 |
| Energy Charge Entitlement upon True up | Rs. Cr | 93.4 | 128.48 |
| Total Entitlement | **Rs. Cr** | **152.19** | **187.13** |
| **Revenue Billed** | | | |
| AFC | Rs. Cr | 56.08 | 62.1 |
| EC | Rs. Cr | 92.34 | 125.14 |
| Incentive | Rs. Cr | - | - |
| Total Revenue Billed to JUVNL/JBVNL | **Rs. Cr** | **148.42** | **187.25** |
| **Gap/(Surplus)** | **Rs. Cr** | **3.77** | **(0.11)** |

## Business Plan and ARR for the MYT period from FY 2016-17 to FY 2020-21

### Additional capitalization and capital structure

3.2 The details of capital expenditure proposed by APNRL during second MYT control period are given below:

**Table 5: Proposed Additional Capitalization for Unit-I and Unit-II (in Rs. Cr)**

| Particulars | Hard Cost | Soft Cost | Total Cost | Year of Completion |
|---|---|---|---|---|
| Reservoir Construction including Land & Site Development | 49.50 | 7.13 | 56.63 | FY 2020-21 |
| Grated Weir Construction | 39.32 | 5.66 | 44.98 | FY 2020-21 |

| Particulars | Hard Cost | Soft Cost | Total Cost | Year of Completion |
|---|---|---|---|---|
| Critical Spares | 30.59 | 4.41 | 35.00 | FY 2020-21 |
| Brick Making Plant | 4.00 | 0.58 | 4.58 | FY 2020-21 |
| Bottom ash handling system including dewatering bin to feed HCSD system | 26.54 | 3.82 | 30.36 | FY 2020-21 |
| Railway Sliding | 61.23 | 8.82 | 70.05 | FY 2020-21 |
| **Total Cost** | **211.18** | **30.42** | **241.60** | **FY 2020-21** |

3.3 Unit-wise details of additional capitalization proposed by the Petitioner for the second MYT Control Period are as follows:

**Table 6: Unit-Wise Proposed Additional Capitalization (Rs. Cr)**

| Particulars | Unit 1 | Unit 2 | Total Cost | Year of Completion |
|---|---|---|---|---|
| Reservoir Construction including Land & Site Development | 28.32 | 28.32 | 56.63 | FY 2020-21 |
| Grated Weir Construction | 22.49 | 22.49 | 44.98 | FY 2020-21 |
| Critical Spares | 17.50 | 17.50 | 35.00 | FY 2020-21 |
| Brick Making Plant | 2.29 | 2.29 | 4.58 | FY 2020-21 |
| Bottom ash handling system including dewatering bin to feed HCSD system | 15.18 | 15.18 | 30.36 | FY 2020-21 |
| Railway Sliding | 35.03 | 35.03 | 70.05 | FY 2020-21 |
| **Total Cost** | **120.80** | **120.80** | **241.60** | **FY 2020-21** |

## ARR for second MYT control period from FY 2016-17 to FY 2020-21

3.4 The summary of operational parameters and Aggregate Revenue Requirement as submitted by the Petitioner for Stage I (2x270 MW) of the project for the period FY 2016-17 to FY 2020-21 is as follows:

**Table 7: Operational performance and annual fixed cost from FY 2016-17 to FY 2020-21**

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| **Operational Parameters** | | | | | | |
| **Gross Generation** | MUs | 4020.84 | 4020.84 | 4020.84 | 4020.84 | 4020.84 |
| **Plant Load Factor** | % | 85% | 85% | 85% | 85% | 85% |
| **Aux Power Consumption** | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| **Availability** | % | 85% | 85% | 85% | 85% | 85% |
| **Net Generation** | MU | 3658.96 | 3658.96 | 3658.96 | 3658.96 | 3658.96 |
| **Weighted Average GCV of primary fuel** | kCal/kg | 3,408 | 3,403 | 3,403 | 3,403 | 3,403 |

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| Station Heat Rate | kcal/kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Coal Consumption | Kg/kWh | 0.698 | 0.699 | 0.699 | 0.699 | 0.699 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Details of Annual Fixed Cost | | | | | | |
| Depreciation | Rs. Cr. | 162.93 | 162.93 | 162.93 | 162.93 | 169.31 |
| Interest on Loan | Rs. Cr. | 260.27 | 238.03 | 215.79 | 193.56 | 182.42 |
| Return on Equity | Rs. Cr. | 140.25 | 140.25 | 140.25 | 140.25 | 145.86 |
| Interest on working Capital | Rs. Cr. | 63.66 | 66.47 | 68.77 | 71.22 | 74.28 |
| O&M Expenses (including water charges) | Rs. Cr. | 149.40 | 158.59 | 168.36 | 178.75 | 189.79 |
| Annual Fixed Cost | **Rs. Cr.** | **776.50** | **766.26** | **756.10** | **746.70** | **761.67** |
| Total Variable Charge | **Rs./kWh** | **2.462** | **2.625** | **2.756** | **2.894** | **3.038** |
| Regulated Capacity to JBVNL | | | | | | |
| Gross Capacity | MU | 540.00 | 540.00 | 540.00 | 540.00 | 540.00 |
| Auxiliary Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | MU | 491.4 | 491.40 | 491.40 | 491.40 | 491.40 |
| 12% of net capacity for supply to JUVNL at Energy Charge | MU | 58.97 | 58.97 | 58.97 | 58.97 | 58.97 |
| Remaining Capacity from which Fixed Charges are to be recovered | MU | 432.43 | 432.43 | 432.43 | 432.43 | 432.43 |
| Total AFC | **Rs. Cr** | **776.51** | **766.27** | **756.10** | **746.70** | **761.67** |
| Annual Fixed Charges/MW | Rs./MW | 1.80 | 1.77 | 1.75 | 1.73 | 1.76 |
| 13% of Net Capacity for supply to JUVNL at full tariff | MU | 63.88 | 63.88 | 63.88 | 63.88 | 63.88 |
| AFC for 13% of Net Capacity | Rs. Cr | 114.71 | 113.20 | 111.70 | 110.31 | 112.52 |

**AFC is exclusive of amount recoverable towards cost of capital spares and cost of transportation of fly ash. The same would be billed and recovered separately.*

3.5 The Petitioner has submitted revised (unit-wise) information in subsequent submissions which are summarized as follows:

**Table 8: Revised Operational performance and annual fixed cost from FY 2016-17 to FY 2020-21 for Unit 1**

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| Operational Parameters | | | | | | |
| Gross Generation | MUs | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| Plant Load Factor | % | 85% | 85% | 85% | 85% | 85% |

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| Aux Power Consumption | % | 9% | 9% | 9% | 9% | 9% |
| Availability | % | 85% | 85% | 85% | 85% | 85% |
| Net Generation | MU | 1829.48 | 1829.48 | 1829.48 | 1829.48 | 1829.48 |
| Weighted Average GCV of primary fuel | kCal/kg | 3408 | 3403 | 3403 | 3403 | 3403 |
| Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 | 2387 |
| Specific Coal Consumption | Kg/kWh | 0.698 | 0.699 | 0.699 | 0.699 | 0.699 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Details of Annual Fixed Cost | | | | | | |
| Depreciation | Rs. Cr. | 81.06 | 81.06 | 81.06 | 81.06 | 84.25 |
| Interest on Loan | Rs. Cr. | 127.92 | 116.86 | 105.79 | 94.72 | 89.21 |
| Return on Equity | Rs. Cr. | 69.79 | 69.79 | 69.79 | 69.79 | 72.60 |
| Interest on working Capital | Rs. Cr. | 31.83 | 33.23 | 34.38 | 35.61 | 37.14 |
| O&M Expenses (including water charges) | Rs. Cr. | 74.70 | 79.29 | 84.18 | 89.37 | 94.89 |
| Annual Fixed Cost | **Rs. Cr.** | **385.30** | **380.23** | **375.21** | **370.56** | **378.10** |
| Total Variable Charge | **Rs./kWh** | **2.462** | **2.625** | **2.756** | **2.894** | **3.038** |
| Regulated Capacity to JBVNL | | | | | | |
| Gross Capacity | MU | 270 | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | MU | 245.70 | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | MU | 29.48 | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MU | 216.22 | 216.22 | 216.22 | 216.22 | 216.22 |
| Total AFC | **Rs. Cr** | **385.30** | **380.24** | **375.21** | **370.56** | **378.10** |
| Annual Fixed Charges/MW | Rs./MW | 1.78 | 1.76 | 1.74 | 1.71 | 1.75 |
| 13% of Net Capacity for supply to JUVNL at full tariff | MU | 31.94 | 31.94 | 31.94 | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | Rs. Cr | 56.92 | 56.17 | 55.43 | 54.74 | 55.86 |

**Table 9: Operational performance and annual fixed cost from FY 2016-17 to FY 2020-21 for Unit 2**

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| Operational Parameters | | | | | | |
| Gross Generation | MUs | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| Plant Load Factor | % | 85% | 85% | 85% | 85% | 85% |
| Aux Power Consumption | % | 9% | 9% | 9% | 9% | 9% |
| Availability | % | 85% | 85% | 85% | 85% | 85% |
| Net Generation | MU | 1829.48 | 1829.48 | 1829.48 | 1829.48 | 1829.48 |
| Weighted Average GCV of primary fuel | kCal/kg | 3408 | 3403 | 3403 | 3403 | 3403 |
| Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 | 2387 |
| Specific Coal Consumption | Kg/kWh | 0.698 | 0.699 | 0.699 | 0.699 | 0.699 |
| Secondary Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Details of Annual Fixed Cost | | | | | | |
| Depreciation | Rs. Cr. | 81.87 | 81.87 | 81.87 | 81.87 | 85.05 |
| Interest on Loan | Rs. Cr. | 132.36 | 121.18 | 110.01 | 98.83 | 93.21 |
| Return on Equity | Rs. Cr. | 70.46 | 70.46 | 70.46 | 70.46 | 73.26 |
| Interest on working Capital | Rs. Cr. | 31.83 | 33.23 | 34.38 | 35.61 | 37.14 |
| O&M Expenses (including water charges) | Rs. Cr. | 74.70 | 79.29 | 84.18 | 89.37 | 94.89 |
| Annual Fixed Cost | **Rs. Cr.** | **391.21** | **386.03** | **380.89** | **376.14** | **383.57** |
| Total Variable Charge | **Rs./kWh** | **2.462** | **2.625** | **2.756** | **2.894** | **3.038** |
| Regulated Capacity to JBVNL | | | | | | |
| Gross Capacity | MU | 270 | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | MU | 245.70 | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | MU | 29.48 | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MU | 216.22 | 216.22 | 216.22 | 216.22 | 216.22 |
| Total AFC | **Rs. Cr** | **391.21** | **386.03** | **380.89** | **376.14** | **383.57** |
| Annual Fixed Charges/MW | Rs./MW | 1.81 | 1.79 | 1.76 | 1.74 | 1.77 |

| Particulars | Units | FY 17 | FY18 | FY 19 | FY 20 | FY 21 |
|---|---|---|---|---|---|---|
| **13% of Net Capacity for supply to JUVNL at full tariff** | MU | 31.94 | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | Rs. Cr | 57.79 | 57.03 | 56.27 | 55.57 | 56.66 |

**Tariff for supply of energy to JUVNL**

3.6 The tariff for supply of regulated capacity to JUVNL (erstwhile JSEB) for the second Control Period at Normative Availability submitted by the Petitioner in it petition is summarised in the tables below:

**Table 10: Fixed Charges and rate of Energy Charges for JUVNL for Unit 1 & Unit 2**

| Particulars | Units | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Capacity Charges for 13% of Capacity at 85% Plant Availability Factor | Rs Crore | 114.71 | 113.20 | 111.70 | 110.31 | 112.52 |
| Rate of Energy Charges | Rs/kWh | 2.462 | 2.625 | 2.756 | 2.894 | 3.038 |
| **Total Tariff (Capacity Charges + Energy Charges)** | **Rs./kWh** | **3.716** | **3.863** | **3.977** | **4.099** | **4.268** |

3.7 The Petitioner has submitted additional information in subsequent submissions as mentioned in paragraph 2.6 which have also been considered by the Commission while passing this Order.

# A4: PUBLIC CONSULTATION PROCESS

4.1 A public hearing was held on 11th December, 2017 at Ranchi and many respondents voiced their views on the petition filed by the Petitioner. The list of the attendees is attached as **Annexure- 1** to this Order.

4.2 During the public hearing, the Commission also allowed persons/representatives of entities who had not submitted prior written representations but attended the public hearings to express their views, in person, regarding the Petitions filed by the Petitioner.

4.3 The comments and suggestion of the members of the public along with the response thereon of the Petitioner and the views of the Commission are detailed hereunder:

**Capital cost of the project**

*Public comments/ suggestions*

4.4 JBVNL submitted that the Petitioner has claimed opening balance of GFA of Rs 3,314.24 Cr against the approved GFA (capital cost) of Rs 3,271.49 Cr as approved by the Commission in the last Tariff Order. JBVNL submitted that though the Petitioner has filed a review Petition against Commission's last Order, the Commission is yet to issue an Order against the review Petition and hence the capital cost as approved by the Commission in the last Tariff Order i.e. Rs 3314.24 Cr should be considered for tariff computation.

*Petitioner's submission*

4.5 The Petitioner submitted that it has considered the capital cost taking into consideration the issues raised by it in the Review Petition. The final decision of the Commission shall form the basis for tariff computation.

*Commission's view*

4.6 The Commission, on 09 January, 2018, has notified the Order against the review petition filed by the Petitioner. The capital cost approved in the Order has been considered as the base for the tariff computation in the relevant years.

**Allowable Incentive**

*Public comments/ suggestions*

4.7 JBVNL submitted that the Generation Tariff Regulations, 2015 allow incentive for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF). The PLF ought to be considered as per CERC guidelines as per which the whole plant capacity has to be considered for computation of incentive.

4.8 However, the Petitioner has considered the contracted capacity of 122.85 MW against the total capacity of 540 MW for calculation of incentive to be taken from JBVNL.

*Petitioner's submission*

4.9 The Petitioner submitted that as per the PPA signed between the Petitioner and JBVNL, Availability has been defined in respect of contracted capacity and not installed capacity. Hence, there is no error in claiming incentive on the basis of contracted capacity.

*Commission's view*

4.10 The Commission has considered the calculation of incentive strictly as per the provisions specified in JSERC (Generation Tariff) regulations, 2010 as well as JSERC (Generation Tariff ) Regulations, 2015. In accordance with the PPA signed by the Petitioner with JBVNL, Incentive calculation has been done based on approved availability, of the generation station of the petitioner, as certified by the SLDC.

# A5: TRUE UP FOR FY 2014-15 & FY 2015-16

## Operational Parameters

### Availability

*Petitioner's submission*

5.1 The Petitioner, in its true up petition, did not submit the availability for Unit 1 and Unit 2 separately. Subsequently, in reply to one of the discrepancy notes raise by the Commission, the Petitioner submitted the availability certificate for FY 2014-15 and FY 2015-16 i.e. 77.97% and 98.77% respectively.

*Commission's Analysis*

5.2 Regulation 8.6 of the Generation Tariff Regulations, 2010 prescribes the norm for approving the availability of a new generating station.

*"8.6 The norms of operation for generating stations other than existing stations shall be as under:*

*(a) Normative Annual Plant Availability Factor (NAPAF): All thermal generating stations, NAPAF shall be 85%."*

5.3 Accordingly, the Commission approves availability for FY 2014-15 and FY 2015-16 at 77.97% and 98.77% respectively.

5.4 The recovery of capacity charges below the level of NAPAF (during FY 2014-15) shall be on pro-rata basis while the Petitioner shall be entitled to an incentive for plant availability exceeding NAPAF during FY 2015-16 in accordance with Regulation 8.12 of the Generation Tariff Regulations, 2010.

### Generation

*Petitioner's submission*

5.5 The Petitioner submitted that it had signed PPA with JUVNL/ JBVNL (earlier JSEB) for the 122.85 MW capacity (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totalling to 540 MW less Normative Auxiliary Consumption).

5.6 The gross generation submitted by the Petitioner is shown in the following table:

**Table 11 Generation Capacity submitted by the Petitioner**

| Description | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Gross Capacity | MW | 270 | 270 | 270 | 270 |
| Gross Generation | MU | 1231.24 | 1680.29 | 981.39 | 1245.59 |

*Commission's Analysis*

5.7 The Commission has considered the actual PLF as submitted by the Petitioner (for Unit 1 and Unit 2) for arriving at the gross generation.

5.8 Accordingly, the table below shows the gross generation approved by the Commission for both the unit towards true up of FY 2014-15 and FY 2015-16:

**Table 12 Gross generation (in MUs) approved by the Commission**

| Description | FY 2014-15 | | | FY 2015-16 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Petitioner Submission | Approved in True-up | Approved in MYT | Petitioner Submission | Approved in True-up |
| Unit 1 | 1227.07 | 1231.24 | 1231.24 | 2010.42 | 1680.29 | 1680.29 |
| Unit 2 | 985.34 | 981.39 | 981.39 | 2010.42 | 1245.59 | 1245.59 |

**Auxiliary Consumption, Station heat rate and Secondary Fuel Oil Consumption**

*Petitioner's submission*

5.10 The Petitioner submitted the actual auxiliary consumption for Unit 1 at 9.74% for FY 2014-15 and at 9.62% for FY 2015-16. Further, the Petitioner submitted the auxiliary consumption for Unit 2 at 9.70% for FY 2014-15 and at 8.09% for FY 2015-16. However, for the purpose of computation of tariff, the Petitioner has considered the normative auxiliary consumption of 9.00% for both units 1 and 2 for FY 2014-15 as well as for FY 2015-16.

5.11 The Petitioner in the petition has submitted that the Station Heat Rate for both Unit 1 and Unit 2 at 2,387 kCal/kWh for FY 2014-15 as well as FY 2015-16.

5.12 The Petitioner also submitted the secondary fuel oil consumption for both Unit 1 and Unit 2 at 1 ml/kWh for FY 2014-15 as well as FY 2015-16.

*Commission's Analysis*

5.13 Regulation 8.6 of the Generation Tariff Regulations, 2010 prescribes the norm for approving the operational parameters including auxiliary consumption, station heat rate and secondary fuel oil consumption of a generating station:

***"Auxiliary Energy Consumption***

*8.6(c) (i) Coal Based generating Stations*

| | | |
|---|---|---|
| | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

| | | |
|---|---|---|
| *500 MW Series- Steam Driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *6%* |
| *500 MW Series- Electrically driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

*Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:*

***(b) Gross Station Heat Rate:***

*(i) Coal-based and lignite-fired Thermal Generating Stations = 1.065 X Design Heat Rate (kCal/kWh)*

*Where, the Design Heat Rate of a unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.*

*Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:*

| | | | | | |
|---|---|---|---|---|---|
| *Pressure Rating(kg/cm2* | *150* | *170* | *170* | *247* | *247* |
| *SHT/RHT (0C)* | *535/535* | *537/537* | *537/565* | *537/565* | *565/593* |
| *Type of BFP* | *Electrical Driven* | *Turbine driven* | *Turbine Driven* | *Turbine Driven* | *Turbine Driven* |
| *Max Turbine Cycle Heat rate (kCal/kWh)* | *1955* | *1950* | *1935* | *1900* | *1850* |
| *Min. Boiler Efficiency* | | | | | |
| *Sub-Bituminous Indian Coal* | *0.85* | *0.85* | *0.85* | *0.85* | *0.85* |
| *Bituminous Imported Coal* | *0.89* | *0.89* | *0.89* | *0.89* | *0.89* |
| *Max Design Unit Heat rate (kCal/kWh)* | | | | | |
| *Sub-Bituminous* | *2300* | *2294* | *2276* | *2235* | *2176* |

| | | | | | |
|---|---|---|---|---|---|
| *Indian Coal* | | | | | |
| *Bituminous Imported Coal* | *2197* | *2191* | *2174* | *2135* | *2079* |

***Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken;***

***Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;***

*Provided also that if one or more units were declared under commercial operation prior to 1.4.2011, the heat rate norms for those units as well as units declared under commercial operation on or after 1.4.2012 shall be lower of the heat rate norms arrived at by above methodology and the norms as per clause 8.4 of these Regulations;*

*Note: In respect of units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven BFP.*

...

***(d) Secondary Fuel Oil Consumption for Coal based generating stations: 1.0 ml/kWh."***

5.14 The Commission approves the auxiliary consumption as per the norms towards True up of FY 2014-15 and FY 2015-16. Hence, the auxiliary consumption is approved at 9.00%.

5.15 The Commission has arrived at the heat rate of 2387 kCal/ kWh as per the same methodology followed in the previous tariff order and accordingly approves the same.

5.16 The Commission approves the secondary fuel oil Consumption at 1 ml/kWh as specified in the regulation cited in paragraph 5.13 above.

**Coal Mix, Coal Cost, Transit loss and GCV**

*Petitioner's submission*

5.17 In its Petition for true up for FY 2014-15 and FY 2015-16, the Petitioner submitted the following coal mix for Unit 1 and Unit 2:

**Table 13 Coal Mix for FY 2014-15 and FY 2015-16 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Domestic Coal-Linkage | 51.00% | 45.00% | 57.00% | 44.00% |
| Domestic Coal-Spot Market | 36.00% | 45.00% | 19.00% | 46.00% |
| Washery Rejects | 7.00% | 7.00% | 8.00% | 7.00% |
| Imported Coal | 6.00% | 3.00% | 16.00% | 3.00% |

5.18 With regards to the landed cost of coal, the submission of the Petitioner is summarised in the following table as shown below:

**Table 14 Landed Cost of coal (Rs/ MT) for FY 2014-15 and FY 2015-16 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | 2014-15 | 2015-16 | 2014-15 | 2015-16 |
| Domestic Coal-Linkage | 2511 | 2556 | 2511 | 2556 |
| Domestic Coal-Spot Market | 3582 | 3245 | 3582 | 3245 |
| Washery Rejects | 1561 | 4900 | 1561 | 4900 |
| Imported Coal | 4232 | 3961 | 4232 | 3961 |

5.19 With regards to the GCV of coal, the Petitioner submitted the GCV of coal from various sources as shown in the following table:

**Table 15 GCV of coal (kCal/kg) from various sources for FY 2014-15 and FY 2015-16 submitted by the Petitioner**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | 2014-15 | 2015-16 | 2014-15 | 2015-16 |
| Domestic Coal-Linkage | 3766 | 3627 | 3748 | 3636.50 |
| Domestic Coal-Spot Market | 3034 | 3149 | 3058 | 3064 |
| Washery Rejects | 1771 | 3800 | 1778 | 3800 |
| Imported Coal | 3659 | 3742 | 3667 | 3751 |

*Commission's Analysis*

5.20 The Petitioner was allotted a captive coal block (Ganeshpur) along with Tata Steel for supply of coal to the power plant. However, the captive mine allocation to the Petitioner was cancelled after the judgement made by Hon'ble Supreme Court on writ petition (CRL) No 120 of 2012. As per the latest information submitted by the Petitioner, the Petitioner has obtained a tapering coal linkage from Coal India limited and fuel supply agreements have been signed with Central Coal fields Ltd. Petitioner also submitted that it is forced to meet its coal requirement through combination of tapering linkage, spot market, washery rejects and imported coal.

5.21 The Commission understands that the captive coal block allocated to the Petitioner has been cancelled vide the Supreme Court judgement stated as above. Hence, the Petitioner is largely depending on the domestic linkage by means of tapering linkage with CCL.

5.22 Meanwhile, the Commission observes that the Petitioner primarily used domestic coal from the CCL linkage and spot market to meet its coal requirements during FY 2014-15 and FY 2015-16. The Petitioner has also used some amount of washery rejects and imported coal in FY 2014-15 and FY 2015-16

5.23 Based on the month wise and unit wise actual data provided by the Petitioner, the Commission approves the following coal mix towards true up of FY 2014-15 and FY 2015-16 is shown in the table below:

**Table 16 Coal Mix for Unit 1 for FY 2014-15 and FY 2015-16 approved by the Commission**

| Coal Mix | As Approved in MYT | As Per Petition | Approved by JSERC | | As Approved in MYT | As Per Petition | Approved by JSERC | |
|---|---|---|---|---|---|---|---|---|
| | 2014-15 | | | | 2015-16 | | | |
| Domestic Coal-Linkage | 51.23% | 51.00% | 440270 MT | 50.69% | 50.00% | 45.00% | 531436 MT | 45.03% |
| Domestic Coal-Spot Market | 34.17% | 36.00% | 312363 MT | 35.96% | 30.00% | 45.00% | 525839 MT | 44.55% |
| Washery Rejects | 7.16% | 7.00% | 60280 MT | 6.94% | 10.00% | 7.00% | 83650 MT | 7.09% |
| Imported Coal | 7.44% | 6.00% | 55627 MT | 6.40% | 10.00% | 3.00% | 39364 MT | 3.34% |

**Table 17 Coal Mix for Unit 2 for FY 2014-15 and FY 2015-16 approved by the Commission**

| Coal Mix | As Approved in MYT | As Per Petition | Approved by JSERC | | As Approved in MYT | As Per Petition | Approved by JSERC | |
|---|---|---|---|---|---|---|---|---|
| | 2014-15 | | | | 2015-16 | | | |
| Domestic Coal-Linkage | 49.91% | 57.00% | 383323 MT | 57.37% | 50.00% | 44.00% | 393162 MT | 44.21% |
| Domestic Coal-Spot Market | 32.37% | 19.00% | 124836 MT | 18.68% | 30.00% | 46.00% | 412140 MT | 46.34% |
| Washery Rejects | 5.16% | 8.00% | 56046 MT | 8.39% | 10.00% | 7.00% | 60661 MT | 6.82% |
| Imported Coal | 12.55% | 16.00% | 103953 MT | 15.56% | 10.00% | 3.00% | 23339 MT | 2.62% |

5.24 The Commission approves normative transit loss of 0.8% for coal procured from domestic sources in accordance with Generation Tariff Regulations, 2010. The Commission also notes that the Central Commission, in the CERC (Terms and Conditions of Tariff) Regulations, 2014, has set a norm of 0.2% for transit loss on imported coal. The Commission approves the same for the imported coal used by the plant.

**Table 18 Coal Cost (Rs/MT) of Unit 1 approved by the Commission**

| Particulars | 2014-15 | | | | 2015-16 | | | |
|---|---|---|---|---|---|---|---|---|
| | As Approved in APR | As Per Petition | Approved by JSERC (Exc. Transit Loss) | Approved by JSERC (Inc. Transit Loss) | As Approved in ARR | As Per Petition | Approved by JSERC (Exc. Transit Loss) | Approved by JSERC (Inc. Transit Loss) |
| Domestic Coal-Linkage | 2418 | 2511 | 2511 | 2531 | 2438 | 2556 | 2556 | 2576 |
| Domestic Coal-Spot Market | 3471 | 3582 | 3582 | 3610 | 3526 | 3245 | 3245 | 3271 |
| Washery Rejects | 1766 | 1561 | 1561 | 1573 | 1720 | 4900 | 4900 | 4940 |
| Imported Coal | 4185 | 4232 | 4232 | 4241 | 4212 | 3961 | 3961 | 3969 |

**Table 19 Coal Cost (Rs/MT) of Unit 2 approved by the Commission**

| Particulars | 2014-15 | | | | 2015-16 | | | |
|---|---|---|---|---|---|---|---|---|
| | As Approved in APR | As Per Petition | Approved by JSERC (Exc. Transit Loss) | Approved by JSERC (Inc. Transit Loss) | As Approved in ARR | As Per Petition | Approved by JSERC (Exc. Transit Loss) | Approved by JSERC (Inc. Transit Loss) |
| Domestic Coal-Linkage | 2459 | 2511 | 2511 | 2531 | 2438 | 2556 | 2556 | 2576 |
| Domestic Coal-Spot Market | 3580 | 3582 | 3582 | 3610 | 3526 | 3245 | 3245 | 3271 |
| Washery Rejects | 1674 | 1561 | 1561 | 1573 | 1720 | 4900 | 4900 | 4940 |
| Imported Coal | 4240 | 4232 | 4232 | 4241 | 4212 | 3961 | 3961 | 3969 |

**Table 20 GCV (Kcal/Kg) of coal for Unit 1 approved by the Commission**

| Particulars | 2014-15 | | | 2015-16 | | |
|---|---|---|---|---|---|---|
| | As Approved in APR | As Per Petition | Approved by JSERC | As Approved in ARR | As Per Petition | Approved by JSERC |
| Domestic Coal-Linkage | 3754 | 3766 | 3766 | 3748 | 3627 | 3627 |
| Domestic Coal-Spot Market | 3102 | 3034 | 3034 | 3125 | 3149 | 3149 |
| Washery Rejects | 1760 | 1771 | 1771 | 1753 | 3800 | 3800 |
| Imported Coal | 3610 | 3659 | 3659 | 3615 | 3742 | 3742 |

**Table 21 GCV (Kcal/Kg) of coal for Unit 2 approved by the Commission**

| Particulars | 2014-15 | | | 2015-16 | | |
|---|---|---|---|---|---|---|
| | As Approved in APR | As Per Petition | Approved by JSERC | As Approved in ARR | As Per Petition | Approved by JSERC |
| Domestic Coal-Linkage | 3742 | 3748 | 3748 | 3748 | 3637 | 3637 |
| Domestic Coal-Spot Market | 3148 | 3058 | 3058 | 3125 | 3064 | 3064 |
| Washery Rejects | 1746 | 1778 | 1778 | 1753 | 3800 | 3800 |
| Imported Coal | 3621 | 3667 | 3667 | 3615 | 3751 | 3751 |

### Base Energy Charge Rate (ECR) and Cost of Primary Fuel

*Petitioner's submission*

5.25 The Petitioner has computed the energy charge for the purpose of truing up based on actual generation, normative auxiliary consumption, normative heat rate and normative secondary fuel oil consumption for the period FY 2014-15 & FY 2015-16.

5.26 The Petitioner had raised the energy bills to Discom, for the FY 2014-15 and FY 2015-16, in line with the energy charge approved by the Hon'ble Commission in its Order dated May 26, 2014, wherein it had approved an energy charge of Rs. 2.071 per kWh for FY 2014-15 & FY 2015-16 for both Unit 1 and 2 of the power plant.

5.27 The Petitioner has submitted the following claim towards base energy charge rate of both units towards true up as shown below:

**Table 22 Energy Charge Rate submitted by the Petitioner for FY 2014-15**

| Particulars | Units | Unit 1 | Unit 2 |
|---|---|---|---|
| **Operational Parameters** | | | |
| Normative Aux Consumption | % | 9.00% | 9.00% |
| Heat Rate | kCal/ kWh | 2387 | 2387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 |
| Secondary Oil Consumption | kL/year | 1231.24 | 981.39 |
| Calorific Value of Oil | kCal/L | 9374 | 9325 |
| Coal | | | |
| Weighted Average Calorific Value of Indian Coal | kCal/kg | 3338.42 | 3485.03 |
| Weighted Average cost of Indian Coal | Rs/Tonne | 2960.68 | 3084.26 |
| **Energy Charge rate** | Rs/kWh | 2.317 | 2.312 |

**Table 23 Energy Charge Rate submitted by the Petitioner for FY 2015-16**

| Particulars | Units | Unit 1 | Unit 2 |
|---|---|---|---|
| **Operational Parameters** | | | |
| Normative Aux Consumption | % | 9% | 9% |
| Heat Rate | kCal/ kWh | 2387 | 2387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 |
| Secondary Oil Consumption | kL/year | 1680.29 | 1245.59 |
| Calorific Value of Oil | kCal/L | 9372 | 9332 |
| Coal | | | |
| Weighted Average Calorific Value of Indian Coal | kCal/kg | 3362.35 | 3352.34 |
| Weighted Average cost of Indian Coal | Rs/Tonne | 3091.39 | 3088.03 |
| **Energy Charge rate** | Rs/kWh | 2.402 | 2.407 |

*Commission's Analysis*

5.28 As per the Generation Tariff Regulation, 2010, the energy (variable) charge shall cover primary fuel costs and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month.

5.29 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.17 and 8.18 of the Generation Tariff Regulation, 2010 as quoted below:

*"8.17 Total Energy charge payable to the Generating Company for a month shall be: =*

*(Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

*8.18 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formula:*

*(a) For coal based stations*

*ECR = (GHR – SFC x CVSF) x LPPF x 100/ {CVPF x (100 – AUX)}*

*Where, AUX - Normative auxiliary energy consumption in percentage*

*CVPF - Gross calorific value of primary fuel as fired, in KCal per kg, per litre or per standard cubic metre, as applicable.*

*CVSF - Calorific value of secondary fuel, in KCal per ml*

*ECR - Energy charge rate, in Rupees per kWh sent out.*

*GHR - Gross station heat rate, in kCal per kWh.*

*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.*

*SFC - Specific fuel oil consumption, in ml per kWh"*

5.30 The Commission has further considered the landed price of primary fuel inclusive of transit loss of 0.80% (for domestic coal) and 0.20% (for imported coal).

5.31 Accordingly, the Commission has calculated the base ECR for the Control Period as per the formula stated above and after considering the operational parameters as approved in this order. The table below contain the base ECR approved by the Commission for the FY 2014-15 & FY 2015-16:

**Table 24 Approved Energy Charge Rate for Unit 1**

| **Particulars** | **Units** | **Approved in APR Order** | **Submitted by APNRL** | **Approved True Up By JSERC** | **Approved in MYT Order** | **Submitted by APNRL** | **Approved True Up By JSERC** |
|---|---|---|---|---|---|---|---|
| | | | **FY 2014-15** | | | **FY 2015-16** | |
| Gross Generation | % | 1227.07 | 1231.24 | 1231.24 | 2010.42 | 1680.29 | 1680.29 |
| Heat Rate | kCal/ kWh | 2387 | 2387 | 2387 | 2387 | 2387 | 2387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/L | 9347 | 9374 | 9374 | 9347 | 9325 | 9325 |
| Weighted Average Calorific Value of Coal | kCal/kg | 3377 | 3338 | 3357 | 3348 | 3362 | 3430 |
| Weighted Average cost of Coal (including transit loss) | Rs/Tonne | 2862 | 2961* | 2962 | 2870 | 3091* | 3100 |
| **Energy Charge rate** | **Rs/kWh** | **2.192** | **2.317** | **2.305** | **2.217** | **2.402** | **2.361** |

**Petitioner has submitted cost of coal excluding transit loss*

**Table 25 Approved Energy Charge Rate for Unit 2**

| **Particulars** | **Units** | **Approved in APR Order** | **Submitted by APNRL** | **Approved True Up By JSERC** | **Approved in MYT Order** | **Submitted by APNRL** | **Approved True Up By JSERC** |
|---|---|---|---|---|---|---|---|
| | | | **FY 2014-15** | | | **FY 2015-16** | |
| Gross Generation | % | 985.34 | 981.39 | 981.39 | 2010.42 | 1245.59 | 1245.59 |
| Heat Rate | kCal/ kWh | 2387 | 2387 | 2387 | 2387 | 2387 | 2387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/L | 9347 | 9372 | 9372 | 9347 | 9332 | 9332 |
| Weighted Average Calorific Value of Coal | kCal/kg | 3431 | 3485 | 3441 | 3348 | 3352 | 3386 |
| Weighted Average cost of Coal (including transit loss) | Rs/Tonne | 3005 | 3084* | 2918 | 2870 | 3088* | 3096 |
| **Energy Charge rate** | Rs/kWh | **2.265** | **2.312** | **2.216** | **2.217** | **2.407** | **2.389** |

**Petitioner has submitted cost of coal excluding transit loss*

**Determinants of Fixed Charges**

**Capital Cost and Additional Capitalization**

*Petitioner's submission*

5.32 The Petitioner in its Petition has submitted that the capital cost of the power plant is to the tune of Rs. 3,344.21 Crore based on the audited accounts for FY 2013-14. Accordingly, for the purpose of Truing-up of Annual Capacity Charges for FY 2014-15, the Petitioner, in the instant petition has considered the opening value of Gross Fixed Assets for FY 2014-15 at Rs. 3,314.24 Crore after netting off the closing work in progress of Rs. 29.97 crore, as disallowed by the Hon'ble Commission in its True-up Order dated September 1, 2016.

5.33 The Petitioner has thereafter considered the actual capitalization and deletions based on the audited account for FY 2014-15 as depicted in the table below:

**Table 26 Additional Capitalization (Rs Cr) submitted by the Petitioner for both units**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Opening GFA | 1650.65 | 1676.22 | 1663.59 | 1690.25 |
| Additions | 25.57 | 7.28 | 26.66 | 7.22 |
| Deletions | - | - | - | - |
| **Closing GFA** | **1676.22** | **1683.50** | **1690.25** | **1697.47** |

5.34 Regulation 7.5 of the JSERC Generation Regulations, 2010 provides for admittance of additional capital expenditure incurred after the date of commercial operation of the project and up to the cut-off date. The COD of Phase-I of APNRL power plant was declared on May 19, 2013. Accordingly the cut-off date of the power project for the purpose of approval of additional capitalization would be March 31st, 2016.

5.35 Therefore, the Petitioner has submitted the net additional capitalization of Rs 52.22 Cr and Rs. 14.50 Cr incurred in FY 2014-15 and FY 2015-16, on account of deferred payments made to suppliers/ contractors towards the works completed forming part of the original scope of the project. The petitioner has considered the funding of additional capitalization as per the audited accounts of the Petitioner for FY 2014-15 and FY 2015-16.

*Commission's Analysis*

5.36 As per Clause 7.5 and 7.6 of the Generation Tariff Regulation, 2010:

*"Additional Capitalisation*

*7.5 The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

*(i) Undischarged liabilities;*

*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions under clause 7.3,7.4 of these Regulations;*

*(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*

*(v) Change in law.*

*Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.*

*'7.6 The capital expenditure incurred on the following counts after the cut-*off date may, in *its discretion, be admitted by the Commission, subject to prudence check:*

*(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*

*(ii) Change in law;*

*(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(iv) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost;*"

5.37 As per the definition of the cut-off date defined under the Generation Tariff Regulations, 2010,

*"Cut-off Date" means 31st March of the year closing after two years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of a year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation;*

5.38 As per the aforementioned provisions of the Generation Tariff Regulations, 2010, the Commission asked for detailed justification and adequate documentary evidence from the Petitioner in regards to break up of total additional capitalization, original scope of work and amount capitalised towards each asset for the years FY 2014-15 and FY 2015-16 for both the units separately.

5.39 The Petitioner in its replies to discrepancy submitted the required break up as well as the auditor's certificate as documentary evidence supporting the additional capitalisation. Also, the Commission has verified the same amount being converted from CWIP to fixed assets from the audited accounts of FY 2014-15 and FY 2015-16.

5.40 Thus, the Commission after reviewing all the submissions of the Petitioner and adhering to the above mentioned clauses approves the additional capitalization of Rs.52.22 Cr and Rs.14.50 Cr incurred in FY 2014-15 and FY 2015-16, on account of deferred payments made to suppliers/contractors towards the works completed forming part of the original scope of the project.

## Depreciation

*Petitioner's submission*

5.41 The Petitioner submitted that the depreciation for Unit 1 and Unit 2 been computed on the basis of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 and the depreciation rate has been considered same as notified in the Appendix – I of the regulations.

5.42 The depreciation submitted by the Petitioner is given in the table below:

**Table 27 Depreciation (Rs Cr) submitted by the Petitioner for both units**

| Particulars | FY 2014-15 | FY 2015-16 |
|---|---|---|
| Unit 1 | 80.05 | 80.87 |
| Unit 2 | 80.82 | 81.68 |

*Commission's Analysis*

5.43 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Depreciation are given below:

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant.*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station."*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis."*

5.44 Accordingly, the Commission calculated the depreciation for Unit 1 and Unit 2 by considering the approved final capital cost for the respective units, as per the Order dated 09 January, 2018, and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2010.

5.45 The following table shows the depreciation for Unit 1 and Unit 2 as calculated by the Commission as against that submitted by the Petitioner:

**Table 28 Depreciation approved by the Commission for Unit 1 (in Rs Cr)**

| Asset Type | FY 2014-15 | | | FY 2015-16 | | |
|---|---|---|---|---|---|---|
| | Approved in APR Order | Submitted now by APNRL | Approved in True Up By JSERC | Approved in APR Order | Submitted now by APNRL | Approved in True Up By JSERC |
| Land owned under full title | - | - | - | - | - | - |
| Land held under lease | 0.37 | 0.36 | 0.37 | 0.37 | 0.36 | 0.38 |
| Plant and machinery | 71.81 | 70.22 | 73.53 | 71.81 | 71.04 | 74.46 |
| Building & civil works | 7.01 | 9.47 | 7.13 | 7.01 | 9.47 | 7.23 |
| Other Assets | 0.4 | | 0.39 | 0.4 | | 0.37 |
| **Total** | **79.59** | **80.05** | **81.43** | **79.59** | **80.87** | **82.43** |

**Table 29 Depreciation approved by the Commission for Unit 2 (Rs Cr)**

| Asset Type | FY 2014-15 | | | FY 2015-16 | | |
|---|---|---|---|---|---|---|
| | Approved in APR Order | Submitted now by APNRL | Approved in True Up By JSERC | Approved in APR Order | Submitted now by APNRL | Approved in True Up By JSERC |
| Land owned under full title | - | - | 0.00 | - | | - |
| Land held under lease | 0.37 | 0.36 | 0.37 | 0.37 | 0.36 | 0.38 |
| Plant and machinery | 72.92 | 71.09 | 74.32 | 72.92 | 71.94 | 75.28 |
| Building & civil works | 6.97 | 9.38 | 7.09 | 6.97 | 9.38 | 7.18 |
| Other Assets | 0.40 | | 0.38 | 0.4 | | 0.37 |
| **Total** | **80.66** | **80.83** | **82.16** | **80.66** | **81.68** | **83.20** |

**Debt Equity Ratio**

*Petitioner's submission*

5.46 The Petitioner submitted that that out of the total capital expenditure incurred amounting to Rs. 3,314.24 Crore as on April 1, 2014, 74.07% of the project cost has been funded from debt and remaining 25.93% is the equity contribution, which is in accordance with actual Debt: Equity ratio as per the audited account of the Petitioner for FY 2014-15.

5.47 Further, the funding of additional capital expenditure claimed during FY 2014-15, has been considered in the actual Debt: Equity ratio as per the audited accounts. Accordingly the blended Debt: Equity ratio for the capital cost up to 31 March, 2015 works out to be 73.12:26.88 which is also within the threshold limits prescribed by Regulation 7.5 of the JSERC Generation Regulations, 2010. The following table shows the unit wise debt equity ratio submitted by the Petitioner.

**Table 30 Debt Equity submitted by the Petitioner for Unit 1 & Unit 2**

| Particulars | % | Amount (Rs Cr) |
|---|---|---|
| Debt | 73.12% | 2461.66 |
| Equity | 26.88% | 904.81 |
| **Total** | **100.00%** | **3366.47** |

*Commission's Analysis*

5.48 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Debt Equity Ratio are quoted below:

*"7.14 For the project declared under commercial operation on or after 1.04.2011, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment"*

*Explanation:-*

*Any expenditure incurred or projected to be incurred on or after 1.04.2011 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

5.49 The Commission has verified the actual equity contribution in the year at which the CoD was achieved. The equity contribution as per the audited accounts has been taken as the equity funding towards the capital cost of the project. The Commission observed an equity contribution of Rs 45.46 Cr in FY 2014-15. Thus, considering the approved gross fixed asset of Rs 3,366.46 Cr, at the end of FY 2014-15 and Rs 3,380.96 Cr at the end of FY 2015-16, the equity contribution works out to 26.88% in FY 2014-15 and 26.75% in FY 2015-16. The balance amount of the approved capital cost has been considered to be funded through debt.

5.50 Accordingly, the Commission approves the debt equity ratio as shown in the table below for both units:

**Table 31 Debt Equity ratio approved by the Commission for FY 2014-15**

| Particulars | Submitted by APNRL | | Approved True Up By JSERC | |
|---|---|---|---|---|
| | % | Amount (Rs Cr) | % | Amount (Rs Cr) |
| Debt | 73.12% | 2461.66 | 73.12% | 2461.66 |
| Equity | 26.88% | 904.81 | 26.88% | 904.81 |
| Total | **100%** | **3366.47** | **100%** | **3366.47** |

**Table 32 Debt Equity ratio approved by the Commission for FY 2015-16**

| Particulars | Submitted by APNRL | | Approved by JSERC | |
|---|---|---|---|---|
| | % | Amount (Rs Cr) | % | Amount (Rs Cr) |
| Debt | 73.24% | 2476.16 | 73.24% | 2476.16 |
| Equity | 26.76% | 904.81 | 26.76% | 904.81 |
| Total | **100%** | **3380.97** | **100%** | **3380.97** |

## Interest on Debt

*Petitioner's submission*

5.51 The Petitioner submitted that the interest on debt has been claimed as per relevant clause of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations 2010.

5.52 The Petitioner submitted that the opening loan balance as on 01.04.2014 has been worked out considering the Debt: Equity ratio of 74.07:25.93 and reducing it by the cumulative repayments up to FY 2013-14. Thereafter the actual loan addition during the year has been considered during the year, considering the actual Debt: Equity ratio as per the audited accounts.

5.53 The interest rates as submitted by the Petitioner for the computation of the interest on debt are based on the actual interest rates payable i.e. 13.62% and 12.81% for Unit 1 in FY 2014-15 and FY 2015-16 and 13.63% and 13.65% for Unit 2 in FY 2014-15 and FY 2015-16 respectively. The following tables shows the interest on debt submitted by the Petitioner:

**Table 33 Interest on debt for FY 2014-15 and FY 2015-16 as submitted by the Petitioner**

| Particulars | FY 2014-15 | FY 2015-16 |
|---|---|---|
| Unit 1 | 148.39 | 129.94 |
| Unit 2 | 153.16 | 143.03 |

*Commission's Analysis*

5.54 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of interest on debt are as under:

*"7.19 The loans arrived at in the manner indicated in clause 7.13, 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

*7.20 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.*

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered*

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

5.55 The Commission has calculated the debt for each year based on the approved capital cost and considering the approved depreciation as repayment in line with the methodology specified in Generation Tariff Regulations, 2010.

5.56 The interest on debt approved by the Commission is shown in the tables below for both Units:

**Table 34 Interest on Debt (Rs Cr) approved by the Commission for Unit 1**

| Particulars | FY 2014-15 | | | FY 2015-16 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by the Petitioner | Approved by JSERC | Approved in ARR Order | Submitted by the Petitioner | Approved by JSERC |
| Opening Balance | 1104.45 | 1128.02 | 1120.97 | 1024.64 | 1051.28 | 1042.85 |
| Additions | 0.00 | 3.31 | 3.31 | 0.00 | 7.28 | 7.28 |
| Repayment | 79.59 | 80.05 | 81.43 | 79.59 | 80.87 | 82.43 |
| Closing Balance | 1024.86 | 1051.28 | **1042.85** | 945.06 | 977.69 | **967.70** |
| Interest on Debt% | 13.43% | 13.62% | 13.62% | 13.43% | 12.81% | 13.13% |
| Amount in Rs Cr | **142.98** | **148.39** | **147.36** | **132.27** | **129.94** | **131.99** |

**Table 35 Interest on Debt (Rs Cr) approved by the Commission for Unit 2**

| Particulars | FY 2014-15 | | | FY 2015-16 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by the Petitioner | Approved by JSERC | Approved in MYT Order | Submitted by the Petitioner | Approved by JSERC |
| Opening Balance | 1143.81 | 1162.41 | 1156.03 | 1062.94 | 1085.03 | 1077.05 |
| Additions | 0.00 | 3.45 | 3.45 | 0.00 | 7.22 | 7.22 |
| Repayment | 80.66 | 80.82 | 82.43 | 80.66 | 81.67 | 83.20 |
| Closing Balance | 1063.15 | 1085.04 | **1077.05** | 982.28 | 1010.58 | **1001.07** |
| Interest on Debt% | 13.33% | 13.63% | 13.63% | 13.33% | 13.65% | 13.28% |
| Amount in Rs Cr | **147.09** | **153.16** | **152.18** | **136.31** | **143.03** | **137.99** |

## Return on Equity

*Petitioner's submission*

5.57 The Petitioner has submitted that the return on equity has been claimed as per the relevant clauses (7.15, 7.16, 7.17 & 7.18) of JSERC Generation Tariff Regulations, 2010.

5.58 The Petitioner submitted that it has calculated return on equity considering a post-tax return of 15.50% as per Generation Tariff Regulations, 2010.

5.59 The opening equity balance as on 01.04.2014 has been worked out considering the Debt: Equity ratio of 74.07:25.93. Thereafter, the actual equity addition during the year has been considered based on the audited accounts of the Petitioner.

5.60 The Return on equity for both units submitted by the Petitioner is shown in the following table:

**Table 36 Return on Equity (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | FY 2014-15 | FY 2015-16 |
|---|---|---|
| Unit 1 | 68.06 | 69.79 |
| Unit 2 | 68.66 | 70.46 |

*Commission's Analysis*

5.61 The provisions specified in the Generation Tariff Regulations, 2010 for approval of return on equity are as under:

*"7.15 Return on equity shall be computed in rupee terms, on the equity base determined*

*in accordance with clause 7.13, 7.14 of these Regulations. Petition for Approval of Capital Cost and Business Plan and MYT Petition for MYT Control Period for FY 2012-13 to FY 2015-16*

*7.16 Return on equity shall be computed on pre-tax basis at the base rate of 15.50%, to be grossed up as per clause 7.17 of these Regulations.*

*……………*

*Provided that in case of Projects commissioned on or after 1st April, 2011, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:*

*Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever:*

*7.17 The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate applicable to the Generating Company as per details shown as under:*

*(i)……….*

*(ii) MYT period: Base rate to be grossed by the applicable tax rate for the Year 2011-12*

*Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective year during the Control period shall be trued up separately for each year of the Control period along with the tariff petition filed for the next Control period.*

*7.18 Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*

*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where 't' is the applicable tax rate in accordance with clause 7.17 of these Regulations."*

5.62 The Commission has worked out the gross normative equity of both Unit 1 and Unit 2 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010. The Commission has considered the return on equity at 15.50%.

5.63 On scrutiny of the audited accounts of the petitioner, it has been observed that the petitioner has not paid any tax for the years FY 2014-15 and FY 2015-16. As such, Return on equity cannot be allowed to be grossed up with tax rate.

5.64 Accordingly, the return on equity approved by the Commission is shown in the tables below:

**Table 37 Return on Equity approved by the Commission for Unit 1 (in Rs Cr)**

| Particulars | Approved in APR | Submitted by the Petitioner | Approved by JSERC | Approved in ARR | Submitted by the Petitioner | Approved by JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| **Equity** | | | | | | |
| Opening Balance | 426.89 | 428.00 | 433.37 | 426.89 | 450.25 | 455.63 |
| Net Additions | 0.00 | 22.26 | 22.26 | 0.00 | 0.00 | 0.00 |
| Closing Balance | 426.89 | 450.26 | 455.63 | 426.89 | 450.25 | 455.63 |
| **Average Equity** | **426.89** | **439.13** | **444.50** | **426.89** | **450.25** | **455.63** |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (%) | 20.96% | 0.00% | 0.00% | 20.96% | 0.00% | 0.00% |
| Grossed Up rate of return on equity | 19.61% | 15.50% | 15.50% | 19.61% | 15.50% | 15.50% |
| **Return on equity** | **83.72** | **68.06** | **68.90** | **83.72** | **69.79** | **70.62** |

**Table 38 Return on Equity approved by the Commission for Unit 2 (in Rs Cr)**

| Particulars | Approved in APR | Submitted by the Petitioner | Approved by JSERC | Approved in ARR | Submitted by the Petitioner | Approved by JSERC |
|---|---|---|---|---|---|---|
| | FY 2014-15 | | | FY 2015-16 | | |
| **Equity** | | | | | | |
| **Opening Balance** | 432.08 | 431.35 | 436.77 | 432.08 | 454.56 | 459.98 |
| **Net Additions** | 0.00 | 23.20 | 23.21 | 0.00 | 0.00 | 0.00 |
| **Closing Balance** | 432.08 | 454.55 | 459.98 | 432.08 | 454.56 | 459.98 |
| **Average Equity** | **432.08** | **442.95** | **448.38** | **432.08** | **454.56** | **459.98** |
| **Rate of return on equity(pre-tax)** | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Applicable tax rate (t %)** | 20.96% | 0.00% | 0.00% | 20.96% | 0.00% | 0.00% |

| Particulars | Approved in APR | Submitted by the Petitioner | Approved by JSERC | Approved in ARR | Submitted by the Petitioner | Approved by JSERC |
|---|---|---|---|---|---|---|
| | | FY 2014-15 | | | FY 2015-16 | |
| **Grossed Up rate of return on equity** | 19.61% | 15.50% | 15.50% | 19.61% | 15.50% | 15.50% |
| **Return on equity** | **84.73** | **68.66** | **69.50** | **84.73** | **70.46** | **71.30** |

**O&M expenses & additional cost towards transportation of Fly Ash**

*Petitioner's submission*

5.65 The Petitioner submitted that since regulation 6.14(a) of JSERC Generation Regulations, 2010 provides that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR, the Petitioner in the instant petition has not claimed any Truing-up on account of O&M expenses for FY 2014-15 and FY 2015-16.

5.66 However, the Petitioner has claimed cost incurred towards transportation of fly ash of Rs. 1.70 Cr. The Petitioner has submitted that the Fly Ash Management Rules have been recently amended vide notification dated January 25th, 2016 under the existing MoEF notification dated 03rd November, 2009. The said amendment is in regard with the sharing of Cost of Transportation of Fly Ash between the beneficiary and the Coal based thermal power plant. The relevant extract of the notification is reproduced below:

*"MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE NOTIFICATION, New Delhi, the 25th January, 2016*

*2. In the said notification, in paragraph 2:-*

*"(10) The cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred kilometres from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant and the cost of transportation beyond the radius of hundred kilometres and up to three hundred kilometres shall be shared equally between the user and the coal or lignite based thermal power plant."*

5.67 The Petitioner has claimed the cost of transportation fly ash under "Change in Law" as defined in Regulation 2.1(3) of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 as per which:

*"Change in Law" means occurrence of any of the following events:*

(i) *the enactment, bringing into effect, adoption, promulgation, amendment, modification or repeal of any law; or* *(ii)* *change in interpretation of any law by a competent court, Tribunal or Indian Governmental Instrumentality which is the final authority under law for such interpretation; or*

(iii) *change by any competent statutory authority, in any consent, approval or licence available or obtained for the project.*

*Commission's Analysis*

5.68 The Commission is not truing up any O&M expenses as per regulation 6.14(a) of JSERC Generation Regulations, 2010. Hence, the O&M expenses will be considered same as approved in APR of FY 2014-15 and ARR of FY 2015-16 as per the last Tariff Order.

5.69 With respect to the additional cost towards transportation of fly ash, the Commission had directed the Petitioner to submit duly audited details of the cost incurred including amount of ash transported, details of dumping locations/ road construction projects/ others, cost of transportation and distance from plant. The Petitioner was also directed to justify reasonability of the transportation cost which may include the process adopted to select the transporter, comparison of cost with Government approved rates etc.

5.70 In reply, the Petitioner submitted distance, quantum and total cost in support of its claims. However, the Petitioner failed to justify the reasonability of the cost. The Petitioner even failed to explain the process adopted to select the transporter. The Commission had also asked whether the revenue from sale/ disposal of such fly ash has been accounted for, which the Petitioner failed to justify. Further, on close scrutiny of the submission of the Petitioner regarding the distance, quantum and total cost, the Commission observed that for transporting of ash to a particular location, the Petitioner has claimed varying transportation rate (Rs/ MT). For instance, for dumping location 'Pendrabeda' located at a distance of 5 to 10 KM, the Petitioner in one of instance has claimed a cost of Rs 95/MT while on another instance has claimed a cost of Rs 112/MT. Moreover, the Commission also observes that with increase in distances of disposal of ash, the transportation cost per unit (Rs/km) has increased whereas over longer distance, the transportation cost per unit ought to decrease as compared to transportation over shorter distances. In view of the above discrepancies, the Commission does not approve any additional cost towards transportation of fly ash.

5.71 The O&M expenses approved by Commission for Unit 1 and Unit 2 are as follows:

**Table 39 O&M expenses (Rs Cr) of Unit 1 and Unit 2 approved by the Commission**

| Particulars | FY 2014-15 | FY 2015-16 |
|---|---|---|
| Unit 1 | 64.91 | 68.63 |
| Unit 2 | 64.91 | 68.63 |

### Additional Water Charges

*Petitioner's submission*

5.72 The Petitioner stated that CERC (Terms and Conditions of Tariff) Regulations, 2014 stipulates that water charges for thermal generating stations shall be allowed separately over and above the O&M expenses. The Petitioner stated that it incurred additional water charges to the extent of Rs 3.56 Cr and Rs 3.42 Cr in FY 2014-15 and FY 2015-16 for both Unit 1 and Unit 2.

5.73 The Petitioner submitted that an agreement was signed between Adhunik and Govt of Jharkhand for supply of water vide agreement dated 29th Aug'08. The required water was to be withdrawn or pumped by the company from the river Subarnarekha.

5.74 The Petitioner further submitted that the Water Department of Gov. of Jharkhand vide its Notification No: 2/PMC/jalapurti175/2007 dated 01.04.2011 devised various categories for water offtake and the Petitioner was asked to pay @ Rs 26.40 per thousand gallon. The same was opposed by the Petitioner and a stay order was issued by Hon'ble High Court of Jharkhand. The Petitioner submitted that it is paying the water charges at the pre-revised rate of Rs 4.50 per thousand gallons and accordingly they have claimed water charges.

**Table 40 Additional Water Charges (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | FY 2014-15 | FY 2015-16 |
|---|---|---|
| Unit 1 & Unit 2 | 3.56 | 3.42 |

*Commission's Analysis*

5.75 The Commission has approved the O&M charges as per the provisions of the applicable JSERC Generation Tariff Regulations, 2010. The norms determined in these regulations are inclusive of water charges and as thus allowance of additional water charges is not in line with the provisions of the JSERC Generation Tariff Regulations, 2010.

### Interest on Working Capital

*Petitioner's submission*

5.76 The Petitioner while computing the working capital and Interest thereon as per the Generation Tariff Regulations, 2010 has considered the working capital as the sum of the following:

a) *Cost of Coal for two months for generation corresponding to the Normative Annual Plant Availability Factor;*
b) *Cost of secondary fuel oil for two months for generation corresponding to the*
c) *Normative Annual Plant Availability Factor;*
d) *Maintenance spares @ 20% of operation and maintenance expenses;*
e) *Operation and Maintenance expenses for 1 month; and*

f) *Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

5.77 The Petitioner has considered the operation and maintenance expenses including water charges for the computation of interest on working capital.

5.78 The rate of interest has been considered at 14.75% for Unit 1 and 14.45% for Unit 2. Accordingly, the interest on working capital submitted by the Petitioner is shown in the table below:

**Table 41 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit 1 | | Unit 2 | |
|---|---|---|---|---|
| | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Coal Cost for 2 months | 43.27 | 61.22 | 34.42 | 45.47 |
| Cost of secondary fuel oil for 2 months | 1.32 | 1.30 | 1.04 | 0.97 |
| Receivables for 2 months | 109.37 | 5.86 | 100.75 | 5.86 |
| O&M Expenses for 1 month | 5.56 | 126.13 | 5.56 | 111.64 |
| Maintenance Spares | 13.34 | 14.07 | 13.34 | 14.07 |
| **Total Working Capital** | **172.86** | **208.58** | **155.10** | **178.01** |
| Rate of Interest | 14.75% | 14.75% | 14.45% | 14.45% |
| **Interest on Working Capital** | **25.50** | **30.77** | **22.41** | **25.72** |

*Commission's Analysis*

5.79 The Commission has computed the interest on working capital for both Units 1 and 2 by considering values of related components. The working capital requirement for the Petitioner has been determined by considering the following components as per Regulation of the Generation Tariff Regulation, 2010:

a) *Cost of Coal for two months for generation corresponding to the Normative Annual Plant Availability Factor;*
b) *Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;*
c) *Maintenance spares @ 20% of operation and maintenance expenses;*
d) *Operation and Maintenance expenses for 1 month; and*
e) *Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

5.80 The Commission outlines the provisions laid out in the Generation Tariff Regulations, 2010 for approval of interest on working capital as under:

*"7.38 Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2011 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation, whichever is later during Transition period.*

*During Control Period rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2012 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."*

5.81 Accordingly, the Commission has calculated the Interest on Working Capital as per the rates prevailing on April 1, 2014 for FY 2014-15 and April 1, 2015 for FY 2015-16. The detailed calculation made by the Commission is shown in the tables below:

**Table 42 Interest on Working Capital (Rs Cr) approved by the Commission for FY 2014-15**

| Particulars | Unit 1 | | | Unit 2 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by APNRL | Approved by JSERC | Approved in ARR | Submitted by APNRL | Approved by JSERC |
| Coal Cost for 2 months | 40.79 | 43.27 | 43.04 | 33.85 | 34.42 | 32.98 |
| Cost of secondary fuel oil for 2 months | 1.30 | 1.32 | 1.32 | 1.04 | 1.04 | 1.04 |
| Receivables for 2 months | 108.10 | 109.37 | 109.02 | 101.51 | 100.75 | 99.12 |
| O&M Expenses for 1 month | 5.41 | 5.56 | 5.41 | 5.41 | 5.56 | 5.41 |
| Maintenance Spares | 12.98 | 13.34 | 12.98 | 12.98 | 13.34 | 12.98 |
| **Total Working Capital** | **168.58** | **172.86** | **171.77** | **154.80** | **155.10** | **151.53** |
| Rate of Interest | 14.75% | 14.75% | 14.75% | 14.75% | 14.45% | 14.45% |
| **Interest on Working Capital** | **24.87** | **25.50** | **25.34** | **22.83** | **22.41** | **21.90** |

**Table 43 Interest on Working Capital (Rs Cr) approved by the Commission for FY 2015-16**

| Particulars | Unit 1 | | | Unit 2 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by APNRL | Approved by JSERC | Approved in ARR | Submitted by APNRL | Approved by JSERC |
| Coal Cost for 2 months | 67.60 | 61.22 | 60.17 | 67.60 | 45.47 | 45.13 |
| Cost of secondary fuel oil for 2 months | 2.13 | 1.30 | 1.30 | 2.13 | 0.97 | 0.97 |
| Receivables for 2 months | 135.96 | 126.13 | 125.49 | 136.89 | 111.64 | 110.53 |
| O&M Expenses for 1 month | 5.72 | 5.86 | 5.72 | 5.72 | 5.86 | 5.72 |
| Maintenance Spares | 13.73 | 14.07 | 13.73 | 13.73 | 14.07 | 13.73 |
| **Total Working Capital** | **225.14** | **208.58** | **206.40** | **226.07** | **178.01** | **176.08** |

| Particulars | Unit 1 | | | Unit 2 | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by APNRL | Approved by JSERC | Approved in ARR | Submitted by APNRL | Approved by JSERC |
| Rate of Interest | 14.05% | 14.75% | 14.75% | 14.05% | 14.45% | 14.45% |
| **Interest on Working Capital** | **31.63** | **30.77** | **30.44** | **31.76** | **25.72** | **25.44** |

**Cost of Secondary Fuel Oil**

*Petitioner's submission*

5.82 The Petitioner submitted that the secondary fuel would be procured through local suppliers. The cost of LDO is considered at Rs 64,285.62 /kL and at Rs 63,503.58 /kL for Unit 1 and Unit 2 respectively for FY 2014-15 and Rs. 46,243.36 /kL and at Rs. 46,472.79 /kL for Unit 1 and Unit 2 respectively for FY 2015-16.

5.83 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for both Unit 1 and Unit 2 for FY 2014-15 and FY 2015-16:

**Table 44 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit | FY 2014-15 | | FY 2015-16 | |
|---|---|---|---|---|---|
| | | Unit 1 | Unit 2 | Unit 1 | Unit 2 |
| Unit Capacity | MW | 270 | 270 | 270 | 270 |
| Normative Plant Availability | % | 85.00% | 85.00% | 85.00% | 85.00% |
| No. of Months of the Year | Months | 12 | 12 | 12 | 12 |
| Gross Generation | MU | 1231.24 | 981.39 | 1680.29 | 1245.59 |
| Normative Secondary Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 |
| Secondary Fuel Oil Consumption at Normative Plant Availability | kL | 1231.24 | 981.39 | 1680.29 | 1245.59 |
| Secondary Fuel Oil Landed Cost | Rs./kL | 64285.62 | 63503.58 | 46243.36 | 46742.79 |
| **Secondary Fuel Oil Cost at Normative Plant availability** | Rs. Cr. | **7.92** | **6.23** | **7.77** | **5.82** |

*Commission's Analysis*

5.84 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of cost of secondary fuel oil are as under:

*"7.49 Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause 8.4, 8.6 of these Regulations, in accordance with the following formula:*

*= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10*

*Where,*

*SFC – Normative Specific Fuel Oil consumption in ml/kWh*

*LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs./ml considered initially*

*NAPAF – Normative Annual Plant Availability Factor in percentage*

*NDY – Number of days in a year*

*IC - Installed Capacity in MW"*

*7.50 Initially, the landed cost incurred by the Generating Company on secondary fuel oil shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of landed costs for the three preceding months, latest procurement price for the generating station, before the start of the year."*

5.85 The Petitioner has submitted the CA certificate towards month wise cost incurred towards secondary fuel oil. The Commission has considered the same for the purpose of approval of cost of secondary fuel oil for Unit 1 and Unit 2 for FY 2014-15 & FY 2015-16.

**Table 45 Cost of secondary fuel oil approved by the Commission for Unit 1**

| Particulars | FY 2014-15 (Rs Cr) | | | FY 2015-16 (Rs Cr) | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by APNRL | Approved by JSERC | Approved in ARR | Submitted by APNRL | Approved by JSERC |
| Gross Generation at NAPAF (MU) | 1227.07 | 1231.24 | 1231.24 | 2010.42 | 1680.29 | 1680.29 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPAF (kL) | 1227.07 | 1231.24 | 1231.24 | 2010.42 | 1680.29 | 1680.29 |
| **LDO Landed Cost (Rs/kL)** | 63503.00 | 64285.62 | 64383.08 | 63503.00 | 46243.36 | 46248.29 |
| **LDO Cost (Rs Cr)** | **7.79** | **7.92** | **7.93** | **12.77** | **7.77** | **7.77** |

**Table 46 Cost of secondary fuel oil approved by the Commission for Unit 2**

| Particulars | FY 2014-15(Rs Cr) | | | FY 2015-16(Rs Cr) | | |
|---|---|---|---|---|---|---|
| | Approved in APR | Submitted by APNRL | Approved by JSERC | Approved in ARR | Submitted by APNRL | Approved by JSERC |
| Gross Generation at NAPAF (MU) | 985.34 | 981.39 | 981.39 | 2010.42 | 1245.59 | 1245.59 |
| Specific Consumption of LDO at NAPF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPAF (kL) | 985.34 | 981.39 | 981.39 | 2010.42 | 1245.59 | 1245.59 |
| **LDO Landed Cost (Rs/kL)** | 63503.00 | 63503.58 | 63436.77 | 63503.00 | 46742.79 | 46744.85 |
| **LDO Cost (Rs Cr)** | **6.26** | **6.23** | **6.23** | **12.77** | **5.82** | **5.82** |

### Annual Fixed Charges

5.86 Regulation 8.2 of the Generation Tariff Regulations, 2010 states that the annual fixed charges of a thermal generating station shall consist of the following

(a) Return on Equity;
(b) Interest and Financing Charges on Loan Capital;
(c) Depreciation;
(d) Operation and Maintenance Expenses;
(e) Interest Charges on Working Capital; and
(f) Cost of Secondary Fuel Oil

5.87 The tables below show the annual fixed charges submitted by the Petitioner and approved by the Commission for each unit for the entire capacity of 270 MW.

**Table 47 Annual Fixed Charges of Unit 1 for 270 MW (Rs Cr)**

| Particulars | Approved in APR | APNRL Submission FY 2014-15 | Approved by JSERC | Approved in ARR | APNRL Submission FY 2015-16 | Approved by JSERC |
|---|---|---|---|---|---|---|
| Depreciation | 79.59 | 80.05 | 81.43 | 79.59 | 80.87 | 82.43 |
| Interest on Loan | 142.98 | 148.39 | 147.36 | 132.29 | 129.94 | 131.99 |
| Return on Equity (pre -tax) | 83.72 | 68.06 | 68.90 | 83.72 | 69.79 | 70.62 |
| O&M Expenses (including water charges) | 64.91 | 66.69 | 64.91 | 68.63 | 70.34 | 68.63 |
| Interest on Working Capital | 24.87 | 25.50 | 25.34 | 31.59 | 30.76 | 30.44 |
| Cost of Secondary Fuel | 7.79 | 7.92 | 7.93 | 12.77 | 7.77 | 7.77 |
| **Annual Fixed Charges** | **403.85** | **396.60** | **395.85** | **408.59** | **389.47** | **391.89** |

**Table 48 Annual Fixed Charges of Unit 2 for 270 MW (Rs Cr)**

| Particulars | Approved in APR | APNRL Submission FY 2014-15 | Approved by JSERC | Approved in ARR | APNRL Submission FY 2015-16 | Approved by JSERC |
|---|---|---|---|---|---|---|
| Depreciation | 80.66 | 80.82 | 82.16 | 80.66 | 81.67 | 83.20 |
| Interest on Loan | 147.09 | 153.16 | 152.18 | 136.34 | 143.03 | 137.99 |
| Return on Equity (pre -tax) | 84.73 | 68.66 | 68.77 | 84.73 | 70.46 | 71.30 |
| O&M Expenses (including water charges) | 64.91 | 66.69 | 64.91 | 68.63 | 70.34 | 68.63 |
| Interest on Working Capital | 22.84 | 22.41 | 21.90 | 31.74 | 25.72 | 25.44 |
| Cost of Secondary Fuel | 6.26 | 6.23 | 6.23 | 12.77 | 5.82 | 5.82 |
| **Annual Fixed Charges** | **406.49** | **397.97** | **396.88** | **414.87** | **397.04** | **392.39** |

### Tariff for Unit 1 and Unit 2 and Impact of True Up

*Petitioner's Submission*

5.88 The Petitioner has submitted that the following charges as shown in the table may be approved towards the tariff for regulated capacity for JUVNL/JBVNL for Unit 1 & Unit 2 towards true up of FY 2014-15 and FY 2015-16:

**Table 49 Petitioner's Submission for tariff for 12% of total net capacity**

| Description | Unit | FY 2014-15 | FY 2015-16 |
|---|---|---|---|
| Variable cost/ Base Energy Charge Rate (in Rs/ kWh) | | Unit 1 | |
| | Rs/kWh | 2.317 | 2.151 |
| | Unit | Unit 2 | |
| | Rs/kWh | 2.402 | 2.407 |

**Table 50 Supply of Regulated Capacity to Discom by Petitioner for FY 2014-15 and FY 2015-16**

| Description | Derivation | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|---|
| | | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Gross Capacity | A | MW | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9% | 9% | 9% | 9% |
| Net Capacity | C= A x (1-B) | MW | 245.7 | 245.7 | 245.7 | 245.7 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| **Total Annual Fixed Charge** | F | Rs Crore | **396.60** | **389.47** | **397.97** | **397.04** |
| Annual Fixed Charges/MW | G=F/E | Rs Crore/MW | 1.83 | 1.80 | 1.84 | 1.84 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | I= G x H | Rs Crore | **58.59** | **57.54** | **58.79** | **58.65** |

*Commission's Analysis*

*Tariff for 12% of total net capacity*

5.89 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) approved by the Commission in this Order as given below:

**Table 51 Approved tariff for 12% of total net capacity**

| Description | Unit | Unit 1 | |
|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.305 | 2.361 |
| | Unit | Unit 2 | |
| | | FY 2014-15 | FY 2015-16 |
| | Rs/kWh | 2.216 | 2.389 |

*Tariff for 13% of total net capacity*

5.90 The tariff for 13% of the total net capacity shall be the total tariff i.e. variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) and fixed charges as approved by the Commission in this Order as given below:

**Table 52 Approved tariff for 13% of total net capacity- variable cost**

| Description | Unit | Unit 1 | |
|---|---|---|---|
| | | FY 2014-15 | FY 2015-16 |
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 2.305 | 2.361 |
| | Unit | Unit 2 | |
| | | FY 2014-15 | FY 2015-16 |
| | Rs/kWh | 2.216 | 2.389 |

**Table 53 Approved tariff for 13% of total net capacity- fixed cost**

| Description | Derivation | Unit | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|---|
| | | | FY 2014-15 | FY 2015-16 | FY 2014-15 | FY 2015-16 |
| Gross Capacity | A | MW | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | C= A x (1-B) | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| **Total Annual Fixed Charge** | F | Rs Crore | **395.85** | **391.89** | **396.88** | **392.39** |
| Annual Fixed Charges/MW | G=F/E | Rs Crore/ MW | 1.83 | 1.81 | 1.84 | 1.81 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | I= G x H | Rs Crore | **58.48** | **57.89** | **58.63** | **57.97** |

## Impact of True Up

5.91 Commission has verified the bills, the Petitioner has issued to JUVNL/ JBVNL for FY 2014-15 and FY 2015-16 for supply of power from Unit 1 and Unit 2 of the petitioner. The revenue billed by the petitioner to JUVNL/JBVNL has been taken as total revenue earned by the petitioner.

5.92 The Commission has approved the impact of true up as shown in the following table considering the approved annual fixed charges, the per unit variable charges approved for the year and other factors.

5.93 **In accordance with Regulation 6.18 of JSERC 'Generation Tariff Regulations, 2010' the Petitioner shall recover/refund the gap/surplus in 6 equal monthly instalments from the beneficiary.**

**Table 54: Impact of True Up as Approved by Commission**

| Particulars | | Unit 1 | | Unit 2 | |
|---|---|---|---|---|---|
| | | FY 15 | FY 16 | FY 15 | FY 16 |
| Net Energy Supplied to JUVNL/JBVNL | MU | 440.26 | 533.82 | 403.93 | 533.82 |
| Rate of Energy Charge | Rs/kWh | 2.31 | 2.36 | 2.22 | 2.39 |
| AFC Entitlement on True Up | Rs Cr | 58.48 | 57.89 | 58.63 | 57.97 |
| Incentive/ Penalty | Rs Cr | -2.42 | 4.69 | -2.42 | 4.70 |
| Energy Charge Entitlement upon True up | Rs Cr | 101.48 | 126.04 | 89.49 | 127.54 |
| **Total Entitlement** | Rs Cr | **157.54** | **188.62** | **145.70** | **190.20** |
| **Revenue Billed** | | | | | |
| AFC | Rs Cr | 60.22 | 64.48 | 56.07 | 62.10 |
| EC (Inc. FPA/ Incentive) | Rs Cr | 100.19 | 125.14 | 91.63 | 125.14 |
| **Total Revenue Billed to JUVNL/ JBVNL** | Rs Cr | **160.41** | **189.63** | **147.70** | **187.25** |
| Gap/(Surplus) | | (2.87) | (1.01) | (2.00) | 2.95 |
| Rate of Interest | % | 14.75% | 14.75% | 14.75% | 14.75% |
| From COD to 31st March of the respective FY | Days | 365 | 366 | 365 | 366 |
| Allowable Interest for the year | Rs Cr | (0.21) | (0.07) | (0.15) | 0.22 |
| Interest for the remaining period till January 31, 2018 | Rs Cr | (1.16) | (0.26) | (0.81) | 0.76 |
| Total Interest (Simple Interest) | Rs Cr | (1.37) | (0.33) | (0.96) | 0.97 |
| **Total Amount to be additionally recovered / (paid back to JUVNL)** | Rs Cr | **(4.24)** | **(1.34)** | **(2.96)** | **3.92** |

# A6: BUSINESS PLAN FOR THE MYT CONTROL PERIOD FY 2016-17 TO FY 2020-21

*Petitioner's submission*

6.1 The Petitioner has classified the Business Plan broadly into the following categories:

a) Capital Investment plan

b) Capital Structure

c) Operation and Maintenance (O&M) expenses

d) Depreciation

e) Performance Targets

## Capital Investment Plan

*Petitioner's submission*

6.2 The Petitioner has submitted that to improve plant's availability and enhance reliability in order to improve cost effectiveness of generation of electricity, it is essential to implement additional facilities. Thus, Petitioner has planned certain additional capitalization schemes as detailed below, which will get completed within the Control period.

6.3 The brief details of additional capitalisation submitted by the Petitioner are as follows:

a) **Additional Water Reservoir:** In case of non-availability of water due to any breakdown in 8 KM stretch of water transporting system to meet full demand, another additional 30 days storage along with raw water pumping system to be developed to ensure utmost reliability for the power plant.

b) **Gated Weir on Subarnarekha River:** Construction of gated weir which will ensure the availability of water for the power station even at any adverse condition/scarcity of water. It is known that the level of water in the area is going down day by day, thereby it is a threat for the reliable operation of the plant.

c) **Critical Spares:** For continuous and trouble free operation, plant need to have adequate critical spares available for any break down/emergencies.

d) **Brick Manufacturing Plant:** As per the environmental clearance received from the ministry of environment & forest, the Petitioner has to utilise 100% fly ash generated from the plant from 4$^{th}$ year of its operation. Hence, to comply with this requirement, the Petitioner has to set up a brick manufacturing plant.

e) **Bottom Ash Handling System including Dewatering bin to feed HCSD System:** As per the environmental clearance received from the ministry of environment & forest, the Petitioner has to establish HCSD system to dispose the fly ash and bottom ash into the ash pond.

f) **A private railway siding at the site** for which they have obtained necessary clearances for construction of railway siding and at Birajpur (plant end). Further, AAPL, one of the Adhunik group companies having plant very near to the APNRL site, is having their private railway siding which can be used for coal unloading.

**Table 55 Break-up of additional capitalisation & completion schedule by Petitioner**

| Particulars | Hard Cost | Soft Cost | Total Cost | Year of Completion |
|---|---|---|---|---|
| Reservoir Construction including Land & Site Development | 49.50 | 7.13 | 56.63 | FY 20-21 |
| Grated Weir Construction | 39.32 | 5.66 | 44.98 | FY 20-21 |
| Critical Spares | 30.59 | 4.41 | 35.00 | FY 20-21 |
| Brick Making Plant | 4.00 | 0.58 | 4.58 | FY 20-21 |
| Bottom ash handling system including dewatering bin to feed HCSD system | 26.54 | 3.82 | 30.36 | FY 20-21 |
| Railway Sliding | 61.23 | 8.82 | 70.05 | FY 20-21 |
| **Total Cost** | **211.18** | **30.42** | **241.60** | FY 20-21 |

*Commission's Analysis*

6.4 The Commission has outlined the provisions for approval of any additional capitalization, for a generating station in Clause 7.5 and 7.6 of the Generation Tariff Regulation, 2015. The clause is outlined below

*Additional Capitalization*

*'7.5 The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

*(vi) Undischarged liabilities;*

*(vii) Works deferred for execution;*

*(viii) Procurement of initial capital spares within the original scope of work, subject to the provisions under clause 7.3,7.4 of these Regulations;*

*(ix) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*

*(x) Change in law.*

*Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.*

*'7.6 The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:*

*(v) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*

*(vi) Change in law;*

*(vii) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(viii) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost;*

*(ix) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*

*(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station"*

6.5 As per the definition of the cut-off date defined under the Generation Tariff Regulations, 2015,

*"Cut off Date" means 31st March of the year closing after two years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of a year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation;*

6.6 The Commission has reviewed the current submissions of Petitioner regarding the proposed schemes for additional capitalisation. The Commission has also reviewed the Detailed Project Report (DPR) and cost benefit analysis submitted by the Petitioner.

6.7 With regard to the brick making plant proposed by the Petitioner, the Commission notes that the Central Electricity Regulatory Commission vide its Order dated 13.7.2012 in Petition No. 323/2009 has stated:

*"22......We have examined the submissions of the parties and the provisions of the Notification dated 3.11.2009 of the Ministry of Environment & Forests, Government of India, applicable in the instant case. While the MOE&F notification dated 3.11.2009 encourages the need for increased use of fly ash for manufacture of bricks, the proviso to clause 8(i) and (ii) provides that the thermal power stations shall facilitate the availability of required quantity and quality of fly ash for this purpose. On scrutiny, it is noticed that the notification dated 3.11.2009, does not mandate the coal or lignite based thermal power stations to manufacture bricks. It is also observed that the said notification provides that all coal/lignite based thermal stations would be free to sell the fly ash to user agencies subject to certain conditions as mentioned therein. Moreover, the amount collected from sale of fly ash or fly ash based products by coal and/or lignite based thermal power stations or their subsidiary or sister concern unit, as applicable should be kept in a separate account head and shall be utilized only for development of infrastructure or facilities, promotion and facilitation activities for use of fly ash until 100% fly ash utilization level is achieved. Since the said notification provides that the money collected from the sale of fly ash or fly ash based products should be utilized for development of infrastructure for use of fly ash, the petitioner is not prevented from utilizing the money for procurement/ installation of brick making machines. Moreover, the income generated from sale of fly ash or fly ash based products like bricks are not passed on to the beneficiaries. Hence, we are of the view that it would not be prudent to load the said expenditure on brick making machine as additional capital expenditure, when such expenditure is neither covered under change in law nor the income from fly ash utilization is shared with the beneficiaries. Based on the above, the expenditure of `30.00 lakh towards brick making machine has not been allowed."*

Accordingly, in view of the above, the Commission disallows the expenditure towards brick making plant.

6.8 In respect of other components of additional capitalisation, the Commission observes that the Petitioner has failed to bring out clearly, in his submissions, the need for the additional capitalisation and expected increase in useful life of the plant. For each scheme proposed by the Petitioner, detailed phasing of capital expenditure has not been clearly elucidated.

6.9 The Cost Benefit Analysis submitted by the Petitioner states benefits only in qualitative terms and is not accompanied by any analysis of the quantitative benefit to the Petitioner and its beneficiaries on account of the proposed schemes.

6.10 Further, the Petitioner, in the last Tariff Order, was directed to employ established methods of conducting cost benefit analysis (such as NPV, IRR and Payback Period) and quantitatively evaluate the need for a proposed investment as compared to other alternatives. The Petitioner has failed to do so.

6.11 In view of the above, the Commission does not find it prudent to approve any additional capitalisation at the moment. The Petitioner is directed to submit, along with the next tariff Petition or prior to taking up any capital expenditure, the detailed rationale for incurring such expenditure and taking into consideration the above mentioned observations of the Commission.

## Operation & Maintenance Expenses

*Petitioner's submission*

6.12 The Petitioner has proposed the O&M expenses for the control period in line with the methodology provided in clause 7.41 of the JSERC Regulations, 2015.

6.13 Further the Petitioner has considered the O&M norms approved for FY 2015-16 as the base year O&M Expenses and has thereafter escalated the same by 6.30% year on year to determine the Operation & Maintenance Expenses for the control period FY 2017-18 to FY 2020-21.

6.14 The details of O&M expenses claimed by the Petitioner for the MYT control period 2016-17 to 2020-21 has been detailed in the table below:

**Table 56 O&M Expenses (Rs Cr) submitted by the Petitioner**

| O&M Expenses | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 20-21 |
|---|---|---|---|---|---|
| Norms for O&M Expenses as per JSERC Regulations (Rs Lakh/MW) | 27.02 | 28.72 | 30.53 | 32.46 | 34.50 |
| **Total O&M Expenses** | **145.92** | **155.11** | **164.88** | **175.27** | **186.31** |

*Commission's Analysis*

6.15 The provisions laid out in the Generation Tariff Regulations, 2015 for approval of O&M expenses are as under:

*"7.41 <u>Existing Thermal Generating Stations:</u>*

*(a) The Applicant shall submit details of O&M expenses as required by the Commission. The O&M expenses excluding terminal liabilities for the Base Year shall be determined based on accounting statements for the base year, estimates of the Generating Company for relevant years and other factors considered relevant.*

*(b) The O&M expenses excluding terminal liabilities permissible towards determination of tariff for each year of the Control Period shall be determined after a prudency check by the Commission based on submissions of the Generating Company, previous years' actual expenses and any other factor considered relevant.*

*(c) Terminal Liabilities will be approved as per actual submitted by the Generating Company or be established through actuarial studies.*

*(d) Increase in O&M charges on account of war, insurgency or changes in laws, or like eventualities where the Commission is of the opinion that an increase in O&M charges is justified, may be considered by the Commission for a specified period."*

6.16 Based upon the above regulation and considering the actual expenses incurred in last four years towards the Operation and Maintenance of plant, the Commission approves the O&M expenses through applying an escalation factor of 4.93% over the approved norm of FY 2015-16. The escalation factor has been arrived at by considering a composite index of WPI and CPI in the ratio of 80:20 over the last five year period.

6.17 As stated in Para 5.69, the Commission had directed the Petitioner to submit duly audited details of the cost incurred including amount of ash transported, details of dumping locations/ road construction projects/ others, cost of transportation and distance from plant. The Petitioner was also directed to justify reasonability of the transportation cost which may include the process adopted to select the transporter, comparison of cost with Government approved rates etc.

6.18 In reply, the Petitioner submitted distance, quantum and total cost in support of its claims. However, the Petitioner failed to justify the reasonability of the cost. The Petitioner even failed to explain the process adopted to select the transporter. The Commission had also asked whether the revenue from sale/ disposal of such fly ash has been accounted for, which the Petitioner failed to justify. Further, on close scrutiny of the submission of the Petitioner regarding the distance, quantum and total cost, the Commission observed that for transporting of ash to a particular location, the Petitioner has claimed varying transportation rate (Rs/ MT). For instance, for dumping location 'Pendrabeda' located at a distance of 5 to 10 KM, the Petitioner in one of instance has claimed a cost of Rs 95/MT while on another instance has claimed a cost of Rs 112/MT. Moreover, the Commission also observes that with increase in distances of disposal of ash, the transportation cost per unit (Rs/km) has increased whereas over longer distance, the transportation cost per unit ought to decrease as compared to transportation over shorter distances. In view of the above discrepancies, the Commission does not approve any additional cost towards transportation of fly ash at the moment.

6.19 The Petitioner is directed to submit, along with the next tariff petition, the reasonability of cost which may include the process adopted to select the transporter, comparison of cost with Government approved rates etc. Revenue generated from fly ash sales must be maintained in a separate account as per the MoEF notification, the details and accounting of which the Petitioner should submit along with its claim for such costs. Further, Actual expenditure incurred as claimed should be duly certified by auditors and the same should be kept in possession so that it can be produced to the beneficiaries on demand.

6.20 The following is being approved by the Commission for Unit 1 and Unit 2 as shown in the table below.

**Table 57 O&M expenses approved by the Commission**

| O&M Expenses | FY 2016-17 | | FY 2017-18 | | FY 2018-19 | | FY 2019-20 | | FY 20-21 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 |
| O&M Expenses as per JSERC (Rs Lakh/ MW) | 26.67 | 26.67 | 27.99 | 27.99 | 29.36 | 29.36 | 30.81 | 30.81 | 32.33 | 32.33 |
| Fly Ash Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| O&M Expenses | FY 2016-17 | | FY 2017-18 | | FY 2018-19 | | FY 2019-20 | | FY 20-21 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 |
| Total O&M Expenses | 72.01 | 72.01 | 75.56 | 75.56 | 79.28 | 79.28 | 83.19 | 83.19 | 87.28 | 87.28 |

## Depreciation

*Petitioner's submission*

6.21 The following table shows the allowable depreciation claimed, calculated considering the capital cost as on 1st April 2016, additional capitalization during FY 2016-17 to FY 2020-21 and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2015:

**Table 58 Depreciation (Rs Cr) submitted by the Petitioner for both units**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 20-21 |
|---|---|---|---|---|---|
| Depreciation | 162.93 | 162.93 | 162.93 | 162.93 | 169.31 |

*Commission's Analysis*

6.22 The provisions laid out in the Generation Tariff Regulations, 2015 for approval of Depreciation are given below:

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station."*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis.*

6.23 Accordingly, the Commission calculated the depreciation for Unit 1 and Unit 2 by considering the approved capital cost, additional capitalisation and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2015.

6.24 The following table shows the depreciation for Unit 1 and Unit 2 as calculated by the Commission as against that submitted by the Petitioner:

**Table 59 Depreciation approved by the Commission for Unit 1**

| Asset Type | FY 2016-17 | | FY 2017-18 | | FY 2018-19 | | FY 2019-20 | | FY 20-21 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 | Unit 1 | Unit 2 |
| Land owned under full title | - | - | - | - | - | - | - | - | - | - |
| Land held under lease | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.39 | 0.39 |
| Plant and machinery | 74.38 | 75.20 | 74.38 | 75.20 | 74.38 | 75.20 | 74.38 | 75.20 | 77.05 | 77.87 |
| Building & civil works | 7.25 | 7.21 | 7.25 | 7.21 | 7.25 | 7.21 | 7.25 | 7.21 | 7.51 | 7.46 |
| Any Other Assets | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.38 | 0.38 |
| **Total Depreciation** | **82.37** | **83.15** | **82.37** | **83.15** | **82.37** | **83.15** | **82.37** | **83.15** | **85.32** | **86.11** |

## Performance Targets

6.25 The performance targets are discussed in detail in the next section of this order.

# A7: DETERMINATION OF ARR FOR THE MYT PERIOD FY 2016-17 TO 2020-21

## Operational Parameters

### Availability

*Petitioner's submission*

7.1 The Petitioner in the petition has submitted that the availability for both Unit 1 and Unit 2 will be maintained at 85%.

*Commission's Analysis*

7.2 Clause 8.6 of the Generation Tariff Regulations, 2015 prescribes the norm for approving the availability of a new generating station.

*"8.6 The norms of operation for generating stations other than existing stations shall be as under:*

*(a) Normative Annual Plant Availability Factor (NAPAF): All thermal generating stations, NAPAF shall be 85%."*

7.3 Accordingly, the Commission approves availability for Unit 1 and Unit 2 at Normative Annual Plant Availability Factor i.e. at 85%.

### Generation

*Petitioner's submission*

7.4 The Petitioner submitted that it has signed PPA with JSEB for the 122.85 MW capacity (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption). For generation planning, the Petitioner has considered the plant load factor equal to the normative availability of 85%.

7.5 The projected generation submitted by the Petitioner in its MYT petition is shown in the following table

**Table 60 Gross generation submitted by the Petitioner for Unit 1**

| Particulars | Unit | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Unit 1 & Unit 2 | MW | 540 | 540 | 540 | 540 | 540 |
| No. of Months of Operation | No. | 12 | 12 | 12 | 12 | 12 |
| Gross Generation | MU | 4020.84 | 4020.84 | 4020.84 | 4020.84 | 4020.84 |

*Commission's Analysis*

7.6 The Commission has considered a normative plant load factor of 85% for projecting the generation for the second control period.

7.7 The table below shows the projected generation approved by the Commission for both the units:

**Table 61 Gross Generation of both units approved by the Commission**

| Generation (MU) | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Unit 1 | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| Unit 2 | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |

## Auxiliary Consumption, Station heat rate and Secondary Fuel Oil Consumption

*Petitioner's submission*

7.8 The Petitioner in the petition has submitted that the auxiliary consumption both for Unit 1 and Unit 2 at 8.5% and additional 0.5% for induced draft cooling tower.

7.9 The Petitioner in the petition has submitted that the Station Heat rate both for Unit 1 and Unit 2 at 2387 kCal/kWh.

7.10 The Petitioner in the petition has submitted Secondary Fuel Oil Consumption for both for Unit 1 and Unit 2 at 1 ml/kWh.

*Commission's Analysis*

7.11 Clause 8.6 of the Generation Tariff Regulations, 2015 prescribes the norm for approving the operational parameters including auxiliary consumption, station heat rate and secondary fuel oil consumption of a generating station.

*"Auxiliary Energy Consumption*

*8.6 (c) Gross Station Heat Rate:*

*(i) Coal-based and lignite-fired Thermal Generating Stations = 1.065 X Design Heat Rate (kCal/kWh)*

*Where, the Design Heat Rate of a unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.*

*Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:*

| | | | | |
|---|---|---|---|---|
| *Pressure Rating (kg/cm$^2$)* | *150* | *170* | *170* | *247* |
| *SHT/RHT (0C)* | *535/ 535* | *537/ 537* | *537/ 565* | *537/ 565* |
| *Type of BFP* | *Electrical Driven* | *Turbine driven* | *Turbine Driven* | *Turbine Driven* |
| *Max Turbine Cycle Heat rate (kCal/kWh)* | *1955* | *1950* | *1935* | *1850* |
| *Min. Boiler Efficiency* | | | | |
| *Sub-Bituminous Indian Coal* | *0.86* | *0.86* | *0.86* | *0.86* |
| *Bituminous Imported Coal* | *0.89* | *0.89* | *0.89* | *0.89* |
| *Max Design Unit Heat rate (kCal/kWh)* | | | | |
| *Sub-Bituminous Indian Coal* | *2273* | *2267* | *2250* | *2151* |
| *Bituminous Imported Coal* | *2197* | *2191* | *2174* | *2078* |

*Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken;*

*Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;*

*Provided also that if one or more units were declared under commercial operation prior to 1.4.2011, the heat rate norms for those units as well as units declared under commercial operation on or after 1.4.2012 shall be lower of the heat rate norms arrived at by above methodology and the norms as per clause 8.4 of these Regulations;*

*Note: In respect of units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven BFP.*

*...*

*8.6(d) (i)* ***Coal Based generating Stations***

| | | |
|---|---|---|
| *200 MW Series* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

| | | |
|---|---|---|
| *500 MW Series- Steam Driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *6%* |
| *500 MW Series- Electrically driven Boiler Feed Pumps* | *With Natural Draft cooling Tower or without cooling towers* | *8.50%* |

*Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:*

*(e) Secondary Fuel Oil Consumption for Coal based generating stations: 1.0 ml/kWh."*

7.12 The Commission in the previous orders asked the Petitioner to corroborate the procurement of the induced draft of the cooling towers and the Petitioner submitted the purchase order of such procurement. After verifying the purchase order submitted by the Petitioner, the Commission had approved the auxiliary consumption at normative level of 8.5% and an additional 0.5% for the induced cooling tower. Accordingly, the Commission approves the auxiliary consumption at 9.00%.

7.13 The Commission has considered the station heat rate as per its methodology in its last tariff order for the Petitioner. The relevant extracts of the order is reproduced below:

"*As per regulation cited above, the Commission has determined the design heat rate considering the plant specifications mentioned in the performance guarantee provided by the manufacturer (M/s Bharat Heavy Electricals Ltd.) in "Annexure-B Performance Guarantee Schedule" of the services contract between the Petitioner and M/s Bharat Heavy Electricals Ltd. The manufacturer has guaranteed the Turbine Cycle Heat Rate (at 100% TMCR with zero percent make up) at 1943 kCal/kWh and boiler efficiency at 86.7% for both Unit 1 and Unit 2. The unit design heat rate has been arrived at 2241 kCal/kWh by using guaranteed turbine cycle heat rate and boiler efficiency. By multiplying the unit design heat rate with the factor specified in the said regulations i.e. 1.065, the Commission arrived at the heat rate of 2387 kCal/kWh and accordingly approves the same."*

7.14 The Commission approves the Secondary Fuel Oil Consumption at 1 ml/kWh as specified in the Regulation cited above.

## Coal Mix, Coal Cost, Transit loss and GCV

*Petitioner's submission*

7.15 The Petitioner has submitted that due to de-allocation of coal block by the Supreme Court, the petitioner has to be depended upon the coal available in the Spot Market (e-auction) and imports, to meet its coal requirement for the period FY 2016-17 to 2020-21.

7.16 Further, the Fuel Supply Agreements with Central Coalfields Limited for Unit-1 and Unit-2 would also not in force from July 16 onwards. Accordingly, the Petitioner has proposed the following ratio of coal procurement through various sources:

**Table 62 Coal Procurement Ratio of both units submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| MOU Coal | 12% | 0% | 0% | 0% | 0% |
| Domestic Coal | 73% | 80% | 80% | 80% | 80% |
| Imported | 15% | 20% | 20% | 20% | 20% |
| Total | **100%** | **100%** | **100%** | **100%** | **100%** |

7.17 The details of projected GCV of coal from various sources as considered by the Petitioner are depicted in the table below:

**Table 63 GCV of coal (kCal/kg) of both units submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| MOU Coal | 3,593 | - | - | - | - |
| Domestic Coal | 3,262 | 3,262 | 3,262 | 3,262 | 3,262 |
| Imported | 3,969 | 3,969 | 3,969 | 3,969 | 3,969 |
| Weighted Average GCV of Coal | **3,408** | **3,403** | **3,403** | **3,403** | **3,403** |

7.18 The details of projected landed cost of coal from various sources as considered by the Petitioner are depicted in the table below:

**Table 64 Landed Cost of coal (Rs./MT) for both the units as submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| MOU Coal | 3,007 | - | - | - | - |
| Domestic Coal | 3,033 | 3,184 | 3,343 | 3,511 | 3,686 |
| Imported | 3,883 | 4,078 | 4,281 | 4,496 | 4,720 |
| Weighted Average Coal Price | **3,157** | **3,363** | **3,531** | **3,708** | **3,893** |

7.19 The Petitioner has considered an escalation of 5% in the prices of coal during the control period. The Petitioner claimed that any variation on account of change in the Gross Calorific Value (GCV) & Price of Coal shall be adjusted on monthly basis.

*Commission's Analysis*

7.20 The Commission notes that due to de-allocation of coal block by the Supreme Court, the Petitioner has to depend upon the coal available in the Spot Market (e-auction) and imports, to meet its coal requirement for the period FY 2016-17 to 2020-21. Further, the Petitioner has not projected any availability from the linkage source from FY 2016-17 onwards due to expiry of the agreement with CCL.

7.21 However, the Petitioner, in one of the replies to the discrepancy notes also submitted that it has secured long term source of primary fuel in May 2017 under the 'SHAKTI' scheme introduced by Ministry of Coal. Taking cognisance of the above, the Commission has approved the coal mix for the MYT Period same as that proposed by the Petitioner for FY 2016-17. The Commission shall approve the actual mix at the time of True-up of respective years, subject to prudence check and on submission of adequate data by the Petitioner.

7.22 With regards to landed cost of coal, as per Generation Tariff Regulations, 2015, the landed price of coal includes the following:

*"8.21 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.*

*The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:*

*Pithead generating stations: 0.2%*

*Non-pithead generating stations: 0.8%*

*Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail, transit loss of 0.8% shall be applicable:*

*Provided further that in case of imported coal, the transit and handling losses shall be 0.2%."*

7.23 Further, as per Clause 7.37 of Generation Tariff Regulations, 2015,

*"the cost of fuel in cases covered ... shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period."*

7.24 The GCV of coal is approved as per weighted average actual for the three months preceding the first month for which tariff is to be determined as mentioned in clause 7.37 of Generation Tariff Regulations, 2015.

7.25 The Commission approves normative transit loss of 0.8% for coal procured from domestic sources (other than coal obtained from captive coal block) and 0.2% for imported coal in accordance with the Generation Tariff Regulations, 2015.

**Table 65 Coal Cost (Rs/MT) inclusive of transit loss for Unit 1 and Unit 2 approved by the Commission**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Domestic Coal-Linkage | 2534 | 2534 | 2534 | 2534 | 2534 |
| Domestic Coal-Spot Market | 3308 | 3308 | 3308 | 3308 | 3308 |
| Imported Coal | 3860 | 3860 | 3860 | 3860 | 3860 |

**Table 66 GCV (Kcal/L) of coal for Unit 1 and Unit 2 approved by the Commission**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Domestic Coal-Linkage | 4050 | 4050 | 4050 | 4050 | 4050 |
| Domestic Coal-Spot Market | 3233 | 3233 | 3233 | 3233 | 3233 |
| Imported Coal | 3827 | 3827 | 3827 | 3827 | 3827 |

## Base Energy Charge Rate (ECR) and Cost of Primary Fuel

*Petitioner's submission*

7.26 The Petitioner in the Petition has projected the energy charge for the control period FY 2016-17 to FY 2020-21 of both units as below:

**Table 67 Energy Charge Rate submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Uom | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Operational Parameters | | | | | | |
| Normative Aux Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Heat Rate | kCal/ kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/Kg | 9347 | 9347 | 9347 | 9347 | 9347 |
| Coal | | | | | | |
| Weighted Average Calorific Value of Indian Coal | kCal/kg | 3408 | 3403 | 3403 | 3403 | 3403 |
| Weighted Average cost of Indian Coal | Rs/Tonne | 3157 | 3363 | 3531 | 3708 | 3893 |
| **Energy Charge rate** | **Rs/kWh** | **2.462** | **2.625** | **2.756** | **2.894** | **3.038** |

*Commission's Analysis*

7.27 As per the Generation Tariff Regulation, 2015, the energy (variable) charge shall cover primary fuel costs and shall be payable by every beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month.

7.28 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.18 and 8.19 of the Generation Tariff Regulation, 2015 as quoted below:

*"8.18 Total Energy charge payable to the Generating Company for a month shall be:*

*= (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

*8.19 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:*

*(a) For coal based stations*

*ECR = {(GHR – SFC x CVSF) x LPPF/CVPF+SFC x LPSFi+ LC x LPL} x 100/ (100 – AUX)}*

*(b) For gas and liquid fuel based stations*

*ECR = GHR x LPPF x 100 / {CVPF x (100 – AUX)}*

*Where,*

*AUX - Normative auxiliary energy consumption in percentage*

*CVPF – (a) Weighted Average Gross calorific value of coal as received, in kCal per kg for coal based stations*

*(b) Weighted Average Gross calorific value of primary fuel as received in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations.*

*(c ) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.*

*CVSF - Calorific value of secondary fuel, in kCal per ml*

*ECR - Energy charge rate, in Rupees per kWh sent out.*

*GHR - Gross station heat rate, in kCal per kWh.*

*LC = Normative limestone consumption in kg per kWh*

*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio)*

*LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during the month*

*LPL = Weighted average landed price of limestone in Rupees per kg.*

*SFC - Specific fuel oil consumption, in ml per kWh*

*Provided that energy charge rate for a gas/liquid fuel based station shall be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee for the open cycle operation during the month."*

7.29 Accordingly, the Commission has calculated the base ECR for the Control Period as per the formula stated above and after considering the operational parameters as approved in this order. The table below contain the base ECR approved by the Commission for the period FY 2016-17 to FY 2020-21:

**Table 68 Approved Energy Charge Rate for Unit 1**

| Particulars | Uom | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Normative Aux Consumption | % | 9% | 9% | 9% | 9% | 9% |
| Heat Rate | kCal/ kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/Kg | 9336 | 9336 | 9336 | 9336 | 9336 |
| Weighted average cost of Oil | Rs/KL | 42637 | 42637 | 42637 | 42637 | 42637 |
| Weighted Average Calorific Value of Coal | kCal/kg | 3918 | 3918 | 3918 | 3918 | 3918 |
| Weighted Average cost of Coal (Inc transit loss) | Rs/Tonne | 2826 | 2826 | 2826 | 2826 | 2826 |
| **Energy Charge rate** | **Rs/kWh** | **1.762** | **1.762** | **1.762** | **1.762** | **1.762** |

**Table 69 Approved Energy Charge Rate for Unit 2**

| Particulars | Uom | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Normative Aux Consumption | % | 9% | 9% | 9% | 9% | 9% |
| Heat Rate | kCal/ kWh | 2,387 | 2,387 | 2,387 | 2,387 | 2,387 |
| Specific Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kCal/Kg | 9336 | 9336 | 9336 | 9336 | 9336 |
| Weighted average cost of Oil | Rs/KL | 45134 | 45134 | 45134 | 45134 | 45134 |

| Particulars | Uom | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Weighted Average Calorific Value of Coal | kCal/kg | 3918 | 3918 | 3918 | 3918 | 3918 |
| Weighted Average cost of Coal (Inc transit loss) | Rs/Tonne | 2826 | 2826 | 2826 | 2826 | 2826 |
| **Energy Charge rate** | **Rs/kWh** | **1.764** | **1.764** | **1.764** | **1.764** | **1.764** |

7.30 The Energy Charge Rate (ECR) approved by the Commission as above shall be the base energy charge rate for the year. Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal shall be adjusted on a monthly basis on the basis of weighted average GCV of coal in stock, received and burnt, and weighted average landed cost incurred by the Petitioner for procurement of coal, utilizing the fuel price adjustment mechanism given in the Generation Tariff Regulations, 2015.

## Determinants of Fixed Charges

## Additional Capitalization & Depreciation

7.31 The additional capitalization as well as depreciation have been discussed and approved in the previous section of this Order on approval of Business Plan.

## Interest on Debt

*Petitioner's submission*

7.32 The Petitioner, in the petition has submitted that the opening loan balance as on 01.04.2016 has been considered equivalent to the closing balances claimed in the True-up Petition for FY 2015-16. Thereafter the normative loan addition during the year has been computed at 70% of the total additional capitalization proposed during the year, considering the normative debt: equity ratio of 70:30.

7.33 The Petitioner has considered the repayment during the year equivalent to the normative depreciation for the year being in line with the methodology prescribed in the JSERC Generation Regulations, 2015.

7.34 Further, the JSERC Generation Regulations, 2015 Regulations provides that weighted average interest rate shall be considered for the purpose of calculation of allowable interest on loan during the year.

7.35 Accordingly, the Petitioner has worked out the weighted average rate of interest at 13.65% on the basis of total loan portfolio of the petitioner for FY 2015-16.

7.36 The following tables represent the detailed computation of Interest on Debt for the control period FY 2016-17 to FY 2020-21:

**Table 70 Interest on Debt of both units as submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| **Opening Balance** | 1988.24 | 1825.31 | 1662.38 | 1499.45 | 1336.52 |
| **Addition during the year** | 0.00 | 0.00 | 0.00 | 0.00 | 169.12 |
| **Repayment (Equal to Depreciation allowed for the year)** | 162.93 | 162.93 | 162.93 | 162.93 | 169.31 |
| **Closing Balance** | **1825.31** | **1662.38** | **1499.45** | **1336.52** | **1336.33** |
| **Interest on Debt (%)** | 13.65% | 13.65% | 13.65% | 13.65% | 13.65% |
| **Interest on Debt** | **260.27** | **238.03** | **215.79** | **193.56** | **182.42** |

*Commission's Analysis*

7.37 The provisions laid out in the Generation Tariff Regulations, 2015 for approval of Interest on Debt as quoted as under:

*"7.19 The loans arrived at in the manner indicated in clause 7.13, 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

…

*7.21 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of* commercial operation of the project and shall be equal to the annual depreciation allowed.

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

…

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest."*

7.38 The Commission has calculated the debt for each year based on the approved capital cost and considering the approved depreciation as repayment in line with the methodology specified in Generation Tariff Regulations, 2015.

7.39 The rates of interest from FY 2016-17 to FY 2020-21 have been taken equal to those approved for FY 2015-16. The interest on debt approved by the Commission is shown in the tables below for both Units:

**Table 71 Interest on Debt (Rs Cr) approved by the Commission for Unit 1**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Opening Balance | 967.70 | 885.33 | 802.96 | 720.60 | 638.23 |
| Addition during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment (Equal to Depreciation allowed for the year) | 82.37 | 82.37 | 82.37 | 82.37 | 82.37 |
| Closing Balance | 885.33 | 802.96 | 720.60 | 638.23 | 555.86 |
| Average Balance | 926.51 | 844.15 | 761.78 | 679.41 | 597.04 |
| **Interest on Debt (%)** | 13.13% | 13.13% | 13.13% | 13.13% | 13.13% |
| **Interest on Debt** | **121.65** | **110.84** | **100.02** | **89.21** | **78.39** |

**Table 72 Interest on Debt approved by the Commission for Unit 2**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| **Opening Balance** | 1001.07 | 917.92 | 834.77 | 751.63 | 668.48 |
| **Addition during the year** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Repayment (Equal to Depreciation allowed for the year)** | 83.15 | 83.15 | 83.15 | 83.15 | 83.15 |
| **Closing Balance** | 917.92 | 834.77 | 751.63 | 668.48 | 585.33 |
| **Average Balance** | 959.49 | 876.35 | 793.20 | 710.48 | 626.91 |
| **Interest on Debt (%)** | 13.28% | 13.28% | 13.28% | 13.28% | 13.28% |
| **Interest on Debt** | **127.42** | **116.38** | **105.34** | **94.30** | **83.25** |

## Return on Equity

*Petitioner's submission*

7.40 The Petitioner submitted that it has calculated return on equity considering a post-tax return of 15.50% as per Generation Tariff Regulations, 2015. The opening equity balance as on 01.04.2016 has been considered equivalent to the closing equity balance submitted by the Petitioner in the True-up petition for FY 2015-16.

7.41 The Petitioner submitted that since it is not liable to any tax on account of huge losses incurred on yearly basis, the rate of return on equity has been considered equivalent to the pre-tax rate i.e. 15.50%.

7.42 Thereafter, the normative equity addition during the year has been computed at 30% of the total proposed capitalization during the control period, considering the normative debt: equity ratio of 70: 30.

7.43 Accordingly, the Return on Equity (Pre-Tax) claimed for FY 2016-17 to FY 2020-21are summarized in the table below:

**Table 73 Return on Equity (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| ROE (pre-tax) | 140.25 | 140.25 | 140.25 | 140.25 | 145.86 |

*Commission's Analysis*

7.44 The he provisions laid out in the Generation Tariff Regulations, 2015 for approval of Return on Equity are as under:

*"7.15 Return on equity shall be computed in rupee terms, on the equity base determined in accordance with clause 7.13, 7.14 of these Regulations.*

*7.16 Return on equity shall be computed on pre-tax basis at the base rate of 15.50%, to be grossed up as per clause 7.17 of these Regulations.*

*……………*

*Provided that in case of Projects commissioned on or after 1st April, 2016, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:*

*Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever:*

*7.17 The rate of return on equity shall be computed by grossing up the base rate with the normal applicable tax rate for the FY 2016-17 applicable to the Generating Company.*

(i)……….

*(ii) MYT period: Base rate to be grossed by the applicable tax rate for the Year 2011-12 Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective year during the Control period shall be trued up separately for each year of the Control period along with the tariff petition filed for the next Control period.*

*7.18 Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*

*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where't' is the applicable tax rate in accordance with clause 7.17 of these Regulations."*

7.45 The Commission has worked out the gross normative equity of both Unit 1 and Unit 2 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2015. The Commission has considered the return on equity at 15.50%.

7.46 The return on equity approved by the Commission is shown in the tables below:

**Table 74 Return on Equity approved by the Commission for Unit 1**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Equity | | | | | |
| Opening Balance | 455.63 | 455.63 | 455.63 | 455.63 | 455.63 |
| Net Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Balance | 455.63 | 455.63 | 455.63 | 455.63 | 455.63 |
| Average Equity | 455.63 | 455.63 | 455.63 | 455.63 | 455.63 |
| Rate of return on equity(pre-tax) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Applicable tax rate (t%) | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Grossed Up rate of return on equity | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| Return on equity | **70.62** | **70.62** | **70.62** | **70.62** | **70.62** |

**Table 75 Return on Equity approved by the Commission for Unit 2**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Equity | | | | | |
| Opening Balance | 459.98 | 450.25 | 450.25 | 450.25 | 450.25 |
| Net Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Balance | 450.25 | 450.25 | 450.25 | 450.25 | 450.25 |
| Average Equity | 450.25 | 450.25 | 450.25 | 450.25 | 450.25 |

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| **Rate of return on equity(pre-tax)** | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Applicable tax rate (t%)** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **Grossed Up rate of return on equity** | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on equity** | **69.79** | **69.79** | **69.79** | **69.79** | **69.79** |

7.47 The Commission would like to highlight that the threshold norms for RoE approved in the regulation had been determined based on rates (interest rates on long term debt/ premium to be allowed for equity) prevalent prior to the notification of the Regulation in the year 2015. Over the past few year, there has been a decrease in the interest rates. In view of that, the Commission is of the opinion that determining tariffs using threshold rates as given in the Regulations is not in the interest of the public. The benefit of the decrease in rates should be passed on in the tariffs to be determined in the coming years. CERC vide its Terms and Conditions for Tariff determination from Renewable Energy Sources Regulations, 2017 has also lowered the normative Return on Equity to 14%, to be grossed up by prevailing MAT as on 1st April of previous year.

7.48 In view of the above, the Commission may re-look the RoE during the course of True-up in the subsequent years after review of the prevailing rates which may impact the ARR as well as the approved fixed and energy charges.

## O&M Expenses

7.49 The O&M expenses have been discussed and approved in the Business Plan section of this Order.

## Interest on Working Capital

*Petitioner's submission*

7.50 The Petitioner while computing the working capital and Interest thereon as per the Generation Tariff Regulations, 2015 has considered the working capital as the sum of the following:

*(a) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;;*

*(c) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*

*(d) Maintenance spares @ 20% of operation and maintenance expenses specified in clauses 7.40- 7.48 of these Regulations;*

*(d) Operation and Maintenance expenses for 1 month; and*

*(e) Receivables equivalent to 2 months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

7.51 The Petitioner in the petition has submitted that for calculation of Interest on Working Capital, the rate of interest on working capital equal to the bank rate specified by the State Bank as on 01.04.2016 plus 350 basis points. Accordingly the Petitioner has considered 13.50% as the Rate of Interest for calculation of allowable interest on Working Capital for the control period.

7.52 The Interest on working capital submitted by the Petitioner is shown in the table below:

**Table 76 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Coal Cost for 2 months | 147.70 | 157.55 | 165.43 | 173.70 | 182.39 |
| Cost of secondary fuel oil for 2 months | 2.45 | 2.55 | 2.65 | 2.76 | 2.87 |
| Receivables for 2 months | 12.30 | 13.07 | 13.89 | 14.75 | 15.53 |
| O&M Expenses for 1 month | 279.57 | 287.81 | 294.10 | 300.91 | 312.20 |
| Maintenance Spares | 29.53 | 31.37 | 33.32 | 35.40 | 37.26 |
| Total Working Capital | **471.57** | **492.36** | **509.39** | **527.52** | **550.24** |
| Rate of Interest | 13.50% | 13.50% | 13.50% | 13.50% | 13.50% |
| Interest on Working Capital | **63.66** | **66.47** | **68.77** | **71.22** | **74.28** |

*Commission's Analysis*

7.53 The Commission has computed the interest on working capital for both Units 1 and 2 by considering values of related components. The working capital requirement for the Petitioner has been determined by considering the following components as per Regulation 7.34 of the Generation Tariff Regulation, 2015.

*(a) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(b) Cost of coal or lignite and limestone for 30 days for generation corresponding to normative annual plant availability factor;*

*(c) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*

*(d) Maintenance spares @ 20% of Operation and maintenance expenses specified in clauses 7.40 to 7.48 of these regulations;*

*(e) Operation and Maintenance expenses for 1 month; and*

*(f) Receivables equivalent to 2 months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

7.54 The Commission outlines the provisions laid out in the Generation Tariff Regulations, 2015 for approval of Interest on Working Capital as under:

*"7.38 Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 01.04.2016 or as on 1st April of the year during the tariff period 2016-17 to 2020-21 in which the generating station or a unit thereof, is declared under commercial operation, whichever is later.*

*Provided that the rate of interest on working capital shall be trued up on the basis of actual bank rate as on 1st April of the respective year at the time of true up for that year.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."*

7.55 Accordingly the Commission calculated the interest on working capital on the rates prevailing on the April 1, 2016 plus 350 basis point i.e. at 12.80% for Unit 1 and Unit 2. The detailed calculation made by the Commission is shown in the tables below:

**Table 77 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 1**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Coal cost 1 month or max coal stock whichever is lower | 26.14 | 26.14 | 26.14 | 26.14 | 26.14 |
| Coal Cost for 1 months | 26.14 | 26.14 | 26.14 | 26.14 | 26.14 |
| Cost of secondary fuel oil for 2 months | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 |
| Receivables for 2 months | 115.83 | 114.61 | 113.42 | 112.28 | 111.16 |
| O&M Expenses for 1 month | 6.00 | 6.30 | 6.61 | 6.93 | 7.27 |
| Maintenance Spares | 14.40 | 15.11 | 15.86 | 16.64 | 17.46 |
| **Total Working Capital** | **189.94** | **189.72** | **189.59** | **189.56** | **189.60** |
| Rate of Interest | 12.80% | 12.80% | 12.80% | 12.80% | 12.80% |
| **Interest on Working Capital** | **24.31** | **24.28** | **24.27** | **24.26** | **24.27** |

**Table 78 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 2**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Coal cost 1 month or max coal stock whichever is lower | 26.14 | 26.14 | 26.14 | 26.14 | 26.14 |

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Coal Cost for 1 months | 26.14 | 26.14 | 26.14 | 26.14 | 26.14 |
| Cost of secondary fuel oil for 2 months | 1.51 | 1.51 | 1.51 | 1.51 | 1.51 |
| Receivables for 2 months | 116.88 | 115.64 | 114.41 | 113.22 | 112.06 |
| O&M Expenses for 1 month | 6.00 | 6.30 | 6.61 | 6.93 | 7.27 |
| Maintenance Spares | 14.40 | 15.11 | 15.86 | 16.64 | 17.46 |
| **Total Working Capital** | **191.08** | **190.84** | **190.66** | **190.59** | **190.59** |
| Rate of Interest | 12.80% | 12.80% | 12.80% | 12.80% | 12.80% |
| **Interest on Working Capital** | **24.46** | **24.43** | **24.40** | **24.39** | **24.40** |

## Cost of Secondary Fuel Oil

*Petitioner's submission*

7.56 The Petitioner has submitted that the secondary fuel would be procured through local suppliers. The Petitioner for the purpose of working out the expenditure on account of secondary fuel oil (LDO) has considered the weighted average GCV and Price of secondary fuel oil for the period April to September, 2016. Further the Petitioner has considered an escalation of 4% in the prices of secondary fuel oil during the control period.

7.57 Any variation on account of change in the Gross Calorific Value (GCV) and Prices of secondary fuel oil shall be adjusted on a monthly basis. Accordingly the Petitioner has worked out the allowable cost of secondary fuel oil for FY 2016-17 to FY 2020-21.

7.58 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for both Unit 1 and Unit 2:

**Table 79 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 1 and Unit 2**

| Particulars | Unit | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Unit Capacity | MW | 540.00 | 540.00 | 540.00 | 540.00 | 540.00 |
| Gross Generation at Normative Plant Availability | MU | 4020.84 | 4020.84 | 4020.84 | 4020.84 | 4020.84 |
| Normative Secondary Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Secondary Fuel Oil Consumption at Normative Plant Availability | kL | 4020.84 | 4181.67 | 4348.94 | 4522.90 | 4703.81 |
| Secondary Fuel Oil Landed Cost | Rs./kL | 36574 | 36574 | 36574 | 36574 | 36574 |
| **Secondary Fuel Oil Cost at Normative Plant availability** | Rs. Cr. | **14.71** | **15.29** | **15.91** | **16.54** | **17.20** |

*Commission's Analysis*

7.59 The Commission has considered the projection of cost of secondary fuel oil as per Generation Regulations 2015 for Unit 1 and Unit 2 as follows:

**Table 80 Cost of secondary fuel oil approved by the commission for Unit 1**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Gross Generation at NAPAF (MU) | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| Specific Consumption of LDO at NAPAF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPAF (kL) | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| LDO Landed Cost (Rs/kL) | 42637 | 42637 | 42637 | 42637 | 42637 |
| **LDO Cost (Rs Cr)** | **8.57** | **8.57** | **8.57** | **8.57** | **8.57** |

**Table 81 Cost of secondary fuel oil approved by the commission for Unit 2**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Gross Generation at NAPAF (MU) | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| Specific Consumption of LDO at NAPAF (ml/kWh) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| LDO Consumption at NAPAF (kL) | 2010.42 | 2010.42 | 2010.42 | 2010.42 | 2010.42 |
| LDO Landed Cost (Rs/kL) | 45134 | 45134 | 45134 | 45134 | 45134 |
| **LDO Cost (Rs Cr)** | **9.07** | **9.07** | **9.07** | **9.07** | **9.07** |

## Additional Water Charges

*Petitioner's submission*

7.60 The Petitioner submitted that an agreement was signed between Adhunik and Govt of Jharkhand for supply of water vide agreement dated 29th Aug'08. The required water was to be withdrawn or pumped by the company from the river Subarnarekha.

7.61 The Petitioner further submitted that the Water Department of Gov. of Jharkhand vide its Notification No: 2/PMC/jalapurti175/2007 dated 01.04.2011 devised various categories for water offtake and the Petitioner was asked to pay @ Rs 26.40 per thousand gallon. The same was opposed by the Petitioner and a stay order was issued by Hon'ble High Court of Jharkhand. The Petitioner submitted that it is paying the water charges at the pre-revised rate of Rs 4.50 per thousand gallons and accordingly they have claimed water charges.

7.62 The Petitioner in the petition stated that CERC (Terms and Conditions of Tariff) Regulations, 2015 stipulates that water charges for thermal generating stations shall be allowed separately. The relevant extracts of the regulation as submitted by the Petitioner is reproduced as below:

*"29. Operation and Maintenance Expenses:*

*(1) Normative Operation and Maintenance Expenses of Thermal Generating*

*Stations…*

*(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc, subject to prudence check. The details regarding the same shall be furnished along with the petition…"*

7.63 The Petitioner has projected the water charges for the MYT Period based on the estimated billable water charges for Financial Year 2016-17.

7.64 The calculation details of yearly water charges based on daily consumption is provided in the table below:

**Table 82 Additional Water Charges (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner**

| Yearly withdrawn of water (MG) | Bill Rate (Rs./MG) | Cost of Water |
|---|---|---|
| 7739.10 | 4,500 | 3.48 |

7.65 Further the Petitioner has not considered any escalation on water charges during the control period, as the same is allowed to the extent actually incurred. The Petitioner will claim the actual water charges incurred for the financial years in its True-up Petition in line with Regulation 7.46 of the JSERC Generation Regulations, 2015.

7.66 Accordingly, the details of water charges claimed for the control period from FY 2016-17 to 2020-21 is detailed in the table below:

**Table 83 Water Charges for the Control Period of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Water Charges (Rs. Cr) | 3.48 | 3.48 | 3.48 | 3.48 | 3.48 |

*Commission's Analysis*

7.67 The Commission has reviewed the submissions of the Petitioner as far as additional water charges as concerned.

7.68 JSERC Generation Tariff Regulations, 2015 specifies the treatment of water charges. The relevant extracts from the regulation are reproduced below:

*"7.46 The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Clause 7.47 of the Regulation or special allowance as per Clause 7.10 and 7.11 of the Regulation or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization."*

7.69 The Commission asked for the details of type of water plant and other specifications as per the above mentioned regulation. After considering the submissions of the petitioner the Commission has provisionally approved the water charges for both the units for the second control period as per submissions of the petitioner. These amounts are subject to true up in the respective years in future.

7.70 Accordingly, the details of water charges approved for the control period from FY 2016-17 to 2020-21 is detailed in the table below:

**Table 84 Water Charges for the Control Period of Unit 1 and Unit 2 submitted by the Petitioner**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Water Charges (Rs. Cr) | 3.48 | 3.48 | 3.48 | 3.48 | 3.48 |

## Annual Fixed Charges

7.71 Regulation 8.2 of the Generation Tariff Regulations, 2015 states that the annual fixed charges of a thermal generating station shall consist of the following:

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

7.72 The tables below show the annual fixed charges approved by the Commission for each unit for the entire capacity of 270 MW.

**Table 85 Annual Fixed Charges of Unit 1 for 270 MW approved by the Commission**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Depreciation | 82.37 | 82.37 | 82.37 | 82.37 | 82.37 |
| Interest on Loan | 121.65 | 110.84 | 100.02 | 89.21 | 78.39 |

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Return on Equity (pre -tax) | 70.62 | 70.62 | 70.62 | 70.62 | 70.62 |
| O&M Expenses | 72.01 | 75.56 | 79.28 | 83.19 | 87.28 |
| Water Charges | 1.74 | 1.74 | 1.74 | 1.74 | 1.74 |
| Interest on Working Capital | 24.31 | 24.28 | 24.27 | 24.26 | 24.27 |
| **Annual Fixed Charges** | **372.71** | **365.41** | **358.30** | **351.39** | **344.68** |

**Table 86 Annual Fixed Charges of Unit 2 for 270 MW approved by the Commission**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|
| Depreciation | 83.15 | 83.15 | 83.15 | 83.15 | 83.15 |
| Interest on Loan | 127.42 | 116.38 | 105.34 | 94.30 | 83.25 |
| Return on Equity (pre -tax) | 69.79 | 69.79 | 69.79 | 69.79 | 69.79 |
| O&M Expenses | 72.01 | 75.56 | 79.28 | 83.19 | 87.28 |
| Water Charges | 1.74 | 1.74 | 1.74 | 1.74 | 1.74 |
| Interest on Working Capital | 24.46 | 24.43 | 24.40 | 24.39 | 24.40 |
| **Annual Fixed Charges** | **378.57** | **371.04** | **363.70** | **356.55** | **349.61** |

## Approved Tariff for Unit 1 and Unit 2

*Tariff for 12% of total net capacity*

7.73 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) approved by the Commission in this order and as noted below:

**Table 87 Approved tariff for 12% of total net capacity for Unit 1**

| Particulars | Units | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 1.762 | 1.761 | 1.761 | 1.762 | 1.762 |

**Table 88 Approved tariff for 12% of total net capacity for Unit 2**

| Particulars | Units | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 1.764 | 1.764 | 1.764 | 1.764 | 1.764 |

*Tariff for 13% of total net capacity*

7.74 The tariff for 13% of the total net capacity shall be the total tariff i.e. variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission in this order as noted below:

**Table 89 Approved tariff for 13% of total net capacity for Unit 1– variable cost**

| Particulars | Units | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 1.762 | 1.761 | 1.761 | 1.762 | 1.762 |

**Table 90 Approved tariff for 13% of total net capacity for Unit 2– variable cost**

| Particulars | Units | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|
| Variable cost/ Base Energy Charge Rate | Rs/kWh | 1.764 | 1.764 | 1.764 | 1.764 | 1.764 |

**Table 91 Approved tariff for 13% of total net capacity for Unit 1– fixed charges**

| Description | Derivation | Unit | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 |
|---|---|---|---|---|---|---|---|
| Gross Capacity | A | MW | 270 | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | C= A x (1-B) | MW | 245.70 | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 | 216.22 |
| Total Annual Fixed Charge | F | Rs Cr | 372.71 | 365.41 | 358.30 | 351.39 | 344.68 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr/ MW | 1.72 | 1.69 | 1.66 | 1.63 | 1.59 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | I= G x H | Rs. Cr | 55.06 | 53.98 | 52.93 | 51.91 | 50.92 |

**Table 92 Approved tariff for 13% of total net capacity Unit 2– fixed charges**

| Description | Derivation | Unit | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY2020-21 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Gross Capacity | A | MW | 270 | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | C= A x (1-B) | MW | 245.70 | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of net capacity for supply to JUVNL at Energy Charge | D= C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 | 216.22 |
| Total Annual Fixed Charge | F | Rs Cr | 378.57 | 371.04 | 363.70 | 356.55 | 349.61 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr/ MW | 1.75 | 1.72 | 1.68 | 1.65 | 1.62 |

| Description | Derivation | Unit | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY2020-21 |
|---|---|---|---|---|---|---|---|
| 13% of Net Capacity for supply to JUVNL at full tariff | H= C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 | 31.94 |
| AFC for 13% of Net Capacity | I= G x H | Rs Cr | 55.92 | 54.81 | 53.73 | 52.67 | 51.65 |

# A8: DIRECTIVES

## Detailed Project Report (DPR)

8.1 The Petitioner has submitted DPR of schemes that has been proposed along with the Petition. In the DPRs, the Petitioner has submitted details about the project along with costs and have also worked out the impact of such schemes. The Commission has observed that such analysis and costs have not been supported by rate reasonability and should have approval of the competent authority of the Petitioner. The Petitioner should provide supporting documents in the form of tendered rates, order for work carried out previously, quotations etc., then only it would be considered.

## Re-negotiation of high cost loans

8.2 The Commission has observed that the rate of interests on some loans availed by the Petitioner are in excess of 15%. Looking at the falling interest rates in the country, the Petitioner should look at means to re-finance such loans or re-negotiate the rates of interests on such loans. The Commission directs the Petitioner to make all out efforts in this regard and submit along with the next tariff petition the steps taken by it towards the same, failing which the Commission may be constrained to disallow interest on high cost loans.

## Filing of True-Up Petition

8.3 The Commission directs the Petitioner to file the true up for the FY 2016-17 and APR petition for FY 2017-18 within two months from the date of issuance of this order. Further, the Petitioner should adhere to the timelines as provided in the JSERC Generation tariff Regulations 2015, in future.

## Transit Loss

8.4 The Commission directs the Petitioner to submit actual figures, duly authenticated by a Chartered Accountant, of transit loss for primary fuel i.e. coal, failing which the Commission may be constrained to disallow any transit loss incurred by the Petitioner.

**This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 19th day of February, 2018.**

Date: 19 February, 2018
Place: Ranchi

| | |
|---|---|
| Sd/- | Sd/- |
| **(R. N. Singh)** | **(Dr. Arbind Prasad)** |
| **MEMBER (Engg.)** | **CHAIRPERSON** |

# A9: ANNEXURES

## Annexure 1: List of participating members of public in the public hearing

| Sl. No. | Name S/Shri | Address / Organisation if any |
|---|---|---|
| 1 | Rishi Singh | Deloitte (Consultant) |
| 2 | Ishan Srivastava | Deloitte (Consultant) |
| 3 | Kushal Mandal | Dainik Bhaskar |
| 4 | Rana Pratap Singh | Prabhat Khabar |
| 5 | Sandip Agrawal | APNRL |
| 6 | Mohit Goyal | APNRL |
| 7 | Mrinal Navendu | APNRL |
| 8 | Mani shankar | APNRL |
| 9 | Niraj Kumar | Kadru, Ranchi |
| 10 | Ravi Shankar | Ganiriya |
| 11 | Sanjeev Kumar Singh | Ganiriya |
| 12 | Sunil Kumar Thakur | JBVNL - CE (C&R) |
| 13 | Anita Prasad | JBVNL |
| 14 | Paghu Mahato | Ranchi |
| 15 | Rishin Nandan | ESE/C&R, JBVNL |
| 16 | Sachin Agarwal | Director, APNRL |
| 17 | Chotu Nath | Kadru, Ranchi |
| 18 | Gopal Meewal | Chowka |
| 19 | Leaquat Ali | Chandwa |
| 20 | Ravi Singh | Srirampur |
| 21 | Sanoj Sahu | Ranchi |
| 22 | Biraj Kumar | Adityapur |
| 23 | R. K. Singh | Kandra |
| 24 | Himanshu Kumar | Adityapur |
| 25 | R. Sharma | Sakchi, Jamshedpur |
| 26 | Eshan Singh | Ranchi |
| 27 | Sanjeev Kumar | Kandra |
| 28 | N. Adhikami | Kandra |
| 29 | Sujeet Kumar | Dhurwa, Ranchi |
| 30 | Ajay Kumar | Shri Rampur |
| 31 | Manoj Sharma | Shri Rampur |
| 32 | A. K. Shrivastava | Shri Rampur |

**Jharkhand State Electricity Regulatory Commission**

# Order on
# True-up for FY 2016-17 and
# Annual Performance Review for FY 2017-18
# for
# Adhunik Power and Natural Resources Limited
# (APNRL)

Ranchi

22nd May, 2023

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# List of Abbreviations

| Abbreviation | Description |
|---|---|
| **A&G** | Administrative and General |
| **APNRL** | Adhunik Power and Natural Resources Limited |
| **ARR** | Aggregate Revenue Requirement |
| **CEA** | Central Electricity Authority |
| **COD** | Commercial Operation Date |
| **CFBC** | Circulating Fluidized Bed Combustion |
| **CCL** | Central Coalfield Limited |
| **CIL** | Coal India Limited |
| **ECR** | Energy Charge Rate |
| **FY** | Financial Year |
| **GCV** | Gross Calorific Value |
| **GFA** | Gross Fixed Assets |
| **GHR** | Gross Station Heat Rate |
| **GoI** | Government of India |
| **GoJ** | Government of Jharkhand |
| **IoWC** | Interest on Working Capital |
| **JBVNL** | Jharkhand Bijli Vitran Nigam Limited |
| **JSEB** | Jharkhand State Electricity Board |
| **JSERC** | Jharkhand State Electricity Regulatory Commission |
| **JUVNL** | Jharkhand Urja Vikas Nigam Limited |
| **kCal** | Kilocalorie |
| **kg** | Kilogram |
| **kWh** | Kilowatt-hour |
| **MAT** | Minimum Alternative Tax |
| **ML** | Millilitre |
| **MOU** | Memorandum of Understanding |
| **MT** | Million Tonnes |
| **MU** | Million Units |
| **MW** | Megawatt |
| **MYT** | Multi-Year Tariff |
| **NAPAF** | Normative Annual Plant Availability Factor |
| **O&M** | Operations and Maintenance |
| **PAF** | Plant Availability Factor |
| **PLF** | Plant Load Factor |
| **PPA** | Power Purchase Agreement |
| **R&M** | Repair and Maintenance |
| **RoE** | Return on Equity |
| **Rs.** | Rupees |
| **SBI** | State Bank of India |
| **SERC** | State Electricity Regulatory Commission |
| **SLDC** | State Load Dispatch Centre |
| **SLM** | Straight Line Method |

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**BEFORE**

# Jharkhand State Electricity Regulatory Commission, Ranchi

**Case (Tariff) No.: 02 of 2018**

**In the matter of:**

**Petition for**
**True-up for FY 2016-17**
**and**
**Annual Performance Review for FY 2017-18**

**In the matter:**
Adhunik Power and Natural Resources Limited (APNRL),
H-29, Harmu Housing Colony, Harmu, Ranchi-834002 …. **Petitioner**

**PRESENT**

| | |
|---|---|
| Shri. Justice Amitav K. Gupta | Chairperson |
| Shri. Atul Kumar | Member (Technical) |
| Shri. Mahendra Prasad | Member (Legal) |

**Order dated May 22nd, 2023**

In this Petition, Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL or the Petitioner) has filed a petition for Truing up for FY 2016-17 and Annual Performance Review for FY 2017-18.

# A 1: INTRODUCTION

**Jharkhand State Electricity Regulatory Commission**

1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the JSERC or the Commission) was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003.

1.2 The Government of Jharkhand vide its notification dated August 22, 2002, had defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:

(a) to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;
(b) to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;
(c) to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;
(d) to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.3 After the Electricity Act, 2003 came into force, the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the functions of State Electricity Regulatory Commission are now defined under Section 86 of the Act.

1.4 In accordance with Section 86 (1) of the Act, the JSERC discharges the following functions:

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:
Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies

or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

(c) facilitate intra-state transmission and wheeling of electricity;

(d) issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

(f) adjudicate upon the disputes between the licensees and generating companies, and to refer any dispute for arbitration;

(g) levy fee for the purposes of this Act;

(h) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;

(i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

(j) fix the trading margin in the intra-state trading of electricity, if considered, necessary;

(k) discharge such other functions as may be assigned to it under this Act.

1.5 The Commission has to also advise the State Government as per sub section 2 of Section 86 of the Act, on all or any of the following matters, namely:

(a) promotion of competition, efficiency and economy in activities of the electricity industry;

(b) promotion of investment in electricity industry;

(c) reorganisation and restructuring of electricity industry in the State;

(d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.6 The State Commission shall ensure transparency while exercising its powers and discharging its functions.

1.7 In discharge of its functions, the State Commission is also guided by the National Tariff Policy as brought out by GoI in compliance to Section 3 of the Act. The objectives of the National Tariff Policy are to:

(a) ensure availability of electricity to consumers at reasonable and competitive rates;

(b) ensure financial viability of the sector and attract investments;

(c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;

(d) promote competition, efficiency in operations and improvement in quality of supply.

**Adhunik Power and Natural Resources Limited (APNRL)**

1.8 Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL or the Petitioner) is a company incorporated under the provisions of the Indian Companies Act, 1956.

1.9 Originally incorporated as "Adhunik Thermal Energy Ltd." (ATEL), in the year 2007, ATEL was renamed to "Neepaz Thermal Energy Limited" (NTEL) and subsequently renamed as "Adhunik Power & Natural Resources Ltd." (APNRL) in the year 2008 after complying with the applicable provisions of the Companies Act, 1956.

1.10 ATEL, in October 2005, had signed a Memorandum of Understanding (hereinafter referred to as "the MoU") with Government of Jharkhand to develop a 1,000 MW coal based thermal power plant. Further in January 2007, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MoU further for a period of 12 months. In February 2008, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MoU further for a period of three years upto October 31, 2010. Subsequently in May 2011, the validity of the MoU was again extended for a period of three years from November 1, 2010 to October 31, 2013. In November 2013, the validity of MoU was again extended for a period of three years from November 1, 2013 to October 31, 2016.

1.11 Accordingly, APNRL has set up a 540 MW coal based power plant in Stage-1 (consisting of Unit 1 and Unit 2 of 270 MW each) and is planning to develop an additional 540 MW coal based power plant in Stage-2. Unit 1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. Unit 2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

1.12 Further, as per the provisions of the MOU, the Government of Jharkhand or Distribution Licensees authorized by it will have the first right of claim on purchase upto 25% of power delivered to the system by the proposed power station.

1.13 Further, the extension of the MoU stipulates that the Government of Jharkhand moved to Government of India for the policy decision through suitable arrangements for making available to the State, 12% of the total power generated at variable cost, by APNRL. Hence, as stated above, as per MoU and its extension's conditions, JSEB will have first right of claim on purchase upto 25% of power delivered to the system, out of which 12% power will be made available to the state at variable cost only.

1.14 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as "the PPA") with Jharkhand State Electricity Board (now Jharkhand Urja Vikas Nigam Limited or "JUVNL") on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., gross capacity of 2 units of 270 MW each, totaling to 540 MW less normative auxiliary consumption) from Stage-1 of the Project on long term basis.

1.15 As per the terms of the PPA, 63.882 MW capacity, i.e., 13% of Net Capacity of Stage-1 shall be supplied to JSEB (now JUVNL) at total tariff and the balance 58.968 MW capacity, i.e. 12% of total Net Capacity of Stage-1 shall be supplied at variable cost only.

1.16 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner and JSEB (now JUVNL), the tariff payable shall be determined by the State Commission:

> *3.1(ii) "The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".*
>
> *3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010", as amended from time to time."*

**Overview of the Thermal Station**

1.17 The Petitioner had achieved COD of its two units of 270 MW each in the year 2013. Both these units are subject to ARR and Tariff determination. The following table summarizes the information pertaining to both the units:

| Sr. no. | Unit | Installed Capacity (MW) | Status of Operation | Actual Date of Commercial Operation |
|---|---|---|---|---|
| 1 | Unit 1 | 270 MW | Operational | January 21, 2013 |
| 2 | Unit 2 | 270 MW | Operational | May 19, 2013 |

**The Petitioner's Prayers**

1.18 The Petitioner in this Petition has prayed before the Commission:

- Approve the True-up of ARR for 540 MW (2x270 MW) coal based thermal power plant in Jharkhand, for supplying the regulated Contracted Capacity of 122.85 MW to Discom for FY 2016-17;
- Approve the APR for 540 MW (2x270 MW) coal based thermal power plant in Jharkhand, for supplying the regulated Contracted Capacity of 122.85 MW to Discom for FY 2017-18;
- Approve the recovery of upward and downward variation in fuel prices and calorific values including fuel mix through Fuel Price Adjustment as part of monthly Energy Charges;
- The petitioner respectfully seeks an opportunity to present their case prior to the finalization of the tariff order. The petitioner believes that such an approach would provide a fair treatment to all the stakeholders and may eliminate the need of a review or clarification;
- Condone any inadvertent omissions/errors/ rounding off difference/shortcomings and permit the Petitioner to add/alter this filing and make further submissions as may be required by the Commission; and
- Pass such further and other Order, as the Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

**Scope of the Present Order**

1.19 The Commission in this Order has approved the True-up for FY 2016-17.

1.20 It is observed that considerable time elapsed since the date of filing of the Petition. Further, the audited accounts of FY 2017-18 are finalised. Thus, the Commission is of the view, that there is no rationale to carry out APR for FY 2017-18. The Commission has therefore, in this order has carried out only the Truing up for FY 2016-17.

1.21 While approving this Order, the Commission has taken into consideration:

a) Material placed on record by the Petitioner

b) Provisions of the Electricity Act, 2003

c) Principles laid down in the National Electricity Policy

d) Principles laid down in the National Tariff Policy

e) Provisions of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 (hereinafter referred to as JSERC Generation Tariff Regulations, 2015 or the Regulations).

1.22 Accordingly, the Commission has scrutinized the Petition in detail and hereby issues the Order on Truing-up for FY 2016-17 of APNRL.

# A 2: PROCEDURAL HISTORY

**Background**

2.1 The Commission had notified Provisional Order on Petition for approval of Capital Cost, Business Plan and MYT Petition for FY 2012-13 to FY 2015-16 for Adhunik Power and Natural Resources Limited (APNRL) on May 26, 2014.

2.2 The Commission had notified Order on Petition for approval of final Capital Cost of 540MW (2x270) Coal Based Thermal Power Plant in Jharkhand, True Up of ARR for FY 2012-13 and FY 2013-14, APR of FY 2014-15 and ARR and Tariff Determination for FY 2015-16 on September 01, 2016. Further, the Petitioner filed a petition on September 29, 2016 seeking review of Order dated September 01, 2016. The Order, against the Review Petition, was issued by Commission on January 09, 2018.

2.3 The Commission vide Order dated February 19, 2018 approved the True-up for FY 2014-15 and FY 2015-16, Business Plan, ARR and Tariff for Multi Year Tariff Period from FY 2016-17 to FY 2020-21.

2.4 The Petitioner has now sought approval from the Commission on True-up petition for FY 2016-17 and APR for FY 2017-18.

**Information Gaps in the Petitions**

2.5 As part of tariff determination exercise, several deficiencies/ information gaps were observed in the Petition submitted by the Petitioner. The information gaps were pointed out and communicated to the Petitioner vide letter nos. JSERC/Case (Tariff) No. 02 of 2018/166 dated September 21, 2022 and JSERC/Case (Tariff) No. 02 of 2018/189 dated October 07, 2022.

2.6 The Petitioner submitted its response to the aforesaid letters and furnished additional data/information vide letter nos. APNRL/PT-JBVNL/FY22-23/1408 dated November 11, 2022 and APNRL/PT-JBVNL/FY22-23/1424 dated December 09, 2022.

2.7 The Commission scrutinized the additional data/ information submitted and considered the same while passing this Order on the Petition filed by the Petitioner. The Commission has also examined the replies and supporting documents as supplied by the Petitioner on the discrepancies pointed out to it only on material already on record in the Petition filed by the Petitioner.

### Inviting Public Comments/Suggestions

2.8 The Commission directed the Petitioner to make available copies of the Petition to the members of the general public on request and also issue a public notice inviting comments/ suggestions on the Petition for approval of True-up for FY 2016-17 and APR for FY 2017-18.

2.9 The aforesaid public notice was issued by the Petitioner in various newspapers and a period of twenty-one (21) days was given to the members of the general public for submitting their comments/suggestions.

**Table 1: List of newspapers and dates of publication of public notice by the Petitioner**

| Newspaper | Date of Publication |
|---|---|
| Sanmarg Ranchi | January 28, 2023 |
| The Pioneer | January 28, 2023 |
| The Hindustan Times | January 28, 2023 |
| Hindustan | January 28, 2023 |
| Sanmarg Jharkhand | January 29, 2023 |
| Sunday Pioneer | January 29, 2023 |
| Sunday Hindustan Times | January 28, 2023 |
| Hindustan Ranchi | January 29, 2023 |

2.10 Subsequently, the Commission also issued a notice on its website www.jserc.org and various newspapers for conducting the public hearing on the Petition. The details of the newspapers publishing the notice by the Commission are as under:

**Table 2: List of newspapers and dates of publication of public notice by the Commission**

| Newspaper | Date of Publication |
|---|---|
| Prabhat Khabar (Hindi) | 05.03.2023 |
| Danik Bhaskar (Hindi) | 05.03.2023 |
| The Times of India (English) | 05.03.2023 |
| The Hindustan Times (English) | 05.03.2023 |
| Prabhat Khabar (Hindi) | 19.03.2023 |
| Hindustam Dainik (Hindi) | 19.03.2023 |
| The Times of India (English) | 19.03.2023 |
| Morning India (English) | 19.03.2023 |

### Submission of Comments/Suggestions and Conduct of Public Hearing

2.11 In order to provide adequate opportunities to all stakeholders and general public, as mandated under Section 64 (3) of the Electricity Act, 2003 and in relevant provisions of Regulation(s) framed by the Commission and in order to ensure transparency in the process of tariff determination, the Commission held public hearing on March 20, 2023 in Ranchi.

2.12 The objections/ comments/ suggestions, if any of the Public, Petitioner's responses and Commission's views thereon are detailed in **Section A4** of this Order.

# A 3: BRIEF FACTS OF THE PETITION

3.1 The following sub-section presents a summary of True-up for FY 2016-17 and APR for FY 2017-18 as filed by the Petitioner.

**Truing up for FY 2016-17 and APR for FY 2017-18**

***Operational Parameters of Plant***

3.2 The summary of operational parameters approved by the Commission in the MYT Order dated February 19, 2018 vis-à-vis as submitted by the Petitioner for FY 2016-17 and FY 2017-18 of Unit-1 and Unit-2 is provided in the table below:

**Table 3: Operational Parameters for FY 2016-17 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | 89.44 | 85.00 | 89.44 |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

3.3 The summary of operational parameters approved by the Commission in the MYT Order dated February 19, 2018 vis-à-vis as submitted by the Petitioner for FY 2017-18 of Unit-1 and Unit-2 is provided in the table below:

**Table 4: Operational Parameters for FY 2017-18 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | - | 85.00 | - |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

***Aggregate Revenue Requirement (ARR)***

3.4 The summary of Annual Revenue Requirement (ARR) as submitted by the Petitioner including subsequent replies for FY 2016-17 vis-à-vis as approved by the Commission in MYT Order dated February 19, 2018 and corrigendum dated March 08, 2019 is tabulated below.

**Table 5: Annual Revenue Requirement for FY 2016-17 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.75 | 83.15 | 83.49 |
| Interest on Loan | 121.65 | 108.43 | 127.42 | 115.62 |
| Return on Equity | 70.62 | 78.30 | 69.79 | 78.95 |
| O&M Expenses | 72.01 | 72.96 | 72.01 | 72.96 |
| Interest on Working Capital | 30.74 | 25.55 | 30.88 | 26.59 |
| **Aggregate Revenue Requirement** | **377.39** | **367.99** | **383.25** | **377.61** |

3.5 The summary of Annual Revenue Requirement (ARR) as submitted by the Petitioner including subsequent replies for FY 2017-18 vis-à-vis as approved by the Commission in MYT Order dated February 19, 2018 and corrigendum dated March 08, 2019 is tabulated below:

**Table 6: Annual Revenue Requirement for FY 2017-18 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.77 | 83.15 | 83.51 |
| Interest on Loan | 110.84 | 98.27 | 116.38 | 105.08 |
| Return on Equity | 70.62 | 78.31 | 69.79 | 78.95 |
| O&M Expenses | 75.56 | 77.54 | 75.56 | 77.54 |
| Water Charges | 1.74 | 1.74 | 1.74 | 1.74 |
| Interest on Working Capital | 30.71 | 29.86 | 30.85 | 18.73 |
| **Aggregate Revenue Requirement** | **371.84** | **368.49** | **377.47** | **365.56** |

# A 4: PUBLIC CONSULTATION PROCESS

4.1 The Public Hearing was held on March 20, 2023 at Ranchi to ensure the maximum public participation and transparency wherein stakeholders put forth their comments and suggestions before the Commission in the presence of the Petitioner. The list of the attendees is attached as **Annexure-1** to this Order.

4.2 In course of public hearing, the Commission also allowed persons/representatives of entities who had not submitted prior written representations but attended the public hearing to express their views, in person, regarding the Petition filed by the Petitioner and also about ways and means to improve the services rendered by the Petitioner.

4.3 No comments or suggestions were received for the True up period of FY 2016-17. The comments and suggestions received during the public hearing were related to True-up for FY 2017-18,FY 2018-19 and FY 2019-20, APR for FY 2020-21, Business Plan and ARR for Control period from FY 2021-22 to FY 2025-26 which was also held on March 20, 2023. The comments and suggestions of the members of the public along with the response thereon of the Petitioner and the views of the Commission related to above said period will be dealt while disposing the True-up for FY 2017-18,FY 2018-19 and FY 2019-20, APR for FY 2020-21, Business Plan and ARR for Control period from FY 2021-22 to FY 2025-26.

# A 5: TRUE-UP FOR FY 2016-17

5.1 The Petitioner has submitted the True-up petition for FY 2016-17 based on the Audited Accounts taking into consideration the provisions of the Tariff Regulations, 2015 and the methodology adopted by the Commission in the earlier Orders.

5.2 The Commission has now carried out the True-up for FY 2016-17 taking into consideration:

a) Audited (Statutory) accounts for the FY 2016-17;

b) JSERC Generation Tariff Regulations, 2015;

c) Methodology adopted by the Commission in its earlier Orders.

**Operational Performance**

***Plant Availability Factor (PAF)***

***Petitioner's Submission***

5.3 In regard to actual plant availability, the Petitioner submitted that the actual availability factor during the FY 2016-17 is 89.44%, which is above the normative value of 85% and therefore, requested the Commission to consider the same for FY 2016-17.

***Commission's Analysis***

5.4 The Commission in the MYT Order dated February 19, 2018 had approved the Normative Annual Plant Availability Factor (NAPAF) as 85.00% based on the MYT Petition submitted by the Petitioner.

5.5 Based on the information and SLDC certificate provided by the Petitioner, the Commission observes that actual availability factor supplied during the FY 2016-17 is more than the normative value of 85%. Thus, the Commission is of the view that the actual availability factor for FY 2016-17 is more than normative value of 85%.

5.6 The Plant Availability as approved by the Commission in the MYT Order dated February 19, 2018, as submitted by the Petitioner and approved now by the Commission for FY 2016-17 is summarised below:

**Table 7: Plant availability as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Normative Plant Availability Factor | 85.00% | 85.00% | 85.00% | 85.00% | 85.00% | 85.00% |
| Actual Plant Availability Factor | - | 89.44% | 89.44% | - | 89.44% | 89.44% |

***Auxiliary Consumption***

***Petitioner's Submission***

5.7 The Petitioner has submitted the auxiliary consumption for FY 2016-17 on normative basis as 9.00% for both the Units inline to approved value in MYT Order dated February 19, 2018.

***Commission's Analysis***

5.8 The Commission while dealing with the matter of approving the auxiliary consumption in the MYT Order dated February 19, 2018 for the Control period i.e. from FY 2016-17 to FY 2020-21 had verified the Purchase Order (PO) submitted by Petitioner and approved the auxiliary consumption at normative level of 8.50% and an additional 0.50% for the induced cooling tower.

5.9 The Commission has therefore adopted the same methodology and approved the normative auxiliary consumption as 9.00% for both the Units as shown below.

**Table 8: Auxiliary Consumption as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Auxiliary Consumption | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% | 9.00% |

***Plant Load Factor and Gross Generation***

***Petitioner's Submission***

5.10 The Petitioner has submitted the actual Plant Load Factor (PLF) as 89.44% for FY 2016-17 against the normative value of 85.00% approved by the Commission in the MYT Order dated February 19, 2018.

5.11 The Petitioner has further submitted Gross Generation as 1579.29 MU for Unit-1 and 1679.32 MU for Unit-2 for FY 2016-17.

***Commission's Analysis***

5.12 The Commission has scrutinized the detail submitted along with Petition and approves the actual Plant Load Factor and net Generation as submitted by the Petitioner for FY 2016-17.

5.13 The Plant Load Factor, Gross Generation as approved by the Commission in the MYT Order, as submitted by the Petitioner and as approved now by the Commission has been summarized in the table below.

**Table 9: Plant Load Factor and Generation as approved by the Commission**

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Plant Load Factor | % | 85.00 | 89.44 | 89.44 | 85.00 | 89.44 | 89.44 |
| Gross Generation | MU | - | 1579.29 | 1579.29 | - | 1679.32 | 1679.32 |

***Gross Station Heat Rate (GHR)***

***Petitioner's Submission***

5.14 The Petitioner has claimed the Gross Station Heat Rate (GHR) for both the Units as 2387.00 kcal/kWh in line with the approved value in the MYT Order dated February 19, 2018.

***Commission's Analysis***

5.15 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and JSERC Generation Tariff Regulations, 2015. Hence, the Commission approves the Gross Station Heat Rate as submitted by the Petitioner for FY 2016-17 as shown below:

**Table 10: Gross Station Heat Rate (GHR) as approved by the Commission**

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Gross Station Heat Rate | kcal/kWh | 2387.00 | 2387.00 | 2387.00 | 2387.00 | 2387.00 | 2387.00 |

***Specific Fuel Oil Consumption***

***Petitioner's Submission***

5.16 The Petitioner has submitted the specific fuel oil consumption as 1.00 mL/kWh in line with JSERC Generation Tariff Regulations, 2015 for both the Units for FY 2016-17.

*Commission's Analysis*

5.17 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and Generation Tariff Regulations, 2015. Hence, the Commission approves the secondary fuel oil consumption as submitted by the Petitioner for FY 2016-17 as shown below:

**Table 11: Specific Fuel Oil Consumption as approved by the Commission**

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Secondary Fuel Oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Fuel Cost Parameters**

***Coal Mix and Gross Calorific Value (GCV) of Primary Fuel***

***Petitioner's Submission***

5.18 The Petitioner submitted that there is variation in coal mix, GCV and landed price of primary fuel against the approved value in MYT Order dated February 19, 2018. The Petitioner further added that the reason for variation are not attributable to Petitioner.

5.19 The Petitioner submitted the source wise break up of coal consumed, GCV of coal for each unit during FY 2016-17 duly certified by auditor in support of his claim.

***Commission's Analysis***

5.20 The Commission observed that there has been significant deviation in the blending ratio, GCV of primary fuel-mix and its price as compared to the approved values by the Commission. It is also observed that there is decrease in GCV of coal, leading to increase in consumption of primary fuel.

5.21 The Commission vide letter dated September 21, 2022 directed the Petitioner to provide the detail computation of GCV of the primary fuel. In compliance, the Petitioner submitted that the weighted average GCV for Unit-1 as 3464.05 kcal/kg and GCV for Unit-2 as 3430.52 kcal/kg respectively and also submitted the detailed excel computation of GCV.

5.22 The Commission has reviewed the submission made by the Petitioner along with statutory audited detailing month wise quantity consumed and GCV for FY 2016-17 of each Unit.

5.23 For the purpose of truing-up, the Commission has considered the submission made by the Petitioner including supporting documents certified by the statutory auditor. The

Commission computed the GCV from each source of primary fuel by considering the actual GCV for FY 2016-17 after scrutinizing the actual monthly GCV submitted by the Petitioner duly certified by an auditor.

5.24 The following table summarize the fuel mix and weighted average GCV as submitted by the Petitioner and approved by the Commission for FY 2016-17.

**Table 12: Coal Mix and GCV as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Linkage Coal | 12.00% | 11.79% | 11.79% | 12.00% | 13.67% | 13.67% |
| Spot Market Coal | 73.00% | 80.80% | 80.80% | 73.00% | 80.08% | 80.08% |
| Middling Coal | | 6.21% | 6.21% | | 4.50% | 4.50% |
| Imported Coal | 15.00% | 1.20% | 1.20% | 15.00% | 1.74% | 1.74% |
| GCV of Linkage Coal | 4050.00 | 3593.26 | 3593.26 | 4050.00 | 3593.14 | 3593.14 |
| GCV of Spot Market Coal | 3233.00 | 3419.91 | 3419.91 | 3233.00 | 3376.16 | 3376.16 |
| GCV of Middling Coal | | 3695.18 | 3695.18 | | 3695.10 | 3695.10 |
| GCV of Imported Coal | 3827.00 | 3969.90 | 3969.90 | 3827.00 | 3969.01 | 3969.01 |
| **GCV of Primary Fuel** | **3419.00** | **3464.05** | **3464.05** | **3419.00** | **3430.52** | **3430.52** |

***Transit Loss***

***Petitioner's Submission***

5.25 The Petitioner has claimed the normative transit loss as 0.8% for domestic coal and 0.2% for imported coal inline to MYT Order dated February 19, 2018.

***Commission's Analysis***

5.26 The Commission observes that the actual transit loss of coal depends on various factors like category of coal, foreign particles content, moisture content, distance from mines etc. Considering all the factors, the Commission stipulated the weighted average normative transit loss of 0.80% for non-pit head plant and 0.20% for pit head plant in the JSERC Generation Tariff Regulations, 2015. In addition to the above, the Commission also allows the transit loss of 0.20% on imported coal.

5.27 The Commission observes that the generating station is non-pit head and in addition to domestic coal, the Petitioner also sourced power from imported coal.

5.28 Thus, in accordance with Regulation 8.21 of JSERC Generation Tariff Regulation, 2015, the Commission approves the normative transit loss as 0.80% for domestic coal and 0.20% for imported coal.

**Table 13: Transit Loss as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% |
| Imported Coal | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% |

***Landed Cost of Coal***

***Petitioner's Submission***

5.29 The Petitioner submitted that the landed price of primary fuel includes base price, royalty taxes and duties, transportation cost, Clean Energy Cess, transit loss and provided the auditor certificate in support of his claim.

***Commission's Analysis***

5.30 As per Regulation 8.21 of the JSERC Generation Tariff Regulations, 2015:

> *"8.21 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.*
>
> *The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:*
>
> *Pithead generating stations: 0.2%*
> *Non-pithead generating stations: 0.8%*
>
> *Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail, transit loss of 0.8% shall be applicable:*

*Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.*

5.31 The Commission vide letter dated September 21, 2022 directed the Petitioner to provide the detail computation of landed price of the primary fuel. In compliance the Petitioner submitted that the weighted average landed price of coal for Unit-1 as Rs. 3179.62 per MT and for Unit-2 as Rs. 3130.83 per MT respectively and also submitted the detailed excel computation of landed price of primary fuel.

5.32 Considering, the Petitioner's submission and after due prudent check, the Commission approves the landed cost of coal as given in the table below:

**Table 14: Weighted Average Landed Price of Coal as approved by the Commission (Rs. /Ton)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Price of Linkage Coal | 2534.00 | 3000.74 | 3000.74 | 2534.00 | 3015.47 | 3015.47 |
| Price of Spot Market Coal | 3308.00 | 3120.96 | 3120.96 | 3308.00 | 3077.03 | 3077.03 |
| Price of Middling Coal | | 4146.39 | 4146.39 | | 4145.34 | 4145.34 |
| Price of Imported Coal | 3860.00 | 3883.55 | 3883.55 | 3860.00 | 3887.52 | 3887.52 |
| **Price of Primary Fuel** | **3298.00** | **3179.62** | **3179.62** | **3298.00** | **3130.83** | **3130.83** |

***Calorific value and Landed price of Secondary Fuel***

***Petitioner's Submission***

5.33 The Petitioner has submitted the true copy duly certified by statutory auditor for secondary fuel consumed, GCV and landed price of secondary fuel for each Unit.

***Commission's Analysis***

5.34 The Commission has scrutinized the quantity of secondary fuel consumed, GCV and price of secondary fuel submitted by the Petitioner duly certified by an auditor.

5.35 The Commission has worked out the weighted average landed price of secondary fuel based on month-wise data duly certified by the auditor and specific fuel consumption as 1.00 mL/kWh as per Regulation 8.6 of JSERC Generation Tariff Regulation, 2015 and approved in this Order. The detail of approved calorific value and Landed price of Secondary Fuel for each Unit is shown below:

**Table 15: Calorific value and Landed price of Secondary fuel as approved by the Commission**

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Calorific Value | kcal/L | 9337.00 | 9348.25 | 9348.25 | 9334.00 | 9348.70 | 9348.70 |

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Landed Price | Rs./kL | 42637.00 | 39033.48 | 39033.48 | 45134.00 | 40712.06 | 40712.06 |

**Energy Charge Rate (ECR)**

***Petitioner's Submission***

5.36 The Petitioner has submitted the energy charge rate as Rs. 2.441/kWh and Rs. 2.429/kWh for Unit-1 and Unit-2 respectively against the approved value of Rs. 2.567/kWh and Rs. 2.570/kWh for FY 2016-17.

5.37 The Petitioner further added that the energy charges is computed considering the normative performance parameters and actual fuel prices and calorific value.

***Commission's Analysis***

5.38 As per JSERC Generation Tariff Regulation, 2015 the energy (variable) charge shall cover primary fuel and secondary fuel costs and limestone consumption cost (where applicable), shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment and limestone adjustment).

5.39 The formula for calculation of energy charge payable to a Generating Company is specified in JSERC Generation Tariff Regulation, 2015 as quoted below:

> *"8.17 The energy (variable) charge shall cover primary fuel and secondary fuel costs and limestone consumption cost (where applicable), shall be payable by every Beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment and limestone adjustment).*
>
> *"8.18 Total Energy charge payable to the Generating Company for a month shall be: = (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*
>
> *8.19 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formula:*
> *(a) For coal based stations*
> *ECR = {(GHR – SFC x CVSF) x LPPF/CVPF+SFCxLPSFi+LCxLPL} x 100/(100 – AUX)}*

*…………..*

*Where,*
*AUX - Normative auxiliary energy consumption in percentage*
*CVPF – Weighted Average Gross calorific value of coal as received, in KCal per kg, for coal based stations. In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.*
*CVSF - Calorific value of secondary fuel, in KCal per ml*
*ECR - Energy charge rate, in Rupees per kWh sent out.*
*GHR - Gross station heat rate, in KCal per kWh.*
*LC – Normative limestone consumption in kg per kWh*
*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio)*
*LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during the month*
*LPL = Weighted average landed price of limestone in Rupees per kg*
*SFC - Specific fuel oil consumption, in ml per kWh".*

*8.21 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.*

*The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:*

*Pithead generating stations: 0.2%*
*Non-pithead generating stations: 0.8%*

*Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail, transit loss of 0.8% shall be applicable:*

*Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.*

5.40 Accordingly, the Commission has calculated the Energy Charge Rate (ECR) to be charged by the Petitioner as per the formula specified in JSERC Generation Tariff Regulations, 2015. The detail of ECR and Fuel Cost for truing up of FY 2016-17 for both the Units as submitted by the Petitioner and approved by the Commission is given below:

**Table 16: Energy Charge Rate (ECR) as approved by the Commission**

| Particulars | UoM | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1579.29 | 1579.29 | 2010.42 | 1679.32 | 1679.32 |
| Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 | 9.00% | 9.00% | 9.00% |
| Gross Station Heat Rate | kcal/kWh | 2387.00 | 2387.00 | 2387.00 | 2387.00 | 2387.00 | 2387.00 |
| Specific Oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil | kcal/mL | 9.34 | 9.35 | 9.35 | 9.33 | 9.35 | 9.35 |
| GCV of Primary Fuel | kcal/kg | 3419.00 | 3464.05 | 3464.05 | 3419.00 | 3430.52 | 3430.52 |
| Landed Price of Primary Fuel | Rs./Ton | 3298.00 | 3179.62 | 3179.62 | 3298.00 | 3130.83 | 3130.83 |
| Landed Price of Secondary Fuel | Rs./kL | 42637.00 | 39033.48 | 39033.48 | 45134.00 | 40712.06 | 40712.06 |
| **Energy Charge Rate (ECR)** | **Rs//kWh** | **2.567** | **2.441** | **2.441** | **2.570** | **2.429** | **2.429** |

**Determination of Fixed Cost**

***Capital Cost***

5.41 The Commission in its Order dated May 26, 2014 provisionally approved the capital cost for Unit-1 and Unit-2 of generating plant as Rs. 1662.26 Crore and Rs. 1624.37 Crore respectively.

5.42 The Petitioner in its Petition dated April 20, 2015 submitted the actual project cost before the Commission for approval. The Commission vide Order dated September 01, 2016 approved the capital cost as Rs. 1625.98 Crore and Rs. 1645.72 Crore for Unit-1 and Unit-2 respectively.

5.43 The Petitioner being aggrieved by the above said Order, filed a review petition (Case (T) No. 13 of 2016) on various grounds out of which review of capital cost was also one of them. The Commission vide its Order dated January 09, 2018 disposed the above said review with the observation that the error in approval of capital cost primarily arose because of divergent figures provided by Petitioner in the original application vis-à-vis the audited accounts. During the course of finalization of Order dated September 01, 2016, the Petitioner was accorded several occasions to reconcile the variations/ differences which the Petitioner fails. As a result, the Commission had no option but to take the figures which it considered appropriate without the supporting clarifications from the Petitioner. Consequently, the inadvertent difference of Rs. 42.54 Crore from the audited accounts creeped in. The clarification providing the break up based on the audited accounts duly signed by a Chartered Accountant which was submitted during the proceeding of review petition should have been submitted during the process of finalization of the True-up Order. Thus, after clarification and justification submitted by the Petitioner duly certified by auditor, the Commission revised the capital cost as Rs. 1650.64 Crore and Rs. 1663.60 Crore for Unit-1 and Unit-2 respectively.

***Additional Capitalization & De-capitalization***

***Petitioner's Submission***

5.44 The Petitioner submitted that it has incurred an additional capitalization and de-capitalisation of Rs. 0.75 Crore and Rs. 0.09 Crore respectively for each Unit of the generation station for FY 2016-17.

5.45 The details of additional capitalisation and de-capitalisation as claimed by the Petitioner for FY 2016-17 is shown below:

**Table 17: Details of additional capitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Plant & Machinery | - | 0.41 | - | 0.41 |
| Building & Civil Works | - | 0.25 | - | 0.25 |
| Other | - | 0.09 | - | 0.09 |
| **Total** | **-** | **0.75** | **-** | **0.75** |

**Table 18: Details of de-capitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Other | - | 0.09 | - | 0.09 |
| **Total** | **-** | **0.09** | **-** | **0.09** |

5.46 In support of capitalization, the Petitioner has submitted the Statutory Auditor certificate duly attesting the capital cost of Rs. 3382.30 Crore as on March 31, 2017.

***Commission's Analysis***

5.47 The Commission has outlined the provisions for the approval of any additional capitalization, for a generating station in Regulation 7.5 and Regulation 7.6 of the JSERC Generation Tariff Regulation, 2015. The relevant clauses are outlined below:

> *"Additional Capitalization*
>
> *7.5 The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*
>
> *(i) Undischarged liabilities recognized to be payable at a future date;*
>
> *(ii) Works deferred for execution;*
>
> *(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions under clause 7.3 and 7.4 of these Regulations;*
>
> *(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
>
> *(v) Change in law*
>
> *Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.*
>
> *7.6 The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:*
>
> *(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*
>
> (ii) Change in law;

*(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(iv) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost;*

*(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*

*(vi) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:*

*(vii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to ecological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plan operation; and*

*Provided that in respect sub-clause (vii) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture air conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machine, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 01.04.2016 for the Control period.*

*Provided further that any capital expenditure other than that of the nature specified above in (i) to (vi) in case of coal/lignite based station shall be met out of compensation allowance as specified in Clause 7.46;*

*Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and*

*Compensation Allowance, same expenditure cannot be claimed under this regulation."*

5.48 The Commission observed that there is discrepancy in the representation of additional capitalisation and de-capitalisation when compared with Petitioner claimed and audited accounts as shown below.

**Table 19: Discrepancy between Petitioner Claim and audited accounts in Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Plant & Machinery | 0.41 | 0.41 | 0.41 | 0.41 |
| Building & Civil Works | 0.25 | 0.25 | 0.25 | 0.25 |
| Furniture and Fixtures | - | 0.003 | - | 0.003 |
| Vehicles | - | 0.03 | - | 0.03 |
| Office Equipment | - | 0.01 | - | 0.01 |
| Computer | - | 0.04 | - | 0.04 |
| Other | 0.09 | - | 0.09 | - |
| **Total** | **0.75** | **0.75** | **0.75** | **0.75** |

**Table 20: Discrepancy between Petitioner Claim and audited accounts in De-Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| **Vehicles** | **-** | **0.09** | | **0.09** |
| **Other** | **0.09** | **-** | **0.09** | **-** |
| **Total** | **0.09** | **0.09** | **0.09** | **0.09** |

5.49 The Commission observed the Petitioner had claimed Rs. 1.50 Crore (cumulative for both the Units) as additional capitalisation after the cut-off date. The Commission vide its letter dated September 21, 2022 directed the Petitioner to submit the reason for addition of assets after cut-off date and the provision(s) of Regulation 7.6 of JSERC Generation Tariff Regulations, 2015 under which the above said addition is claimed.

5.50 The Petitioner vide letter dated November 11, 2022 submitted the detail of assets capitalized during the FY 2016-17 along with justification as tabulated below.

| Sr. No. | Detail of Assets | Value (Rs. Cr.) | Justification |
|---|---|---|---|
| 1 | Oil Handling System, Air Compressor | 0.83 | For ensuring smooth handling of oil & protect wear and tear of Air Compressor System, which are nodal for consistent operation of the generating station. The Commission may |

| Sr. No. | Detail of Assets | Value (Rs. Cr.) | Justification |
|---|---|---|---|
| | System and Other Plant & Machineries | | allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| 2 | Civil Work and Infrastructure | 0.53 | For increasing/strengthening the capacity of Ash Dyke, which is essential for smooth running of plant. The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| 3 | IT Equipment | 0.09 | For replacement of laptop, printers, UPS etc. for routine office work. The expenditure was necessary for managing efficient and successful administration of the generating station. The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| 4 | Self-propelled vehicles | 0.07 | For purchase of vehicles for commuting at plant, which is necessary for efficient and successful management of the station. The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| **Total (Rs. Crore)** | | **1.50** | |

5.51 The Commission observes that all the assets capitalized during the FY 2016-17 were not part of the original project. Further, the Petitioner requested the Commission to allow the above said assets under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015 i.e. any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost.

5.52 The Commission examined the audited accounts of FY 2016-17 and as per Note-13 (Fixed Assets) of audited accounts, substantiated the fact that Rs. 1.50 Crore (cumulative for both the Units) of assets is capitalized during the FY 2016-17. Based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the additional capitalization of Rs. 1.50 Crore (cumulative for both the Units) for FY 2016-17 under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015.

5.53 In regard to de-capitalisation, the Commission directed the Petitioner to provide the detail of de-capitalised assets along with the date of commissioning of each assets.

5.54 The Petitioner vide its letter dated December 09, 2022 submitted that vehicle (SUV Tata Aria Pride 2.2 L Dicor 140 PS) amounting Rs. 0.17 Crore was decapitalized during the year. The Petitioner further submitted that the same was capitalized on September 15, 2012 (FY 2012-13).

5.55 The Commission examined the audited accounts of FY 2016-17 and as per Note-13 (Fixed Assets) of audited accounts substantiated that Rs. 0.17 Crore (cumulative for both the

Units) was deducted from assets during the FY 2016-17. Based on the submission and justification made by the Petitioner and after a prudent check, the Commission approved the deduction of Rs. 0.17 Crore (cumulative for both the Units) for FY 2016-17.

5.56 The additional capitalization and de-capitalization as approved by the Commission in the previous MYT Order, as submitted by Petitioner and as approved now by the Commission has been summarized in the table below.

**Table 21: Details of the Additional Capitalization as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Capitalization | - | 0.75 | 0.75 | - | 0.75 | 0.75 |
| De-Capitalisation | - | 0.09 | 0.09 | - | 0.09 | 0.09 |

***Depreciation***

***Petitioner's Submission***

5.57 The Petitioner submitted that depreciation is calculated as per depreciation rates provided in Appendix-I of the JSERC Generation Tariff Regulations 2015.

5.58 The Petitioner further submitted that the net additional capitalization of Rs. 0.67 Crore (Rs. 75 Crore minus Rs. 0.09 Crore) for each Unit is also taken into account in calculation of depreciation. The depreciation as submitted by Petitioner is shown below.

**Table 22: Depreciation as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.75 | 83.15 | 83.49 |

***Commission's Analysis***

5.59 The provisions laid out in the JSERC Generation Tariff Regulations, 2015 for approval of depreciation is reproduced below.

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*………*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station:*

*Provided that, the remaining depreciable value as on 31st March of the Year closing after a period of 12 Years from the Date of Commercial operation shall be spread over the balance Useful life of the assets.*

*7.32 In case of existing projects, the balance depreciable value as on 1st April 2016 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31st March 2016 from the gross depreciable value of the assets.*

*The rate of depreciation shall be continued to be charged at the rate specified in Appendix-I till cumulative depreciation reaches 70%. Thereafter the remaining depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%.*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis."*

5.60 The Commission has computed depreciation for both the Units in accordance with the above regulations considering the capital cost approved by the Commission vide Order dated January 09, 2018 in Case (T) No. 13 of 2016 and subsequent additional capitalisation and decapitalisation approved by the Commission. The following table shows the depreciation approved by the Commission against that submitted by Petitioner.

**Table 23: Depreciation as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Depreciation | 82.37 | 82.75 | 82.39 | 83.15 | 83.49 | 83.15 |

***Operation & Maintenance Expenses***

***Petitioner's Submission***

5.61 The Petitioner has submitted that the Commission in its MYT Order dated February 19, 2018 had approved the O&M Expenses considering FY 2015-16 as Base Year and applying an escalation factor of 4.93% over the approved norm of FY 2015-16.

5.62 The Petitioner had filed a Review Petition (Case No. 05 of 2018) before the Commission to review the escalation factor of 4.93% approved by the Commission for the Control period from FY 2016-17 to FY 2020-21 and claimed the escalation factor as 6.30% over the approved norm of FY 2015-16. Therefore, the Petitioner has claimed the escalation factor of 6.30% in this instant Petition over the approved norm of FY 2015-16 to derive the O&M Expenses for FY 2016-17.

5.63 The Petitioner has entered into an MoU with Govt. of Jharkhand for drawl of water to an extent of 4064 $m^3$ per hour in a phased manner from Subarnarekha river, flowing at a distance of eight km downstream of water intake point from APNRL Project site, vide agreement dated August 29, 2008. The said agreement stipulates that a pump house has to be installed for drawal of required water from the river Subarnarekha withdrawn directly from river and not from any reservoir. Subsequently, Water Department of Govt. of Jharkhand vide its Notification dated April 01, 2011 has devised various categories for water off-take and APNRL was asked to pay @ Rs. 26.40 per thousand gallon. The Petitioner aggrieved by the rate, filed a Writ Petition before High Court of Jharkhand on February 07, 2012 with regard to demand raised by Subarnarekha Dam Division towards withdrawal of water at higher than the agreed rates.

5.64 The Hon'ble High Court of Jharkhand passed a stay Order in the above said Writ Petition, restricting the payment of water charges at pre-revised rate of Rs. 4.50 per thousand gallons. Therefore, the Petitioner is paying at Rs. 4.50 per thousand gallon of water withdrawn from river, amounting to Rs. 1.74 Crore for FY 2016-17, as reflected in audited accounts. The same is apportioned in proportion to JBVNL share (25%) i.e., 0.44 Crore (Rs. 0.22 Crore for each Unit).

5.65 The Petitioner further added that final Order against Writ Petition filed before Hon'ble High Court of Jharkhand is still awaited and requested the Commission, to allow to recover any additional water charges which may have been imposed, based on the outcome of the said Writ Petition, as the same would be accounted for increase in rate of water charges by GoJ and not on account of increase in water consumption.

5.66 The Petitioner has incurred an expenditure of Rs. 3.61 Crore on account of Capital Spares for FY 2016-17 and claimed an amount of Rs. 0.90 Crore to be billed to JBVNL in apportion to its share (25%).

5.67 In view of the reasons stated above, the Petitioner has prayed to the Commission to allow the O&M expenses as mentioned below.

**Table 24: O&M Expenses as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses | 72.01 | 72.96 | 72.01 | 72.96 |
| Water Charges | 3.48 | 0.22 | 3.48 | 0.22 |
| Capital Spares | 0.00 | 0.45 | 0.00 | 0.45 |
| **Net- O&M Expenses** | **75.49** | **73.63** | **75.49** | **73.63** |

***Commission's Analysis***

5.68 The provisions laid out in the JSERC Generation Tariff Regulations, 2015 for approval of O&M expenses are as under:

*"7.40 Operation and Maintenance (O&M) expenses shall comprise of the following:*

*Salaries, wages, pension contribution and other employee costs;*

*Administrative and General costs;*

*Repairs and maintenance expenses; and*

*Other miscellaneous expenses statutory levies and taxes (except corporate income tax).*

...............................

*7.41 Existing Thermal Generating Stations:*

*(a) The Applicant shall submit details of O&M expenses as required by the Commission. The O&M expenses excluding terminal liabilities for the Base Year shall be determined based on accounting statements for the base year, estimates of the Generating Company for relevant years and other factors considered relevant.*

*(b) The O&M expenses excluding terminal liabilities permissible towards determination of tariff for each year of the Control Period shall be determined after a prudency check by the Commission based on submissions of the Generating Company, previous years' actual expenses and any other factor considered relevant.*

*(c) Terminal Liabilities will be approved as per actual submitted by the Generating Company or be established through actuarial studies.*

*(d) Increase in O&M charges on account of war, insurgency or changes in laws, or like eventualities where the Commission is of the opinion that an*

> *increase in O&M charges is justified, may be considered by the Commission for a specified period."*

5.69 Based upon the above mentioned Regulation and considering the actual expenses incurred in last four years towards the Operation and Maintenance of plant, the Commission vide Order dated February 19, 2018 approved the O&M Expenses for the Control Period from FY 2016-17 to FY 2020-21 by applying an escalation factor of 4.93% over the approved norm of FY 2015-16. The escalation factor has been arrived at by considering a composite index of WPI and CPI in the ratio of 80:20 over the last five years.

5.70 In line to above, the Commission in this instant Order has also considered the escalation factor of 4.93% over the approved norm of FY 2015-16 to derive the O&M Expenses for FY 2016-17.

5.71 Further, as per Regulation 6.14(b) laid out in the JSERC Generation Tariff Regulations, 2015, any surplus and deficit on account of O&M expenses shall be on the account of Generator and shall not be trued up in ARR.

5.72 The treatment of water charges and capital spares for thermal generation stations is governed by the Clause 7.46 as stated below. The relevant extract of the Regulations is reproduced below:

> *"7.46 The Water Charges and capital spares for thermal generating stations shall be allowed separately:*
>
> *Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*
>
> *Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Clause 7.47 of the Regulation or special allowance as per Clause 7.10 and 7.11 of the Regulation or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization."*

5.73 The Commission has scrutinized the detail submitted by the Petitioner and approved the water charges as per audited accounts for FY 2016-17 in proportion of power allocated to JBVNL.

5.74 In regard to Capital spares, the Commission is of the view that in compliance to 2nd proviso of Regulation 7.46 of the JSERC Generation Tariff Regulations, the Petitioner is required to submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 7.47 of the JSERC Generation Tariff Regulations or special allowance as per Regulations 7.10 and 7.11 of the JSERC Generation Tariff Regulations or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization. In compliance, the Petitioner submitted the details of critical spares consumed in FY 2016-17 duly certified by auditor along with purpose of consumption.

5.75 The Commission examines the details of critical spares consumed in FY 2016-17 duly certified by auditor along with purpose of consumption. The Commission approves that out of Rs. 3.62 Crore, the Petitioner had claimed Rs. 1.80 Crore (cumulative for both units) based on the ratio of the power allocation to JBVNL. Thus, based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the critical spares of Rs. 0.90 Crore for each unit for FY 2016-17.

5.76 Considering the above facts and norms specified in the JSERC Generation Tariff Regulations, 2015, the Commission approves the O&M expenses as shown below:

**Table 25: O&M Expenses as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| O&M Expenses | 72.01 | 72.96 | 72.01 | 72.01 | 72.96 | 72.01 |
| Water Charges | 3.48 | 0.22 | 0.22 | 3.48 | 0.22 | 0.22 |
| Capital Spares | 0.00 | 0.45 | 0.45 | 0.00 | 0.45 | 0.45 |
| **Net- O&M Expenses** | **75.49** | **73.63** | **72.68** | **75.49** | **73.63** | **72.68** |

***Interest on Loan***

***Petitioner's Submission***

5.77 The Petitioner submitted that the Commission in its MYT Order dated February 19, 2018 had approved debt equity ratio of 73.24% and 26.76% as on March 31, 2016, which translates into equity as Rs. 904.81 Crore and debt as Rs. 2476.16 Crore.

5.78 The Petitioner has emphasised that lenders of the Company initiated Strategic Debt Restructuring (SDR) process on December 22, 2015. Pursuant to the scheme, the Joint Lenders Forum (JLF) approved conversion of debt into equity shares of the company aggregating an amount of Rs. 605.43 Crore. The conversion of debt into equity, as required under SDR guidelines was approved by company on June 22, 2016. Thus, on account of the above conversion of debt into equity, the proportion of equity in the capital balance for FY 2016-17 increased to 55.35%.

5.79 The Petitioner has considered the debt equity ratio as 70:30 in accordance to Regulation 7.3 of the JSERC Generation Tariff Regulations and further addition during the FY 2016-17 on normative basis of debt-equity as 70:30.

5.80 The Petitioner has considered the weighted average rate of interest based on actual loan portfolio and repayment equal to depreciation proposed by Petitioner for calculation of interest on loan for FY 2016-17.

**Table 26: Interest on Loan as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Debt Balance | 967.70 | 918.28 | 1001.07 | 951.80 |
| Net Additions | 0.00 | 0.47 | 0.00 | 0.47 |
| Repayment | 82.37 | 82.48 | 83.15 | 83.24 |
| Closing Debt Balance | 885.33 | 836.27 | 917.92 | 869.03 |
| Average | 926.51 | 877.27 | 959.49 | 910.41 |
| Rate of Interest (%) | 13.13% | 12.36% | 13.28% | 12.70% |
| **Interest on Debt** | **121.65** | **108.43** | **127.42** | **115.62** |

***Commission's Analysis***

5.81 The relevant Clause as per JSERC Generation Tariff Regulation, 2015 is as follows: -

*"7.13 In case of the generating station declared under commercial operation prior to 1.4.2016, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31.3.2016 shall be considered for determination of tariff.*

*During the control period, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31st March 2017 shall be considered for determination of tariff.*

*7.14 For the project declared under commercial operation on or after 1.04.2016, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*Explanation: -*

*i. The premium, if any, raised by the Generating Company, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station.*

*ii. Provided, further that any consumer contribution, deposit work and grant obtained for the execution of the project shall not be considered as part of the capital structure for the purpose of computation of normative debt: equity.*
*iii. Any expenditure incurred or projected to be incurred on or after 1st April 2016 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

*……….*

*"7.19 The loans arrived at in the manner indicated in clause 7.13 and 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

*7.20 The normative loan outstanding as on 1st April 2016 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31st March 2016 from the gross normative loan*

*7.21 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.*

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered*

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

5.82 The Commission vide letter dated September 21, 2022 directed the Petitioner to submit the computed weighted average interest rate on the basis of opening loan balance from each source and corresponding interest rate applicable for FY 2016-17 as per Regulations 7.23 of JSERC Generation Tariff Regulations, 2015.

5.83 The Petitioner in its reply dated November 11, 2022 submitted the loan rate from each bank along with weighted average interest rate. The Petitioner has claimed the weighted average rate as 12.36% for Unit-1 and 12.70% for Unit-2.

5.84 The Commission vide letter dated September 21, 2022 directed the Petitioner to provide the copy of letter/correspondence/approval related to Strategic Debt Restructuring (SDR) process letter dated 22.07.2016. The Commission further enquired whether the SDR detail was submitted in MYT petition or during its proceeding and if not, why when the same was finalized on 22.07.2016, well before the finalization of MYT Order for Control Period for FY 2016-17 to FY 2020-21. The Petitioner in its reply submitted that pursuant to SDR, there has been no change in the rate of interest. As per JSERC Generation Tariff Regulations 2015, the Petitioner has to consider the impact of lower rate of interest pursuant to loan restructuring to be passed on consumers. However, this is not the case in the instant matter. The implication of SDR is only to the extent of increase in equity base. Regarding disclosure of the details, the Petitioner as part of its submission has transparently shared the audited accounts which clearly provide the details of such SDR. The said audited accounts are an integral part of the Petition which may kindly be considered by the Commission. The approval of interest expenses is based on normative loan amount which are agnostic to the overall loan amount as per the book of accounts. Accordingly, the said SDR had no impact on the interest rate which is a prime factor for tariff purposes. So far as the impact on equity is concerned, the same has been elaborated in detail in the petition as also in the books of accounts and the Petitioner has requested the Commission to consider the change in the position of the equity with detailed rationale.

5.85 The Commission has reviewed the submissions made by the Petitioner. The Strategic Debt Restructuring (SDR) process was approved by company on June 22, 2016. The Petition for approval of Business Plan, ARR & Tariff for MYT Control Period FY 2016-17 to FY 2020-21 was filed on January 31, 2017. The Commission is of the view that when SDR process was completed and approved by the company before the filing of MYT Petition, the same need to be submitted before the Commission for consideration. Thus, the Commission is not inclined to review the SDR at this juncture.

5.86 The Commission has calculated the normative opening balance of debt for FY 2016-17 as trued up closing balance for FY 2015-16 vide Order dated February 19, 2018 for each Unit.

5.87 In regard to de-capitalisation of vehicle, the de-capitalised value apportioned to loan is deducted from loan for FY 2016-17.

5.88 The Commission has approved the repayment as approved depreciation in line with the methodology specified in JSERC Generation Tariff Regulations, 2015 to arrive at the closing balance of normative debt component.

5.89 The Commission has considered the weighted average rate of interest calculated based on the actual loan portfolio as per the submission made by the Petitioner.

**Table 27: Interest on Loan as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Debt Balance | 967.70 | 918.28 | 967.70 | 1001.07 | 951.80 | 1001.07 |
| Addition during the FY | 0.00 | 0.47 | 0.46 | 0.00 | 0.47 | 0.47 |
| Deletion during the FY | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.06 |
| Repayment | 82.37 | 82.48 | 82.39 | 83.15 | 83.24 | 83.15 |
| Closing Debt Balance | 885.33 | 836.27 | 885.71 | 917.92 | 869.03 | 918.32 |
| Average | 926.51 | 877.27 | 926.70 | 959.49 | 910.41 | 959.70 |
| Rate of Interest (%) | 13.13% | 12.36% | 12.36% | 13.28% | 12.70% | 12.70% |
| **Interest on Debt** | **121.65** | **108.43** | **114.54** | **127.42** | **115.62** | **121.88** |

***Interest on Working Capital (IoWC)***

***Petitioner's Submission***

5.90 The Petitioner has worked out the normative working capital requirement for Unit-1 and Unit-2 for FY 2016-17 and has considered the rate of interest on working capital equal to the Bank Rate specified by State Bank as on April 01, 2016 plus 350 basis points. Accordingly, the Petitioner has considered 12.80% for Unit-1 and Unit-2 as rate of interest on working capital. The detailed computation of interest on working capital for Unit-1 and Unit-2 for FY 2016-17 based on the above rationale as shown below.

**Table 28: Interest on Working Capital as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Coal Cost for 2 Months | 76.84 | 57.66 | 76.84 | 60.94 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.03 | 1.51 | 1.14 |
| O&M Expenses for 1 month | 6.00 | 6.08 | 6.00 | 6.08 |
| Maintenance Spares (20% of O&M) | 14.40 | 14.59 | 14.40 | 14.59 |
| Receivables for 2 months | 141.47 | 120.11 | 142.52 | 124.98 |
| Total Working Capital | 240.15 | 199.60 | 241.28 | 207.73 |
| Rate of Interest | 12.80% | 12.80% | 12.80% | 12.80% |
| **Interest on Working Capital** | **30.74** | **25.55** | **30.88** | **26.59** |

***Commission's Analysis***

5.91 The Commission has computed the interest on working capital as per JSERC Generation Tariff Regulations, 2015 as reproduced below.

*"7.34 The Commission shall determine the Working Capital requirement for coal based generating stations containing the following components:*

*(a) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(b) Cost of coal or lignite and limestone for 30 days for generation corresponding to normative annual plant availability factor;*

*(c) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;*

*(c) Maintenance spares @ 20% of operation and maintenance expenses;*

*(d) Operation and Maintenance expenses for 1 month; and*

*(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

*7.37 The cost of fuel in cases covered under clause 7.34 and 7.35 of these Regulations shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period."*

*"7.38 Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 01.04.2016 or as on 1st April of the year during the tariff period 2016-17 to 2020-21 in which the generating station or a unit thereof, is declared under commercial operation, whichever is later.*

*Provided that the rate of interest on working capital shall be trued up on the basis of actual bank rate as on 1st April of the respective year at the time of true up for that year.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures".*

5.92 The Commission has computed the working capital requirement as per the above said Regulations. The interest on working capital is considered as per JSERC Generation Tariff Regulations, 2015 i.e., Bank rate as April 01, 2016. The detailed calculation made by the Commission is shown in the tables below.

**Table 29: Interest on Working Capital as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Coal Cost for 2 Months | 76.84 | 57.66 | 57.44 | 76.84 | 60.94 | 60.73 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.03 | 1.03 | 1.51 | 1.14 | 1.14 |
| O&M Expenses for 1 month | 6.00 | 6.08 | 6.00 | 6.00 | 6.08 | 6.00 |
| Maintenance Spares (20% of O&M) | 14.40 | 14.59 | 14.40 | 14.40 | 14.59 | 14.40 |
| Receivables for 2 months | 141.47 | 120.11 | 119.30 | 142.52 | 124.98 | 124.16 |
| Total Working Capital | 240.15 | 199.60 | 198.17 | 241.28 | 207.73 | 206.43 |
| Rate of Interest | 12.80% | 12.80% | 12.80% | 12.80% | 12.80% | 12.80% |
| **Interest on Working Capital** | **30.74** | **25.55** | **25.37** | **30.88** | **26.59** | **26.45** |

***Return on Equity***

***Petitioner's Submission***

5.93 The Petitioner had initiated Strategic Debt Restructuring (SDR) process on December 22, 2015. Pursuant to the scheme, the Joint Lenders Forum (JLF) approved conversion of debt into equity shares of the company aggregating to an amount of Rs. 605.43 Crore. The conversion of debt into equity, as required under SDR guidelines was approved by the company on June 22, 2016. Thus, on account of above conversion of debt into equity, the proportion of equity in the capital balance for FY 2016-17 has increased to 55.35%.

5.94 The Petitioner has considered the debt equity ratio as 70:30 in accordance to Regulation 7.3 of the JSERC Generation Tariff Regulations, resulting in opening balance of equity as Rs. 505.04 Crore and Rs. 509.44 Crore for Unit-1 and Unit-2 respectively. The Petitioner has considered the actual equity addition during the FY 2016-17, based on the audited accounts.

5.95 Further, the Petitioner while calculating return on equity has considered post-tax return as 15.50% in line with Regulations and approach adopted by the Commission in earlier Orders.

5.96 Accordingly, the Return on Equity (Pre-Tax) claimed by the Petitioner for Unit-1 and Unit-2 for FY 2016-17 is summarized in the table below:

**Table 30: RoE as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Equity | 455.63 | 505.04 | 450.25 | 509.24 |
| Addition during the Year | 0.00 | 0.20 | 0.00 | 0.20 |
| Closing Equity | 455.63 | 505.24 | 450.25 | 509.44 |
| Average Equity | 455.63 | 505.14 | 450.25 | 509.34 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.30** | **69.79** | **78.95** |

***Commission's Analysis***

5.97 The Commission has calculated the gross normative equity for FY 2016-17 as per Clause 7.13 and 7.14 of the JSERC Generation Tariff Regulations, 2015.

*"7.13 In case of the generating station declared under commercial operation prior to 1.4.2016, debt-equity ratio allowed by the Commission for determination of*

*Tariff for the period ending 31.3.2016 shall be considered for determination of tariff.*

*During the control period, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31st March 2017 shall be considered for determination of tariff.*

*7.14 For the project declared under commercial operation on or after 1.04.2016, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*Explanation: -*

*i. The premium, if any, raised by the Generating Company, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station.*

*ii. Provided, further that any consumer contribution, deposit work and grant obtained for the execution of the project shall not be considered as part of the capital structure for the purpose of computation of normative debt: equity.*

*iii. Any expenditure incurred or projected to be incurred on or after 1st April 2016 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

5.98 The Commission has observed that the Petitioner has revised the debt:equity ratio based on Strategic Debt Restructuring (SDR) process which was approved by the company on June 22, 2016. However, the Commission is of the view that when SDR process was completed and approved by company during the proceeding of MYT Petition for FY 2016-17 to FY 2020-21, the same need to be submitted by the Petitioner before the Commission for consideration. Thus, the Commission is not inclined to review the SDR at this juncture.

5.99 The Commission has calculated the normative opening balance of equity for FY 2016-17 as trued up closing balance for FY 2015-16 vide Order dated February 19, 2018 for each Unit.

5.100 The Commission has scrutinized the details submitted by the Petitioner and observed that the assets (vehicles) that are de-capitalised were part of the capital cost and were capitalised at the time of COD of their respective Unit. Thus, assuming the debt:equity ratio approved by the Commission of each Unit for the capital cost at the time COD, the apportion of de-capitalisation is deducted while arriving the net addition of equity during FY 2016-17.

5.101 In accordance with Regulation 7.16, Regulation 7.17 and Regulation 7.18 of the JSERC Generation Tariff Regulations, 2015, the Commission has approved the rate of return on equity at the rate of 15.50% as shown below:

**Table 31: RoE as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Equity | 455.63 | 505.04 | 455.63 | 450.25 | 509.24 | 459.98 |
| Addition during the FY | 0.00 | 0.20 | 0.20 | 0.00 | 0.20 | 0.20 |
| Deletion during the FY | - | - | 0.02 | - | - | 0.02 |
| Closing Equity | 455.63 | 505.24 | 455.81 | 450.25 | 509.44 | 460.16 |
| Average Equity | 455.63 | 505.14 | 455.72 | 450.25 | 509.34 | 460.07 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.30** | **70.64** | **69.79** | **78.95** | **71.31** |

***Incentive***

***Petitioner's Submission***

5.102 The Petitioner claimed an incentive of Rs. 1.19 Crore for each Unit for FY 2016-17 as shown below:

**Table 32: Incentive as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Incentive | - | 1.19 | - | 1.19 |

***Commission's Analysis***

5.103 The Commission vide its letter dated September 19, 2022 has directed the Petitioner to submit detailed calculation and the basis for claiming incentive. The Petitioner in its reply dated November 11, 2022 submitted that as per Regulation 8.15 of the JSERC Generation Tariff Regulations, incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF).

**Table 33: Incentive as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Incentive | - | 1.19 | 1.19 | - | 1.19 | 1.19 |

***Annual Fixed Charge***

***Petitioner's Submission***

5.104 The summary of Annual Fixed Charge (AFC) as submitted by the Petitioner is shown below:

**Table 34: Annual Fixed Charge as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses excluding Water Charges & Capital Spares | 72.01 | 72.96 | 72.01 | 72.96 |
| Depreciation | 82.37 | 82.75 | 83.15 | 83.49 |
| Interest on Loan | 121.65 | 108.43 | 127.42 | 115.62 |
| Return on Equity | 70.62 | 78.30 | 69.79 | 78.95 |
| Interest on Working Capital | 30.74 | 25.55 | 30.88 | 26.59 |
| **Annual Fixed Cost** | **377.39** | **367.99** | **383.25** | **377.61** |

***Commission's Analysis***

5.105 Regulation 8.2 of the JSERC Generation Tariff Regulations, 2015 states that Annual Fixed Cost (AFC) of a thermal generating station shall consist of the following components:

(a) Return on Equity;

(b) Interest and Financing Charges on Loan Capital;

(c) Depreciation;

(d) Operation and Maintenance Expenses;

(e) Interest Charges on Working Capital; and

(f) Special allowance in lieu of R&M or separate compensation allowance, wherever applicable;

5.106 The Annual Fixed Cost (AFC) as submitted by Petitioner and approved by the Commission has been tabulated below.

**Table 35: Annual Fixed Charge as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| O&M Expenses excluding Water Charges & Capital Spares | 72.01 | 72.96 | 72.01 | 72.01 | 72.96 | 72.01 |
| Depreciation | 82.37 | 82.75 | 82.39 | 83.15 | 83.49 | 83.15 |
| Interest on Loan | 121.65 | 108.43 | 114.54 | 127.42 | 115.62 | 121.88 |
| Return on Equity | 70.62 | 78.30 | 70.64 | 69.79 | 78.95 | 71.31 |
| Interest on Working Capital | 30.74 | 25.55 | 25.37 | 30.88 | 26.59 | 26.45 |
| **Annual Fixed Cost** | **377.39** | **367.99** | **364.94** | **383.25** | **377.61** | **374.80** |

**Tariff for Unit-1 and Unit-2**

***Petitioner's Submission***

5.107 The Petitioner has submitted that in accordance with provisions of Power Purchase Agreement (PPA) executed with Discom, out of the total Contracted Capacity of 122.85 MW, APNRL will supply 63.882 MW capacity (i.e., 13% of the total net Capacity at total Tariff (both fixed and Variable Charge) and the balance 58.96 MW capacity, i.e., 12% of the Net capacity at variable cost i.e., Energy Charge as approved by the Commission. Accordingly, the tariff for supply of regulated capacity for JUVNL/JBVNL is summarized below:

**Table 36: Tariff for 12% of Total Net Capacity as submitted by the Petitioner (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 2.441 | 2.570 | 2.429 |

**Table 37: Tariff for 13% of Total Net Capacity as submitted by the Petitioner (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|---|
| | | | MYT Order | Petition | MYT Order | Petition |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 377.39 | 367.99 | 383.25 | 377.61 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.75 | 1.70 | 1.77 | 1.75 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | I=G x H | MW | **55.75** | **54.36** | **56.62** | **55.78** |

***Commission's Analysis***

5.108 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) approved by the Commission, whereas the tariff for next 13% of total net capacity shall be total tariff i.e., variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission as tabulated below.

**Table 38: Tariff for 12% of Total Net Capacity as approved by the Commission (Variable Charge)**

| Particulars | Units | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|---|
| | | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 2.441 | 2.441 | 2.570 | 2.429 | 2.429 |

**Table 39: Tariff for 13% of Total Net Capacity for Unit-1 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 377.39 | 367.99 | 364.94 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.75 | 1.70 | 1.69 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | I=G x H | MW | **55.75** | **54.36** | **53.91** |

**Table 40: Tariff for 13% of Total Net Capacity for Unit-2 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-2 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 383.25 | 377.61 | 374.80 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.77 | 1.75 | 1.73 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | I=G x H | MW | **56.62** | **55.78** | **55.37** |

**Revenue**

***Petitioner's Submission***

5.109 The Petitioner submitted that the billed amount to JUVNL/JBVNL comprises of capacity charge, energy charges and fuel cost adjustment bill. The Petitioner further added that the revenue billed to JUVNL/JBVNL amounts to Rs. 179.02 Crore and Rs. 176.58 Crore for Unit-1 and Unit-2 respectively as shown below:

**Table 41: Revenue as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Petition | Petition |
| Fixed Charge | 66.10 | 63.66 |
| Energy Charge | 99.66 | 99.66 |
| Fuel Cost Adjustment | 13.26 | 13.26 |
| **Revenue from Sale of Power** | **179.02** | **176.58** |

### *Commission's Analysis*

5.110 The Commission has scrutinized the details submitted by the Petitioner and approves the revenue as tabulated below:

**Table 42: Revenue as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petition | Approved | Petition | Approved |
| Fixed Charge | 66.10 | 66.10 | 63.66 | 63.66 |
| Energy Charge | 99.66 | 99.66 | 99.66 | 99.66 |
| Fuel Cost Adjustment | 13.26 | 13.26 | 13.26 | 13.26 |
| **Revenue from Sale of Power** | **179.02** | **179.02** | **176.58** | **176.58** |

## Impact of True up

### *Petitioner's Submission*

5.111 The Petitioner has worked out the impact of true up considering the Trued-up annual fixed charges, trued-up per unit variable charges for the year and the actual availability against the contracted capacity to JBVNL for the year, based on the availability certificates issued by Jharkhand SLDC as shown below.

**Table 43: Impact of True up as submitted by the Petitioner**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Net Energy Supplied to JUVNL/JBVNL | MU | 481.21 | 481.21 |
| Rate of Energy Charge | Rs/kWh | 2.44 | 2.43 |
| AFC Entitlement on True Up | Rs Cr | 54.32 | 55.75 |
| Incentive | Rs Cr | 1.19 | 1.19 |
| Energy Charge Entitlement upon True up | Rs Cr | 117.47 | 116.90 |
| Water Charges | Rs Cr | 0.22 | 0.22 |
| Capital Spares | Rs Cr | 0.45 | 0.45 |
| **Total Entitlement** | Rs Cr | **173.65** | **174.51** |
| **Revenue Billed** | | | |
| AFC | Rs Cr | 66.10 | 63.66 |
| EC | Rs Cr | 99.66 | 99.66 |

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | **Petition** | **Petition** |
| FPA | Rs Cr | 13.26 | 13.26 |
| Total Revenue Billed to JUVNL/JBVNL | Rs Cr | **179.02** | **176.58** |
| **Gap/(Surplus)** | Rs Cr | **(5.37)** | **(2.07)** |
| Rate of Interest | % | 12.80 | 12.80 |
| From 1st April 2015 to 31st October, 2016 | Days | 383.00 | 383.00 |
| Allowable Interest for the year | Rs Cr | (0.36) | (0.14) |
| **Total Amount to be additionally recovered / (paid back to JUVNL)** | **Rs Cr** | **(5.73)** | **(2.21)** |

***Commission's Analysis***

5.112 The JSERC Generation Tariff Regulations, 2015, states that:

> *"6.16 Where after the truing up, the tariff recovered exceeds the tariff approved by the Commission under these regulations, the generating company shall refund to the beneficiaries as the case may be, the excess amount so recovered shall be as specified in the Clause 6.18 of this regulation."*
>
> *"6.17 Where after the truing up, the tariff recovered is less than the tariff approved by the Commission under these regulations; the generating company licensee shall recover from the beneficiaries the under-recovered amount shall be as specified in the Clause 6.18 of this regulation.*
>
> *6.18 The amount under-recovered or over-recovered, along with simple interest at the rate equal to the bank rate as on 1st April of the respective year, shall be recovered or refunded by the generating company in six equal monthly instalments starting within three months from the date of the tariff order issued by the Commission".*

5.113 Based on the above approved values and revenue, the Commission has approved the impact of True up for FY 2016-17 as shown below:

**Table 44: Gap/(Surplus) as approved by the Commission (Rs. Crore)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Net Energy Supplied to JUVNL/JBVNL | MU | 481.21 | 481.21 | 481.21 | 481.21 |
| Rate of Energy Charge | Rs/kWh | 2.44 | 2.441 | 2.43 | 2.429 |
| AFC Entitlement on True Up | Rs. Cr. | 54.32 | 53.91 | 55.75 | 55.21 |
| Incentive | Rs. Cr. | 1.19 | 1.19 | 1.19 | 1.19 |
| Energy Charge Entitlement upon True up | Rs. Cr. | 117.47 | 117.47 | 116.90 | 116.90 |
| Water Charges | Rs. Cr. | 0.22 | 0.22 | 0.22 | 0.22 |
| Capital Spares | Rs. Cr. | 0.45 | 0.45 | 0.45 | 0.45 |
| **Total Entitlement** | Rs. Cr. | **173.65** | **173.24** | **174.51** | **173.97** |
| **Revenue Billed** | | | | | |
| Annual Fixed Charge | Rs. Cr. | 66.10 | 66.10 | 63.66 | 63.66 |
| Energy Charge | Rs. Cr. | 99.66 | 99.66 | 99.66 | 99.66 |
| Fuel Price Adjustment | Rs. Cr. | 13.26 | 13.26 | 13.26 | 13.26 |
| Total Revenue Billed to JUVNL/JBVNL | Rs. Cr. | **179.02** | **179.02** | **176.58** | **176.58** |
| **Gap/(Surplus)** | Rs. Cr. | **(5.37)** | **(5.78)** | **(2.07)** | **(2.46)** |

5.114 The Commission has approved the cumulative surplus for FY 2016-17 along with carrying as shown below:

**Table 45: Surplus including Carrying Cost for Unit-1 as approved by the Commission (Rs. Crore)**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 |
|---|---|---|---|---|---|---|---|
| | Approved | Approved | Approved | Approved | Approved | Approved | Approved |
| Opening Balance | 0.00 | (5.78) | (5.78) | (5.78) | (5.78) | (5.78) | (5.78) |
| Addition during the Year | (5.78) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Balance | (5.78) | (5.78) | (5.78) | (5.78) | (5.78) | (5.78) | (5.78) |
| Carrying Cost Rate | 12.80% | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% | 10.50% |
| Carrying Cost for respective Financial Year | **(0.37)** | **(0.73)** | **(0.71)** | **(0.73)** | **(0.67)** | **(0.61)** | **(0.61)** |

**Table 46: Surplus including Carrying Cost for Unit-2 as approved by the Commission (Rs. Crore)**

| Particulars | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 |
|---|---|---|---|---|---|---|---|
| | Approved | Approved | Approved | Approved | Approved | Approved | Approved |
| Opening Balance | 0.00 | (2.46) | (2.46) | (2.46) | (2.46) | (2.46) | (2.46) |
| Addition during the Year | (2.46) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Balance | (2.46) | (2.46) | (2.46) | (2.46) | (2.46) | (2.46) | (2.46) |
| Carrying Cost Rate | 12.80% | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% | 10.50% |
| Carrying Cost for respective Financial Year | **(0.16)** | **(0.31)** | **(0.30)** | **(0.31)** | **(0.29)** | **(0.26)** | **(0.26)** |

5.115 The Commission has carried out the True-up for FY 2016-17 and directs the Petitioner to refund the above surplus to its Beneficiary.

# A 6: STATUS OF EARLIER DIRECTIVES AND NEW DIRECTIVES

6.1 The Commission has time and again issued various directives in order to improve the functioning of the Petitioner. However, the Commission observes that the Petitioner has not complied to the earlier directives. The Commission directs the Petitioner to comply with the earlier directives along with new directives as mentioned below with utmost sincerity failing which penal action may be taken.

**Timely filing of APR Petition and Data adequacy**

6.2 The Commission directs the Petitioner to submit the APR petition as per timelines of JSERC Generation Regulations before the Commission for timely disposal. The Petitioner should adhere to the timelines as provided in the JSERC Generation tariff Regulations 2015 and JSERC Generation tariff Regulations 2020.

**Development of a Fuel Procurement Plan**

6.3 The Petitioner is directed to develop a Fuel Procurement Plan and explore options with its suppliers in order to reduce the cost of coal. The Petitioner should prioritize the procurement of primary fuel from the least cost source.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on 22nd May, 2023.

**Date: 22.05.2023**
**Place: Ranchi**

| Sd/- | Sd/- | Sd/- |
|---|---|---|
| **(Atul Kumar)** | **(Mahendra Prasad)** | **(Justice Amitav K. Gupta)** |
| **Member(Technical)** | **Member (Legal)** | **Chairperson** |

# ANNEXURE

**Annexure-1: List of participating members of the public in the public hearing**

| Sr. No. | Name | Address/Organization |
|---|---|---|
| **Venue: Hotel B N R Chanakya, Ranchi** | | **Date & Time: 20.03.2023 & 12:30 PM** |
| 1 | Amit Griwan | 468, 1st floor, Udyog Bihar, DLF Ph-III, Gurgram |
| 2 | Ravi Shankar Singh | 2IC Road Shanti Hari tower, Bistupur, Jamshedpur |
| 3 | Sarangdev Sarkar | 1st floor, Udyog Bihar, DLF Ph-III, Gurgram |
| 4 | Rajesh Kumar Sharma | Petrol Pump Road, No. 6, Sonari west, Jamshedpur |
| 5 | Ravi Verma | Flat NEI/2 ,Manav Shree Appt., Rd. IA, Basant Vihar, Harmu, Ranchi |
| 6 | Himanshu Kumar | A/3 Nishaant Vihar, adityapur |
| 7 | Rishi Nandan | GM, Commercial, JBVNL |
| 8 | Ravishankar Kumar | EEE, Revenue, JBVNL |
| 9 | Bhavesh Saw | APNRL |
| 10 | Arvind Kumar | ED (C&R), JBVNL |
| 11 | Radha Krishna Tripathy | JBVNL Representative |
| 12 | Jiwan Kumar Jalan | 101, Harmu Road, Ranchi |
| 13 | Anita Prasad | JBVNL |
| 14 | Birendra Kisku | JBVNL |
| 15 | R. K. Pandey | Ranchi |
| 16 | Eshan Singh | Ranchi |
| 17 | Sharat Kumar | JBVNL |
| 18 | Vijay Kumar | Ranchi |

# Jharkhand State Electricity Regulatory Commission

True-up for FY 2017-18, FY 2018-19, FY 2019-20 and
Annual Performance Review for FY 2020-21
for
Adhunik Power and Natural Resources Limited (APNRL)

Ranchi
June 22, 2023

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## List of Abbreviations

| Abbreviation | Description |
|---|---|
| **A&G** | Administrative and General |
| **APNRL** | Adhunik Power and Natural Resources Limited |
| **ARR** | Aggregate Revenue Requirement |
| **CEA** | Central Electricity Authority |
| **COD** | Commercial Operation Date |
| **CFBC** | Circulating Fluidized Bed Combustion |
| **CCL** | Central Coalfield Limited |
| **CIL** | Coal India Limited |
| **ECR** | Energy Charge Rate |
| **FY** | Financial Year |
| **GCV** | Gross Calorific Value |
| **GFA** | Gross Fixed Assets |
| **GHR** | Gross Station Heat Rate |
| **GoI** | Government of India |
| **GoJ** | Government of Jharkhand |
| **IoWC** | Interest on Working Capital |
| **JBVNL** | Jharkhand Bijli Vitran Nigam Limited |
| **JSEB** | Jharkhand State Electricity Board |
| **JSERC** | Jharkhand State Electricity Regulatory Commission |
| **JUVNL** | Jharkhand Urja Vikas Nigam Limited |
| **kCal** | Kilocalorie |
| **kg** | Kilogram |
| **kWh** | Kilowatt-hour |
| **MAT** | Minimum Alternative Tax |
| **ML** | Millilitre |
| **MOU** | Memorandum of Understanding |
| **MT** | Million Tonnes |
| **MU** | Million Units |
| **MW** | Megawatt |
| **MYT** | Multi-Year Tariff |
| **NAPAF** | Normative Annual Plant Availability Factor |
| **O&M** | Operations and Maintenance |
| **PAF** | Plant Availability Factor |
| **PLF** | Plant Load Factor |
| **PPA** | Power Purchase Agreement |
| **R&M** | Repair and Maintenance |
| **RoE** | Return on Equity |
| **Rs.** | Rupees |
| **SBI** | State Bank of India |
| **SERC** | State Electricity Regulatory Commission |
| **SLDC** | State Load Dispatch Centre |
| **SLM** | Straight Line Method |

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**BEFORE**

**Jharkhand State Electricity Regulatory Commission, Ranchi**

**Case (Tariff) No.: 02 of 2022**

**In the matter of:**

**Petition for**
**True-up for FY 2017-18, FY 2018-19, FY 2019-20**
**and**
**Annual Performance Review for FY 2020-21**

**In the matter:**
Adhunik Power and Natural Resources Limited (APNRL),
H-29, Harmu Housing Colony, Harmu, Ranchi-834002 …. **Petitioner**

**PRESENT**

| | |
|---|---|
| Shri. Justice Amitav K. Gupta | Chairperson |
| Shri. Mahendra Prasad | Member (Legal) |
| Shri. Atul Kumar | Member (Technical) |

**Order dated June 22, 2023**

Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL or the Petitioner) has filed the petition for Truing up for FY 2017-18, FY 2018-19, FY 2019-20 and Annual Performance Review for FY 2020-21.

# A 1: INTRODUCTION

## Jharkhand State Electricity Regulatory Commission

1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the JSERC or the Commission) was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003.

1.2 The Government of Jharkhand vide its notification dated August 22, 2002, had defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:

(a) to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;
(b) to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;
(c) to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;
(d) to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.3 After the Electricity Act, 2003 came into force, the earlier Electricity Regulatory Commission Act of 1998 stand repealed and the functions of State Electricity Regulatory Commission are now defined under Section 86 of the Act 2003.

1.4 In accordance with Section 86 (1) of the Act, the JSERC discharges the following functions:

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:
Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the

generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

(c) facilitate intra-state transmission and wheeling of electricity;

(d) issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

(f) adjudicate upon the disputes between the licensees and generating companies, and to refer any dispute for arbitration;

(g) levy fee for the purposes of this Act;

(h) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;

(i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

(j) fix the trading margin in the intra-state trading of electricity, if considered, necessary;

(k) discharge such other functions as may be assigned to it under this Act.

1.5 The Commission has to also advise the State Government as per sub section 2 of Section 86 of the Act, on all or any of the following matters, namely:

(a) promotion of competition, efficiency and economy in activities of the electricity industry;

(b) promotion of investment in electricity industry;

(c) reorganisation and restructuring of electricity industry in the State;

(d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.6 The State Commission shall ensure transparency while exercising its powers and discharging its functions.

1.7 In discharge of its functions, the State Commission is also guided by the National Tariff Policy as brought out by GoI in compliance to Section 3 of the Act. The objectives of the National Tariff Policy are to:

(a) ensure availability of electricity to consumers at reasonable and competitive rates;

(b) ensure financial viability of the sector and attract investments;

(c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;

(d) promote competition, efficiency in operations and improvement in quality of supply.

**Adhunik Power and Natural Resources Limited (APNRL)**

1.8 Adhunik Power and Natural Resources Limited (hereinafter referred to as APNRL or the Petitioner) is a company incorporated under the provisions of the Indian Companies Act, 1956.

1.9 Originally incorporated as "Adhunik Thermal Energy Ltd." (ATEL), in the year 2007, ATEL was renamed to "Neepaz Thermal Energy Limited" (NTEL) and subsequently renamed as "Adhunik Power & Natural Resources Ltd." (APNRL) in the year 2008 after complying with the applicable provisions of the Companies Act, 1956.

1.10 ATEL, in October 2005, had signed a Memorandum of Understanding (hereinafter referred to as "the MoU") with Government of Jharkhand to develop a 1,000 MW coal based thermal power plant. Further in January 2007, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MoU further for a period of 12 months. In February 2008, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MoU further for a period of three years upto October 31, 2010. Subsequently in May 2011, the validity of the MoU was again extended for a period of three years from November 1, 2010 to October 31, 2013. In November 2013, the validity of MoU was again extended for a period of three years from November 1, 2013 to October 31, 2016.

1.11 Accordingly, APNRL has set up a 540 MW coal based power plant in Stage-1 (consisting of Unit 1 and Unit 2 of 270 MW each) and is planning to develop an additional 540 MW coal based power plant in Stage-2. Unit 1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. Unit 2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

1.12 Further, as per the provisions of the MOU, the Government of Jharkhand or Distribution Licensees authorized by it will have the first right of claim on purchase upto 25% of power delivered to the system by the proposed power station.

1.13 Further, the extension of the MoU stipulates that the Government of Jharkhand moved to Government of India for the policy decision through suitable arrangements for making available to the State, 12% of the total power generated at variable cost, by APNRL. Hence, as stated above, as per MoU and its extension's conditions, JSEB will have first right of claim on purchase upto 25% of power delivered to the system, out of which 12% power will be made available to the state at variable cost only.

1.14 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as "the PPA") with Jharkhand State Electricity Board (now Jharkhand Urja Vikas Nigam Limited or "JUVNL") on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., gross capacity of 2 units of 270 MW each, totaling to 540 MW less normative auxiliary consumption) from Stage-1 of the Project on long term basis.

1.15 As per the terms of the PPA, 63.882 MW capacity, i.e., 13% of Net Capacity of Stage-1 shall be supplied to JSEB (now JUVNL) at total tariff and the balance 58.968 MW capacity, i.e. 12% of total Net Capacity of Stage-1 shall be supplied at variable cost only.

1.16 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner and JSEB (now JUVNL), the tariff payable shall be determined by the State Commission:

*3.1(ii)"The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".*

*3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010", as amended from time to time."*

**Overview of the Thermal Station**

1.17 The Petitioner had achieved COD of its two units of 270 MW each in the year 2013. Both these units are subject to ARR and Tariff determination. The following table summarizes the information pertaining to both the units:

| Sr. no. | Unit | Installed Capacity (MW) | Status of Operation | Actual Date of Commercial Operation |
|---|---|---|---|---|
| 1 | Unit 1 | 270 MW | Operational | January 21, 2013 |
| 2 | Unit 2 | 270 MW | Operational | May 19, 2013 |

**The Petitioner's Prayers**

1.18 The Petitioner in this Petition has prayed before the Commission:

- Approve the True-up of ARR for 540 MW (2x270 MW) coal based thermal power plant in Jharkhand, for supplying the regulated Contracted Capacity of 122.85 MW to DISCOM for FY 2017-18, FY 2018-19 and FY 2019-20 and APR for FY 2020-21;
- Approve the APR for 540 MW (2x270 MW) coal based thermal power plant in Jharkhand, for supplying the regulated Contracted Capacity of 122.85 MW to Discom for FY 2020-21;
- Approve the recovery of upward and downward variation in fuel prices and calorific values including fuel mix through Fuel Price Adjustment as part of monthly Energy Charges;
- The petitioner respectfully seeks an opportunity to present their case prior to the finalization of the tariff order. The petitioner believes that such an approach would provide a fair treatment to all the stakeholders and may eliminate the need of a review or clarification;
- Condone any inadvertent omissions/errors/ rounding off difference/shortcomings and permit the Petitioner to add/alter this filing and make further submissions as may be required by the Commission; and
- Pass such further and other Order, as the Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

**Scope of the Present Order**

1.19 The Commission in this Order has approved the True-up for FY 2017-18, FY 2018-19, FY 2019-20, and APR for FY 2020-21.

1.20 While approving this Order, the Commission has taken into consideration:

a) Material placed on record by the Petitioner

b) Provisions of the Electricity Act, 2003

c) Principles laid down in the National Electricity Policy

d) Principles laid down in the National Tariff Policy

e) Follow the Methodology used in previous order

f) Provisions of the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 (hereinafter referred to as JSERC Generation Tariff Regulations, 2015 or the Regulations).

1.21 Accordingly, the Commission has scrutinized the Petition in detail and hereby issues the Order on Truing-up for FY 2017-18, FY 2018-19, FY 2019-20 and APR for FY 2020-21 of APNRL.

## A 2: PROCEDURAL HISTORY

**Background**

2.1 The Commission had notified Provisional Order on the Petition for approval of Capital Cost, Business Plan, and MYT Petition for FY 2012-13 to FY 2015-16 for Adhunik Power and Natural Resources Limited (APNRL) on May 26, 2014.

2.2 The Commission had notified Order on petition for approval of final Capital Cost of 540MW (2x270) Coal Based Thermal Power Plant in Jharkhand, True Up of ARR for FY 2012-13, FY 2013-14, APR of FY 2014-15 and ARR and Tariff Determination for FY 2015-16 on September 01, 2016. Further, the Petitioner filed a petition on September 29, 2016 seeking review of Order dated September 01, 2016. The Order, against the Review Petition, was issued by Commission on January 09, 2018.

2.3 The Commission vide Order dated February 19, 2018 approved the True-up for FY 2014-15 and FY 2015-16, Business Plan, ARR and Tariff for Multi Year Tariff Period from FY 2016-17 to FY 2020-21.

2.4 The Commission vide Order dated April 10, 2019 issued the Corrigendum Order by the Commission in Case No. 05 of 2018.

2.5 The Petitioner has now sought approval from the Commission on True-up for FY 2017-18, FY 2018-19, FY 2019-20 and APR for FY 2020-21.

**Information Gaps in the Petitions**

2.6 As part of the tariff determination exercise, several deficiencies/ information gaps were observed in the Petition submitted by the Petitioner. The information gaps were pointed out and communicated to the Petitioner vide letter nos. JSERC/Case (Tariff) No. 02 of 2022/206 dated October 14, 2022.

2.7 The Petitioner submitted its response to the aforesaid letters and furnished additional data/information vide letter nos. APNRL/PT-JBVNL/FY22-23/1435 January 18, 2023.

2.8 The Petitioner further submitted additional data vide letter nos. APNRL/PT-JBVNL/FY23-24/22 dated May 24, 2023 and also via E-mail.

2.9 The Commission scrutinized the additional data/ information submitted and considered the same while passing this Order on the Petition filed by the Petitioner. The Commission has also examined the replies and supporting documents, as supplied by the Petitioner on the discrepancies pointed out to it only on material already on record in the Petition filed by the Petitioner.

**Inviting Public Comments/Suggestions**

2.10 The Commission directed the Petitioner to make available copies of the Petition to the members of the general public on request and also issued a public notice inviting comments/ suggestions on the Petition for approval of True-up for FY 2017-18, FY 2018-19, FY 2019-20, and APR for FY 2020-21.

2.11 The aforesaid public notice was issued by the Petitioner in various newspapers and a period of twenty-one (21) days was given to the members of the general public for submitting their comments/suggestions.

**Table 1: List of newspapers and dates of publication of public notice by the Petitioner**

| Newspaper | Date of Publication |
|---|---|
| Sanmarg Ranchi | 30.01.2023 |
| The Pioneer | 30.01.2023 |
| The Hindustan Times | 30.01.2023 |
| Hindustan | 30.01.2023 |
| Sanmarg Jharkhand | 31.01.2023 |
| Sunday Pioneer | 31.01.2023 |
| Sunday Hindustan Times | 31.01.2023 |
| Hindustan Ranchi | 31.01.2023 |

2.12 Subsequently, the Commission also issued a notice on its website www.jserc.org, and various newspapers for conducting the public hearing on the Petition. The details of the newspapers publishing the notice by the Commission are as under:

**Table 2: List of newspapers and dates of publication of public notice by the Commission**

| Newspaper | Date of Publication |
|---|---|
| Prabhat Khabar (Hindi) | 05.03.2023 |
| Danik Bhaskar (Hindi) | 05.03.2023 |
| The Times of India (English) | 05.03.2023 |
| The Hindustan Times (English) | 05.03.2023 |
| Prabhat Khabar (Hindi) | 19.03.2023 |
| Hindustam Dainik (Hindi) | 19.03.2023 |
| The Times of India (English) | 19.03.2023 |
| Morning India (English) | 19.03.2023 |

**Submission of Comments/Suggestions and Conduct of Public Hearing**

2.13 In order to provide adequate opportunities to all stakeholders and general public, as mandated under Section 64 (3) of the Electricity Act, 2003 and in relevant provisions of Regulation(s) framed by the Commission and in order to ensure transparency in the process of tariff determination, the Commission held public hearing on March 20, 2023 in Ranchi.

2.14 The objections/ comments/ suggestions, if any of the Public, Petitioner's responses and Commission's views thereon are detailed in **Section A4** of this Order.

## A 3: BRIEF FACTS OF THE PETITION

3.1 The following sub-section presents a summary of True-up for FY 2017-18, FY 2018-19, FY 2019-20 and Annual Performance Review for FY 2020-21.

### Truing up for FY 2017-18, FY 2018-19, FY 2019-20

#### *Operational Parameters of Plant*

3.2 The summary of operational parameters approved by the Commission in MYT Order dated February 19, 2018 vis-à-vis as submitted by the Petitioner for FY 2017-18, FY 2018-19, and FY 2019-20 of Unit-1 and Unit-2 is provided in the table below:

**Table 3: Operational Parameters for FY 2017-18 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | 73.09 | 85.00 | 73.09 |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

**Table 4: Operational Parameters for FY 2018-19 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | 82.18 | 85.00 | 82.18 |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

**Table 5: Operational Parameters for FY 2019-20 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | 89.56 | 85.00 | 89.56 |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

#### *Aggregate Revenue Requirement (ARR)*

3.3 The summary of Annual Revenue Requirement (ARR) as submitted by the Petitioner including subsequent replies for FY 2017-18 vis-à-vis as approved by the Commission in MYT Order dated February 19, 2018 and corrigendum dated March 08, 2019 is tabulated below.

**Table 6: Annual Revenue Requirement for FY 2017-18 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.57 | 83.15 | 83.34 |
| Interest on Loan | 110.84 | 97.06 | 116.38 | 101.01 |
| O&M Expenses | 75.56 | 75.56 | 75.56 | 75.56 |
| Return on Equity (Pre-Tax) | 70.62 | 78.39 | 69.79 | 79.05 |
| Interest on Working Capital | 30.71 | 64.77 | 30.85 | 65.16 |
| **Total AFC (Excluding water and ash Disposal Charge)** | **370.10** | **398.36** | **375.73** | **404.11** |

**Table 7: Annual Revenue Requirement for FY 2018-19 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.64 | 83.15 | 83.09 |
| Interest on Loan | 100.02 | 88.07 | 105.34 | 91.98 |
| O&M Expenses | 79.28 | 79.28 | 79.28 | 79.28 |
| Return on Equity (Pre-Tax) | 70.62 | 78.51 | 69.79 | 79.16 |
| Interest on Working Capital | 30.69 | 76.90 | 30.83 | 76.17 |
| **Total AFC (Excluding water and ash Disposal Charge)** | **362.98** | **405.40** | **368.39** | **409.68** |

**Table 8: Annual Revenue Requirement for FY 2019-20 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.65 | 83.15 | 83.42 |
| Interest on Loan | 89.21 | 78.00 | 94.30 | 81.84 |
| O&M Expenses | 83.19 | 83.19 | 83.19 | 83.19 |
| Return on Equity (Pre-Tax) | 70.62 | 78.57 | 69.79 | 79.22 |
| Interest on Working Capital | 30.69 | 72.64 | 30.82 | 73.29 |
| **Total AFC (Excluding water and ash Disposal Charge)** | **356.08** | **395.06** | **361.25** | **400.96** |

**Annual Performance Review for FY 2020-21**

3.4 The Petitioner has projected the Operational Parameter for FY 2020-21 based on the actual figures for first six months of FY 2020-21 and estimated for the remaining six months for FY 2020-21 vis-à-vis as approved by the Commission in MYT Order dated February 19, 2018 as tabulated below.

**Table 9: Operational Parameters for FY 2020-21 as submitted by the Petitioner**

| Particulars | UoM | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Annual Plant Availability Factor | % | 85.00 | - | 85.00 | - |
| Auxiliary Energy Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Gross Station Heat Rate | kcal/kWh | 2387 | 2387 | 2387 | 2387 |
| Secondary fuel oil Consumption | mL/kWh | 1.00 | 1.00 | 1.00 | 1.00 |

***Aggregate Revenue Requirement (ARR)***

3.5 The summary of Annual Revenue Requirement (ARR) as submitted by the Petitioner including subsequent replies for FY 2020-21 vis-à-vis as approved by the Commission in MYT Order dated February 19, 2018 is tabulated below.

**Table 10: Annual Revenue Requirement for FY 2020-21 as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.93 | 83.15 | 83.70 |
| Interest on Loan | 78.39 | 68.31 | 83.25 | 72.05 |
| O&M Expenses | 87.28 | 87.28 | 87.28 | 87.28 |
| Return on Equity (Pre-Tax) | 70.62 | 78.84 | 69.79 | 79.49 |
| Interest on Working Capital | 30.69 | 63.09 | 30.82 | 64.73 |
| **Total AFC (Excluding water and ash Disposal Charge)** | **349.35** | **380.44** | **354.29** | **387.24** |

## A 4: PUBLIC CONSULTATION PROCESS

4.1 The Public Hearing was held on March 20, 2023 at Ranchi to ensure the maximum public participation and transparency wherein stakeholders put forth their comments and suggestions before the Commission in the presence of the Petitioner. The list of the attendees is attached as **Annexure-1** to this Order.

4.2 In course of public hearing, the Commission also allowed persons/representatives of entities who had not submitted prior written representations but attended the public hearing to express their views, in person, regarding the Petition filed by the Petitioner and also about ways and means to improve the services rendered by the Petitioner.

4.3 The comments and suggestions of the member of the public along with the response thereon of the Petitioner and the view of the Commission are summarised in this Section. Some of the issues raised by the stakeholders, which do not relate to True-up, and APR are not discussed in this Chapter.

### *Gross fixed asset and capitalization*

**JBVNL's objections**

The details of these capital expenditures are not clear from the petition. The nature of these expenses in plant and machinery, building and civil engineering works should have been given details and the reasons for such changes had to be highlighted. In the absence of such details, it should not be passed on to the stakeholders. The additional capitalization for FY 16-17 and FY 17-18 for unit 1 and unit 2 are same and there is no bifurcation of these expenditures in the petition. It is not clear for which these expenses are made and to which unit.

**Reply from APNRL**

The Petitioner had provided the justification for the additional capitalization for FY 2016-17 in the reply to query 1 of this Hon'ble Commission, dated 11th November 2022.

Further, the petitioner wants to convey that the detailed bi-furcation of additional capitalization for FY 2017-18 had been provided in its true-up petition, case no: 02 of 2022, dated 2nd July 2021, which is sub-judice before this Hon'ble Commission. However, for the ease of reference, the submissions are again enclosed as Annexure-1.

Ash Handling System: The Petitioner submits that ash handling system required strengthening and accordingly the Petitioner purchased an automatic bagging and packing machine for sending bagged fly ash through railway rake to different customer in accordance with the norms of Ministry of Environment, Forest and Climate Change. Hence the Petitioner claims that this expense is justifiable and require increase in efficiency and compliance.

Site Development: The Petitioner at Birajpur, Jharkhand had developed a railway siding which is 800 meters away from the plant truck tippler area and the Petitioner has developed a road from truck tippler at coal handling plant to Birajpur railway siding for transportation of coal. This will increase the efficiency of coal unloading and movement.

Merry-Go-Round (MGR) / Railway Siding: The Petitioner has developed the railway siding at Birajpur, Jharkhand for unloading of coal near the plant. This railway siding is 800 meters far away the coal handling plant area.

Coal Handling System: The Petitioner has to procure coal from multiple sources, the coal handling system has to be strengthened to take care of multiple trucks reaching the power plant premises. Accordingly, a 100 MT weight bridge has been installed. Beside this 6 LPM oil filtration machine is purchased for truck tippler and stacker reclaimer for filtration of oil. Hence, the Petitioner claims that this expense is justifiable and necessary for operations.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Additional Capitalization for Unit-1 and Unit-2. for FY 2017-18*

**JBVNL's objections**

APNRL has shown an expenses of around 2 crores for site development and 4.37 crores for railway siding. The necessity of such expenditure is not clear and thus, these expenditures should not be passed by the stakeholders.

In ash handling plant, the automatic bagging and packing machine was not necessary and was therefore a wasteful expenditure. Also, for site development, the road construction for coal movement should be probed accordingly. Similarly, the claim of expenses of MGR and railway siding needs to be thoroughly checked and its necessity vis-avis expenses should be probed upon and the expenses should be disallowed as_ it unnecessarily burdens the stakeholders and ultimately the consumers of the state will face the tariff increase. Coal handling system is not justifiable in the name of strengthening the logistics.

**Reply from APNRL**

The Petitioner submits that the Petitioner at Birajpur, Jharkhand had developed a railway siding which is 800 meters away from plant truck tippler area. Earlier to this, the nearest railway siding was around 4 Km away from the coal handling plant. In order to increase the efficiency of coal unloading and movement, the said expenditure towards the railway siding development had been incurred.

In line with this, the Petitioner had developed a road from truck tippler at coal handling plant to Birajpur railway siding for the transportation of coal. This had been done in order to increase the efficiency of coal unloading and movement.

Similarly, the Petitioner submits that automatic bagging and packing machine had been purchased to strengthen the ash handling system and efficient movement of bagged fly ash through railway rake to different customer in accordance with the norms of Environment, Forest and Climate Change. Hence, the Petitioner submits that the expenses incurred towards the automatic bagging and packing machine is justifiable and required for increase in efficiency and compliance.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Additional Capitalization for Unit-1 and Unit-2. for FY 2018-19*

**JBVNL's objections**

It is not clear what constitutes other ready assets where in APNRL claims to have an expense of 1.88 crores. In CHP (Coal handling Plant), the change from 12 wheeler truck to 14 wheeler truck expense is not justifiable. Only claiming such expenditure as per clause 7.6 (iv) of JSERC Generation Regulations, 2015 is not at all acceptable and should be discarded.

**Reply from APNRL**

Regarding this, the Petitioner had already given the justification in its petition. It has been again submitted that in order to procure large quantity of coal the Petitioner had purchased the truck tipplers. Since, the 14-wheel truck is much more spacious and coal from such trucks can transport substantially. Therefore, the Petitioner has enhanced the capacity of the truck from 12 wheeled trucks to 14 wheeled trucks. Hence, the Petitioner claims that this expense is justifiable and required for efficient for movement of coal.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

### *Depreciation for FY 2017-18 to FY 2019-20 as per MYT order dt 19.02.2018*

**JBVNL's objections**

It is wrong to calculate the depreciation according to allowable figure. The depreciation should have been calculated on actual assets capitalized and the life of the assets that was not followed. Hence, it is not clear how the depreciation value is coming and thus, it should not have been passed on to the consumer.

**Reply from APNRL**

The Petitioner submits that the depreciation has been calculated as per the Regulation 7.28 and 7.29 of the JSERC Regulation, 2015 and similarly the depreciation rate has been used as per the depreciation schedule provided in the Appendix-1 of the JSERC Regulation, 2015.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

### Interest on debt repayment

**JBVNL's objections**

The weighted avg rate of interest for all such debtors seem to be at a higher side. The APNRL should be advised to recast their loan and refinance it with Financial institutions at lower interest rate. As the assets are mature and the business is generating profit, APNRL could have easily refinanced its loan at a lower rate of interest. The higher interest rate is eventually a burden for the end consumers as the increased rate would amount to a higher tariff for the consumer. Such higher interest rate should be discouraged and should not be allowed to the APNRL. For FY 17-18 to FY 19-20, there is an interest burden of around INR 540 crores which is huge to be passed on to the consumers.

**Reply from APNRL**

The Petitioner submits that as per Regulation 7.23 of the JSERC Regulation, 2015, the rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year. Accordingly, the petitioner had worked out the interest rate in the petition.

Further, the petitioner submits that considering the benefit of the beneficiaries the Petitioner is continuously trying to restructure its finance at a lower rate. The Hon'ble Commission would appreciate that the company has gone through refinancing in FY 2020-21, which resulted in a lower interest rate of 9% from FY 2021-22.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Return on Equity for FY 2017-18 to FY 2019-20*

**JBVNL's objections**

The JSERC in its petition has not provisioned for any fresh equity additions. Hence, the fresh equity additions to APNRL should be disapproved and not passed through to the consumers.

**Reply from APNRL**

In this regard, the Petitioner submits that the additional capitalization is a part of the capital cost of the company and as per regulation 7.13 and 7.14 of the JSERC Regulation, 2015 the financing of the capital should be in the form of debt equity ratio as allowed by the Hon'ble Commission and equity should be restricted to 30%. Accordingly, the Petitioner has considered the equity addition.

Apart from the petitioner wants to convey to the Hon'ble Commission that the JBVNL has itself considered fresh equity addition for FY 2017-18 & FY 2018-19 and the same has been approved of by the Hon'ble Commission vide its order dated 27.04.2018. Hence, it is unjustifiable for JBVNL to say that any fresh additions to APNRL should be disapproved.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Operations and Maintenance (O&M) Expenses*

**JBVNL's objections**

The O&M expenses should have been probed in details and actual expenses after prudence check should have been passed. Claiming O&M expenses based on normative values should be disapproved.

**Reply from APNRL**

The Petitioner wants to submit that as per the regulation 6.14 (b) of the JSERC Regulation, 2015, any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR. Accordingly the Petitioner has claimed the O&M expense which was approved by the Hon'ble Commission in its MYT order dated 19.02.2018. Hence, it is submitted that the objection is incorrect and are in violation of the normative principles.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Interest on working capital*

**JBVNL's objections**

The elements like Coal cost 1 month or max coal stock whichever is lower, Cost of Coal for 1 month, Receivable's equivalent to 180 days average billing Vs receivables against 60 days of billing. It is disheartening to see that APNRL is claiming 180 days of receivables in interest on working capital without any base. Also, it does not have any control over the cost of coal. Such huge working capital requirement is a blunder on the part of APNRL and at any cost, it should not be passed on to the consumers that are already reeling under huge tariff burden. JBVNL requests JSERC to disallow this instantly.

**Reply from APNRL**

The company has claimed interest on working capital for 180 days as the company received payment too late and on the other hand the company is paying advance for purchase of coal.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Summary of Annual Fixed Charges*

**JBVNL's objections**

Such fixed charges from APNRL is not desirable that constitutes elements at inflated cost and should be disallowed instantly.

**Reply from APNRL**

No Comments

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *True up of Tariff for FY 2017-18 to FY 2019-20 and Table 20: AFC share of Discom for FY 2017-18 to FY 2019-20*

**JBVNL's objections**

The incentive on the AFC entitlement should be based on the PLF and not on the plant availability.

**Reply from APNRL**

As per the JSERC Tariff Regulations, 2015, the generating company is allowed to claim incentives as per the provision mentioned below.

*"8.15 Incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF)."*

Further, the Regulation provides the definition of PLF as provided below:

*"43) 'Plant Load Factor' or '(PLF)' in relation to thermal generating station or unit for a given period means the total sent out energy corresponding to scheduled generation during the period, expressed as a percentage of sent out energy corresponding to installed capacity in that period and shall be computed in accordance with the following formula:*

$PLF = 10000x \sum^{n}_{i=1} SGi / \{N \ x \ IC \ x \ (100 — AUXn)\}\%$

*Where,*

*IC = Installed Capacity of the generating station or unit in MW,*

*SGi = Scheduled Generation in MW for the ith time block of the period,*

*N = Number of time blocks during the period, and*

*AUXn = Normative Auxiliary Energy Consumption as a percentage of gross energy generations;"*

The Regulation further provides the definition of availability as below:

*"Plant Availability Factor (PAF)" in relation to a generating station for any period means the average of the daily declared capacities (DCs) for all the days during*

*that period expressed as a percentage of the installed capacity in MW reduced by the normative auxiliary energy consumption,"*

In the current case, APNRL is supplying power to JBVNL for only part of the capacity (i.e., 188.85 MW net capacity). A total of around 100 MW net capacity is supplied to Tamil Nadu & West Bengal each and the remaining 103.15 MW (Net capacity) is operated under merchant sales. Therefore, while the availability of the units depicts the clear position on dispatch capability, however the PLF for overall capacity can be lower depending on dispatches required by West Bengal, Tamil Nadu and merchant sales. Historically, JBVNL has been dispatching the entire declared capacity against the contracted capacity. It is noteworthy that the definition of PLF takes into account the entire capacity of the station since the Regulation does not envisage a situation in which a generator can be supplying only part of the capacity.

Taking into account the above facts, the Petitioner has considered the availability of the station to be taken as the operating PLF for JBVNL. Accordingly, since the plant/station has remained available and gets dispatched fully for JBVNL's contracted capacity, the Petitioner has raised the claim for incentives against the same and requests the Hon'ble Commission to kindly approve the submission.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Truing-Up of Energy Charges*

**JBVNL's objections**

In actual coal mix, APNRL claims to purchase coal above 95% from e-auction which is not desirable. It failed to get linkage coal for FY 17-18 and FY 18-19 and also in FY 19-20, the linkage coal is only around 30% that ultimately increases the cost of coal. Also, middling coal also increases the fuel mix that is not desirable. The inefficiency of APNRL in having a proper fuel mix should not be passed on to the consumers and should be discarded instantly. The weighted average cost of oil and coal is huge as compared to approved figures of JSERC. Instead of SHAKTI scheme, the APNRL prefer to purchase coal from auction market that is undesirable and should be disallowed.

**Reply from APNRL**

Regarding this, the Petitioner submits that in FY 2019-20 the APNRL had won the Shakti linkage coal and the supply of the same was commenced from mid of the FY 2019-20. Since, the supply of Shakti linkage coal had started in the mid of FY 2019-20 and APNRL had to supply full contracted power to JBVNL, the balance coal had been procured from the auction/open market. Hence the share of Shakti coal for the period FY 2019-20 was 30% of the overall coal required for supply of contracted power to JBVNL.

Further the Petitioner submits that in order to reduce the cost of coal, the petitioner is continuously putting in efforts. The Hon'ble Commission would appreciate that the Petitioner has signed another FSA for supply of Shakti coal in FY 2022-23, which will further increase the share of Shakti coal from FY 2022-23 onwards.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

### *Water Charges*

**JBVNL's objections**

JBVNL should not be penalized for any inefficiency in the part of APNRL in water agreement and its charges.

**Reply from APNRL**

APNRL has already given a detailed deliberation on this matter. It is requested to the Hon'ble Commission to kindly consider the same.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

### *Ash disposal and Transportation charges*

**JBVNL's objections**

JBVNL submits that ash disposal and its transportation is the responsibility of APNRL and moreover, by selling these waste residual matters to other industries such as brick kiln and cement, APNRL is generating revenue. So, any expenditure related to the ash disposal and_ its transportation should not be passed on to the consumers.

**Reply from APNRL**

The Petitioner submits that ash disposal and transportation is the statutory requirement of the power plant. The Petitioner has been disposing of and transporting the Ash from its power station in accordance with the Government of India, Ministry of Environment, Forest & Climate Change (MOEFCC) notification dated 25.01.2016.

The Petitioner has already provided the justification for the same in its reply to the query raised by the Hon'ble Commission, vide the letter of the Petitioner dated 18" January 2023.

In connection with the above, it is submitted that the APNRL is trying to fulfill the MOEF guidelines for the Ash utilizations by giving Ash to cement plant / Ash brick manufacturing plant.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Impact of Truing-up*

**JBVNL's objections**

In FY 19-20, APNRL claims for an incentive of INR 1.17 crores for unit 1 and unit 2 which is un reasonable. Incentives as per JSERC should have been based on PLF and not on the PAF (Plant Availability factor).

**Reply from APNRL**

It has been stated above that historically, JBVNL has been dispatching the entire declared capacity against the contracted capacity. It is noteworthy that the definition of PLF takes into account the entire capacity of the station since the Regulation does not envisage a situation in that a generator can be supplying only part of the capacity.

Given the above facts, the Petitioner has considered the availability of the station to be taken as the operating PLF for JBVNL. Accordingly, since the plant/station has remained available and gets dispatched fully for JBVNL's contracted capacity, the Petitioner has raised the claim for incentives against the same and requests the Hon'ble Commission to kindly approve the submission.

**Commission Analysis**

The Commission has noted the Stakeholder's objection and Petitioner's response on the said issue.

## *Allowable incentives*

**JBVNL's objections**

The incentives on the AFC (Annual Fixed Charge) on the account of its calculation is disputed with APNRL. While it should have been on the basis of PLF, APNRL takes into account the availability while deciding on the AFC. Hence, it should be corrected accordingly. The PLF of the power plant is never shared by APNRL.

In Energy Charges, the inflated value of coal due to inefficient purchase should not be passed on to the JBVNL.

**Reply from APNRL**

It has been stated above that historically, JBVNL has been dispatching the entire declared capacity against the contracted capacity. It is noteworthy that the definition of PLF takes into account the entire capacity of the station since the Regulation does not envisage a situation in that a generator can be supplying only part of the capacity.

Given the above facts, the Petitioner has considered the availability of the station to be taken as the operating PLF for JBVNL. Accordingly, since the plant/station has remained available and gets dispatched fully for JBVNL's contracted capacity, the Petitioner has raised the claim for incentives against the same and requests the Hon'ble Commission to kindly approve the submission.

# A 5: TRUE-UP FOR FY 2017-18

5.1 The Petitioner has submitted the True-up petition for FY 2017-18 based on the Audited Accounts taking into consideration the provisions of the Tariff Regulations, 2015 and the methodology adopted by the Commission in the earlier Orders.

5.2 The Commission has now carried out the True-up for FY 2017-18 taking into consideration:

a) JSERC Generation Tariff Regulations, 2015;
b) Audited (Statutory) accounts for the FY 2017-18;
c) MYT Order for FY 2016-17 to FY 2020-21 vide dated February 19, 2018;
d) Corrigendum Order issued by the Commission dated April 10, 2019;
e) Methodology adopted by the Commission in its earlier Orders.

**Operational Performance**

***Plant Availability Factor (PAF)***

***Petitioner's Submission***

5.3 The Petitioner has submitted the actual availability for Unit-1 & Unit-2 as 73.09% respectively for FY 2017-18.

***Commission's Analysis***

5.4 The Commission in its MYT Order dated February 19, 2018, had approved the Normative Annual Plant Availability Factor (NAPAF) as 85.00% for the Control Period (FY 2016-17 to FY 2020-21) in line with Clause 8.4 of JSERC Generation Tariff Regulation, 2015.

5.5 The Commission noted the reply submitted by the Petitioner and scrutinized the month wise actual availability and approves the actual availability for FY 2017-18 as 73.09% for both Units.

5.6 Based on the information provided by the Petitioner, the Commission observes that the actual availability supplied during the FY 2017-18 is less than the normative value of 85.00%.

5.7 The actual Plant Availability as approved by the Commission in the MYT Order dated February 19, 2018 as submitted by the Petitioner and approved now by the Commission for FY 2017-18 is summarized below.

**Table 11: Plant availability as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 73.09 | 73.09 |
| **UNIT-2** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 73.09 | 73.09 |

**Auxiliary Consumption**

***Petitioner's Submission***

5.8 The Petitioner has submitted the auxiliary consumption for FY 2017-18 on normative basis as 9.00% for both the Units in accordance with the approved value in MYT Order dated February 19, 2018.

***Commission's Analysis***

5.9 The Commission while dealing with the matter of approving the auxiliary consumption in the MYT Order dated February 19, 2018 for the Control period (FY 2016-17 to FY 2020-21) had verified the Purchase Order (PO) submitted by the Petitioner and approved the auxiliary consumption at normative level of 8.50% and an additional 0.50% for the induced cooling tower.

5.10 The Commission has therefore adopted the same methodology & also in accordance with the Clause 8.6(d)(i) of Generation Tariff Regulation 2015 approved the normative auxiliary consumption as 9.00% for both the Units as summarized below.

**Table 12: Auxiliary Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |
| **UNIT-2** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |

**Plant Load Factor and Generation**

***Petitioner's Submission***

5.11 The Petitioner has submitted the actual Plant Load Factor (PLF) for Unit-1 as 89.00% and Unit-2 as 34.00% for FY 2017-18 against the normative value of 85.00% approved by the Commission in the MYT Order dated February 19, 2018.

5.12 Further, the Petitioner has submitted the Gross Generation as 1454.92 MU for both the Units which is average of 2106.07 MU for Unit-1 and 803.78 MU for Unit-2 for FY 2017-18.

***Commission's Analysis***

5.13 The Commission is of the view that the Petitioner should look into the reasons for the sub-optimal utilization of its assets which could be due to high cost of generation. The Petitioner should take steps towards reduction of the cost of generation so that more power can be scheduled thus increasing the utilization.

5.14 The Commission has scrutinized the detail submitted along with the Petition and approved the actual Plant Load Factor, Gross Generation and Net Generation as submitted by the Petitioner for FY 2017-18 as shown below.

**Table 13: Plant Load Factor and Generation as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Gross Generation | MU | 2010.42 | 1454.92 | 2106.07 |
| Net Generation | MU | - | 1323.98 | 1916.53 |
| Plant Load Factor | % | - | 89.00 | 89.00 |
| **UNIT-2** | | | | |
| Gross Generation | MU | 2010.42 | 1454.92 | 803.78 |
| Net Generation | MU | - | 1323.98 | 731.44 |
| Plant Load Factor | % | - | 34.00 | 34.00 |

**Gross Station Heat Rate (GHR)**

***Petitioner's Submission***

5.15 The Petitioner has claimed the Gross Station Heat Rate (GHR) for both the Units as 2387.00 kcal/kWh in line with the approved value in the MYT Order dated February 19, 2018.

***Commission's Analysis***

5.16 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and JSERC Generation Tariff Regulations, 2015. Hence, the Commission approves the Gross Station Heat Rate as submitted by the Petitioner for FY 2017-18 as shown below:

**Table 14: Gross Station Heat Rate (GHR) as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| **UNIT-2** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |

**Specific Fuel Oil Consumption**

***Petitioner's Submission***

5.17 The Petitioner has submitted the specific fuel oil consumption as 1.00 mL/kWh in line with JSERC Generation Tariff Regulations, 2015 for both the Units for FY 2017-18.

***Commission's Analysis***

5.18 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and Generation Tariff Regulations, 2015. Hence, the Commission approves the secondary fuel oil consumption as submitted by the Petitioner for FY 2017-18 as shown below:

**Table 15: Specific Fuel Oil Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| **UNIT-2** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |

**Fuel Cost Parameters**

**Coal Mix and Gross Calorific Value (GCV) of Primary Fuel**

***Petitioner's Submission***

5.19 The Petitioner has submitted that there is variation in coal mix, GCV and landed price of primary fuel against the approved value in MYT Order dated February 19, 2018. Further, the Petitioner has added that the reason for variation is not attributable to Petitioner.

5.20 The Petitioner has submitted the source wise break up of coal consumed, GCV of coal for each unit during FY 2017-18 duly certified by the auditor in support of his claim.

***Commission's Analysis***

5.21 The Commission vide letter dated September 21, 2022 had directed the Petitioner to provide the detailed computation of GCV of the primary fuel. In compliance, the Petitioner submitted that the weighted average GCV for Unit-1 as 3543.44 kcal/kg and GCV for Unit-2 as 3466.28 kcal/kg respectively and also submitted the detailed excel computation of GCV.

5.22 The Commission observed that there has been significant deviation in the blending ratio, GCV of primary fuel-mix and its price as compared to the approved values by the Commission.

5.23 The Commission has taken note of submission made by the Petitioner and statutory audited detailing month wise quantity consumed and GCV for FY 2017-18 of each Unit.

5.24 The following table summarize the fuel mix and weighted average GCV as submitted by the Petitioner and approved by the Commission for FY 2017-18 is tabulated below.

**Table 16: Coal Mix and GCV for Unit-1 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | - | - | 3827 | - | - |
| E-Auction Coal | - | 97.73% | 97.73% | - | 3542.97 | 3542.97 |
| Middling Coal | - | 2.27% | 2.27% | - | 3563.77 | 3563.77 |
| **Wt. average** | **-** | **-** | **-** | **3408** | **3543.44** | **3543.44** |

**Table 17: Coal Mix and GCV for Unit-2 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | - | - | 3827 | - | - |
| E-Auction Coal | - | 95.49% | 95.49% | - | 3464.70 | 3464.70 |
| Middling Coal | - | 4.51% | 4.51% | - | 3499.77 | 3499.77 |
| **Wt. average** | **-** | **-** | **-** | **3408** | **3466.28** | **3466.28** |

**Transit Loss**

***Petitioner's Submission***

5.25 The Petitioner has claimed the normative transit loss as 0.8% for domestic coal and 0.2% for imported coal in accordance with MYT Order dated February 19, 2018.

***Commission's Analysis***

5.26 The Commission observes that the actual transit loss of coal depends on various factors like category of coal, foreign particles content, moisture content, distance from mines etc. Considering all the factors, the Commission has computed the weighted average normative transit loss of 0.80% for non-pit head plant and 0.20% for pit head plant is stipulated in the JSERC Generation Tariff Regulations, 2015.

5.27 Thus, in accordance with Clause 8.21 of JSERC Generation Tariff Regulation, 2015, the Commission approves the normative transit loss as 0.80% for domestic coal and 0.20% for imported coal as shown below.

**Table 18: Transit Loss as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% |

**Landed Cost of Coal**

***Petitioner's Submission***

5.28 The Petitioner has submitted that the month wise landed price of primary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

5.29 The Commission for reason stated in this Order has approved the normative transit loss for the calculation of landed price of the coal.

5.30 The Commission analysed and considered the submission made by the Petitioner and also arrived at the weighted average landed cost of coal by following methodology: -

a) Audited figures of the Base price of coal including base price, applicable tax, transportation charges, handling charges and provisional adjustment/stock adjustment (if any);

b) Normative Transit loss as approved by the Commission;

c) Actual consumption of various types of coal.

d) Price and quality of the coal is uncontrollable in nature

5.31 The Commission has outlined the provision for approval of landed price of primary fuel for generating station as mention in the JSERC Generation Tariff Regulation, 2015, in terms of the Clause stated below: -

*"8.21 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.*

*The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:*

*Pithead generating stations: 0.2%*
*Non-pithead generating stations: 0.8%*

*Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail, transit loss of 0.8% shall be applicable:*

*Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.*

5.32 The Commission has scrutinized the details submitted by the Petitioner in its reply and observed that the weighted average landed price of coal for Unit-1 as Rs. 3253.47/MT and for Unit-2 as Rs 3184.92/MT respectively.

5.33 The weighted average price of coal as approved in it MYT corrigendum order dated April 10, 2019 as submitted by the Petitioner and approved now by the

Commission for FY 2017-18 is provided in the table below.

**Table 19: Landed price of Coal as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| F-Auction Coal | Rs/MT | - | 3248.68 | 3248.68 |
| Middling Coal | Rs/MT | - | 3459.21 | 3459.21 |
| **Wt. average** | **Rs/MT** | **3298*** | **3253.47** | **3253.47** |
| **UNIT-2** | | | | |
| F-Auction Coal | Rs/MT | - | 3156.38 | 3156.38 |
| Middling Coal | Rs/MT | - | 3767.16 | 3767.16 |
| **Wt. average** | **Rs/MT** | **3298*** | **3183.92** | **3183.92** |

**As per Corrigendum Order dated April 10, 2019*

**Calorific value and Landed price of Secondary Fuel**

***Petitioner's Submission***

5.34 The Petitioner has submitted that the month wise landed price and GCV of secondary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

5.35 The Commission has analysed the month wise quantity of secondary fuel consumption, GCV and landed price of secondary fuel duly certified by an auditor.

5.36 The Commission on scrutinizing the details submitted in reply by the Petitioner observed that the weighted average landed price of oil for Unit-1 as Rs. 43470/KL and for Unit-2 as Rs 43855/KL respectively, While the weighted average GCV of oil as 9350 kCal/KL for both Unit.

5.37 On the basis of record available with the Commission, the Commission has approved Calorific value and Landed price of Secondary Fuel for each Unit as shown below:

**Table 20: Calorific value and Landed price of Secondary fuel as approved by the Commission**

| Particul-ars | Calorific Value (kcal/L) | | | Landed Price (Rs./kL) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| **UNIT-1** | 9337* | 9350 | 9350 | 42637* | 43470 | 43470 |
| **UNIT-2** | 9334* | 9350 | 9350 | 45134* | 43855 | 43855 |

**As per Corrigendum Order dated April 10, 2019*

**Energy Charge Rate (ECR)**

***Petitioner's Submission***

5.38 The Petitioner has stated the energy charge rate as Rs. 2.447/kWh and Rs. 2.449/kWh for Unit-1 and Unit-2 respectively against the approved value of Rs. 2.567/kWh and Rs. 2.570/kWh for FY 2017-18.

5.39 For calculation of ECR, the Petitioner has considered the normative Gross Station Heat Rate of 2387 kCal/kWh, normative Auxiliary Consumption of 9.00% and normative Secondary fuel oil as 1.00 ml/kWh for both the Units.

***Commission's Analysis***

5.40 As per Clause 8.17 of JSERC Generation Tariff Regulation, 2015, the energy charge (i.e. Variable Charge) shall cover primary fuel and secondary fuel costs and shall be payable by every beneficiary for the energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment).

5.41 The formula for calculation of energy charge payable to a Generating Company is specified in JSERC Generation Tariff Regulation, 2015 as quoted below: -

*"8.17 The energy (variable) charge shall cover primary fuel and secondary fuel costs and limestone consumption cost (where applicable), shall be payable by every Beneficiary for the total energy scheduled to be supplied to such Beneficiary during the calendar month on ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment and limestone adjustment).*

*"8.18 Total Energy charge payable to the Generating Company for a month shall be: = (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}*

*8.19 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the the following formula:*

*(a) For coal based stations*

*ECR = {(GHR – SFC x CVSF) x LPPF/CVPF+SFCxLPSFi+LCxLPL} x 100/(100 – AUX)}*

*………….*

*Where,*

*AUX - Normative auxiliary energy consumption in percentage*

*CVPF – Weighted Average Gross calorific value of coal as received, in KCal per kg, for coal based stations. In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.*
*CVSF - Calorific value of secondary fuel, in KCal per ml*
*ECR - Energy charge rate, in Rupees per kWh sent out.*
*GHR - Gross station heat rate, in KCal per kWh.*
*LC – Normative limestone consumption in kg per kWh*
*LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of*
*blending of fuel from different sources, the weighted average landed price of*
*primary fuel shall be arrived in proportion to blending ratio)*
*LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during*
*the month*
*LPL = Weighted average landed price of limestone in Rupees per kg*
*SFC - Specific fuel oil consumption, in ml per kWh".*

*8.21 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the tariff period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.*

*The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:*

*Pithead generating stations: 0.2%*
*Non-pithead generating stations: 0.8%*

*Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines which is transported to the station through rail, transit loss of 0.8% shall be applicable:*

*Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.*

5.42 Accordingly, the Commission has calculated the Energy Charge Rate (ECR) to be charged by the Petitioner as per the formula specified in JSERC Generation Tariff Regulations, 2015. The detail of ECR and Fuel Cost for truing up of FY 2017-18 for both the Units as submitted by the Petitioner and approved by the Commission is tabulated hereunder:

**Table 21: Energy Charge Rate (ECR) for Unit-1 as approved by the Commission**

| Particulars | UoM | FY 2017-18 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1454.92 | 2106.07 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419.00 | 3543.44 | 3543.44 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.25 | 3.25 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.04 | 0.04 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.567** | **2.447** | **2.447** |

**As per Corrigendum Order dated April 10, 2019*

**Table 22: Energy Charge Rate (ECR) for Unit-2 as approved by the Commission**

| Particulars | UoM | FY 2017-18 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1454.92 | 803.78 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419 | 3466.28 | 3466.28 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.18 | 3.18 |

| Particulars | UoM | FY 2017-18 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.04 | 0.04 |
| Energy Charge Rate (ECR) | **Rs/kWh** | **2.570** | **2.449** | **2.448** |

**As per Corrigendum Order dated April 10, 2019*

**Determination of Fixed Cost**

**Additional Capitalization & De-capitalization**

***Petitioner's Submission***

5.43 It is submitted that an additional capitalization of Rs. 3.54 Crore for each Unit of the generating station for FY 2017-18 has been incurred by the Petitioner.

5.44 The details of additional capitalisation as claimed by the Petitioner for FY 2017-18, is tabulated hereunder:

**Table 23: Details of additional capitalization as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Plant & Machinery | - | 2.33 | - | 2.33 |
| Building & Civil Works | - | 1.22 | - | 1.22 |
| **Total** | **-** | **3.54** | **-** | **3.54** |

5.45 In support of capitalization, the Petitioner has submitted the statutory Auditor certificate attesting the closing value of GFA of Rs. 3389.38 Crore as on March 31, 2018.

***Commission's Analysis***

5.46 The Commission has outlined the provisions for the approval of any additional capitalization, for a generating station in Clause 7.5 and Clause 7.6 of the JSERC Generation Tariff Regulation, 2015, and the relevant clauses are outlined below:

*Additional Capitalisation*

*"7.5 The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

*(i) Undischarged liabilities;*
*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions under clause 7.3,7.4 of these Regulations;*

*(iv) Liabilities to meet award of arbitration or for compliance of the order ordecree of a court; and*

*(v) Change in law.*

*Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.*

*'7.6 The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:*

*(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*

*(ii) Change in law;*

*(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(iv) Any additional works/ services which have become necessary for efficient andsuccessful operation of the generating station, but not included in the original project cost;*

*(v) Any liability for works executed prior to the cut-off date, after prudence checkof the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*

*(vi) Any capital expenditure found justified after prudence check necessitated onaccount of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:*

5.47 The Commission observed that there is discrepancy in the representation of additional capitalisation when as compared to the Petitioner's claim and audited accounts as shown below.

**Table 24: Discrepancy between Petitioner Claim and audited accounts in Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Plant & Machinery | 2.33 | 2.33 | 2.33 | 2.33 |
| Building & Civil Works | 1.22 | 1.03 | 1.22 | 1.03 |
| Furniture and Fixtures | - | 0.01 | - | 0.01 |
| Vehicles | - | 0.13 | - | 0.13 |
| Office Equipment | - | 0.02 | - | 0.02 |
| Computer | - | 0.03 | - | 0.03 |
| Other | - | - | - | - |
| **Total** | **3.54** | **3.54** | **3.54** | **3.54** |

5.48 The Commission has also scrutinized the submission supplied by the Petitioner regarding the Capitalization of assets for FY 2017-18 and after a prudent check approves the Capitalization as shown below.

**Table 25: Additional Capitalization for Unit-1 and Unit-2 for FY 2017-18**

| Sr. No. | Detail of Assets | Value (Rs. Cr.) | Justification |
|---|---|---|---|
| 1 | Ash Handling System | 0.14 | The Petitioner submits that ash handling system required strengthening and accordingly the Petitioner has purchased an automatic bagging and packing machine for sending bagged fly ash through railway rake to different customer in accordance with norms of Ministry of Environment, Forest and Climate Change. Hence the Petitioner claims that this expenses are justifiable and required for increase in efficiency and compliance.<br>The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| 2 | Site Development | 2.06 | The Petitioner at Birajpur, Jharkhand had developed a railway siding which is 800 meters away from plant truck tippler area and the Petitioner has developed a road from truck tippler at coal handling plant to Birajpur railway siding for transportation of coal. This will increase the efficiency of coal unloading and movement.<br>The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |

| Sr. No. | Detail of Assets | Value (Rs. Cr.) | Justification |
|---|---|---|---|
| 3 | Merry-Go-Round (MGR)/ Railway Siding | 4.37 | The Petitioner has developed the railway siding at Birajpur, Jharkhand for unloading of coal near the plant. This railway siding is 800 meters far from the coal handling plant area.<br>The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| 4 | Coal Handling System | 0.51 | The Petitioner has to procure coal from multiple sources, the coal handling system had to be strengthened to take care of multiple trucks reaching the power plant premises. Accordingly, a 100 MT weight bridge has been installed. Beside this 6 LPM oil filtration machine is purchased for truck tippler and stacker reclaimer for filtration of oil. Hence, the Petitioner claims that this expenses is justifiable and necessary requirement for operations.<br>The Commission may allow the expenditure under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015. |
| **Total (Rs. Crore)** | | **7.08** | |

5.49 It is observed by the Commission that all the assets capitalized during the FY 2017-18 were not part of the original project. Further, the Petitioner has requested the Commission to allow the above mentioned assets under Clause 7.6 (iv) of JSERC Tariff Regulations 2015 i.e. any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost.

5.50 The Commission has examined the audited accounts of FY 2017-18 and as per Note-4 (Property, Plant and Equipment) of audited accounts, substantiates the fact that Rs. 7.08 Crore (cumulative for both the Units) of assets is capitalized during the FY 2017-18. Based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the additional capitalization of Rs. 7.08 Crore (cumulative for both the Units) for FY 2017-18 under Clause 7.6 (iv) of JSERC Tariff Regulations 2015. Further, In FY 2017-18, the additional capitalization as per the audited accounts of 2017-18 is Rs. 7.08 Crores, leading to closing value of GFA as on 31st March, 2018 as Rs. 3,389.38 Crores.

**Table 26: Details of the Additional Capitalization as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Capitalization | - | 3.54 | 3.54 | - | 3.54 | 3.54 |

**Depreciation**

***Petitioner's Submission***

5.51 The Petitioner has submitted that depreciation is calculated based on 'Single Line Method' and at the depreciation rates provided in Appendix-I of the JSERC Generation Tariff Regulations 2015.

5.52 Further, the Petitioner has submitted that the depreciation so allowed shall be up to maximum of 90% of the capital cost of the project and the balance is to be considered as the salvage value of the asset.

**Table 27: Depreciation as submitted by the Petitioner (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.38 | 74.63 | 75.20 | 75.44 |
| Building & civil works | 3.34% | 7.25 | 7.12 | 7.21 | 7.08 |
| Other Assets | 5.28% | 0.37 | 0.40 | 0.37 | 0.40 |
| **Net Depreciation** | **Rs.cr.** | **82.37** | **82.53** | **83.15** | **83.30** |

***Commission's Analysis***

5.53 The JSERC Generation Tariff Regulation, 2015 has specified the following methodology for the calculation of depreciation expense for existing generating station are reproduced below: -

*"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;*

*Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant*

*7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.*

*………*

*7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station:*

*Provided that, the remaining depreciable value as on 31st March of the Year closing after a period of 12 Years from the Date of Commercial operation shall be spread over the balance Useful life of the assets.*

*7.32 In case of existing projects, the balance depreciable value as on 1st April 2016 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31st March 2016 from the gross depreciable value of the assets.*

*The rate of depreciation shall be continued to be charged at the rate specified in Appendix-I till cumulative depreciation reaches 70%. Thereafter the remaining depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%.*

*7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis."*

5.54 The Commission has computed depreciation for both the Units in accordance with the above mention regulations. The following table shows the depreciation approved by the Commission against that submitted by the Petitioner.

**Table 28: Depreciation as approved by the Commission (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approve | Petition | Approve |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.63 | 74.63 | 75.44 | 75.44 |
| Building & civil works | 3.34% | 7.12 | 7.12 | 7.08 | 7.08 |
| Other Assets | 5.28% | 0.40 | 0.40 | 0.40 | 0.40 |
| **Net Depreciation** | **Rs.cr.** | **82.53** | **82.53** | **83.30** | **83.30** |

**Operation & Maintenance Expenses**

***Petitioner's Submission***

5.55 The Petitioner has claimed the normative operational & Maintenance (O&M)

Expenses as approved in the MYT Order dated February 19, 2018.

5.56 Further, the Petitioner has outlined the Clause 6.14 of the Tariff JSERC Regulations, 2015 provides that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR

5.57 In view of the reasons mentioned above, the Petitioner has prayed to the Commission to allow the O&M expenses as mentioned below.

**Table 29: O&M Expenses as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses | 75.56 | 75.56 | 75.56 | 75.56 |

***Commission's Analysis***

5.58 As per JSERC Generation Tariff Regulations, 2015 Clause 7.40 and Clause 7.41 lays out the provision for determination of O&M expenses and the same is quoted below: -

*"7.40 Operation and Maintenance (O&M) expenses shall comprise of the following:*

*(a) Salaries, wages, pension contribution and other employee costs;*
*(b) Administrative and General costs;*
*(c) Repairs and maintenance expenses; and*
*(d) Other miscellaneous expenses statutory levies and taxes (except corporate incometax).*

*7.41 Existing Thermal Generating Stations:*

*(a) The Applicant shall submit details of O&M expenses as required by the Commission. The O&M expenses excluding terminal liabilities for the Base Year shall be determined based on accounting statements for the base year, estimates of the Generating Company for relevant years and other factors considered relevant.*
*(b) The O&M expenses excluding terminal liabilities permissible towards determination of tariff for each year of the Control Period shall be determined after a prudency check by the Commission based on submissions of the Generating Company, previous years' actual expenses and any other factor considered relevant.*
*(c) Terminal Liabilities will be approved as per actual submitted by the*

*Generating Company or be established through actuarial studies.*

*(d) Increase in O&M charges on account of war, insurgency or changes in laws, or like eventualities where the Commission is of the opinion that an increase in O&M charges is justified, may be considered by the Commission for a specified period."*

5.59 The Commission has scrutinized the submission made by the Petitioner and approved the operational & maintenance expenses as per MYT Order dated February 19, 2018.

**Table 30: O&M Expenses as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| O&M Expenses | 75.56 | 75.56 | 75.56 | 75.56 | 75.56 | 75.56 |

**Interest on Loan**

***Petitioner's Submission***

5.60 The Petitioner has considered the opening balance of loan for FY 2017-18 as Rs 836.27 crores and Rs 869.03 crores for unit-1, unit-2 respectively based on closing values of 2016-17 truing up petition. Further, the gross additional capitalisation (without deletion) have been funded in the ratio of 70:30.

5.61 The Petitioner has considered the repayment during the year equivalent to the normative depreciation for the year being in line with the methodology prescribed in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

5.62 The Petitioner has submitted that the actual loan portfolio is in the line with the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015., and also considered 70% of the actual capitalization as Normative Loan for FY 2017-18 with interest rate of 12.19% for Unit-1 and Unit-2.

5.63 Further, the Petitioner has submitted the weighted average rate of interest for Unit-1 and Unit-2 duly certified by the auditor.

5.64 The Petitioner has considered the weighted average rate of interest based on actual loan portfolio and repayment equal to depreciation proposed by Petitioner for calculation of interest on loan for FY 2017-18.

**Table 31: Interest on Loan as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Debt Balance | 885.33 | 836.27 | 917.92 | 869.03 |
| Net Additions | - | 2.48 | - | 2.48 |
| Repayment | 82.37 | 82.53 | 83.15 | 83.30 |
| **Closing Debt Balance** | **802.96** | **756.22** | **834.77** | **788.21** |
| Rate of Interest (%) | 13.13% | 12.19% | 13.28% | 12.19% |
| **Interest on Debt** | **110.84** | **97.06** | **116.38** | **101.01** |

***Commission's Analysis***

5.65 The Commission has calculated the gross normative loan for FY 2017-18 as per Clause 7.13 and Clause 7.14 of the JSERC Generation Tariff Regulation, 2015 as reproduced below: -

*"7.13 In case of the generating station declared under commercial operation prior to 1.4.2016, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31.3.2016 shall be considered for determination of tariff.*

*During the control period, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31st March 2017 shall be considered for determination of tariff.*

*7.14 For the project declared under commercial operation on or after 1.04.2016, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equityshall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*Explanation: -*

*i. The premium, if any, raised by the Generating Company, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station.*

*ii. Provided, further that any consumer contribution, deposit work* *and grant obtained for the execution of the project shall not be considered as part of the capital structure for the purpose of computation of normative debt: equity.*

*iii. Any expenditure incurred or projected to be incurred on or after 1st April 2016 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

*………*

*"7.19 The loans arrived at in the manner indicated in clause 7.13 and 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.*

*7.20 The normative loan outstanding as on 1st April 2016 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31st March 2016 from the gross normative loan*

*7.21 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year.*

*7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.*

*7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered*

*7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

5.66 The Commission has scrutinized the details submitted by the Petitioner and observed that weighted average interest rate as 12.19% for both Unit-1 & Unit-2.

5.67 The Commission has calculated the normative opening balance of debt for FY 2017-18 as trued up closing balance for FY 2016-17 vide Order dated May 22, 2023 for each Unit.

5.68 The Commission has approved the repayment as approved of depreciation in line with the methodology specified in JSERC Generation Tariff Regulations, 2015 to arrive at the closing balance of normative debt component as shown below.

**Table 32: Interest on Loan as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Loan | 885.33 | 836.27 | 885.71 | 917.92 | 869.03 | 918.32 |
| Deemed Loan Addition | 0.00 | 2.48 | 2.48 | 0.00 | 2.48 | 2.48 |
| Deemed Loan Repayment | 82.37 | 82.53 | 82.53 | 83.15 | 83.30 | 83.30 |
| **Closing Loan** | **802.96** | **756.22** | **805.66** | **834.77** | **788.21** | **837.51** |
| Interest Rate | 13.13% | 12.19% | 12.19% | 13.28% | 12.19% | 12.19% |
| **Interest on Loan** | **110.84** | **97.06** | **103.09** | **116.38** | **101.01** | **107.02** |

**Interest on Working Capital (IoWC)**

***Petitioner's Submission***

5.69 The Petitioner has mentioned that Clause 6.14 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 provides for Truing-up of Interest on Working Capital on account of variation in actual capital expenditure incurred vis-à-vis approved capital expenditure. The relevant clause has been reproduced below:

> *"6.14(c) at the end of the control period –*
>
> *i. the Commission shall review actual capital investment vis-à-vis approved capital investment.*
>
> *ii. depreciation and financing cost, which includes cost of debt including working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited information and prudence check by the Commission"*

5.70 Further, the Petitioner craves for liberty before the Hon'ble Commission to claim Receivables equivalent to 180 days of average billing as outstanding dues of the Petitioner w.r.t JBVNL supply is pending for more than 180 days. Hence, the

Petitioner requests before the Hon'ble Commission to relax and allow the receivables of 180 days under Regulation A 33 i.e. Power of relaxation.

5.71 The Petitioner has worked out the normative working capital requirement for Unit-1 and Unit-2 for FY 2017-18 and has considered the rate of interest on working capital equal to the Bank Rate specified by State Bank as on April 01, 2017 plus 350 basis points. Accordingly, the Petitioner has considered 12.60% for Unit-1 and Unit-2 as rate of interest on working capital. The detailed computation of interest on working capital for Unit-1 and Unit-2 for FY 2017-18 based on the above rationale is shown below.

**Table 33: Interest on Working Capital as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Coal Cost for 2 Months | 76.84 | 73.04 | 76.84 | 73.16 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.48 | 1.51 | 1.50 |
| O&M Expenses for 1 month | 140.34 | 6.30 | 141.22 | 6.30 |
| Receivable for 2 month | 6.30 | 418.09* | 6.30 | 421.09* |
| Maintenance Spare | 15.11 | 15.11 | 15.11 | 15.11 |
| **Total Working Capital** | **239.92** | **514.02** | **241.04** | **517.15** |
| Rate of Interest | 12.80% | 12.60% | 12.80% | 12.60% |
| **Interest on Working Capital** | **30.71** | **64.77** | **30.85** | **65.16** |

** the Petitioner claim receivable for 180 days*

***Commission's Analysis***

5.72 The Commission has computed the interest on working capital (IoWC) for FY 2017-18 for both the Units as per Clause 7.34 and Clause 7.37 of JSERC Generation Tariff Regulations, 2015 as reproduced below: -

*"7.34 The Commission shall determine the Working Capital requirement for coal based generating stations containing the following components:*

*(a) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(b) Cost of coal or lignite and limestone for 30 days for generation corresponding to normative annual plant availability factor;*

*(c) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;*

*(c) Maintenance spares @ 20% of operation and maintenance expenses;*

*(d) Operation and Maintenance expenses for 1 month; and*

*(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.*

*7.37 The cost of fuel in cases covered under clause 7.34 and 7.35 of these Regulations shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period."*

*"7.38 Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 01.04.2016 or as on 1st April of the year during the tariff period 2016-17 to 2020-21 in which the generating station or a unit thereof, is declared under commercial operation, whichever is later.*

*Provided that the rate of interest on working capital shall be trued up on the basis of actual bank rate as on 1st April of the respective year at the time of true up for that year.*

*7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures".*

5.73 The Commission has scrutinized the submission made by Petitioner and allow Receivable for 2 months only as per Clause 7.34 (e) of the JSERC generation Tariff Regulation 2015.

5.74 The Commission has computed the working capital requirement as per the above mentioned Regulations. The interest on working capital is considered as per JSERC Generation Tariff Regulations, 2015 i.e., Bank rate as April 01, 2017. The detailed calculation made by the Commission is shown in the tables below.

**Table 34: Interest on Working Capital as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Coal Cost for 2 Months | 76.84 | 73.04 | 76.63 | 76.84 | 73.16 | 29.26 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.48 | 1.53 | 1.51 | 1.50 | 0.59 |
| O&M Expenses for 1 month | 140.34 | 6.30 | 6.30 | 141.22 | 6.30 | 6.30 |
| Receivable for 2 month | 6.30 | **418.09*** | 138.77 | 6.30 | **421.09*** | 89.30 |
| Maintenance Spare | 15.11 | 15.11 | 15.11 | 15.11 | 15.11 | 15.11 |
| **Total Working Capital** | **239.92** | **514.02** | **238.33** | **241.04** | **517.15** | **140.55** |
| Rate of Interest | 12.80% | 12.60% | 12.60% | 12.80% | 12.60% | 12.60% |
| Interest on Working Capital | **30.71** | **64.77** | **30.03** | **30.85** | **65.16** | **17.71** |

** the Petitioner claim receivable for 180 days*

**Return on Equity**

***Petitioner's Submission***

5.75 The Petitioner has considered the opening value of equity for FY 2017-18 as Rs 505.24 crores and Rs 509.44 crores for unit-1, unit-2 respectively based on closing values of 2016-17 truing up petition. Further, the gross additional capitalisation (without deletion) have been funded in the ratio of 70:30.

5.76 The Petitioner has mention Clause 7.15 to 7.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 to prescribe the provisions for computing the normative return on equity for determination of tariff.

5.77 Further, the Petitioner while calculating return on equity has considered post-tax return as 15.50% in accordance with Generation Tariff Regulations 2015 and approach adopted by the Commission in earlier Orders.

5.78 Accordingly, the Return on Equity (Pre-Tax) claimed by the Petitioner for Unit-1 and Unit-2 for FY 2017-18 is summarized in the table below:

**Table 35: RoE as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Equity | 455.63 | 505.24 | 450.25 | 509.44 |
| Net Addition | - | 1.06 | - | 1.06 |
| Closing Equity | 455.63 | 506.30 | 450.25 | 510.50 |
| Average Equity | 455.63 | 505.77 | 450.25 | 509.97 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% |

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| **Return on Equity (ROE)** | **70.62** | **78.39** | **69.79** | **79.05** |

***Commission's Analysis***

5.79 The Commission has calculated the gross normative equity for FY 2017-18 as per Clause 7.13 and 7.14 of the JSERC Generation Tariff Regulations, 2015, as reproduce below: -

*"7.13 In case of the generating station declared under commercial operation prior to 1.4.2016, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31.3.2016 shall be considered for determination of tariff.*

*During the control period, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31st March 2017 shall be considered for determination of tariff.*

*7.14 For the project declared under commercial operation on or after 1.04.2016, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

Explanation: -

*i. The premium, if any, raised by the Generating Company, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station.*

*ii. Provided, further that any consumer contribution, deposit work and grant obtained for the execution of the project shall not be considered as part of the capital structure for the purpose of computation of normative debt: equity.*

*iii. Any expenditure incurred or projected to be incurred on or after 1st April 2016 asmay be admitted by the Commission as additional* *capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."*

5.80 The Commission has calculated the normative opening balance of equity for FY 2017-18 as trued up closing balance for FY 2016-17 vide Order dated May 22, 2023 for each Unit.

5.81 The Commission has scrutinized the discrepancies reply supplied by the Petitioner and observed the revised Debt: Equity ratio from FY 2016-17 onwards as 70:30.

5.82 The Commission has noted the reply of the Petitioner and in accordance with Clause 7.16, Clause 7.17 and Clause 7.18 of the JSERC Generation Tariff Regulations, 2015, the Commission has approved the rate of return on equity at the rate of 15.50% as given below:

**Table 36: RoE as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Equity | 455.63 | 505.24 | 455.81 | 450.25 | 509.44 | 460.16 |
| Net Addition | - | 1.06 | 1.06 | - | 1.06 | 1.06 |
| Closing Equity | 455.63 | 506.30 | 456.87 | 450.25 | 510.50 | 461.22 |
| Average Equity | 455.63 | 505.77 | 456.34 | 450.25 | 509.97 | 460.69 |
| Rate of RoE | 15.50 % | 15.50% | 15.50% | 15.50 % | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.39** | **70.73** | **69.79** | **79.05** | **71.41** |

**Annual Fixed Charge**

***Petitioner's Submission***

5.83 The summary of Annual Fixed Charge (AFC) as submitted by the Petitioner is shown below:

**Table 37: Annual Fixed Charge as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.53 | 83.15 | 83.30 |
| Interest on Debt | 110.84 | 97.06 | 116.38 | 101.01 |
| O&M Expenses | 75.56 | 75.56 | 75.56 | 75.56 |
| Return on Equity (Pre-Tax) | 70.62 | 78.39 | 69.79 | 79.05 |

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Interest on Working Capital | 30.71 | 64.77 | 30.85 | 65.16 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **370.10** | **398.32** | **375.73** | **404.07** |

***Commission's Analysis***

5.84 Clause 8.2 of the JSERC Generation Tariff Regulations, 2015 states that Annual Fixed Cost (AFC) of a thermal generating station shall consist of the following components:

a) Return on Equity;
b) Interest and Financing Charges on Loan Capital;
c) Depreciation;
d) Operation and Maintenance Expenses;
e) Interest Charges on Working Capital; and
f) Special allowance in lieu of R&M or separate compensation allowance, wherever applicable;

5.85 The Annual Fixed Cost (AFC) as submitted by Petitioner and approved by the Commission has been tabulated below.

**Table 38: Annual Fixed Charge as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Depreciation | 82.37 | 82.53 | 82.53 | 83.15 | 83.30 | 83.30 |
| Interest on Debt | 110.84 | 97.06 | 103.09 | 116.38 | 101.01 | 107.02 |
| O&M Expenses | 75.56 | 75.56 | 75.56 | 75.56 | 75.56 | 75.56 |
| RoE (Pre-Tax) | 70.62 | 78.39 | 70.73 | 69.79 | 79.05 | 71.41 |
| IoWC | 30.71 | 64.77 | 30.03 | 30.85 | 65.16 | 17.71 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **370.10** | **398.32** | **361.94** | **375.73** | **404.07** | **354.99** |

**Water Charges, Capital Spare Expenses**

***Petitioner's Submission***

5.86 The Petitioner has entered into an MoU with Govt. of Jharkhand for drawl of water to an extent of 35.60 MCM (4064 $m^3$ per hour) in a phased manner from Subarnarekha river, flowing at a distance of eight km downstream of water intake point from APNRL Project site, vide agreement dated August 29, 2008. The said agreement stipulates that a pump house has to be installed for drawl of required water from the river Subarnarekha withdrawn directly from river and not from any reservoir. Subsequently, Water Department of Govt. of Jharkhand vide its Notification No. 2/PMC/Jalapurti-175/2007 dated April 01, 2011 has revised various categories for water off-take and APNRL was asked to pay @ Rs. 26.40 per thousand gallons. The Petitioner aggrieved by the rate, filed a Writ Petition before High Court of Jharkhand on February 07, 2012 with regard to demand raised by Subarnarekha Dam Division towards withdrawal of water at higher than the agreed rates.

5.87 The Hon'ble High Court of Jharkhand was pleased to pass a stay Order in the above mentioned Writ Petition, restricting the payment of water charges at pre-revised rate of Rs. 4.50 per thousand gallons.

5.88 The Petitioner further mention that clause 18 of the Water agreement, which contains provisions for reduction of the Water quantity, the Petitioner has requested WRD, Government of Jharkhand for lowering of the permitted water quantity from 35.60 MCM to 17.60 MCM i.e. almost 50% of the original allocated quantity, which is yet to be considered by the WRD, State of Jharkhand. As a result, the Petitioner has filed another petition before the Hon'ble High Court at Ranchi for resolution of dispute regarding the billed water quantum in the bill, which is pending.

5.89 Therefore, the Petitioner is paying at Rs. 4.50 per thousand gallon of water withdrawn from river, amounting to Rs. 1.74 Crore for FY 2017-18, as reflected in audited accounts. The same is apportioned in proportion to JBVNL share (25%) i.e., 0.44 Crore (Rs. 0.22 Crore for each Unit).

5.90 The Petitioner has claimed capital spare expenses well within the clause 7.46 of the JSERC generation Tariff Regulation 2015.

**Table 39: Water chare and Capital spare as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Water Charges | 1.74 | 0.22 | 1.74 | 0.22 |
| Capital Spares | - | 0.55 | - | 0.55 |

***Commission's Analysis***

5.91 The treatment of water charges and capital spares for thermal generating stations is governed by the Clause 7.46 as stated below: -

*"7.46 The Water Charges and capital spares for thermal generating stations*

*shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Clause 7.47 of the Regulation or special allowance as per Clause 7.10 and 7.11 of the Regulation or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization."*

5.92 The Commission has scrutinized the detail as submitted by the Petitioner and observed that the matter related to water charge is sub-judice before the Hon'ble Jharkhand High Court. Thus, the Commission in the Present petition approved the water charges as per audited accounts for FY 2017-18 in proportion of power allocated to JBVNL.

5.93 In regard to Capital spares, the Commission is of the view that in compliance to 2nd proviso of Regulation 7.46 of the JSERC Generation Tariff Regulations, the Petitioner is required to submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 7.47 of the JSERC Generation Tariff Regulations or special allowance as per Regulations 7.10 and 7.11 of the JSERC Generation Tariff Regulations or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization. In compliance, the Petitioner has submitted the details of critical spares consumed in FY 2017-18 duly certified by auditor along with the purpose of consumption.

5.94 The Commission has examined the details of critical spares consumed in FY 2017-18 duly certified by auditor along with the purpose of consumption. The Commission approves Rs. 1.09 Crore (cumulative for both units) based on the ratio of the power allocation to JBVNL. Thus, based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the critical spares of Rs. 0.55 Crore for each unit for FY 2017-18.

5.95 The Commission observed that, the overall capital spare and water charges are well within the clause 7.46 of JSERC Generation Tariff Regulation 2015. The Commission has therefore approved the capital spare and water charge as shown below.

**Table 40: Water charge and Capital Spare as approved by the Commission (Rs. Cr)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Water charge | 1.74 | 0.22 | 0.22 | 1.74 | 0.22 | 0.22 |
| Capital Spare | - | 0.55 | 0.55 | - | 0.55 | 0.55 |

**Ash Disposal Expenses**

***Petitioner's Submission***

5.96 The Petitioner submits that ash disposal and transportation is the statutory requirement of the power plant. The Petitioner has been disposing and transporting the Ash from its power station in accordance with the Government of India, Ministry of Environment, Forest & Climate Change (MOEFCC) notification dated 25.1.2016.

5.97 Further, the Petitioner has submitted that as per the environmental norms and MOEFCC guidelines, the Petitioner has been transporting ash from its power station to various cement and bricks manufacturing units. The details of quantity of ash disposal and its expenditures is being provided as below:

**Table 41: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Disposal | - | 2.20 | - | 2.20 |

***Commission's Analysis***

5.98 The Commission has scrutinized the submission made by the Petitioner and approves the Ash Disposal Expenses as per audited accounts.

5.99 Considering the facts and circumstances the Commission approved the Ash Disposal Expense for FY 2017-18 is shown below.

**Table 42: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Ash Disposal | - | 2.20 | 2.20 | - | 2.20 | 2.20 |

**Tariff for Unit-1 and Unit-2**

***Petitioner's Submission***

5.100 The Petitioner has submitted that in accordance with provisions of Power Purchase Agreement (PPA) executed with Discom, out of the total Contracted Capacity of 122.85 MW, APNRL will supply 63.882 MW capacity (i.e., 13% of the total net Capacity at total Tariff (both fixed and Variable Charge) and the balance 58.96 MW capacity, i.e., 12% of the Net capacity at variable cost i.e., Energy Charge as approved by the Commission. Accordingly, the tariff for supply of regulated capacity for JUVNL/JBVNL is summarized below:

**Table 43: Tariff for 12% of Total Net Capacity as submitted by the Petitioner (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 2.447 | 2.570 | 2.449 |

**Table 44: Tariff for 13% of Total Net Capacity as submitted by the Petitioner (Fixed Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Gross Capacity | MW | 270.00 | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | Rs Cr. | 371.84 | 398.32 | 377.47 | 404.07 |
| Annual Fixed harges/MW | Rs Cr./ MW | 1.72 | 1.84 | 1.75 | 1.87 |

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| 13% of Net Capacity for supply to JUVNL at full tariff | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | MW | **54.93** | **58.84** | **55.76** | **59.69** |

***Commission's Analysis***

5.101 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) approved by the Commission, whereas the tariff for next 13% of total net capacity shall be total tariff i.e., variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission as tabulated below.

**Table 45: Tariff for 12% of Total Net Capacity as approved by the Commission (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.447 | 2.447 | 2.449 | 2.448 |

**Table 46: Tariff for 13% of Total Net Capacity for Unit-1 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 371.84 | 398.32 | 361.94 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.72 | 1.84 | 1.67 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **54.93** | **58.84** | **53.47** |

**Table 47: Tariff for 13% of Total Net Capacity for Unit-2 as approved by the Commission (Fixed Charge).**

| Particulars | Derivation | Units | Unit-2 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 377.47 | 404.07 | 354.99 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.75 | 1.87 | 1.64 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **55.76** | **59.69** | **52.44** |

**Revenue**

***Petitioner's Submission***

5.102 The Petitioner has submitted that the billed amount to JUVNL/JBVNL comprises of capacity charge, energy charges and fuel cost adjustment bill. The Petitioner further added that the revenue billed to JUVNL/JBVNL amounts to Rs. 179.02 Crore and Rs. 176.58 Crore for Unit-1 and Unit-2 respectively as shown below:

**Table 48: Revenue as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Petition | Petition |
| Annual Fixed Charge | 51.90 | 52.70 |
| Fuel Cost Adjustment | 2.31 | 2.31 |
| Energy Charge | 87.19 | 87.19 |

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Petition | Petition |
| **Revenue from Sale of Power** | **141.40** | **142.20** |

***Commission's Analysis***

5.103 The Commission has scrutinized the details submitted by the Petitioner and approves the revenue as tabulated below:

**Table 49: Revenue as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petition | Approved | Petition | Approved |
| Annual Fixed Charge | 51.90 | 51.90 | 52.70 | 52.70 |
| Fuel Cost Adjustment | 2.31 | 2.31 | 2.31 | 2.31 |
| Energy Charge | 87.19 | 87.19 | 87.19 | 87.19 |
| **Revenue from Sale of Power** | **141.40** | **141.40** | **142.20** | **142.20** |

**Impact of True up**

***Petitioner's Submission***

5.104 The Petitioner has worked out the impact of true up considering the Trued-up annual fixed charges, trued-up per unit variable charges for the year and the actual availability against the contracted capacity to JBVNL for the year, based on the availability.

**Table 50: Impact of True up as submitted by the Petitioner**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Net Energy Supplied to JUVNL/JBVNL | MU | 393.29 | 393.29 |
| Rate of Energy Charge | Rs/kWh | 2.447 | 2.449 |
| AFC Entitlement on True Up | Rs Cr | 50.60 | 51.33 |
| Incentive | Rs Cr | | |
| Energy Charge Entitlement upon True up | Rs Cr | 96.25 | 96.32 |
| Water Charges | Rs Cr | 0.22 | 0.22 |
| Capital Spares | Rs Cr | 0.55 | 0.55 |
| Additional Ash Disposal Charge | | 2.20 | 2.20 |
| **Total Entitlement** | Rs Cr | **149.82** | **150.62** |
| **Revenue Billed** | | | |
| AFC | Rs Cr | 51.90 | 52.70 |
| FPA | Rs Cr | 2.31 | 2.31 |
| EC | Rs Cr | 87.19 | 87.19 |
| Total Revenue Billed to JUVNL/JBVNL | Rs Cr | **141.40** | **142.20** |
| **Gap/(Surplus)** | Rs Cr | **8.42** | **8.41** |
| Rate of Interest | % | 12.60% | 12.60% |
| From 1st true-up FY 2017-18 to till date | Days | 1461 | 1461 |
| Allowable Interest for the year | Rs Cr | 2.12 | 2.12 |

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| **Total Amount to be additionally recovered /(paid back to JUVNL)** | **Rs Cr** | **10.54** | **10.54** |

***Commission's Analysis***

5.105 The JSERC Generation Tariff Regulations, 2015, states that:

> *"6.16 Where after the truing up, the tariff recovered exceeds the tariff approved by the Commission under these regulations, the generating company shall refund to the beneficiaries as the case may be, the excess amount so recovered shall be as specified in the Clause 6.18 of this regulation."*
>
> *"6.17 Where after the truing up, the tariff recovered is less than the tariff approved by the Commission under these regulations; the generating company licensee shall recover from the beneficiaries the under-recovered amount shall be as specified in the Clause 6.18 of this regulation.*
>
> *6.18 The amount under-recovered or over-recovered, along with simple interest at the rate equal to the bank rate as on 1st April of the respective year, shall be recovered or refunded by the generating company in six equal monthly instalments starting within three months from the date of the tariff order issued by the Commission".*

5.106 Based on the above approved values and revenue, the Commission has approved the impact of True up for FY 2017-18 as shown below:

**Table 51: Gap/(Surplus) as approved by the Commission (Rs. Crore).**

| Particulars | MoU | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Net Energy Supplied to JUVNL/JBVNL | MU | 393.29 | 393.29 | 393.29 | 393.29 |
| Rate of Energy Charge | Rs/kWh | 2.447 | 2.447 | 2.449 | 2.448 |
| AFC Entitlement on True Up | Rs. Cr. | 50.60 | 45.98 | 51.33 | 45.09 |
| Incentive | Rs. Cr. | - | - | - | - |
| Energy Charge Entitlement upon True up | Rs. Cr. | 96.25 | 96.23 | 96.32 | 96.28 |
| Water Charges | Rs. Cr. | 0.22 | 0.22 | 0.22 | 0.22 |
| Capital Spares | Rs. Cr. | 0.55 | 0.55 | 0.55 | 0.55 |
| Ash Disposal Expenses | | 2.20 | 2.20 | 2.20 | 2.20 |
| **Total Entitlement** | Rs. Cr. | **149.82** | **145.17** | **150.62** | **144.34** |
| **Revenue Billed** | | | | | |

| Particulars | MoU | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Annual Fixed Charge | Rs. Cr. | 51.90 | 51.90 | 52.70 | 52.70 |
| Fuel Price Adjustment | Rs. Cr. | 2.31 | 2.31 | 2.31 | 2.31 |
| Energy Charge | Rs. Cr. | 87.19 | 87.19 | 87.19 | 87.19 |
| **Total Revenue Billed to JUVNL/JBVNL** | **Rs. Cr.** | **141.40** | **141.40** | **142.20** | **142.20** |
| **Gap/(Surplus)** | Rs. Cr. | **8.42** | **3.77** | **8.41** | **2.14** |

5.107 The Commission has approved the cumulative surplus for FY 2017-18 along with carrying as shown below:

**Table 52: Gap/(Surplus) including Carrying Cost for Unit-1 as approved by the Commission (Rs. Crore)**

| **Particulars** | **FY 2017-18** | **FY 2018-19** | **FY 2019-20** | **FY 2020-21** | **FY 2021-22** | **FY 2022-23** |
|---|---|---|---|---|---|---|
| | **Approved** | **Approved** | **Approved** | **Approved** | **Approved** | **Approved** |
| Opening Balance | - | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| Addition during the Year | 3.77 | - | - | - | - | 0 |
| Closing Balance | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| Average Balance | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 | 3.77 |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% | 10.50% |
| Carrying Cost for respective Year | 0.24 | 0.23 | 0.24 | 0.22 | 0.20 | 0.20 |

**Table 53: Gap/(Surplus) including Carrying Cost for Unit-2 as approved by the Commission (Rs. Crore)**

| **Particulars** | **FY 2017-18** | **FY 2018-19** | **FY 2019-20** | **FY 2020-21** | **FY 2021-22** | **FY 2022-23** |
|---|---|---|---|---|---|---|
| | **Approved** | **Approved** | **Approved** | **Approved** | **Approved** | **Approved** |
| Opening Balance | - | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| Addition during the Year | 2.14 | - | - | - | - | - |
| Closing Balance | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| Average Balance | 1.07 | 2.14 | 2.14 | 2.14 | 2.14 | 2.14 |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% | 10.50% |
| Carrying Cost for respective Year | 0.07 | 0.13 | 0.13 | 0.12 | 0.11 | 0.11 |

**Table 54: Carrying Cost on Revenue Gap/(Surplus) for Unit-1 & Unit-2 as approved by the Commission (Rs. Cr.)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Approved | Approved |
| Opening Gap/Surplus for FY 2017-18 | - | - |
| Gap/(Surplus) addition during the FY 2017-18 | 3.77 | 2.14 |
| Closing Gap/ (Surplus) for FY 2017-18 | 3.77 | 2.14 |
| Carrying Cost of FY 2017-18 | 0.24 | 0.07 |
| Carrying Cost of FY 2018-19 | 0.23 | 0.13 |
| Carrying Cost of FY 2019-20 | 0.24 | 0.13 |
| Carrying Cost of FY 2020-21 | 0.22 | 0.12 |
| Carrying Cost of FY 2021-22 | 0.20 | 0.11 |
| Carrying Cost of FY 2022-23 | 0.20 | 0.11 |
| **Net Gap/(Surplus)** | 5.09 | 2.83 |

5.108 The Commission would like to clarify that the above Gap/(Surplus) is computed based on the information submitted before the Commission. In case there is any other adjustment between Petitioner and its Beneficiaries, the same need to be taken into account while final adjustment which shall be carried out mutually.

5.109 The Commission has directed the Petitioner to adjust the Gap as per Clause 6.17 & Clause 6.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

## A 6: TRUE-UP FOR FY 2018-19

6.1 The Petitioner has submitted the True-up petition for FY 2018-19 based on the Audited Accounts taking into consideration the provisions of the Tariff Regulations, 2015 and the methodology adopted by the Commission in the earlier Orders.

6.2 The Commission has now carried out the True-up for FY 2018-19 taking into consideration:

a) JSERC Generation Tariff Regulations, 2015;
b) Audited (Statutory) accounts for the FY 2018-19;
c) MYT Order for FY 2016-17 to FY 2020-21 vide dated February 19, 2018;
d) Corrigendum Order issued by the Commission dated April 10, 2019;
e) Methodology adopted by the Commission in its earlier Orders.

### Operational Performance

***Plant Availability Factor (PAF)***

***Petitioner's Submission***

6.3 The Petitioner has submitted the actual availability for Unit-1 & Unit-2 as 82.18% respectively for FY 2018-19.

***Commission's Analysis***

6.4 The Commission in its MYT Order dated February 19, 2018, had approved the Normative Annual Plant Availability Factor (NAPAF) as 85.00% for the Control Period (FY 2016-17 to FY 2020-21) in line with Clause 8.4 of JSERC Generation Tariff Regulation, 2015.

6.5 The Commission noted the reply submitted by the Petitioner and scrutinized the month wise actual availability and approves the actual availability for FY 2018-19 as 82.18% for both Units.

6.6 Based on the information provided by the Petitioner, the Commission observes that the actual availability supplied during the FY 2018-19 is less than the normative value of 85.00%.

6.7 The actual Plant Availability as approved by the Commission in the MYT Order dated February 19, 2018 as submitted by the Petitioner and approved now by the

Commission for FY 2018-19 is summarized below.

**Table 55: Plant availability as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 82.18 | 82.18 |
| **UNIT-2** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 82.18 | 82.18 |

**Auxiliary Consumption**

***Petitioner's Submission***

6.8 The Petitioner has submitted the auxiliary consumption for FY 2018-19 on normative basis as 9.00% for both the Units in accordance with approved value in MYT Order dated February 19, 2018.

***Commission's Analysis***

6.9 The Commission, while dealing with the matter of approving the auxiliary consumption in the MYT Order dated February 19, 2018 for the Control period (FY 2016-17 to FY 2020-21) had verified the Purchase Order (PO) submitted by Petitioner and approved the auxiliary consumption at normative level of 8.50% and an additional 0.50% for the induced cooling tower.

6.10 The Commission has therefore adopted the same methodology & also in line with the Clause 8.6(d)(i) of Generation Tariff Regulation 2015 approved the normative auxiliary consumption as 9.00% for both the Units as summarize below.

**Table 56: Auxiliary Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |
| **UNIT-2** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |

**Plant Load Factor and Generation**

***Petitioner's Submission***

6.11 The Petitioner has submitted the actual Plant Load Factor (PLF) for Unit-1 as 69.00% and Unit-2 as 52.00% for FY 2018-19 against the normative value of 85.00% approved by the Commission in the MYT Order dated February 19, 2018.

6.12 Further, the Petitioner has submitted Gross Generation as 1438.26 MU which is average of 1639.63 MU for Unit-1 and 1236.89 MU for Unit-2 for FY 2018-19.

***Commission's Analysis***

6.13 The Commission is of the view that the Petitioner should look into the reasons for the sub-optimal utilization of its assets which could be due to high cost of generation. The Petitioner should take steps towards reduction of the cost of generation so that more power can be scheduled thus increasing the utilization.

6.14 The Commission has scrutinized the detail submitted along with the Petition and approved the actual Plant Load Factor, Gross Generation and Net Generation as submitted by the Petitioner for FY 2018-19 as shown below.

**Table 57: Plant Load Factor and Generation as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Gross Generation | MU | 2010.42 | 1438.26 | 1639.63 |
| Net Generation | MU | - | 1308.82 | 1492.06 |
| Plant Load Factor | % | - | 69.00 | 69.00 |
| **UNIT-2** | | | | |
| Gross Generation | MU | 2010.42 | 1438.26 | 1236.89 |
| Net Generation | MU | - | 1308.82 | 1125.57 |
| Plant Load Factor | % | - | 52.00 | 52.00 |

**Gross Station Heat Rate (GHR)**

***Petitioner's Submission***

6.15 The Petitioner has claimed the Gross Station Heat Rate (GHR) for both the Units as 2387.00 kcal/kWh in line with the approved value in the MYT Order dated February 19, 2018.

***Commission's Analysis***

6.16 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and JSERC Generation Tariff Regulations, 2015. Hence, the Commission approves the Gross Station Heat Rate as submitted by the Petitioner for FY 2018-19 as shown below:

**Table 58: Gross Station Heat Rate (GHR) as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| **UNIT-2** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |

**Specific Fuel Oil Consumption**

***Petitioner's Submission***

6.17 The Petitioner has submitted the specific fuel oil consumption as 1.00 mL/kWh in line with JSERC Generation Tariff Regulations, 2015 for both the Units for FY 2018-19.

***Commission's Analysis***

6.18 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and Generation Tariff Regulations, 2015. Hence, the Commission approves the secondary fuel oil consumption as submitted by the Petitioner for FY 2018-19 as shown below:

**Table 59: Specific Fuel Oil Consumption as approved by the Commission**

| | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| **UNIT-2** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |

**Fuel Cost Parameters**

**Coal Mix and Gross Calorific Value (GCV) of Primary Fuel**

***Petitioner's Submission***

6.19 The Petitioner has submitted that there is variation in coal mix, GCV and landed price of primary fuel against the approved value in MYT Order dated February 19, 2018. The Petitioner has further added that the reason for variation are not attributable to the Petitioner.

6.20 The Petitioner submitted the source wise break up of coal consumed, GCV of coal for each unit during FY 2018-19 duly certified by auditor in support of his claim.

***Commission's Analysis***

6.21 The Commission vide letter dated September 21, 2022 directed the Petitioner to provide the detail computation of GCV of the primary fuel. In compliance, the Petitioner submitted that the weighted average GCV for Unit-1 as 3493.89 kcal/kg and GCV for Unit-2 as 3457.38 kcal/kg respectively and also submitted the detailed excel computation of GCV.

6.22 The Commission has observed that there has been significant deviation in the blending ratio, GCV of primary fuel-mix and its price as compared to the approved values by the Commission. It is also observed that there is decrease in GCV of coal, leading to increase in consumption of primary fuel.

6.23 The Commission has taken note of the submission made by the Petitioner along with statutory audited detailing month wise quantity consumed and GCV for FY 2018-19 of each Unit.

6.24 The following table summarize the fuel mix and weighted average GCV as submitted by the Petitioner and approved by the Commission for FY 2018-19.

**Table 60: Coal Mix and GCV for Unit-1 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | 0.68% | 0.68% | 3827 | 4697.58 | 4697.58 |
| F-Auction Coal | - | 99.32% | 99.32% | - | 3485.62 | 3485.62 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3493.89** | **3493.89** |

**Table 61: Coal Mix and GCV for Unit-2 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | - | - | 3827 | - | - |
| F-Auction Coal | - | 100.00% | 100.00% | - | 3457.38 | 3457.38 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3457.38** | **3457.38** |

**Transit Loss**

***Petitioner's Submission***

6.25 The Petitioner has claimed the normative transit loss as 0.8% for domestic coal and 0.2% for imported coal in accordance with MYT Order dated February 19, 2018.

***Commission's Analysis***

6.26 The Commission observes that the actual transit loss of coal depends on various factors like category of coal, foreign particles content, moisture content, distance from mines etc. Considering all the factors, the Commission has computed the weighted average normative transit loss of 0.80% for non-pit head plant and 0.20% for pit head plant as stipulated in the JSERC Generation Tariff Regulations, 2015.

6.27 Thus, in accordance with Regulation 8.21 of JSERC Generation Tariff Regulation, 2015, the Commission approves the normative transit loss as 0.80% for domestic coal and 0.20% for imported coal.

**Table 62: Transit Loss as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% |
| Imported Coal | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% |

**Landed Cost of Coal**

***Petitioner's Submission***

6.28 The Petitioner has submitted that the month wise landed price of primary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

6.29 The Commission for reason stated in this Order approved the normative transit loss for the calculation of landed price of the coal.

6.30 The Commission analysed and considered the submission made by the Petitioner and arrived at the weighted average landed cost of coal by following methodology:

a) Audited figures of the Base price of coal including base price, applicable tax, transportation charges, handling charges and provisional adjustment/stock adjustment (if any);
b) Normative Transit loss as approved by the Commission;
c) Actual consumption of various types of coal.
d) Price and quality of the coal is uncontrollable in nature

6.31 The Commission has outlined the provision for approval of landed price of primary fuel for generating station as mentioned in the JSERC Generation Tariff Regulation, 2015, in terms of Clause mentioned in para 5.31.

6.32 The Commission had scrutinized the details submitted by the Petitioner in its reply and observed that the weighted average landed price of coal for Unit-1 as Rs. 4416.59/MT and for Unit-2 as Rs 4276.93/MT respectively.

6.33 The weighted average price of coal as approved in it MYT corrigendum order dated April 10, 2019 as submitted by the Petitioner and approved now by the Commission for FY 2018-19 is provided in the table below.

**Table 63: Landed price of Coal as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| F-Auction Coal | Rs/MT | - | 4396.77 | 4396.77 |
| Imported Coal | Rs/MT | - | 7302.59 | 7302.59 |
| **Wt. Average** | **Rs/MT** | **3298*** | **4416.59** | **4416.59** |
| **UNIT-2** | | | | |
| F-Auction Coal | Rs/MT | - | 4275.96 | 4275.96 |
| Imported Coal | Rs/MT | - | 7354.46 | 7354.46 |
| **Wt. Average** | **Rs/MT** | **3298*** | **4276.93** | **4276.93** |

**As per Corrigendum Order dated April 10, 2019*

**Calorific value and Landed price of Secondary Fuel**

***Petitioner's Submission***

6.34 The Petitioner has submitted that the month wise landed price and GCV of secondary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

6.35 The Commission has analysed the month wise quantity of secondary fuel consumption, GCV and landed price of secondary fuel duly certified by an auditor.

6.36 The Commission on scrutinizing the details submitted in reply by the Petitioner and observed that the weighted average landed price of oil for Unit-1 as Rs. 52789/KL and for Unit-2 as Rs 52540/KL respectively. While the weighted average GCV of oil as 9350 kCal/KL for both Unit.

6.37 On the basis of record available with the Commission, the Commission has approved Calorific value and Landed price of Secondary Fuel for each Unit is shown below:

**Table 64: Calorific value and Landed price of Secondary fuel as approved by the Commission**

| Particul-ars | Calorific Value (kcal/L) | | | Landed Price (Rs./kL) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| **UNIT-1** | 9337* | 9350 | 9350 | 42637* | 52789 | 52789 |
| **UNIT-2** | 9334* | 9350 | 9350 | 45134* | 52540 | 52540 |

**As per Corrigendum Order dated April 10, 2019*

**Energy Charge Rate (ECR)**

***Petitioner's Submission***

6.38 The Petitioner has stated the energy charge rate as Rs. 3.361/kWh and Rs. 3.290/kWh for Unit-1 and Unit-2 respectively against the approved value of Rs. 2.567/kWh and Rs. 2.570/kWh for FY 2018-19.

6.39 For calculation of ECR, the Petitioner has considered the normative Gross Station Heat Rate of 2387 kCal/kWh, normative Auxiliary Consumption of 9.00% and normative Secondary fuel oil as 1.00 ml/kWh for both the Units.

***Commission's Analysis***

6.40 As per Clause 8.17 of JSERC Generation Tariff Regulation, 2015, the energy charge (i.e. Variable Charge) shall cover primary fuel and secondary fuel costs and shall be payable by every beneficiary for the energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment).

6.41 The formula for calculation of energy charge payable to a Generating Company is specified in JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.41.

6.42 Accordingly, the Commission has calculated the Energy Charge Rate (ECR) to be charged by the Petitioner as per the formula specified in JSERC Generation Tariff Regulations, 2015. The detail of ECR and Fuel Cost for truing up of FY 2018-19 for both the Units as submitted by the Petitioner and approved by the Commission is tabulated hereunder:

**Table 65: Energy Charge Rate (ECR) for Unit-1 as approved by the Commission**

| Particulars | UoM | FY 2018-19 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1438.26 | 1639.63 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419.00 | 3493.89 | 3493.89 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 4.42 | 4.42 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.567** | **3.361** | **3.361** |

**As per Corrigendum Order dated April 10, 2019*

**Table 66: Energy Charge Rate (ECR) for Unit-2 as approved by the Commission**

| Particulars | UoM | FY 2018-19 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1438.26 | 1236.89 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419 | 3457.38 | 3457.38 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 4.27 | 4.27 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.570** | **3.290** | **3.290** |

**As per Corrigendum Order dated April 10, 2019*

**Determination of Fixed Cost**

**Additional Capitalization & De-capitalization**

***Petitioner's Submission***

6.43 Is is submitted that an additional capitalization and de-capitalisation of Rs. 2.82 Crore and Rs. (5.48) Crore respectively for each Unit of the generating station for FY 2018-19, has been incurred by the Petitioner.

6.44 The details of additional capitalisation and de-capitalisation as claimed by the Petitioner for FY 2018-19, is shown below:

**Table 67: Details of additional capitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Handling System | - | 0.035 | - | 0.035 |
| Coal Handling System | - | 0.345 | - | 0.345 |
| Other Ready Assets | - | 0.94 | | 0.94 |
| Workshop, Laboratory | - | 0.09 | | 0.09 |
| **Total** | **-** | **1.41** | **-** | **1.41** |

**Table 68: Details of Decapitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Other Ready Assets | - | (2.74) | - | (2.74) |
| **Total** | **-** | **(2.74)** | **-** | **(2.74)** |

6.45 In support of capitalization, the Petitioner has submitted the Statutory Auditor certificate attesting the closing value of GFA of Rs. 3386.72 Crore as on March 31, 2019.

***Commission's Analysis***

6.46 The Commission has outlined the provisions for the approval of any additional capitalization, for a generating station in Clause 7.5 and Clause 7.6 of the JSERC Generation Tariff Regulation, 2015, and the relevant clause is mentioned in Para 5.46.

6.47 The Commission has observed that there is discrepancy in the representation of additional capitalisation when as compared to Petitioner claim and audited accounts as shown below.

**Table 69: Discrepancy between Petitioner Claim and audited accounts in Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Plant & Machinery | - | 0.47 | - | 0.47 |
| Building & Civil Works | - | - | - | - |
| Furniture and Fixtures | - | 0.003 | - | 0.003 |
| Vehicles | - | 0.1422 | - | 0.1422 |
| Office Equipment | - | 0.0132 | - | 0.0132 |
| Computer | - | 0.78 | - | 0.78 |
| Ash Handling System | 0.035 | - | 0.035 | - |
| Coal Handling System | 0.345 | - | 0.345 | - |

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Other Ready Assets | 0.94 | - | 0.94 | - |
| Workshop, Laboratory | 0.09 | - | 0.09 | - |
| **Total** | **1.41** | **1.41** | **1.41** | **1.41** |

**Table 70: Discrepancy between Petitioner Claim and audited accounts in De-Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Plant & Machinery | - | 0.002 | - | 0.002 |
| Building & Civil Works | - | - | - | - |
| Furniture and Fixtures | - | 0.182 | - | 0.182 |
| Vehicles | - | 0.005 | - | 0.005 |
| Office Equipment | - | 0.161 | - | 0.161 |
| Computer | - | 2.39 | - | 2.39 |
| Other Ready Asset | (2.74) | - | (2.74) | - |
| **Total** | **(2.74)** | **(2.74)** | **(2.74)** | **(2.74)** |

6.48 The Commission observes that all the assets capitalized during the FY 2018-19 were not part of the original project. Further, the Petitioner requested the Commission to allow the above mention assets under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015 i.e. any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost.

6.49 The Commission examined the audited accounts of FY 2018-19 and as per Note-4 (Property, Plant and Equipment) of audited accounts, substantiates the fact that Rs. 2.82 Crore (cumulative for both the Units) of assets is capitalized while Rs 5.48 Crore is de-capitalized during the FY 2018-19. Based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the additional capitalization of Rs. 2.82 Crore (cumulative for both the Units) and de-capitalization as Rs 5.48 Crore for FY 2018-19 under Clause 7.6 (iv) of JSERC Tariff Regulations 2015. Further in FY 2018-19, the net additional capitalization as per the audited accounts of 2018-19 is Rs. (2.66) Crores, leading to closing value of GFA as on 31st March, 2019 at Rs. 3,386.72 Crores.

**Table 71: Details of the Additional Capitalization & Decapitalization as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Capitalization | - | 1.41 | 1.41 | - | 1.41 | 1.41 |
| De-capitalization | - | (2.74) | (2.74) | | (2.74) | (2.74) |
| **Net addition** | **(2.66)** | | | | | |

**Depreciation**

***Petitioner's Submission***

6.50 The Petitioner has submitted that depreciation is calculated based on 'Single Line Method' and at the depreciation rates provided in Appendix-I of the JSERC Generation Tariff Regulations 2015.

6.51 Further, the Petitioner has submitted that the depreciation so allowed shall be up to maximum of 90% of the capital cost of the project and the balance is to be considered as the salvage value of the asset.

**Table 72: Depreciation as submitted by the Petitioner (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.38 | 74.74 | 75.20 | 75.55 |
| Building & civil works | 3.34% | 7.25 | 7.12 | 7.21 | 7.08 |
| Other Assets | 5.28% | 0.37 | 0.40 | 0.37 | 0.40 |
| **Net Depreciation** | **Rs.cr.** | **82.37** | **82.64** | **83.15** | **83.40** |

***Commission's Analysis***

6.52 The JSERC Generation Tariff Regulation, 2015 has specified the methodology for the calculation of depreciation expense for existing generating station as mentioned in para 5.53.

6.53 The Commission has computed depreciation for both the Units in accordance with the above mentioned regulations. The following table shows the depreciation approved by the Commission against that submitted by the Petitioner.

**Table 73:: Depreciation as approved by the Commission (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approve | Petition | Approve |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.74 | 74.74 | 75.55 | 75.55 |
| Building & civil works | 3.34% | 7.12 | 7.11 | 7.08 | 7.06 |
| Other Assets | 5.28% | 0.40 | 0.40 | 0.40 | 0.40 |
| **Net Depreciation** | **Rs.cr.** | **82.64** | **82.62** | **83.40** | **83.39** |

**Operation & Maintenance Expenses**

***Petitioner's Submission***

6.54 The Petitioner has claimed the normative operational & Maintenance (O&M) Expenses as approved in the MYT Order dated February 19, 2018.

6.55 Further, the Petitioner has submitted that Clauses 6.14 of the Tariff JSERC Regulations, 2015 provides that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR

6.56 In view of the reasons mentioned above, the Petitioner has prayed to the Commission to allow the O&M expenses as mentioned below.

**Table 74: O&M Expenses as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses | 79.28 | 79.28 | 79.28 | 79.28 |

***Commission's Analysis***

6.57 As per JSERC Generation Tariff Regulations, 2015 Clause 7.40 and Clause 7.41 lays out the provision for determination of O&M expenses and the same is mentioned in para 5.58.

6.58 The Commission has scrutinized the submission made by the Petitioner and approved the operational & maintenance expenses as per MYT Order dated February 19, 2018.

**Table 75: O&M Expenses as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT | Petition | Approved | MYT | Petition | Approved |
| O&M Expenses | 79.28 | 79.28 | 79.28 | 79.28 | 79.28 | 79.28 |

**Interest on Loan**

***Petitioner's Submission***

6.59 The Petitioner has considered the opening balance of loan for FY 2018-19 as Rs 802.96 crores and Rs 834.77 crores for unit-1, unit-2 respectively based on closing values of 2017-18 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

6.60 The Petitioner has considered the repayment during the year equivalent to the normative depreciation for the year being in line with the methodology prescribed in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

6.61 The Petitioner has submitted that the actual loan portfolio is in the line with the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015., and also considered 70% of the actual capitalization as Normative Loan for FY 2018-19 with interest rate of 12.31% for Unit-1 and Unit-2.

6.62 Further, the Petitioner has submitted the weighted average rate of interest for Unit-1 and Unit-2 duly certified by the auditor.

6.63 The Petitioner has considered the weighted average rate of interest based on actual loan portfolio and repayment equal to depreciation proposed by Petitioner for calculation of interest on loan for FY 2018-19.

**Table 76: Interest on Loan as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Debt Balance | 802.96 | 756.22 | 834.77 | 788.21 |
| Net Additions | 0.00 | 0.99 | 0.00 | 0.99 |
| Repayment | 82.37 | 82.64 | 83.15 | 83.40 |
| Closing Debt Balance | **720.60** | **674.57** | **751.63** | **705.80** |
| Rate of Interest (%) | 13.13% | 12.31% | 13.28% | 12.31% |
| **Interest on Debt** | **100.02** | **88.08** | **105.34** | **91.97** |

***Commission's Analysis***

6.64 The Commission has calculated the gross normative loan for FY 2018-19 as per Clause 7.13 and Clause 7.14 of the JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.65

6.65 The Commission has scrutinized the details submitted by the Petitioner and observed that weighted average interest rate as 12.31% for both Unit-1 & Unit-2.

6.66 The Commission has calculated the normative opening balance of debt for FY 2018-19 as trued up closing balance for FY 2017-18 approved in table 32.

6.67 The Commission has approved the repayment as approved depreciation in line with the methodology specified in JSERC Generation Tariff Regulations, 2015 to arrive at the closing balance of normative debt component as shown below.

**Table 77: Interest on Loan as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Loan | 802.96 | 756.22 | 805.66 | 834.77 | 788.21 | 837.51 |
| Deemed Loan Addition | 0.00 | 0.99 | (1.59) | 0.00 | 0.99 | (1.59) |
| Deemed Loan Repayment | 82.37 | 82.64 | 82.62 | 83.15 | 83.40 | 83.39 |
| Closing Loan | **720.60** | **674.57** | 721.45 | **751.63** | **705.80** | 752.53 |
| Interest Rate | 13.13% | 12.31% | 12.31% | 13.28% | 12.31% | 12.31% |
| Interest on Loan | **100.02** | **88.08** | **94.01** | **105.34** | **91.97** | **97.88** |

**Interest on Working Capital (IoWC)**

***Petitioner's Submission***

6.68 The Petitioner has mentioned that Clause 6.14 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 provides for Truing-up of Interest on Working Capital on account of variation in actual capital expenditure incurred vis-à-vis approved capital expenditure. The relevant clause has been mentioned in para 5.69.

6.69 Further, the Petitioner craves liberty before the Hon'ble Commission to claim Receivables equivalent to 180 days of average billing as outstanding dues of the Petitioner w.r.t JBVNL supply is pending for more than 180 days. Hence, the Petitioner requests before the Hon'ble Commission to relax and allow the receivables of 180 days under Regulation A 33 i.e. Power of relaxation.

6.70 The Petitioner has worked out the normative working capital requirement for Unit-1 and Unit-2 for FY 2018-19 and has considered the rate of interest on working capital equal to the Bank Rate specified by State Bank as on April 01, 2018 plus 350 basis points. Accordingly, the Petitioner has considered 12.20% for Unit-1 and Unit-2 as rate of interest on working capital. The detailed computation of interest on working capital for Unit-1 and Unit-2 for FY 2018-19 based on the above rationale is shown below.

**Table 78: Interest on Working Capital as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Coal Cost for 2 Months | 76.84 | 102.07 | 78.77 | 100.37 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.77 | 1.51 | 1.76 |
| O&M Expenses for 1 month | 6.61 | 6.61 | 6.61 | 6.61 |
| Receivable for 2 month | 139.06 | 504.00* | 140.04 | 499.87* |
| Maintenance Spare | 15.86 | 15.86 | 15.86 | 15.86 |
| **Total Working Capital** | 239.79 | **630.30** | 240.86 | **624.46** |
| Rate of Interest | 12.80% | 12.20% | 12.80% | 12.20% |
| **Interest on Working Capital** | **30.69** | **76.90** | **30.83** | **76.18** |

** the Petitioner claim receivable for 180 days*

***Commission's Analysis***

6.71 The Commission has computed the interest on working capital (IoWC) for FY 2018-19 for both the Units as per Clause 7.34 and Clause 7.37 of JSERC Generation Tariff Regulations, 2015 as mention in para 5.72.

6.72 The Commission has scrutinized the submission made by the Petitioner and allow Receivable for 2 months only as per Clause 7.34 (e) of the JSERC generation Tariff Regulation 2015.

6.73 The Commission has computed the working capital requirement as per the above mentioned Regulations. The interest on working capital is considered as per JSERC Generation Tariff Regulations, 2015 i.e., Bank rate as April 01, 2018. The detailed calculation made by the Commission is shown in the tables below.

**Table 79: Interest on Working Capital as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Coal Cost for 2 Months | 76.84 | 102.07 | 82.13 | 78.77 | 100.37 | 60.63 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.77 | 1.44 | 1.51 | 1.76 | 1.08 |
| O&M Expenses for 1 month | 6.61 | 6.61 | 6.61 | 6.61 | 6.61 | 6.61 |
| Receivable for 2 month | 139.06 | **504.00*** | 143.38 | 140.04 | **499.87*** | 121.52 |
| Maintenance Spare | 15.86 | 15.86 | 15.86 | 15.86 | 15.86 | 15.86 |
| **Total Working Capital** | **239.79** | **630.30** | **249.42** | **240.86** | **624.46** | **205.70** |
| Rate of Interest | 12.80% | 12.20% | 12.20% | 12.80% | 12.20% | 12.20% |
| **Interest on Working Capital** | **30.69** | **76.90** | **30.43** | **30.83** | **76.18** | **25.10** |

** the Petitioner claim receivable for 180 days*

**Return on Equity**

***Petitioner's Submission***

6.74 The Petitioner has considered the opening value of equity for FY 2018-19 as Rs 506.30 crores and Rs 510.50 crores for unit-1, unit-2 respectively based on closing values of 2017-18 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

6.75 The Petitioner has mentioned Clause 7.15 to 7.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 prescribed in the provisions for computing the normative return on equity for determination of tariff.

6.76 Further, the Petitioner while calculating return on equity has considered post-tax return as 15.50% in line with Regulations and approach adopted by the Commission in earlier Orders.

6.77 Accordingly, the Return on Equity (Pre-Tax) claimed by the Petitioner for Unit-1 and Unit-2 for FY 2018-19 is summarized in the table below:

**Table 80: Return On Equity as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Equity | 455.63 | 506.30 | 450.25 | 510.50 |
| Net Addition | - | 0.42 | - | 0.42 |
| Closing Equity | **455.63** | **506.73** | **450.25** | **510.93** |
| Average Equity | 455.63 | 506.51 | 450.25 | 510.71 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.51** | **69.79** | **79.16** |

***Commission's Analysis***

6.78 The Commission has calculated the gross normative equity for FY 2018-19 as per Clause 7.13 and 7.14 of the JSERC Generation Tariff Regulations, 2015. The relevant abstract is mentioned in para 5.79.

6.79 The Commission has calculated the normative opening balance of equity for FY 2018-19 as trued up closing balance for FY 2017-18 as approved in table no. 36.

6.80 The Commission has scrutinized the discrepancies reply submitted by the Petitioner and observed the revised Debt: Equity ratio from FY 2016-17 onwards as 70:30.

6.81 The Commission has noted the reply of the Petitioner and in accordance with

Clause 7.16, Clause 7.17 and Clause 7.18 of the JSERC Generation Tariff Regulations, 2015, the Commission has approved the rate of return on equity at the rate of 15.50% as shown below-

**Table 81: RoE as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Equity | 455.63 | 506.30 | 456.87 | 450.25 | 510.50 | 461.22 |
| Net Addition | - | 0.42 | (0.68) | - | 0.42 | (0.40) |
| Closing Equity | 455.63 | 506.73 | 456.19 | 450.25 | 510.93 | 460.82 |
| Average Equity | 455.63 | 506.51 | 456.53 | 450.25 | 510.71 | 461.02 |
| Rate of RoE | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.51** | **70.76** | **69.79** | **79.16** | **71.46** |

**Annual Fixed Charge**

***Petitioner's Submission***

6.82 The summary of Annual Fixed Charge (AFC), as submitted by the Petitioner is shown below:

**Table 82: Annual Fixed Charge as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.64 | 83.15 | 83.40 |
| Interest on Debt | 100.02 | 88.08 | 105.34 | 91.97 |
| O&M Expenses | 79.28 | 79.28 | 79.28 | 79.28 |
| Return on Equity (Pre-Tax) | 70.62 | 78.51 | 69.79 | 79.16 |
| Interest on Working Capital | 30.69 | 76.90 | 30.83 | 76.18 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **362.98** | **405.40** | **368.39** | **410.00** |

***Commission's Analysis***

6.83 Regulation 8.2 of the JSERC Generation Tariff Regulations, 2015 states that Annual Fixed Cost (AFC) of a thermal generating station shall consist of the following components:

- Return on Equity;
- Interest and Financing Charges on Loan Capital;
- Depreciation;
- Operation and Maintenance Expenses;
- Interest Charges on Working Capital; and

- Special allowance in lieu of R&M or separate compensation allowance, wherever applicable;

6.84 The Annual Fixed Cost (AFC), as submitted by the Petitioner and approved by the Commission has been tabulated below.

**Table 83: Annual Fixed Charge as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Depreciation | 82.37 | 82.64 | 82.62 | 83.15 | 83.09 | 83.39 |
| Interest on Debt | 100.02 | 88.08 | 94.01 | 105.34 | 91.98 | 97.88 |
| O&M Expenses | 79.28 | 79.28 | 79.28 | 79.28 | 79.28 | 79.28 |
| RoE (Pre-Tax) | 70.62 | 78.51 | 70.76 | 69.79 | 79.16 | 71.46 |
| IoWC | 30.69 | 76.90 | 30.43 | 30.83 | 76.17 | 25.10 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **362.98** | **405.40** | **357.10** | **368.39** | **409.68** | **357.10** |

**Water Charges, Capital Spare Expenses**

***Petitioner's Submission***

6.85 The Petitioner has entered into an MoU with Govt. of Jharkhand for drawl of water to an extent of 35.60 MCM (4064 $m^3$ per hour) in a phased manner from Subarnarekha river, flowing at a distance of eight km downstream of water intake point from APNRL Project site, vide agreement dated August 29, 2008. The said agreement stipulates that a pump house has to be installed for drawl of required water from the river Subarnarekha withdrawn directly from the river and not from any reservoir. Subsequently, Water Department of Govt. of Jharkhand vide its Notification No. 2/PMC/Jalapurti-175/2007 dated April 01, 2011 has revised various categories for water off-take and APNRL was asked to pay @ Rs. 26.40 per thousand gallons. The Petitioner aggrieved by the rate, filed a Writ Petition before High Court of Jharkhand on February 07, 2012 with regard to demand raised by Subarnarekha Dam Division towards withdrawal of water at higher than the agreed rates.

6.86 The Hon'ble High Court of Jharkhand was pleased to pass a stay Order in the above mentioned Writ Petition, restricting the payment of water charges at pre-revised rate of Rs. 4.50 per thousand gallons.

6.87 The Petitioner further mention that clause 18 of the Water agreement, which contains provisions for reduction of the Water quantity, the Petitioner has requested WRD, Government of Jharkhand for lowering of the permitted water quantity from 35.60 MCM to 17.60 MCM i.e. almost 50% of the original allocated quantity, which is yet to be considered by the WRD, State of Jharkhand. As a result, the Petitioner has filed another petition before the Hon'ble High Court at Ranchi for resolution of dispute regarding the billed water quantum in the bill, which is pending.

6.88 Therefore, the Petitioner is paying at Rs. 4.50 per thousand gallon of water withdrawn from the river, amounting to Rs. 1.74 Crore for FY 2018-19, as reflected in the audited accounts. The same is apportioned in proportion to JBVNL share (25%) i.e., 0.44 Crore (Rs. 0.22 Crore for each Unit).

6.89 The Petitioner has claimed capital spare expenses well within the clause 7.46 of the JSERC generation Tariff Regulation 2015.

**Table 84: Water chare and Capital spare as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Water Charges | 1.74 | 0.22 | 1.74 | 0.22 |
| Capital Spares | - | 0.44 | - | 0.44 |

***Commission's Analysis***

6.90 The treatment of water charges and capital spares for thermal generating stations is governed by Clause 7.46 of GTR 2015, the relevant extract of the Regulations is mentioned in para 5.91.

6.91 The Commission has scrutinized the detail submitted by the Petitioner and observed that the matter related to water charge is sub-judicce before the Hon'ble Jharkhand High Court. Thus, the Commission in the Present petition approved the water charges as per audited accounts for FY 2018-19 in proportion of power allocated to JBVNL.

6.92 With regard to Capital spares, the Commission is of the view that in compliance to 2nd proviso of Clause 7.46 of the JSERC Generation Tariff Regulations 2015, the Petitioner is required to submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Clause 7.47 of the JSERC Generation Tariff Regulations 2015 or special allowance as per Clause 7.10 and 7.11 of the JSERC Generation Tariff Regulations or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization. In compliance, the

Petitioner submitted the details of critical spares consumed in FY 2018-19, duly certified by the auditor along with the purpose of consumption.

6.93 The Commission examines the details of critical spares consumed in FY 2018-19 duly certified by auditor along with purpose of consumption. The Commission approves Rs. 0.88 Crore (cumulative for both units) based on the ratio of the power allocation to JBVNL. Thus, based on the submission and justification made by the Petitioner and after a prudent check, the Commission approves the critical spares of Rs. 0.44 Crore for each unit for FY 2018-19.

6.94 The Commission observed that, the overall capital spare and water charges are well within clause 7.46 of JSERC Generation Tariff Regulation 2015. The Commission has therefore approved the capital spare and water charge as shown below.

**Table 85: Water charge and Capital Spare as approved by the Commission (Rs. Cr)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Water charge | 1.74 | 0.22 | 0.22 | 1.74 | 0.22 | 0.22 |
| Capital Spare | - | 0.44 | 0.44 | - | 0.44 | 0.44 |

**Ash Disposal Expenses**

***Petitioner's Submission***

6.95 The Petitioner submits that ash disposal and transportation is the statutory requirement of the power plant. The Petitioner has been disposing and transporting the Ash from its power station in accordance with the Government of India, Ministry of Environment, Forest & Climate Change (MOEFCC) notification dated 25.1.2016.

6.96 Further, the Petitioner has submitted that as per the environmental norms and MOEFCC guidelines, the Petitioner has been transporting ash from its power station to various cement and brick manufacturing units. The details of the quantity of ash disposal and its expenditures is being provided as below:

**Table 86: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Disposal | - | 3.94 | - | 3.94 |

***Commission's Analysis***

6.97 The Commission has scrutinized the submission made by the Petitioner and approves the Ash Disposal Expenses as per audited accounts.

6.98 Considering the facts and circumstances of the given petition the Commission approved the Ash Disposal Expense for FY 2018-19 as shown below.

**Table 87: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Ash Disposal | - | 3.94 | 3.94 | - | 3.94 | 3.94 |

**Tariff for Unit-1 and Unit-2**

***Petitioner's Submission***

6.99 The Petitioner has submitted that in accordance with provisions of Power Purchase Agreement (PPA) executed with Discom, out of the total Contracted Capacity of 122.85 MW, APNRL will supply 63.882 MW capacity (i.e., 13% of the total net Capacity at total Tariff (both fixed and Variable Charge) and the balance 58.96 MW capacity, i.e., 12% of the Net capacity at variable cost i.e., Energy Charge as approved by the Commission. Accordingly, the tariff for supply of regulated capacity for JUVNL/JBVNL is summarized below:

**Table 88: Tariff for 12% of Total Net Capacity as submitted by the Petitioner (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 3.361 | 2.570 | 3.290 |

**Table 89: Tariff for 13% of Total Net Capacity as submitted by the Petitioner (Fixed Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Gross Capacity | MW | 270 | 270.00 | 270 | 270.00 |
| Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 | 9.00 |
| Net Capacity | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | MW | 29.48 | 29.48 | 29.48 | 29.48 |

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Remaining Capacity from which Fixed Charges are to be recovered | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | Rs Cr. | 364.73 | 405.40 | 370.13 | 410.00 |
| Annual Fixed Charges/MW | Rs Cr./ MW | 1.69 | 1.87 | 1.71 | 1.90 |
| 13% of Net Capacity for supply to JUVNL at full tariff | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | MW | **53.88** | **59.89** | **54.68** | **60.57** |

***Commission's Analysis***

6.100 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) approved by the Commission, whereas the tariff for next 13% of total net capacity shall be total tariff i.e., variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission is tabulated below.

**Table 90: Tariff for 12% of Total Net Capacity as approved by the Commission (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 3.361 | 3.361 | 3.290 | 3.290 |

**Table 91: Tariff for 13% of Total Net Capacity for Unit-1 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00 | 9.00 | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 364.73 | 405.40 | 357.10 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.69 | 1.87 | 1.65 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **53.88** | **59.89** | **52.75** |

**Table 92: Tariff for 13% of Total Net Capacity for Unit-2 as approved by the Commission (Fixed Charge).**

| Particulars | Derivation | Units | Unit-2 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00 | 9.00 | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 370.13 | 410.00 | 357.10 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.71 | 1.90 | 1.65 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **54.68** | **60.57** | **52.75** |

**Revenue**

***Petitioner's Submission***

6.101 The Petitioner submitted that the billed amount to JUVNL/JBVNL comprises of capacity charge, energy charges and fuel cost adjustment bill. The Petitioner further added that the revenue billed to JUVNL/JBVNL amounts to Rs. 179.02 Crore and Rs. 176.58 Crore for Unit-1 and Unit-2 respectively as shown below:

**Table 93: Revenue as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Petition | Petition |
| Annual Fixed Charge | 58.36 | 59.26 |
| Fuel Cost Adjustment | 43.97 | 43.97 |
| Energy Charge | 98.04 | 98.04 |
| **Revenue from Sale of Power** | **200.37** | **201.27** |

***Commission's Analysis***

6.102 The Commission has scrutinized the details submitted by the Petitioner and approves the revenue as tabulated below:

**Table 94: Revenue as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petition | Approved | Petition | Approved |
| Annual Fixed Charge | 58.36 | 58.36 | 59.26 | 59.26 |
| Fuel Cost Adjustment | 43.97 | 43.97 | 43.97 | 43.97 |
| Energy Charge | 98.04 | 98.04 | 98.04 | 98.04 |
| **Revenue from Sale of Power** | **200.37** | **200.37** | **201.27** | **201.27** |

**Impact of True up**

***Petitioner's Submission***

6.103 The Petitioner has worked out the impact of true up considering the Trued-up annual fixed charges, trued-up per unit variable charges for the year and the actual availability against the contracted capacity to JBVNL for the year, based on the availability.

**Table 95: Impact of True up as submitted by the Petitioner**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Net Energy Supplied to JUVNL/JBVNL | MU | 442.20 | 442.20 |
| Rate of Energy Charge | Rs/kWh | 3.361 | 3.290 |
| AFC Entitlement on True Up | Rs Cr | 57.90 | 58.56 |
| Incentive | Rs Cr | | |
| Energy Charge Entitlement upon True up | Rs Cr | 148.62 | 145.48 |
| Water Charges | Rs Cr | 0.22 | 0.22 |
| Capital Spares | Rs Cr | 0.44 | 0.44 |
| Additional Ash Disposal Charge | Rs Cr | 3.94 | 3.94 |
| **Total Entitlement** | Rs Cr | **211.11** | **208.63** |
| **Revenue Billed** | | | |
| AFC | Rs Cr | 58.36 | 59.26 |
| FPA | Rs Cr | 43.97 | 43.97 |
| EC | Rs Cr | 98.04 | 98.04 |

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Total Revenue Billed to JUVNL/JBVNL | Rs Cr | **200.37** | **201.27** |
| **Gap/(Surplus)** | Rs Cr | **10.74** | **7.36** |
| Rate of Interest | % | 12.20% | 12.20% |
| From 1st true-up FY 2017-18 to till date | Days | 1096 | 1096 |
| Allowable Interest for the year | Rs Cr | 1.97 | 1.35 |
| **Total Amount to be additionally recovered /(paid back to JUVNL)** | **Rs Cr** | **12.71** | **8.71** |

***Commission's Analysis***

6.104 The JSERC Generation Tariff Regulations, 2015, as mention in the para 5.105.

6.105 Based on the above approved values and revenue, the Commission has approved the impact of True up for FY 2018-19 as shown below:

**Table 96: Gap/(Surplus) as approved by the Commission (Rs. Crore).**

| Particulars | MoU | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Net Energy Supplied to JUVNL/JBVNL | MU | 442.20 | 442.20 | 442.20 | 442.20 |
| Rate of Energy Charge | Rs/kWh | 3.361 | 3.361 | 3.290 | 3.290 |
| AFC Entitlement on True Up | Rs. Cr. | 57.90 | 51.00 | 58.56 | 51.00 |
| Incentive | Rs. Cr. | | | | |
| Energy Charge Entitlement upon True-up | Rs. Cr. | 148.62 | 148.62 | 145.48 | 145.48 |
| Water Charges | Rs. Cr. | 0.22 | 0.22 | 0.22 | 0.22 |
| Capital Spares | Rs. Cr. | 0.44 | 0.44 | 0.44 | 0.44 |
| Ash Disposal Expenses | | 3.94 | 3.94 | 3.94 | 3.94 |
| **Total Entitlement** | Rs. Cr. | **211.11** | **204.21** | **208.63** | **201.07** |
| **Revenue Billed** | | | | | |
| Annual Fixed Charge | Rs. Cr. | 58.36 | 58.36 | 59.26 | 59.26 |
| Fuel Price Adjustment | Rs. Cr. | 43.97 | 43.97 | 43.97 | 43.97 |
| Energy Charge | Rs. Cr. | 98.04 | 98.04 | 98.04 | 98.04 |
| **Total Revenue Billed to JUVNL/JBVNL** | **Rs. Cr.** | **200.37** | **200.37** | **201.27** | **201.27** |
| **Gap/(Surplus)** | Rs. Cr. | **10.74** | **3.84** | **7.36** | **(0.19)** |

6.106 The Commission has approved the cumulative surplus for FY 2018-19 along with carrying as shown below:

**Table 97: Gap/(Surplus) including Carrying Cost for Unit-1 as approved by the Commission (Rs. Crore)**

| Particulars | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 |
|---|---|---|---|---|---|
| | Approved | Approved | Approved | Approved | Approved |
| Opening Balance | - | 3.84 | 3.84 | 3.84 | 3.84 |
| Addition during the Yr | 3.84 | - | - | - | 0 |
| Closing Balance | 3.84 | 3.84 | 3.84 | 3.84 | 3.84 |
| Average Balance | 1.92 | 3.84 | 3.84 | 3.84 | 3.84 |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% |
| Carrying Cost for respective Year | 0.12 | 0.23 | 0.24 | 0.22 | 0.20 |

**Table 98: Gap/(Surplus) including Carrying Cost for Unit-2 as approved by the Commission (Rs. Crore)**

| Particulars | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 |
|---|---|---|---|---|---|
| | Approved | Approved | Approved | Approved | Approved |
| Opening Balance | - | (0.19) | (0.19) | (0.19) | (0.19) |
| Addition during the Yr | (0.19) | - | - | - | - |
| Closing Balance | (0.19) | (0.19) | (0.19) | (0.19) | (0.19) |
| Average Balance | (0.19) | (0.19) | (0.19) | (0.19) | (0.19) |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% | 10.50% |
| Carrying Cost for respective Year | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |

**Table 99: Carrying Cost on Revenue Gap/(Surplus) for Unit-1 & Unit-2 as approved by the Commission (Rs. Cr.)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Approved | Approved |
| Opening Gap/Surplus for FY 2017-18 | - | - |
| Gap/(Surplus) addition during the FY 2018-19 | 3.84 | (0.19) |
| Closing Gap/ (Surplus) for FY 2018-19 | 3.84 | (0.19) |
| Carrying Cost of FY 2018-19 | 0.12 | (0.01) |
| Carrying Cost of FY 2019-20 | 0.23 | (0.01) |
| Carrying Cost of FY 2020-21 | 0.24 | (0.01) |
| Carrying Cost of FY 2021-22 | 0.22 | (0.01) |
| Carrying Cost of FY 2022-23 | 0.20 | (0.01) |
| **Net Gap/(Surplus)** | 4.87 | (0.25) |

6.107 The Commission would like to clarify that the above Gap/(Surplus) as computed based on the information submitted before the Commission. In case there is any other adjustment between Petitioner and its Beneficiaries, the same need to be taken into account while final adjustment which shall be carried out mutually.

6.108 The Commission has directed the Petitioner to adjust the Gap/(surplus) as per

Clause 6.17 & Clause 6.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

# A 7: TRUE-UP FOR FY 2019-20

7.1 The Petitioner has submitted the True-up petition for FY 2019-20 based on the Audited Accounts taking into consideration the provisions of the Tariff Regulations, 2015 and the methodology adopted by the Commission in the earlier Orders.

7.2 The Commission has now carried out the True-up for FY 2019-20 taking into consideration:

a) JSERC Generation Tariff Regulations, 2015;
b) Audited (Statutory) accounts for the FY 2019-20;
c) MYT Order for FY 2016-17 to FY 2020-21 vide dated February 19, 2018;
d) Corrigendum Order issued by the Commission dated April 10, 2019;
e) Methodology adopted by the Commission in its earlier Orders.

**Operational Performance**

***Plant Availability Factor (PAF)***

***Petitioner's Submission***

7.3 The Petitioner has submitted the actual availability for Unit-1 & Unit-2 as 89.56% respectively for FY 2019-20.

***Commission's Analysis***

7.4 The Commission in its MYT Order dated February 19, 2018, had approved the Normative Annual Plant Availability Factor (NAPAF) as 85.00% for the Control Period (FY 2016-17 to FY 2020-21) in line with Clause 8.4 of JSERC Generation Tariff Regulation, 2015.

7.5 The Commission has noted the reply submitted by the Petitioner and scrutinized the month wise actual availability and approves the actual availability for FY 2019-20 as 89.56 % for both Units.

7.6 The actual Plant Availability as approved by the Commission in the MYT Order dated February 19, 2018, as submitted by the Petitioner and approved now by the Commission for FY 2019-20 is summarized below.

**Table 100: Plant availability as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| Actual Availability | % | - | 89.56 | 89.56 |
| **UNIT-2** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 89.56 | 89.56 |

**Auxiliary Consumption**

***Petitioner's Submission***

7.7 The Petitioner has submitted the auxiliary consumption for FY 2019-20 on normative basis as 9.00% for both the Units in accordance with approved value in MYT Order dated February 19, 2018.

***Commission's Analysis***

7.8 The Commission while dealing with the matter of approving the auxiliary consumption in the MYT Order dated February 19, 2018 for the Control period (FY 2016-17 to FY 2020-21) had verified the Purchase Order (PO) submitted by Petitioner and approved the auxiliary consumption at normative level of 8.50% and an additional 0.50% for the induced cooling tower.

7.9 The Commission has therefore adopted the same methodology & also in line with the Clause 8.6(d)(i) of Generation Tariff Regulation 2015 approved the normative auxiliary consumption as 9.00% for both the Units as summarize below.

**Table 101: Auxiliary Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |
| **UNIT-2** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |

**Plant Load Factor and Generation**

***Petitioner's Submission***

7.10 The Petitioner has submitted the actual Plant Load Factor (PLF) for Unit-1 as 65.00% and Unit-2 as 60.00% for FY 2019-20 against the normative value of 85.00% approved by the Commission in the MYT Order dated February 19, 2018.

7.11 Further, the Petitioner has submitted Gross Generation as 1479.74 MU, which is average of 1542.29 MU for Unit-1 and 1417.19 MU for Unit-2 for FY 2019-20.

***Commission's Analysis***

7.12 The Commission is of the view that the Petitioner should look into the reasons for the sub-optimal utilization of its assets which could be due to high cost of generation. The Petitioner should take steps towards reduction of the cost of generation so that more power can be scheduled thus increasing the utilization.

7.13 The Commission has scrutinized the detail submitted along with the Petition and approved the actual Plant Load Factor, Gross Generation and Net Generation as submitted by the Petitioner for FY 2019-20 as shown below.

**Table 102: Plant Load Factor and Generation as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Gross Generation | MU | 2010.42 | 1479.74 | 1542.29 |
| Net Generation | MU | - | 1346.56 | 1403.48 |
| Plant Load Factor | % | - | 65.00 | 65.00 |
| **UNIT-2** | | | | |
| Gross Generation | MU | 2010.42 | 1479.74 | 1417.19 |
| Net Generation | MU | - | 1346.56 | 1289.64 |
| Plant Load Factor | % | - | 60.00 | 60.00 |

**Gross Station Heat Rate (GHR)**

***Petitioner's Submission***

7.14 The Petitioner has claimed the Gross Station Heat Rate (GHR) for both the Units as 2387.00 kcal/kWh in line with the approved value in the MYT Order dated February 19, 2018.

***Commission's Analysis***

7.15 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and JSERC Generation Tariff Regulations, 2015. Hence, the Commission approves the Gross Station Heat Rate as submitted by the Petitioner for FY 2019-20 as shown below:

**Table 103: Gross Station Heat Rate (GHR) as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| **UNIT-2** | | | | |

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |

**Specific Fuel Oil Consumption**

***Petitioner's Submission***

7.16 The Petitioner has submitted the specific fuel oil consumption as 1.00 mL/kWh in line with JSERC Generation Tariff Regulations, 2015 for both the Units for FY 2019-20.

***Commission's Analysis***

7.17 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and Generation Tariff Regulations, 2015. Hence, the Commission approves the secondary fuel oil consumption as submitted by the Petitioner for FY 2019-20 as shown below:

**Table 104: Specific Fuel Oil Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| **UNIT-2** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |

**Fuel Cost Parameters**

**Coal Mix and Gross Calorific Value (GCV) of Primary Fuel**

***Petitioner's Submission***

7.18 The Petitioner has submitted that there is variation in coal mix, GCV and landed price of primary fuel against the approved value in MYT Order dated February 19, 2018. The Petitioner has further added that the reason for variation are not attributable to Petitioner.

7.19 The Petitioner has submitted the source wise break up of coal consumed, GCV of coal for each unit during FY 2019-20 duly certified by auditor in support of his claim.

***Commission's Analysis***

7.20 The Commission has observed that there has been significant deviation in the blending ratio, GCV of primary fuel-mix and its price as compared to the approved values by the Commission. It is also observed that there is decrease in GCV of coal, leading to increase in consumption of primary fuel.

7.21 The Commission vide letter dated September 21, 2022 directed the Petitioner to provide the detail computation of GCV of the primary fuel. In compliance, the Petitioner has submitted that the weighted average GCV for Unit-1 as 3385.34 kcal/kg and GCV for Unit-2 as 3389.34 kcal/kg respectively and also submitted the detailed excel computation of GCV.

7.22 The Commission has taken note of the submission made by the Petitioner and statutory audited detailing month wise quantity consumed and GCV for FY 2019-20 of each Unit.

7.23 The following table summarize the fuel mix and weighted average GCV as submitted by the Petitioner and as approved by the Commission for FY 2019-20.

**Table 105: Coal Mix and GCV for Unit-1 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | | | 3827 | | |
| Linkage Coal | - | 32.94% | 32.94% | | 3203.87 | 3203.87 |
| F-Auction Coal | - | 54.46% | 54.46% | - | 3499.90 | 3499.90 |
| MCL Auction | - | 4.54% | 4.54% | | 3396.54 | 3396.54 |
| Middling | - | 8.06% | 8.06% | | 3346.67 | 3346.67 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3385.34** | **3385.34** |

**Table 106: Coal Mix and GCV for Unit-2 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | | | 3827 | - | - |
| Linkage Coal | - | 28.93% | 28.93% | - | 3186.89 | 3186.89 |
| F-Auction Coal | - | 58.13% | 58.13% | - | 3466.05 | 3466.05 |
| MCL Auction | - | 5.41% | 5.41% | - | 3372.07 | 3372.07 |
| Middling | - | 7.53% | 7.53% | - | 3580.25 | 3580.25 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3388.78** | **3388.78** |

**Transit Loss**

***Petitioner's Submission***

7.24 The Petitioner has claimed the normative transit loss as 0.8% for domestic coal and 0.2% for imported coal in accordance with MYT Order dated February 19, 2018.

***Commission's Analysis***

7.25 The Commission observes that the actual transit loss of coal depends on various factors like category of coal, foreign particles content, moisture content, distance from mines etc. Considering all the factors, the Commission has computed the weighted average normative transit loss of 0.80% for non-pit head plant and 0.20% for pit head plant as stipulated in the JSERC Generation Tariff Regulations, 2015.

7.26 Thus, in accordance with Regulation 8.21 of JSERC Generation Tariff Regulation, 2015, the Commission approves the normative transit loss as 0.80% for domestic coal and 0.20% for imported coal.

**Table 107: Transit Loss as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% |
| Imported Coal | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% | 0.20% |

**Landed Cost of Coal**

***Petitioner's Submission***

7.27 The Petitioner has submitted that the month wise landed price of primary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

7.28 The Commission for reason stated in this Order approved the normative transit loss for the calculation of landed price of the coal.

7.29 The Commission analysis and considered the submission made by the Petitioner and also arrived at the weighted average landed cost of coal by following methodology: -

- Audited figures of the Base price of coal including base price, applicable tax, transportation charges, handling charges and provisional

adjustment/stock adjustment (if any);
- Normative Transit loss as approved by the Commission;
- Actual consumption of various types of coal.
- Price and quality of the coal is uncontrollable in nature

7.30 The Commission has outlined the provision for approval of landed price of primary fuel for generating station as mentioned in the JSERC Generation Tariff Regulation, 2015, in terms of Clause mention in para 5.31.

7.31 The Commission after scrutinized the details submitted in reply by the Petitioner observed that the weighted average landed price of coal for Unit-1 as Rs. 3770.34/MT and for Unit-2 as Rs 3794.51/MT respectively.

**7.32** The weighted average price of coal as approved in the MYT corrigendum order dated April 10, 2019, as submitted by the Petitioner and approved now by the Commission for FY 2019-20 is provided in the table below**.**

**Table 108: Landed price of Coal as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Linkage Coal | Rs/MT | - | 3010.69 | 3010.69 |
| F-Auction Coal | Rs/MT | - | 4091.22 | 4091.22 |
| MCL Auction | Rs/MT | | 4100.53 | 4100.53 |
| Middling | Rs/MT | | 4521.39 | 4521.39 |
| **Wt. Average** | **Rs/MT** | **3298*** | **3770.34** | **3770.34** |
| **UNIT-2** | | | | |
| Linkage Coal | Rs/MT | - | 2999.43 | 2999.43 |
| F-Auction Coal | Rs/MT | - | 4049.42 | 4049.42 |
| MCL Auction | Rs/MT | | 4121.77 | 4121.77 |
| Middling | Rs/MT | | 4647.05 | 4647.05 |
| **Wt. Average** | **Rs/MT** | **3298*** | **3794.51** | **3794.51** |

**As per Corrigendum Order dated April 10, 2019*

**Calorific value and Landed price of Secondary Fuel**

***Petitioner's Submission***

7.33 The Petitioner submitted that the month wise landed price and GCV of secondary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

7.34 The Commission has analysed the month wise quantity of secondary fuel consumption, GCV and landed price of secondary fuel duly certified by an auditor.

7.35 The Commission on scrutinizing the details submitted in reply by the Petitioner observed that the weighted average landed price of oil for Unit-1 as Rs. 54358/KL and for Unit-2 as Rs 54534/KL respectively. While the weighted average GCV of oil as 9350 kCal/KL for both Unit.

7.36 On the Basis of the record available with the Commission, the Commission has approved Calorific value and Landed price of Secondary Fuel for each Unit is shown below:

**Table 109: Calorific value and Landed price of Secondary fuel as approved by the Commission**

| Particul-ars | Calorific Value (kcal/L) | | | Landed Price (Rs./kL) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| **UNIT-1** | 9337* | 9350 | 9350 | 42637* | 54358 | 54358 |
| **UNIT-2** | 9334* | 9350 | 9350 | 45134* | 54534 | 54534 |

**As per Corrigendum Order dated April 10, 2019*

**Energy Charge Rate (ECR)**

***Petitioner's Submission***

7.37 The Petitioner has stated the energy charge rate as Rs. 2.970/kWh and Rs. 2.986/kWh for Unit-1 and Unit-2 respectively against the approved value of Rs. 2.567/kWh and Rs. 2.570/kWh for FY 2019-20.

7.38 For calculation of ECR, the Petitioner has considered the normative Gross Station Heat Rate of 2387 kCal/kWh, normative Auxiliary Consumption of 9.00% and normative Secondary fuel oil as 1.00 ml/kWh for both the Units.

***Commission's Analysis***

7.39 As per Clause 8.17 of JSERC Generation Tariff Regulation, 2015, the energy charge (i.e. Variable Charge) shall cover primary fuel and secondary fuel costs and shall be payable by every beneficiary for the energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment).

7.40 The formula for calculation of energy charge payable to a Generating Company is specified in JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.41.

7.41 Accordingly, the Commission has calculated the Energy Charge Rate (ECR) to be charged by the Petitioner as per the formula specified in JSERC Generation Tariff Regulations, 2015. The details of ECR and Fuel Cost for truing up of FY 2019-20 for both the Units as submitted by the Petitioner and approved by the Commission, is tabulated hereunder:

**Table 110: Energy Charge Rate (ECR) for Unit-1 as approved by the Commission**

| Particulars | UoM | Unit-1 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1479.14 | 1542.29 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419.00 | 3385.34 | 3385.34 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.77 | 3.77 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.567** | **2.970** | **2.970** |

**As per Corrigendum Order dated April 10, 2019*

**Table 111: Energy Charge Rate (ECR) for Unit-2 as approved by the Commission**

| Particulars | UoM | Unit-2 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1479.14 | 1417.19 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419 | 3388.78 | 3388.78 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.79 | 3.79 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.570** | **2.986** | **2.986** |

**As per Corrigendum Order dated April 10, 2019*

**Determination of Fixed Cost**

**Additional Capitalization & De-capitalization**

***Petitioner's Submission***

7.42 It is submitted that an additional capitalization and de-capitalisation of Rs. 2.82 Crore and Rs. (5.48) Crore respectively for each Unit of the generating station for FY 2019-20, has been incurred by the Petitioner.

7.43 The details of additional capitalisation and de-capitalisation as claimed by the Petitioner for FY 2019-20 is tabulated hereunder:

**Table 112: Details of additional capitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Handling System | - | 0.30 | - | 0.30 |
| Crane & Hoist | - | 0.095 | - | 0.095 |
| DM water Plant | - | 0.025 | - | 0.025 |
| Other Ready Assets | - | 0.295 | - | 0.295 |
| Workshop, Laboratory | - | 0.55 | - | 0.55 |
| **Total** | **-** | **1.265** | **-** | **1.265** |

7.44 In support of capitalization, the Petitioner has submitted the statutory Auditor certificate attesting the closing value of GFA of Rs. 3389.25 Crore as on March 31, 2020.

***Commission's Analysis***

7.45 The Commission has outlined the provisions for the approval of any additional capitalization, for a generating station in Regulation 7.5 and Regulation 7.6 of the JSERC Generation Tariff Regulation, 2015, and the relevant clauses are mentioned in Para 5.46.

7.46 The Commission has observed that there is discrepancy in the representation of additional capitalisation when as compared with Petitioner claim and audited accounts as tabulated hereunder.

**Table 113: Discrepancy between Petitioner Claim and audited accounts in Capitalization (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petitioner Claim | As per Audited Accounts | Petitioner Claim | As per Audited Accounts |
| Plant & Machinery | - | 0.97 | - | 0.97 |
| Building & Civil Works | - | | - | |
| Furniture and Fixtures | - | 0.191 | - | 0.191 |
| Vehicles | - | 0.123 | - | 0.123 |
| Office Equipment | - | 0.017 | - | 0.017 |
| Computer | - | 0.132 | - | 0.132 |
| Ash Handling System | 0.30 | - | 0.30 | - |
| Crane & Hoist | 0.095 | - | 0.095 | - |
| DM water Plant | 0.025 | - | 0.025 | - |
| Other Ready Assets | 0.295 | - | 0.295 | - |
| Workshop, Laboratory | 0.55 | | 0.55 | |
| **Total** | **1.265** | **1.265** | **1.265** | **1.265** |

7.47 It is observed by the Commission that all the assets capitalized during the FY 2019-20 were not part of the original project and the Petitioner has requested the Commission to allow the above mentioned assets under Regulation 7.6 (iv) of JSERC Tariff Regulations 2015 i.e. any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost.

6.109 The Commission examined the audited accounts of FY 2019-20 and as per Note-4 (Property, Plant and Equipment) of audited accounts, substantiates the fact that Rs. 2.53 Crore (cumulative for both the Units) of assets is capitalized. Based on the submission and justification made by the Petitioner and after a prudence check, the Commission approves the additional capitalization of Rs. 2.53 Crore (cumulative for both the Units) for FY 2019-20 under Clause 7.6 (iv) of JSERC Tariff Regulations 2015. Further in FY 2019-20, the net additional capitalization as per the audited accounts of 2019-20 is Rs. 2.53 Crores, leading to closing value of GFA as on 31st March, 2020 at Rs. 3,389.25 Crores.

**Table 114: Details of the Additional Capitalization & Decapitalization as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Capitalization | - | 1.265 | 1.265 | - | 1.265 | 1.265 |

**Depreciation**

***Petitioner's Submission***

7.48 The Petitioner has submitted that depreciation is calculated based on 'Single Line Method' and at the depreciation rates provided in Appendix-I of the JSERC Generation Tariff Regulations 2015.

7.49 The Petitioner has further submitted that the depreciation so allowed shall be up a to maximum of 90% of the capital cost of the project and the balance is to be considered as the salvage value of the asset.

**Table 115: Depreciation as submitted by the Petitioner (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.38 | 74.77 | 75.20 | 75.59 |
| Building & civil works | 3.34% | 7.25 | 7.09 | 7.21 | 7.05 |

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Other Assets | 5.28% | 0.37 | 0.41 | 0.37 | 0.41 |
| **Net Depreciation** | **Rs.cr.** | **82.37** | **82.65** | **83.15** | **83.42** |

***Commission's Analysis***

7.50 The JSERC Generation Tariff Regulation, 2015 has specified the methodology for the calculation of depreciation expense for existing generating station as mention in para 5.53.

7.51 The Commission has computed depreciation for both the Units in accordance to the above mentioned regulations. The following table shows the depreciation approved by the Commission against that submitted by Petitioner.

**Table 116:: Depreciation as approved by the Commission (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approve | Petitio n | Approve |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.77 | 74.77 | 75.59 | 75.59 |
| Building & civil works | 3.34% | 7.09 | 7.06 | 7.05 | 7.01 |
| Other Assets | 5.28% | 0.41 | 0.41 | 0.41 | 0.41 |
| **Net Depreciation** | **Rs.cr.** | **82.65** | **82.62** | **83.42** | **83.39** |

**Operation & Maintenance Expenses**

***Petitioner's Submission***

7.52 The Petitioner has claimed the normative operational & Maintenance (O&M) Expenses as approved in the MYT Order dated February 19, 2018.

7.53 Further, the Petitioner has submitted that as per Clauses 6.14 of the Tariff JSERC Regulations, 2015 provides that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR

7.54 In view of the reasons mentioned above, the Petitioner has prayed to the Commission to allow the O&M expenses as mentioned below.

**Table 117: O&M Expenses as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses | 83.19 | 83.19 | 83.19 | 83.19 |

***Commission's Analysis***

7.55 As per JSERC Generation Tariff Regulations, 2015 Clause 7.40 and Clause 7.41 lays out the provision for determination of O&M expenses and the same is mentioned in para 5.58.

7.56 The Commission has scrutinized the submission made by the Petitioner and approved the operational & maintenance expenses as per MYT Order dated February 19, 2018.

**Table 118: O&M Expenses as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT | Petition | Approved | MYT | Petition | Approved |
| O&M Expenses | 83.19 | 83.19 | 83.19 | 83.19 | 83.19 | 83.19 |

**Interest on Loan**

***Petitioner's Submission***

7.57 The Petitioner has considered the opening balance of loan for FY 2019-20 as 674.53 crores and 706.07 crores for unit-1, unit-2 respectively based on closing values of 2018-19 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

7.58 The Petitioner has considered the repayment during the year equivalent to the normative depreciation for the year being in line with the methodology prescribed in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

7.59 The Petitioner has submitted that the actual loan portfolio is in line with the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015., and also considered 70% of the actual capitalization as Normative Loan for FY 2019-20 with interest rate of 12.31% for Unit-1 and Unit-2.

7.60 Further, the Petitioner has submitted the weighted average rate of interest for Unit-1 and Unit-2 duly certified by the auditor.

7.61 The Petitioner has considered the weighted average rate of interest based on actual loan portfolio and repayment equal to depreciation proposed by Petitioner for calculation of interest on loan for FY 2019-20.

**Table 119: Interest on Loan as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Debt Balance | 720.60 | 674.57 | 706.07 | 705.80 |
| Net Additions | - | 0.89 | - | 0.89 |
| Repayment | 82.37 | 82.65 | 83.15 | 83.42 |
| **Closing Debt Balance** | **638.23** | **592.81** | **623.48** | **623.27** |
| Rate of Interest (%) | 13.13% | 12.31% | 12.13% | 12.31% |
| **Interest on Debt** | **89.21** | **78.01** | **81.21** | **81.80** |

***Commission's Analysis***

7.62 The Commission has calculated the gross normative loan for FY 2019-20 as per Clause 7.13 and Clause 7.14 of the JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.65.

7.63 The Commission has scrutinized the details submitted by the Petitioner and observed the weighted average interest rate as 12.31% for both Unit-1 and Unit-2.

7.64 The Commission has calculated the normative opening balance of debt for FY 2019-20 as trued up closing balance for FY 2018-19 approved in table 77.

7.65 The Commission has approved the repayment as approved depreciation in line with the methodology specified in JSERC Generation Tariff Regulations, 2015 to arrive at the closing balance of normative debt component as tabulated hereunder: -

**Table 120: Interest on Loan as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Loan | 720.60 | 674.57 | 721.45 | 706.07 | 705.80 | 752.53 |
| Deemed Loan Addition | - | 0.89 | 0.89 | - | 0.89 | 0.89 |
| Deemed Loan Repayment | 82.37 | 82.65 | 82.62 | 83.15 | 83.42 | 83.39 |
| **Closing Loan** | **638.23** | **592.81** | **639.71** | **623.48** | **623.27** | **670.03** |
| Interest Rate | 13.13% | 12.31% | 12.31% | 12.13% | 12.31% | 12.31% |
| **Interest on Loan** | **89.21** | **78.01** | **83.78** | **81.21** | **81.80** | **87.56** |

**Interest on Working Capital (IoWC)**

***Petitioner's Submission***

7.66 The Petitioner has mentioned that the Clause 6.14 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 provides for

Truing-up of Interest on Working Capital on account of variation in actual capital expenditure incurred vis-à-vis approved capital expenditure, and the relevant clause is mentioned in para 5.69.

7.67 Further, the Petitioner craves liberty before the Hon'ble Commission to claim Receivables equivalent to 180 days of average billing as outstanding dues of the Petitioner w.r.t JBVNL supply is pending for more than 180 days. Hence, the Petitioner requests before the Hon'ble Commission to relax and allow the receivables of 180 days under Regulation A 33 i.e. Power of relaxation.

7.68 The Petitioner has worked out the normative working capital requirement for Unit-1 and Unit-2 for FY 2019-20 and has considered the rate of interest on working capital equal to the Bank Rate specified by State Bank as on April 01, 2019 plus 350 basis points. Accordingly, the Petitioner has considered 12.55% for Unit-1 and Unit-2 as rate of interest on working capital. The detailed computation of interest on working capital for Unit-1 and Unit-2 for FY 2019-20 based on the above rationale as shown below.

**Table 121: Interest on Working Capital as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Coal Cost for 2 Months | 76.84 | 89.79 | 78.77 | 90.65 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.82 | 1.51 | 1.83 |
| O&M Expenses for 1 month | 6.93 | 6.93 | 6.93 | 6.93 |
| Receivable for 2 month | 137.91 | **463.61*** | 138.86 | **467.94*** |
| Maintenance Spare | 16.64 | 16.64 | 16.64 | 16.64 |
| **Total Working Capital** | 239.76 | 578.80 | 240.79 | 583.99 |
| Rate of Interest | 12.80% | 12.55% | 12.80% | 12.55% |
| **Interest on Working Capital** | **30.69** | **72.64** | **30.82** | **73.29** |

** the Petitioner claim receivable for 180 days*

***Commission's Analysis***

7.69 The Commission has computed the interest on working capital (IoWC) for FY 2019-20 for both the Units as per Clause 7.34 and Clause 7.37 of JSERC Generation Tariff Regulations, 2015 as mentioned in para 5.72.

7.70 The Commission scrutinized the submission made by Petitioner and allowed Receivable for 2 months only as per Clause 7.34 (e) of the JSERC generation Tariff Regulation 2015.

7.71 The Commission has computed the working capital requirement as per the above mentioned Regulations. The interest on working capital is considered as per

JSERC Generation Tariff Regulations, 2015 i.e., Bank rate as April 01, 2019. The detailed calculation made by the Commission is shown in the tables below.

**Table 122: Interest on Working Capital as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Coal Cost for 2 Months | 76.84 | 89.79 | 68.07 | 78.77 | 90.65 | 62.88 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.82 | 1.40 | 1.51 | 1.83 | 1.29 |
| O&M Expenses for 1 month | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 |
| Receivable for 2 month | 137.91 | **463.61*** | 127.76 | 138.86 | **467.94*** | 123.14 |
| Maintenance Spare | 16.64 | 16.64 | 16.64 | 16.64 | 16.64 | 16.64 |
| **Total Working Capital** | **239.76** | **578.80** | **220.80** | **240.79** | **583.99** | **210.88** |
| Rate of Interest | 12.80% | 12.55% | 12.55% | 12.80% | 12.55% | 12.55% |
| **Interest on Working Capital** | **30.69** | **72.64** | **27.71** | **30.82** | **73.29** | **26.47** |

** the Petitioner claim receivable for 180 days*

**Return on Equity**

***Petitioner's Submission***

7.72 The Petitioner has considered the opening value of equity for FY 2019-20 as Rs 506.73 crores and Rs 510.93 crores for unit-1, unit-2 respectively based on closing values of 2018-19 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

7.73 The Petitioner has mentioned Clause 7.15 to 7.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015, to prescribe the provisions for computing the normative return on equity for determination of tariff.

7.74 Further, the Petitioner while calculating return on equity has considered post-tax return as 15.50% in line with Regulations and approach adopted by the Commission in earlier Orders.

7.75 Accordingly, the Return on Equity (Pre-Tax) claimed by the Petitioner for Unit-1 and Unit-2 for FY 2019-20 is summarized in the table below:

**Table 123: RoE as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Equity | 455.63 | 506.73 | 450.25 | 510.93 |

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Net Addition | - | 0.38 | - | 0.38 |
| **Closing Equity** | **455.63** | **507.11** | **450.25** | **511.31** |
| Average Equity | 455.63 | 506.92 | 450.25 | 511.12 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.57** | **69.79** | **79.22** |

***Commission's Analysis***

7.76 The Commission has calculated the gross normative equity for FY 2019-20 as per Clause 7.13 and 7.14 of the JSERC Generation Tariff Regulations, 2015, the relevant abstract is mentioned in para 5.79.

7.77 The Commission has calculated the normative opening balance of equity for FY 2019-20 as trued up closing balance for FY 2018-19 as approved in the table no. 81 for each Unit.

7.78 The Commission has scrutinized the discrepancies in reply submitted by the Petitioner and observed the revised Debt: Equity ratio from FY 2016-17 onwards as 70:30.

7.79 The Commission has noted the reply of the Petitioner and in accordance with Clause 7.16, Clause 7.17 and Clause 7.18 of the JSERC Generation Tariff Regulations, 2015, the Commission has approved the rate of return on equity at the rate of 15.50% as shown below:

**Table 124: RoE as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Equity | 455.63 | 506.73 | 456.19 | 450.25 | 510.93 | 460.82 |
| Net Addition | - | 0.38 | 0.38 | - | 0.38 | 0.38 |
| Closing Equity | 455.63 | 507.11 | 456.57 | 450.25 | 511.31 | 461.20 |
| Average Equity | 455.63 | 506.92 | 456.38 | 450.25 | 511.12 | 461.01 |
| Rate of RoE | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.57** | **70.74** | **69.79** | **79.22** | **71.46** |

**Annual Fixed Charge**

***Petitioner's Submission***

7.80 The summary of Annual Fixed Charge (AFC) as submitted by the Petitioner is shown below:

**Table 125: Annual Fixed Charge as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.65 | 83.15 | 83.42 |
| Interest on Debt | 89.21 | 78.01 | 94.30 | 81.80 |
| O&M Expenses | 83.19 | 83.19 | 83.19 | 83.19 |
| Return on Equity (Pre-Tax) | 70.62 | 78.57 | 69.79 | 79.22 |
| Interest on Working Capital | 30.69 | 72.64 | 30.82 | 73.29 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **356.08** | **395.06** | **361.25** | **400.92** |

***Commission's Analysis***

7.81 Regulation 8.2 of the JSERC Generation Tariff Regulations, 2015 states that Annual Fixed Cost (AFC) of a thermal generating station shall consist of the following components:

- Return on Equity;
- Interest and Financing Charges on Loan Capital;
- Depreciation;
- Operation and Maintenance Expenses;
- Interest Charges on Working Capital; and
- Special allowance in lieu of R&M or separate compensation allowance, wherever applicable;

7.82 The Annual Fixed Cost (AFC) as submitted by Petitioner and approved by the Commission has been tabulated below.

**Table 126: Annual Fixed Charge as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Depreciation | 82.37 | 82.65 | 82.62 | 83.15 | 83.42 | 83.39 |
| Interest on Debt | 89.21 | 78.01 | 83.78 | 94.30 | 81.80 | 87.56 |
| O&M Expenses | 83.19 | 83.19 | 83.19 | 83.19 | 83.19 | 83.19 |
| RoE (Pre-Tax) | 70.62 | 78.57 | 70.74 | 69.79 | 79.22 | 71.46 |
| IoWC | 30.69 | 72.64 | 27.71 | 30.82 | 73.29 | 26.47 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **356.08** | **395.06** | **348.04** | **361.25** | **400.92** | **352.06** |

**Incentive**

***Petitioner Submission***

7.83 The Petitioner claimed an incentive of Rs. 1.17 Crore for each Unit for FY 2019-20 as shown below:

**Table 127: Incentive as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Incentive | - | 1.17 | - | 1.17 |

***Commission's Analysis***

7.84 The Commission has allowed incentive as per Clause 8.15 of the JSERC Generation Tariff Regulations, incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF).

**Table 128: Incentive as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Incentive | - | 1.17 | 1.17 | - | 1.17 | 1.17 |

**Water Charges, Capital Spare Expenses**

***Petitioner's Submission***

7.85 The Petitioner has entered into an MoU with Govt. of Jharkhand for drawl of water to an extent of 35.60 MCM (4064 $m^3$ per hour) in a phased manner from Subarnarekha river, flowing at a distance of eight km downstream of water intake point from APNRL Project site, vide agreement dated August 29, 2008. The said agreement stipulates that a pump house has to be installed for drawl of required water from the river Subarnarekha withdrawn directly from the river and not from any reservoir. Subsequently, Water Department of Govt. of Jharkhand vide its Notification No. 2/PMC/Jalapurti-175/2007 dated April 01, 2011 has revised various categories for water off-take and APNRL was asked to pay @ Rs. 26.40 per thousand gallons. The Petitioner aggrieved by the rate, filed a Writ Petition before High Court of Jharkhand on February 07, 2012 with regard to demand raised by Subarnarekha Dam Division towards withdrawal of water at higher than the agreed rates.

7.86 The Hon'ble High Court of Jharkhand was pleased to pass a stay Order in the above mentioned Writ Petition, restricting the payment of water charges at pre-revised rate of Rs. 4.50 per thousand gallons.

7.87 The Petitioner further mention that clause 18 of the Water agreement, which contains provisions for reduction of the Water quantity, the Petitioner has requested WRD, Government of Jharkhand for lowering of the permitted water quantity from 35.60 MCM to 17.60 MCM i.e. almost 50% of the original allocated quantity, which is yet to be considered by the WRD, State of Jharkhand. As a result, the Petitioner has filed another petition before the Hon'ble High Court at Ranchi for resolution of dispute regarding the billed water quantum in the bill, which is pending.

7.88 Therefore, the Petitioner is paying at Rs. 4.50 per thousand gallon of water withdrawn from the river, amounting to Rs. 1.74 Crore for FY 2019-20, as reflected in audited accounts. The same is apportioned in proportion to JBVNL share (25%) i.e., 0.44 Crore (Rs. 0.22 Crore for each Unit).

7.89 The Petitioner has claimed capital spare expenses well within the clause 7.46 of the JSERC generation Tariff Regulation 2015.

**Table 129: Water chare and Capital spare as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Water Charges | 1.74 | 0.22 | 1.74 | 0.22 |
| Capital Spares | - | 0.55 | - | 0.55 |

***Commission's Analysis***

7.90 The treatment of water charges and capital spares for thermal generating stations is governed by Clause 7.46 of GTR 2015, the relevant clause is mentioned in para 5.91.

7.91 The Commission has scrutinized the detail submitted by the Petitioner and observed that the matter related to water charge is sub-judice before the Hon'ble Jharkhand High Court. Thus, the Commission in the Present petition approved the water charges as per audited accounts for FY 2019-20 in proportion of power allocated to JBVNL.

7.92 With regard to Capital spares, the Commission is of the view that in compliance to 2nd proviso of Regulation 7.46 of the JSERC Generation Tariff Regulations, the Petitioner is required to submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 7.47 of the JSERC Generation Tariff Regulations or special allowance as per Regulations 7.10 and 7.11 of the JSERC Generation Tariff Regulations or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization. In compliance, the Petitioner has submitted the details of critical spares consumed in FY 2019-20 duly certified by auditor along with the purpose of consumption.

7.93 The Commission examined the details of critical spares consumed in FY 2019-20 duly certified by auditor along with the purpose of consumption. The Commission approved Rs. 1.10 Crore (cumulative for both units) based on the ratio of the power allocation to JBVNL. Thus, based on the submission and justification made by the Petitioner and after a prudence check, the Commission approves the critical spares of Rs. 0.55 Crore for each unit for FY 2019-20.

7.94 The Commission observed that, the overall capital spare and water charges are well within clause 7.46 of JSERC Generation Tariff Regulation 2015. The Commission has therefore approved the capital spare and water charge as shown below.

**Table 130: Water charge and Capital Spare as approved by the Commission (Rs. Cr)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Water charge | 1.74 | 0.22 | 0.22 | 1.74 | 0.22 | 0.22 |
| Capital Spare | - | 0.55 | 0.55 | - | 0.55 | 0.55 |

**Ash Disposal Expenses**

***Petitioner's Submission***

7.95 The Petitioner submits that ash disposal and transportation is the statutory requirement of the power plant. The Petitioner has been disposing and transporting the Ash from its power station in accordance with the Government of India, Ministry of Environment, Forest & Climate Change (MOEFCC) notification dated 25.1.2016.

7.96 Further, the Petitioner has submitted that as per the environmental norms and MOEFCC guidelines, the Petitioner has been transporting ash from its power station to various cement and bricks manufacturing units. The details of quantity of ash disposal and its expenditures is being provided as below:

**Table 131: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Disposal | - | 2.19 | - | 2.19 |

***Commission's Analysis***

7.97 The Commission has scrutinized the submission made by the Petitioner and approved the Ash Disposal Expenses as per audited accounts.

7.98 Considering the facts and circumstances of the given petition the Commission approved the Ash Disposal Expense for FY 2019-20 as tabulated hereunder.

**Table 132: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Ash Disposal | - | 2.19 | 2.19 | - | 2.19 | 2.19 |

**Shakti Coal Discount**

***Petitioner's Submission***

7.99 Based on the allocation of primary fuel under Shakti Scheme and actual coal consumption, the Petitioner has calculated the energy generated from Shakti coal. The Petitioner has calculated the discount rate at Rs. 0.03/kWh for the coal procured under SHAKTI Scheme B(ii) round-(i) against 122.85 MW for JBVNL PPA on 21.12.2017.

**Table 133: Shakti Scheme Discount as submitted by Petitioner (Rs. Crore)**

| Particulars | UoM | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| **Discount Amount** | **Rs. Cr.** | **0.66** | **0.66** |

***Commission's Analysis***

7.100 The Commission has scrutinized the detail of coal procured and consumed from Shakti Scheme in FY 2019-20. Further, in line to PPA approval from the Commission the Commission approves the discount amount due to Shakti Scheme coal as mentioned below.

**Table 134: Shakti Scheme Discount as approved by the Commission (Rs. Crore)**

| Particulars | UoM | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Approved | Approved |
| **Discount Amount** | **Rs. Cr.** | **0.66** | **0.66** |

**Tariff for Unit-1 and Unit-2**

***Petitioner's Submission***

7.101 The Petitioner has submitted that in accordance to provisions of Power Purchase Agreement (PPA) executed with Discom, out of the total Contracted Capacity of 122.85 MW, APNRL will supply 63.882 MW capacity (i.e., 13% of the total net Capacity at total Tariff (both fixed and Variable Charge) and the balance 58.96 MW capacity, i.e., 12% of the Net capacity at variable cost i.e., Energy Charge as approved by the Commission. Accordingly, the tariff for supply of regulated capacity for JUVNL/JBVNL is summarized below:

**Table 135: Tariff for 12% of Total Net Capacity as submitted by the Petitioner (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 2.970 | 2.570 | 2.986 |

**Table 136: Tariff for 13% of Total Net Capacity as submitted by the Petitioner (Fixed Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Gross Capacity | MW | 270 | 270 | 270 | 270 |
| Auxiliary Consumption | % | 9.00 | 9% | 9.00 | 9% |
| Net Capacity | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | Rs Cr. | 357.81 | 395.06 | 362.98 | 400.96 |
| Annual Fixed Charges/MW | Rs Cr./ MW | 1.65 | 1.83 | 1.68 | 1.85 |
| 13% of Net Capacity for supply to JUVNL at full tariff | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | MW | **52.86** | **58.36** | **53.62** | **59.23** |

***Commission's Analysis***

7.102 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance to Generation Tariff Regulations 2015) approved by the Commission, whereas the tariff for next 13% of total net capacity shall be total tariff i.e., variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission as tabulated below.

**Table 137: Tariff for 12% of Total Net Capacity as approved by the Commission (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.970 | 2.970 | 2.986 | 2.986 |

**Table 138: Tariff for 13% of Total Net Capacity for Unit-1 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270 | 270 | 270.00 |
| Auxiliary Consumption | B | % | 9.00 | 9% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 357.81 | 395.06 | 348.04 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.65 | 1.83 | 1.61 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **52.86** | **58.36** | **51.42** |

**Table 139: Tariff for 13% of Total Net Capacity for Unit-2 as approved by the Commission (Fixed Charge).**

| Particulars | Derivation | Units | Unit-2 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270 | 270 | 270.00 |
| Auxiliary Consumption | B | % | 9.00 | 9% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 362.98 | 400.96 | 352.06 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.68 | 1.85 | 1.63 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **MW** | **53.62** | **59.23** | **52.01** |

**Revenue**

***Petitioner's Submission***

7.103 The Petitioner has submitted that the billed amount to JUVNL/JBVNL comprises of capacity charge, energy charges and fuel cost adjustment bill. The Petitioner has further added that the revenue billed to JUVNL/JBVNL amounts to Rs. 179.02 Crore and Rs. 176.58 Crore for Unit-1 and Unit-2 respectively as shown below:

**Table 140: Revenue as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Petition | Petition |
| AFC | 52.86 | 53.62 |
| Fuel Cost Adjustment | 15.00 | 14.87 |
| Energy Charge | 123.75 | 123.89 |
| **Revenue from Sale of Power** | **191.61** | **192.38** |

***Commission's Analysis***

7.104 The Commission has scrutinized the details submitted by the Petitioner and approves the revenue as tabulated below:

**Table 141: Revenue as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | Petition | Approved | Petition | Approved |
| AFC | 52.86 | 52.86 | 53.62 | 53.62 |
| Fuel Cost Adjustment | 15.00 | 15.00 | 14.87 | 14.87 |
| Energy Charge | 123.75 | 123.75 | 123.89 | 123.89 |
| **Revenue from Sale of Power** | **191.61** | **191.61** | **192.38** | **192.38** |

**Impact of True up**

***Petitioner's Submission***

7.105 The Petitioner has worked out the impact of true up considering the Trued-up annual fixed charges, trued-up per unit variable charges for the year and the actual availability against the contracted capacity to JBVNL for the year, based on the availability.

**Table 142: Impact of True up as submitted by the Petitioner**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Net Energy Supplied to JUVNL/JBVNL | MU | 482.07 | 482.07 |
| Rate of Energy Charge | Rs/kWh | 2.970 | 2.986 |
| AFC Entitlement on True Up | Rs Cr | 58.36 | 59.23 |
| Incentive | Rs Cr | 1.17 | 1.17 |
| Energy Charge Entitlement upon True up | Rs Cr | 143.16 | 143.92 |
| Water Charges | Rs Cr | 0.22 | 0.22 |
| Capital Spares | Rs Cr | 0.55 | 0.55 |
| Additional Ash Disposal Charge | Rs Cr | 2.19 | 2.19 |
| **Total Entitlement** | Rs Cr | **205.65** | **207.28** |
| **Revenue Billed** | | | |
| AFC | Rs Cr | 52.86 | 53.62 |
| FPA | Rs Cr | 15.00 | 14.87 |
| EC | Rs Cr | 123.75 | 123.89 |
| Incentive | Rs.Cr | 1.17 | 1.17 |
| Total Revenue Billed to JUVNL/JBVNL | Rs Cr | **192.78** | **193.55** |
| Less: Shakti Coal Discount | Rs Cr | **0.66** | **0.66** |
| **Gap/(Surplus) including Discount** | Rs Cr | **12.21** | **13.07** |
| Rate of Interest | % | 12.55% | 12.55% |
| From 1st true-up FY 2017-18 to till date | Days | 731 | 731 |
| Allowable Interest for the year | Rs Cr | 1.53 | 1.64 |
| **Total Amount to be additionally recovered /(paid back to JUVNL)** | **Rs Cr** | **13.75** | **14.71** |

***Commission's Analysis***

7.106 The JSERC Generation Tariff Regulations, 2015, as mentioned in the para 5.105.

7.107 Based on the above approved values and revenue, the Commission has approved the impact of True up for FY 2019-20 as shown below:

**Table 143: Gap/(Surplus) as approved by the Commission (Rs. Crore).**

| Particulars | MoU | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Net Energy Supplied to JUVNL/JBVNL | MU | 482.07 | 482.07 | 482.07 | 482.07 |
| Rate of Energy Charge | Rs/kWh | 2.970 | 2.970 | 2.986 | 2.986 |
| AFC Entitlement on True Up | Rs. Cr. | 58.36 | 51.42 | 59.23 | 52.01 |
| Incentive | Rs. Cr. | 1.17 | 1.17 | 1.17 | 1.17 |
| Energy Charge Entitlement upon True up | Rs. Cr. | 143.16 | 143.16 | 143.92 | 143.92 |
| Water Charges | Rs. Cr. | 0.22 | 0.22 | 0.22 | 0.22 |
| Capital Spares | Rs. Cr. | 0.55 | 0.55 | 0.55 | 0.55 |
| Ash Disposal Expenses | | 2.19 | 2.19 | 2.19 | 2.19 |
| **Total Entitlement** | Rs. Cr. | **205.65** | **198.71** | **207.28** | **200.07** |
| **Revenue Billed** | | | | | |
| Annual Fixed Charge | Rs. Cr. | 52.86 | 52.86 | 53.62 | 53.62 |
| Fuel Price Adjustment | Rs. Cr. | 15.00 | 15.00 | 14.87 | 14.87 |
| Energy Charge | Rs. Cr. | 123.75 | 123.75 | 123.89 | 123.89 |
| Incentive | Rs Cr. | 1.17 | 1.17 | 1.17 | 1.17 |
| **Total Revenue Billed to JUVNL/JBVNL** | **Rs. Cr.** | **192.78** | **192.78** | **193.55** | **193.55** |
| **Less: Shakti Coal Dicount** | **Rs Cr.** | **0.66** | **0.66** | **0.66** | **0.66** |
| **Gap/(Surplus)** | Rs. Cr. | **12.21** | **5.26** | **13.07** | **5.85** |

7.108 The Commission has approved the cumulative surplus for FY 2019-20 along with carrying over shown below:

**Table 144: Gap/(Surplus) including Carrying Cost for Unit-1 as approved by the Commission (Rs. Crore)**

| **Particulars** | **FY 2019-20** | **FY 2020-21** | **FY 2021-22** | **FY 2022-23** |
|---|---|---|---|---|
| | **Approved** | **Approved** | **Approved** | **Approved** |
| Opening Balance | - | 5.26 | 5.26 | 5.26 |
| Addition during the Year | 5.26 | - | - | - |
| Closing Balance | 5.26 | 5.26 | 5.26 | 5.26 |
| Average Balance | 5.26 | 5.26 | 5.26 | 5.26 |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% |
| Carrying Cost for respective Year | 0.33 | 0.32 | 0.33 | 0.31 |

**Table 145: Gap/(Surplus) including Carrying Cost for Unit-2 as approved by the Commission (Rs. Crore)**

| Particulars | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 |
|---|---|---|---|---|
| | Approved | Approved | Approved | Approved |
| Opening Balance | - | 5.85 | 5.85 | 5.85 |
| Addition during the Year | 5.85 | - | - | 0 |
| Closing Balance | 5.85 | 5.85 | 5.85 | 5.85 |
| Average Balance | 5.85 | 5.85 | 5.85 | 5.85 |
| Carrying Cost Rate | 12.60% | 12.20% | 12.55% | 11.65% |
| Carrying Cost for respective Year | 0.37 | 0.36 | 0.37 | 0.34 |

**Table 146: Carrying Cost on Revenue Gap/(Surplus) for Unit-1 & Unit-2 as approved by the Commission (Rs. Cr.)**

| Particulars | Unit-1 | Unit-2 |
|---|---|---|
| | Approved | Approved |
| Opening Gap/Surplus for FY 2019-20 | - | - |
| Gap/(Surplus) addition during the FY 2019-20 | 5.26 | 5.85 |
| Closing Gap/ (Surplus) for FY 2019-20 | 5.26 | 5.85 |
| Carrying Cost of FY 2019-20 | 0.33 | 0.37 |
| Carrying Cost of FY 2020-21 | 0.32 | 0.36 |
| Carrying Cost of FY 2021-22 | 0.33 | 0.37 |
| Carrying Cost of FY 2022-23 | 0.31 | 0.34 |
| **Net Gap/(Surplus)** | 6.55 | 7.28 |

7.109 The Commission would like to clarify that the above Gap/(Surplus) is computed based on the information submitted before the Commission. In case there is any other adjustment between the Petitioner and its Beneficiaries, the same need to be taken into account while final adjustment which shall be carried out mutually.

7.110 The Commission directed the Petitioner to adjust the Gap as per Clause 6.17 & Clause 6.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

# A 8: ANNUAL PERFORMANCE REVIEW FOR FY 2020-21

8.1 The Commission vide MYT Order dated February 19, 2018 approved the Business Plan and determined the Annual Revenue Requirement for the MYT Control Period from FY 2016-17 to FY 2020-21.

8.2 Later, on, the Petitioner filed a True-up Petition based on the actual value for FY 2016-17 & FY 2017-18 to 2019-20 and APR for FY 2020-21. The Commission has carried out the True-up based on the realistic facts presented before the Commission and after a prudent check issued the True-up Order for FY 2016-17 dated May 22, 2023.

8.3 The Petitioner, in the current Petition, has sought the Annual Performance Review (APR) for FY 2020-21 based on the actual operational performance till Oct' 2020 projected for the remaining months of FY 2020-21. The Petitioner had already submitted the actual financial performance for FY 2019-20 before the Commission for approval.

8.4 The Commission has carried out the Annual Performance Review for FY 2020-21 taking into consideration the following:

- JSERC Generation Tariff Regulations, 2015;
- Methodology adopted by the Commission in its earlier Tariff Orders.

8.5 The same shall be trued-up based on the audited accounts for the FY 2020-21 and taking into consideration the provisions of the Tariff Regulations, 2015 and the methodology adopted by the Commission in its earlier Tariff Orders.

## Operational Performance

### *Plant Availability Factor (PAF)*

### *Petitioner's Submission*

8.6 The Petitioner has projected that the actual availability for Unit-1 & Unit-2 as 84.14% respectively for FY 2020-21.

### *Commission's Analysis*

8.7 The Commission in its MYT Order dated February 19, 2018, had approved the Normative Annual Plant Availability Factor (NAPAF) as 85.00% for the Control Period (FY 2016-17 to FY 2020-21) in line with Clause 8.4 of JSERC Generation Tariff Regulation, 2015.

8.8 The Commission noted the reply submitted by the Petitioner and scrutinized the month wise actual availability and approved the actual availability for FY 2020-21 as 84.14% for both Units.

8.9 Based on the information provided by the Petitioner, the Commission observes that the actual availability supplied during the FY 2020-21 is less than the normative value of 85.00%.

8.10 The actual Plant Availability as approved by the Commission in the MYT Order dated February 19, 2018 as submitted by the Petitioner and approved now by the Commission for FY 2020-21 is summarized below.

**Table 147: Plant availability as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **Unit-1** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 84.14 | 84.14 |
| **Unit-2** | | | | |
| NAPAF | % | 85.00 | 85.00 | 85.00 |
| Actual Availability | % | - | 84.14 | 84.14 |

**Auxiliary Consumption**

***Petitioner's Submission***

8.11 The Petitioner has projected the auxiliary consumption for FY 2020-21 on normative basis as 9.00% for both the Units in accordance with approved value in MYT Order dated February 19, 2018.

***Commission's Analysis***

8.12 The Commission while dealing with the matter of approving the auxiliary consumption in the MYT Order dated February 19, 2018 for the Control period (FY 2016-17 to FY 2020-21) had verified the Purchase Order (PO) submitted by the Petitioner and approved the auxiliary consumption at normative level of 8.50% and an additional 0.50% for the induced cooling tower.

8.13 The Commission has therefore adopted the same methodology & also in line with the Clause 8.6(d)(i) of Generation Tariff Regulation 2015 approved the normative auxiliary consumption as 9.00% for both the Units as summarized below.

**Table 148: Auxiliary Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-2** | | | | |
| Normative Auxiliary Consumption | % | 9.00 | 9.00 | 9.00 |

**Plant Load Factor and Generation**

***Petitioner's Submission***

8.14 The Petitioner has projected the actual Plant Load Factor (PLF) for Unit-1 as 58.00% and Unit-2 as 71.00% for FY 2020-21 against the normative value of 85.00% approved by the Commission in the MYT Order dated February 19, 2018.

8.15 Further, the Petitioner has estimated the Gross Generation as 1522.00 MU, which is average of 1374.31 MU for Unit-1 and 1669.69 MU for Unit-2 for FY 2020-21.

***Commission's Analysis***

8.16 The Commission has scrutinized the detail submitted along with the Petition and approved the actual Plant Load Factor, Gross Generation and Net Generation as submitted by the Petitioner for FY 2020-21 as shown below.

**Table 149: Plant Load Factor and Generation as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Gross Generation | MU | 2010.42 | 1522.00 | 1374.31 |
| Net Generation | MU | - | 1385.02 | 1250.63 |
| Plant Load Factor | % | - | 58.00 | 58.00 |
| **UNIT-2** | | | | |
| Gross Generation | MU | 2010.42 | 1522.00 | 1669.89 |
| Net Generation | MU | - | 1385.02 | 1519.42 |
| Plant Load Factor | % | - | 71.00 | 71.00 |

**Gross Station Heat Rate (GHR)**

***Petitioner's Submission***

8.17 The Petitioner has estimated the Gross Station Heat Rate (GHR) for both the Units as 2387.00 kcal/kWh in line with the approved value in the MYT Order dated February 19, 2018.

***Commission's Analysis***

8.18 The Commission has examined and found that the submission made by the

Petitioner is in line with MYT Order dated February 19, 2018 and JSERC Generation Tariff Regulations, 2015. Hence, the Commission approves the Gross Station Heat Rate as submitted by the Petitioner for FY 2020-21 as shown below:

**Table 150: Gross Station Heat Rate (GHR) as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| **UNIT-2** | | | | |
| Station Heat Rate | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |

**Specific Fuel Oil Consumption**

***Petitioner's Submission***

8.19 The Petitioner has projected the specific fuel oil consumption as 1.00 mL/kWh in line with JSERC Generation Tariff Regulations, 2015 for both the Units for FY 2020-21.

***Commission's Analysis***

8.20 The Commission has examined and found that the submission made by the Petitioner is in line with MYT Order dated February 19, 2018 and Generation Tariff Regulations, 2015. Hence, the Commission approves the secondary fuel oil consumption as submitted by the Petitioner for FY 2020-21 as shown below:

**Table 151: Specific Fuel Oil Consumption as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |
| **UNIT-2** | | | | |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 | 1.00 | 1.00 |

**Fuel Cost Parameters**

**Coal Mix and Gross Calorific Value (GCV) of Primary Fuel**

***Petitioner's Submission***

8.21 The Petitioner projected that there is variation in coal mix, GCV and landed price of primary fuel against the approved value in MYT Order dated February 19, 2018. The Petitioner further added that the reason for variation are not attributable to Petitioner.

8.22 The Petitioner has projected the source wise break up of coal consumed, GCV of coal for each unit during FY 2020-21 duly certified by auditor in support of his claim.

***Commission's Analysis***

8.23 The Commission observed that there has been significant deviation in the blending ratio, GCV of primary fuel-mix and its price as compared to the approved values by the Commission. It is also observed that there is decrease in GCV of coal, leading to increase in consumption of primary fuel.

8.24 The Commission, after scrutinizing the excel computation found that the weighted average GCV for Unit-1 as 3389.14 kcal/kg and GCV for Unit-2 as 3449.25 kcal/kg respectively.

8.25 For the purpose of Annual Performance Review, the Commission has considered the submission made by the Petitioner. The Commission computed the GCV from each source of primary fuel by considering the actual GCV for FY 2020-21 after scrutinizing the actual monthly GCV submitted by the Petitioner duly certified by an auditor.

8.26 The following table summarize the fuel mix and weighted average GCV as submitted by the Petitioner and approved by the Commission for FY 2020-21.

**Table 152: Coal Mix and GCV for Unit-1 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | | | 3827 | | |
| Linkage Coal | - | 59.34% | 59.34% | - | 3345.21 | 3345.21 |
| F-Auction Coal | - | 25.70% | 25.70% | - | 3509.03 | 3509.03 |
| MCL Auction | - | 6.22% | 6.22% | - | 2959.31 | 2959.31 |
| Others | - | 8.74% | 8.74% | - | 3640.70 | 3640.70 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3389.14** | **3389.14** |

**Table 153: Coal Mix and GCV for Unit-2 as approved by the Commission**

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | - | - | - | 3233 | - | - |
| Imported Coal | - | - | - | 3827 | - | - |

| Particulars | Fuel Mix (%) | | | GCV (kCal/kg) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Linkage Coal | - | 50.95% | 50.95% | - | 3344.38 | 3344.38 |
| F-Auction Coal | - | 33.78% | 33.78% | - | 3628.88 | 3628.88 |
| MCL Auction | - | 5.63% | 5.63% | - | 2947.43 | 2947.43 |
| Middling | - | 9.63% | 9.63% | - | 3667.66 | 3667.66 |
| **Wt. average** | **-** | **-** | **-** | **-** | **3449.25** | **3449.25** |

**Transit Loss**

***Petitioner's Submission***

8.27 The Petitioner has projected the normative transit loss as 0.8% for domestic coal and 0.2% for imported coal in accordance with MYT Order dated February 19, 2018.

***Commission's Analysis***

8.28 The Commission observes that the actual transit loss of coal depends on various factors like category of coal, foreign particles content, moisture content, distance from mines etc. Considering all the factors, the Commission stipulated the weighted average normative transit loss of 0.80% for non-pit head plant and 0.20% for pit head plant in the JSERC Generation Tariff Regulations, 2015.

8.29 Thus, in accordance with Clause 8.21 of JSERC Generation Tariff Regulation, 2015, the Commission approves the normative transit loss as 0.80% for domestic coal and 0.20% for imported coal.

**Table 154: Transit Loss as approved by the Commission**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Domestic Coal | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% | 0.80% |

**Landed Cost of Coal**

***Petitioner's Submission***

8.30 The Petitioner has projected that the month wise landed price of primary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

8.31 The Commission, for reasons already stated in this Order approved the normative transit loss for the calculation of landed price of the coal.

8.32 The Commission scrutinized the submission made by the Petitioner and also arrived at the weighted average landed cost of coal by following methodology: -

- Audited figures of the Base price of coal including base price, applicable tax, transportation charges, handling charges and provisional adjustment/stock adjustment (if any);
- Normative Transit loss as approved by the Commission;
- Actual consumption of various types of coal.
- Price and quality of the coal is uncontrollable in nature

8.33 The Commission has outlined the provision for approval of landed price of primary fuel for generating station as mention in the JSERC Generation Tariff Regulation, 2015, and the relevant Clause mentioned in para 5.31.

8.34 The Commission had scrutinized the details submitted by the Petitioner in its reply and observed the weighted average landed price of coal for Unit-1 as Rs. 3247.24/MT and for Unit-2 as Rs 3418.71/MT respectively.

8.35 The weighted average price of coal as approved in its MYT Corrigendum order dated April 10, 2019, and as submitted by the Petitioner and now approved now by the Commission for FY 2020-21 is provided in the table below**.**

**Table 155: Landed price of Coal as approved by the Commission**

| Particulars | UoM | MYT Order | Petition | Approved |
|---|---|---|---|---|
| **UNIT-1** | | | | |
| Linkage Coal | Rs/MT | - | 3102.62 | 3102.62 |
| F-Auction Coal | Rs/MT | - | 3579.55 | 3579.55 |
| MCL Auction | Rs/MT | | 3028.39 | 3028.39 |
| Others | Rs/MT | | 3407.67 | 3407.67 |
| **Wt. Average** | **Rs/MT** | **3298*** | **3247.24** | **3247.24** |
| **UNIT-2** | | | | |
| Linkage Coal | Rs/MT | - | 3133.67 | 3133.67 |
| F-Auction Coal | Rs/MT | - | 3903.68 | 3903.68 |
| MCL Auction | Rs/MT | | 2977.66 | 2977.66 |
| Others | Rs/MT | | 3483.72 | 3483.72 |
| **Wt. Average** | **Rs/MT** | **3298*** | **3418.71** | **3418.71** |

**As per Corrigendum Order dated April 10, 2019*

**Calorific value and Landed price of Secondary Fuel**

***Petitioner's Submission***

8.36 The Petitioner has projected that the month wise landed price and GCV of secondary fuel truly certified by the auditor includes base price, transportation cost, etc.

***Commission's Analysis***

8.37 The Commission has scrutinized the month wise quantity of secondary fuel consumption, GCV and landed price of secondary fuel duly certified by an auditor.

8.38 The Commission has scrutinized the details submitted by the Petitioner in its reply and observed that the weighted average landed price of oil for Unit-1 as Rs. 46806/KL and for Unit-2 as Rs 46643/KL respectively. While the weighted average GCV of oil as 9350 kCal/KL for both Unit.

8.39 Based on the record available with the Commission, the Commission has approved Calorific value and Landed price of Secondary Fuel for each Unit as shown below:

**Table 156: Calorific value and Landed price of Secondary fuel as approved by the Commission**

| Particul-ars | Calorific Value (kcal/L) | | | Landed Price (Rs./kL) | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| **UNIT-1** | 9337* | 9350 | 9350 | 42637* | 46806 | 46806 |
| **UNIT-2** | 9334* | 9350 | 9350 | 45134* | 46643 | 46643 |

*As per Corrigendum Order dated April 10, 2019

**Energy Charge Rate (ECR)**

***Petitioner's Submission***

8.40 The Petitioner has estimated the energy charge rate as Rs. 2.555/kWh and Rs. 2.641/kWh for Unit-1 and Unit-2 respectively against the approved value of Rs. 2.567/kWh and Rs. 2.570/kWh for FY 2020-21.

8.41 For calculation of ECR, the Petitioner has projected the normative Gross Station Heat Rate of 2387 kCal/kWh, normative Auxiliary Consumption of 9.00% and normative Secondary fuel oil as 1.00 ml/kWh for both the Units has been considered.

***Commission's Analysis***

8.42 As per Clause 8.17 of JSERC Generation Tariff Regulation, 2015, the energy charge (i.e. Variable Charge) shall cover primary fuel and secondary fuel costs and shall be payable by every beneficiary for the energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment).

8.43 The formula for calculation of energy charge payable to a Generating Company is specified in JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.41.

8.44 Accordingly, the Commission has calculated the Energy Charge Rate (ECR) to be charged by the Petitioner as per the formula specified in JSERC Generation Tariff Regulations, 2015. The detail of ECR and Fuel Cost for APR for FY 2020-21 for both the Units as submitted by the Petitioner and approved by the Commission is given below:

**Table 157: Energy Charge Rate (ECR) for Unit-1 as approved by the Commission**

| Particulars | UoM | Unit-1 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1522.00 | 1374.31 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387.00 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419.00 | 3389.14 | 3389.14 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.25 | 3.25 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.567** | **2.555** | **2.555** |

**As per Corrigendum Order dated April 10, 2019*

**Table 158: Energy Charge Rate (ECR) for Unit-2 as approved by the Commission**

| Particulars | UoM | Unit-2 | | |
|---|---|---|---|---|
| | | MYT* Order | Petition | Approved |
| Gross Generation | MU | 2010.42 | 1522.00 | 1669.69 |
| Normative Auxiliary Consumption (AUX) | % | 9.00 | 9.00 | 9.00 |
| Normative Gross Station Heat Rate (SHR) | kCal/kWh | 2387 | 2387.00 | 2387.00 |
| Specific fuel Oil Consumption (SFC) | mL/kWh | 1.00 | 1.00 | 1.00 |
| Calorific Value of Oil (CVSF) | kCal/ml | 9.34 | 9.35 | 9.35 |
| GCV of Primary Fuel (CVPF) | kCal/kg | 3419 | 3449.25 | 3449.25 |
| Landed Price of Primary Fuel (LPPF) | Rs./kg | 3.30 | 3.42 | 3.42 |
| Landed Price of Secondary Fuel (LPSFi) | Rs./ml | 0.04 | 0.05 | 0.05 |
| **Energy Charge Rate (ECR)** | **Rs/kWh** | **2.570** | **2.641** | **2.641** |

**As per Corrigendum Order dated April 10, 2019*

**Determination of Fixed Cost**

**Additional Capitalization & De-capitalization**

***Petitioner's Submission***

8.45 The Petitioner has projected an additional capitalization and de-capitalisation of Rs. 10.24 Crore and Rs. (0.81) Crore respectively for each Unit of the generating station for FY 2020-21.

8.46 The details of additional capitalisation and de-capitalisation as projected by the Petitioner for FY 2020-21 is shown below:

**Table 159: Details of additional capitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Plant and machinery | - | 9.85 | - | 9.85 |
| Building and Civil Works | - | 0.39 | - | 0.39 |
| **Total** | **-** | **10.24** | **-** | **10.24** |

**Table 160: Details of decapitalization as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Plant and machinery | - | 0.80 | - | 0.80 |
| Building and Civil Works | - | 0.01 | - | 0.01 |
| **Total** | **-** | **0.81** | **-** | **0.81** |

***Commission's Analysis***

8.47 The Commission has outlined the provisions for the approval of any additional capitalization, for a generating station in Regulation 7.5 and Regulation 7.6 of the JSERC Generation Tariff Regulation, 2015, and the relevant clauses are mentioned in Para 5.46.

8.48 In respect to additional capitalization, the Commission observed that the Petitioner has failed to bring out clearly, in his submission, the need for additional capitalization and expected increase in useful life of the plant. For each scheme proposed by the Petitioner, detailed phasing of capital expenditure has not been clearly elucidated.

8.49 The Commission observed that the Petitioner has failed to submit the Cost Benefit Analysis and also any analysis of quantitative benefit to its beneficiaries on account of the proposed scheme.

8.50 Further, the Petitioner in the last Tariff Order, was directed to employ methods of conducting cost benefit analysis (such as NPV, IRR and Payback Period) and quantitatively evaluate the need for proposed investment as compared to other alternative. The Petitioner has failed to do so.

8.51 In View of the above facts, the Commission does not find it prudent to approve any additional Capitalization & Decapitalization at the moment. The Petitioner is directed to submit, along with the next tariff petition or prior to taking up any Capital Expenditure and Decapitalization, the detailed rationale for incurring such expenditure and taking into consideration the above mentioned observation of the Commission.

8.52 Further, the Commission also directs the Petitioner to ensure that proper planning should be carried out before finalization and submission of Capex planning before the Commission for approval. In case there is need to review/revise any scheme or change in the Scope of Work, the same need to be submitted before the Commission with proper justification for approval.

**Table 161: Details of the Additional Capitalization & Decapitalization as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Capitalization | - | 10.24 | - | - | 10.24 | - |
| Decapitalization | - | 0.81 | - | - | 0.81 | - |

**Depreciation**

***Petitioner's Submission***

8.53 The Petitioner has submitted that depreciation is calculated based on 'Single Line Method' and at the depreciation rates provided in Appendix-I of the JSERC Generation Tariff Regulations 2015.

8.54 The Petitioner has further submitted that the depreciation so allowed shall be up to maximum of 90% of the capital cost of the project and the balance is to be considered as the salvage value of the asset.

**Table 162: Depreciation as submitted by the Petitioner (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT* Order | Petition | MYT* Order | Petition |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 74.38 | 75.04 | 75.20 | 75.85 |
| Building & civil works | 3.34% | 7.25 | 7.10 | 7.21 | 7.05 |
| Other Assets | 5.28% | 0.37 | 0.42 | 0.37 | 0.42 |
| **Net Depreciation** | **Rs.cr.** | **82.37** | **82.93** | **83.15** | **83.70** |

** As per order dated 08.03.2019*

***Commission's Analysis***

8.55 The JSERC Generation Tariff Regulation, 2015 has specified the methodology for the calculation of depreciation expense for existing generating station as mentioned in para 5.53.

8.56 The Commission has computed depreciation for both the Units in accordance with the above mention regulations. The following table shows the depreciation approved by the Commission against that submitted by the Petitioner.

**Table 163:: Depreciation as approved by the Commission (Rs. Crore)**

| Particulars | Asset class Depreciation Rate | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approve | Petition | Approve |
| Land held under lease | 3.34% | 0.37 | 0.37 | 0.37 | 0.37 |
| Plant and machinery | 5.28% | 75.04 | 74.80 | 75.85 | 75.61 |
| Building & civil works | 3.34% | 7.10 | 7.06 | 7.05 | 7.01 |
| Other Assets | 5.28% | 0.42 | 0.42 | 0.42 | 0.42 |
| **Net Depreciation** | **Rs.cr.** | **82.93** | **82.65** | **83.70** | **83.42** |

**Operation & Maintenance Expenses**

***Petitioner's Submission***

8.57 The Petitioner has claimed the normative operational & Maintenance (O&M) Expenses as approved in the MYT Order dated February 19, 2018.

8.58 Further, the Petitioner has submitted that Clauses 6.14 of the Tariff JSERC Regulations, 2015 provides that any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR

8.59 In view of the reasons mentioned above, the Petitioner has prayed to the Commission to allow the O&M expenses as mentioned below.

**Table 164: O&M Expenses as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| O&M Expenses | 87.28 | 87.28 | 87.28 | 87.28 |

***Commission's Analysis***

8.60 As per JSERC Generation Tariff Regulations, 2015 Clause 7.40 and Clause 7.41 lays out the provision for determination of O&M expenses and the same is mentioned in para 5.58.

8.61 The Commission has scrutinized the submission made by the Petitioner and approved the operational & maintenance expenses as per MYT Order dated February 19, 2018.

**Table 165: O&M Expenses as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT | Petition | Approved | MYT | Petition | Approved |
| O&M Expenses | 87.28 | 87.28 | 87.28 | 87.28 | 87.28 | 87.28 |

**Interest on Loan**

***Petitioner's Submission***

8.62 The Petitioner has considered the opening balance of loan for FY 2020-21 as Rs 592.81 crores and Rs 623.27 crores for unit-1, unit-2 respectively based on closing values of 2020-21 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

8.63 The Petitioner has considered the repayment during the year equivalent to the normative depreciation for the year being in line with the methodology prescribed in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015.

8.64 The Petitioner has estimated that the actual loan portfolio is in line with the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015., and also considered 70% of the actual capitalization as Normative Loan for FY 2020-21 with interest rate of 12.31% for Unit-1 and Unit-2.

8.65 The Petitioner has considered the weighted average rate of interest based on actual loan portfolio and repayment equal to depreciation proposed by Petitioner for calculation of interest on loan for FY 2020-21.

**Table 166: Interest on Loan as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Debt Balance | 638.23 | 592.81 | 668.48 | 623.27 |
| Net Additions | - | 7.16 | - | 7.16 |
| Repayment | 82.37 | 82.93 | 83.15 | 83.70 |
| Closing Debt Balance | 555.86 | 517.04 | 585.33 | 546.73 |
| Rate of Interest (%) | 13.13% | 12.31% | 13.28% | 12.31% |
| **Interest on Debt** | **78.39** | **68.31** | **83.25** | **72.01** |

***Commission's Analysis***

8.66 The Commission has calculated the gross normative loan for FY 2020-21 as per Clause 7.13 and Clause 7.14 of the JSERC Generation Tariff Regulation, 2015 as mentioned in para 5.65.

8.67 The Commission has scrutinized the details submitted by the Petitioner and observed that weighted average interest rate as 12.31% for both Unit-1 and Unit-2.

8.68 The Commission has calculated the normative opening balance of debt for FY 2020-21 as trued up closing balance for FY 2019-20 approved in in table 120.

8.69 The Commission has approved the repayment as approved depreciation in line with the methodology specified in JSERC Generation Tariff Regulations, 2015 to arrive at the closing balance of normative debt component as shown below

**Table 167: Interest on Loan as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Loan | 638.23 | 592.81 | 639.71 | 668.48 | 623.27 | 670.03 |
| Deemed Loan Addition | - | 7.16 | - | - | 7.16 | - |
| Deemed Loan Repayment | 82.37 | 82.93 | 82.65 | 83.15 | 83.70 | 83.42 |
| Closing Loan | 555.86 | 517.04 | 557.06 | 585.33 | 546.73 | 586.61 |
| Interest Rate | 13.13% | 12.31% | 12.31% | 13.28% | 12.31% | 12.31% |
| Interest on Loan | **78.39** | **68.31** | **73.66** | **83.25** | **72.01** | **77.35** |

**Interest on Working Capital (IoWC)**

***Petitioner's Submission***

8.70 The Petitioner has mentioned that Clause 6.14 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 provides for Truing-up of Interest on Working Capital on account of variation in actual capital expenditure incurred vis-à-vis approved capital expenditure. The relevant clause is mentioned in para 5.69.

8.71 Further, the Petitioner craves for liberty before the Hon'ble Commission to claim Receivables equivalent to 180 days of average billing as outstanding dues of the Petitioner w.r.t JBVNL supply is pending for more than 180 days. Hence, the Petitioner requests before the Hon'ble Commission to relaxed and allow the receivables of 180 days under Regulation A 33 i.e. Power of relaxation.

8.72 The Petitioner has worked out the normative working capital requirement for Unit-1 and Unit-2 for FY 2020-21 and has considered the rate of interest on working capital equal to the Bank Rate specified by State Bank as on April 01, 2020 plus 350 basis points. Accordingly, the Petitioner has considered 12.55% for Unit-1 and Unit-2 as rate of interest on working capital. The detailed computation of interest on working capital for Unit-1 and Unit-2 for FY 2020-21 based on the above rationale as shown below.

**Table 168: Interest on Working Capital as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Coal Cost for 2 Months | 76.84 | 73.56 | 76.84 | 76.51 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.57 | 1.51 | 1.56 |
| O&M Expenses for 1 month | 6.93 | 7.27 | 7.27 | 7.27 |
| Receivable for 2 month | 137.91 | 441.68* | 137.70 | 452.78* |
| Maintenance Spare | 16.64 | 17.46 | 17.46 | 17.46 |
| **Total Working Capital** | 239.76 | **541.54** | **240.79** | **555.58** |
| Rate of Interest | 12.80% | 11.65% | 12.80% | 11.65% |
| **Interest on Working Capital** | **30.69** | **63.09** | **30.82** | **64.73** |

** the Petitioner claim receivable for 180 days*

***Commission's Analysis***

8.73 The Commission has computed the interest on working capital (IoWC) for FY 2020-21 for both the Units as per Clause 7.34 and Clause 7.37 of JSERC Generation Tariff Regulations, 2015 as mentioned in para 5.72.

8.74 The Commission scrutinized the submission made by Petitioner and allow

Receivable for 2 months only as per Clause 7.34 (e) of the JSERC generation Tariff Regulation 2015.

8.75 The Commission has computed the working capital requirement as per the above mentioned Regulations. The interest on working capital is considered as per JSERC Generation Tariff Regulations, 2015 i.e., Bank rate as April 01, 2020. The detailed calculation made by the Commission is shown in the tables below.

**Table 169: Interest on Working Capital as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Coal Cost for 2 Months | 76.84 | 73.56 | 52.18 | 76.84 | 76.51 | 65.58 |
| Cost of Secondary Fuel for 2 Months | 1.43 | 1.57 | 1.07 | 1.51 | 1.56 | 1.30 |
| O&M Expenses for 1 month | 6.93 | 7.27 | 7.27 | 7.27 | 7.27 | 7.27 |
| Receivable for 2 month | 137.91 | **441.68*** | 115.76 | 137.70 | **452.78*** | 130.60 |
| Maintenance Spare | 16.64 | 17.46 | 17.46 | 17.46 | 17.46 | 17.46 |
| **Total Working Capital** | 239.76 | **541.54** | **193.75** | **240.79** | **555.58** | **222.20** |
| Rate of Interest | 12.80% | 11.65% | 11.65% | 12.80% | 11.65% | 11.65% |
| Interest on Working Capital | **30.69** | **63.09** | **22.57** | **30.82** | **64.73** | **25.89** |

** the Petitioner claim receivable for 180 days*

**Return on Equity**

***Petitioner's Submission***

8.76 The Petitioner has considered the opening value of equity for FY 2020-21 as 507.11 crores and 511.31 crores for unit-1, unit-2 respectively based on closing values of 2019-20 truing up petition. Further, the gross additional capitalisation (with deletion) have been funded in the ratio of 70:30.

8.77 The Petitioner has mentioned that Clause 7.15 to 7.18 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 prescribe the provisions for computing the normative return on equity for determination of tariff.

8.78 Further, the Petitioner while calculating return on equity has considered post-tax return as 15.50% in line with Regulations and approach adopted by the Commission in earlier Orders.

8.79 Accordingly, the Return on Equity (Pre-Tax) claimed by the Petitioner for Unit-1 and Unit-2 for FY 2020-21 is summarized in the table below:

**Table 170: RoE as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Opening Equity | 455.63 | 507.11 | 450.25 | 511.31 |
| Net Addition | - | 3.07 | - | 3.07 |
| Closing Equity | 455.63 | 510.18 | 450.25 | 514.38 |
| Average Equity | 455.63 | 508.64 | 450.25 | 512.84 |
| Rate of Return on Equity | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.84** | **69.79** | **79.49** |

***Commission's Analysis***

8.80 The Commission has calculated the gross normative equity for FY 2020-21 as per Clause 7.13 and 7.14 of the JSERC Generation Tariff Regulations, 2015. The relevant abstract mentioned in para 5.79.

8.81 The Commission has calculated the normative opening balance of equity for FY 2020-21 as trued up closing balance for FY 2019-20 as approved in the table no. 124 for each Unit.

8.82 The Commission has scrutinized the discrepancies in reply submitted by the Petitioner and observed that the revised Debt: Equity ratio from FY 2016-17 onwards as 70:30.

8.83 The Commission has noted the reply of the Petitioner and in accordance with Clause 7.16, Clause 7.17 and Clause 7.18 of the JSERC Generation Tariff Regulations, 2015, the Commission has approved the rate of return on equity at the rate of 15.50% as shown below:

**Table 171: RoE as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Opening Equity | 455.63 | 507.11 | 456.57 | 450.25 | 511.31 | 461.20 |
| Net Addition | - | 3.07 | 0.00 | - | 3.07 | 0.00 |
| Closing Equity | 455.63 | 510.18 | 456.57 | 450.25 | 514.38 | 461.20 |
| Average Equity | 455.63 | 508.64 | 456.57 | 450.25 | 512.84 | 461.20 |
| Rate of RoE | 15.50 % | 15.50% | 15.50% | 15.50 % | 15.50% | 15.50% |
| **Return on Equity (ROE)** | **70.62** | **78.84** | **70.77** | **69.79** | **79.49** | **71.49** |

**Annual Fixed Charge**

***Petitioner's Submission***

8.84 The summary of Annual Fixed Charge (AFC) as submitted by the Petitioner is shown below:

**Table 172: Annual Fixed Charge as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Depreciation | 82.37 | 82.93 | 83.15 | 83.70 |
| Interest on Debt | 78.39 | 68.31 | 83.25 | 72.01 |
| O&M Expenses | 87.28 | 87.28 | 87.28 | 87.28 |
| Return on Equity (Pre-Tax) | 70.62 | 78.84 | 69.79 | 79.49 |
| Interest on Working Capital | 30.69 | 63.09 | 30.82 | 64.73 |
| **Total AFC (Excluding Water and Ash disposal charges)** | **349.35** | **380.45** | **354.29** | **387.20** |

***Commission's Analysis***

8.85 Regulation 8.2 of the JSERC Generation Tariff Regulations, 2015 states that Annual Fixed Cost (AFC) of a thermal generating station shall consist of the following components:

- Return on Equity;
- Interest and Financing Charges on Loan Capital;
- Depreciation;
- Operation and Maintenance Expenses;
- Interest Charges on Working Capital; and
- Special allowance in lieu of R&M or separate compensation allowance, wherever applicable;

8.86 The Annual Fixed Cost (AFC) as submitted by the Petitioner and approved by the Commission has been tabulated below.

**Table 173: Annual Fixed Charge as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Depreciation | 82.37 | 82.93 | 82.65 | 83.15 | 83.70 | 83.42 |
| Interest on Debt | 89.21 | 68.31 | 73.66 | 94.30 | 72.01 | 77.35 |
| O&M Expenses | 83.19 | 87.28 | 87.28 | 83.19 | 87.28 | 87.28 |
| RoE (Pre-Tax) | 70.62 | 78.84 | 70.77 | 69.79 | 79.49 | 71.49 |
| IoWC | 30.69 | 63.09 | 22.57 | 30.82 | 64.73 | 25.89 |

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| **Total AFC (Excluding Water and Ash disposal charges)** | **356.08** | **380.45** | **336.93** | **361.25** | **387.20** | **345.42** |

**Incentive**

***Petitioner Submission***

8.87 The Petitioner has estimated an incentive of Rs. 1.17 Crore for each Unit for FY 2020-21 as shown below:

**Table 174: Incentive as submitted by the Petitioner (Rs. Crore)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Incentive | - | 1.17 | - | 1.17 |

***Commission's Analysis***

8.88 The Commission has allowed incentive as per Clause 8.15 of the JSERC Generation Tariff Regulations, incentive to a generating station or unit thereof shall be payable at a flat rate of 50 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF).

**Table 175: Incentive as approved by the Commission (Rs. Crore)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Incentive | - | 1.17 | 1.17 | - | 1.17 | 1.17 |

**Water Charges, Capital Spare Expenses**

***Petitioner's Submission***

8.89 The Petitioner has entered into an MoU with Govt. of Jharkhand for drawl of water to an extent of 35.60 MCM (4064 $m^3$ per hour) in a phased manner from Subarnarekha river, flowing at a distance of eight km downstream of water intake point from APNRL Project site, vide agreement dated August 29, 2008. The said agreement stipulates that a pump house has to be installed for drawl of required water from the river Subarnarekha withdrawn directly from the river and not from any reservoir. Subsequently, Water Department of Govt. of Jharkhand vide its Notification No. 2/PMC/Jalapurti-175/2007 dated April 01, 2011 has revised various categories for water off-take and APNRL was asked to pay @ Rs. 26.40 per thousand gallons. The Petitioner aggrieved by the rate, filed a Writ Petition before the High Court of Jharkhand on February 07, 2012 with regard to demand raised by Subarnarekha Dam Division towards withdrawal of water at higher than the agreed rates.

8.90 The Hon'ble High Court of Jharkhand was pleased to pass a stay Order in the above mention Writ Petition, restricting the payment of water charges at pre-revised rate of Rs. 4.50 per thousand gallons.

8.91 The Petitioner further mention that clause 18 of the Water agreement, which contains provisions for reduction of the Water quantity, the Petitioner has requested WRD, Government of Jharkhand for lowering the permitted water quantity from 35.60 MCM to 17.60 MCM i.e. almost 50% of the original allocated quantity, which is yet to be considered by the WRD, State of Jharkhand. As a result, the Petitioner has filed another petition before the Hon'ble High Court at Ranchi for resolution of dispute regarding the billed water quantum in the bill, which is pending.

8.92 The Petitioner has estimated capital spare expenses well within the clause 7.46 of the JSERC generation Tariff Regulation 2015.

**Table 176: Water chare and Capital spare as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Water Charges | 1.74 | 5.97 | 1.74 | 5.97 |
| Capital Spares | - | 0.55 | - | 0.55 |

***Commission's Analysis***

8.93 The treatment of water charges and capital spares for thermal generating stations is governed by Clause 7.46 GTR 2015, and the relevant extract of the Regulations is mentioned in para 5.91.

8.94 The Commission has scrutinized the detail submitted by the Petitioner and observed that the matter related to water charge is sub-judicce before the Hon'ble Jharkhand High Court. Thus, the Commission in the Present petition approved the water charges as per previous true-up Order for FY 2020-21, in proportion to power allocated to JBVNL.

8.95 Therefore, the Commission has approved Rs. 4.50 per thousand gallon of water withdrawn from river, amounting to Rs. 1.74 Crore (as approved in MYT) for FY

2020-21. The same is apportioned in proportion to JBVNL share (25%) i.e., 0.44 Crore (Rs. 0.22 Crore for each Unit).

8.96 The Commission has observed that the Petitioner has not submit proper justification and projection for spending on capital spare. And hence, the Commission in the instant petition disallow the capital spare.

**Table 177: Water charge and Capital Spare as approved by the Commission (Rs. Cr)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Water charge | 1.74 | 5.97 | 0.22 | 1.74 | 5.97 | 0.22 |
| Capital Spare | - | 0.55 | - | - | 0.55 | - |

**Ash Disposal Expenses**

***Petitioner's Submission***

8.97 The Petitioner has projected that ash disposal and transportation is the statutory requirement of the power plant. The Petitioner has been disposing and transporting Ash from its power station in accordance with the Government of India, Ministry of Environment, Forest & Climate Change (MOEFCC) notification dated 25.1.2016.

8.98 Further, the Petitioner has submitted that as per the environmental norms and MOEFCC guidelines, the Petitioner has been transporting ash from its power station to various cement and brick manufacturing units. The details of quantity of ash disposal and its expenditure is being provided as below:

**Table 178: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | Unit-2 | |
|---|---|---|---|---|
| | MYT Order | Petition | MYT Order | Petition |
| Ash Disposal | - | 0.23 | - | 0.23 |

***Commission's Analysis***

8.99 The Commission has scrutinized the submission made by the Petitioner and approves the Ash Disposal Expenses as per Petitioner submission.

8.100 Considering the facts and circumstances of the given petition the Commission approved the Ash Disposal Expense for FY 2020-21 as shown below.

**Table 179: Ash Disposal Expenses as submitted by the Petitioner (Rs. Cr.)**

| Particulars | Unit-1 | | | Unit-2 | | |
|---|---|---|---|---|---|---|
| | MYT Order | Petition | Approved | MYT Order | Petition | Approved |
| Ash Disposal | - | 0.23 | 0.23 | - | 0.23 | 0.23 |

**Tariff for Unit-1 and Unit-2**

***Petitioner's Submission***

8.101 The Petitioner has submitted that in accordance with the provisions of Power Purchase Agreement (PPA) executed with Discom, out of the total Contracted Capacity of 122.85 MW, APNRL will supply 63.882 MW capacity (i.e., 13% of the total net Capacity at total Tariff (both fixed and Variable Charge) and the balance 58.96 MW capacity, i.e., 12% of the Net capacity at variable cost i.e., Energy Charge as approved by the Commission. Accordingly, the tariff for supply of regulated capacity for JUVNL/JBVNL is summarized below:

**Table 180: Tariff for 12% of Total Net Capacity as submitted by the Petitioner (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.567 | 2.555 | 2.570 | 2.641 |

**Table 181: Tariff for 13% of Total Net Capacity as submitted by the Petitioner (Fixed Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| Gross Capacity | MW | 270.00 | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | % | 9.00% | 9.00% | 9.00% | 9.00% |
| Net Capacity | MW | 245.70 | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | MW | 29.48 | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | MW | 216.22 | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | Rs Cr. | 351.10 | 380.45 | 356.04 | 387.20 |
| Annual Fixed Charges/MW | Rs Cr./ MW | 1.62 | 1.76 | 1.65 | 1.79 |

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | MYT Order | Petition | MYT Order | Petition |
| 13% of Net Capacity for supply to JUVNL at full tariff | MW | 31.94 | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | Rs. Cr. | **51.87** | **56.20** | **52.60** | **57.20** |

***Commission's Analysis***

8.102 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) approved by the Commission, whereas the tariff for next 13% of total net capacity shall be the total tariff i.e., variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2015) and fixed charges as approved by the Commission as tabulated below.

**Table 182: Tariff for 12% of Total Net Capacity as approved by the Commission (Variable Charge)**

| Particulars | Units | Unit-1 | | Unit-2 | |
|---|---|---|---|---|---|
| | | Petition | Approved | Petition | Approved |
| Variable Cost/ Base Energy Charge Rate | Rs/kWh | 2.555 | 2.555 | 2.641 | 2.641 |

**Table 183: Tariff for 13% of Total Net Capacity for Unit-1 as approved by the Commission (Fixed Charge)**

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270.00 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 351.10 | 380.45 | 336.93 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.62 | 1.76 | 1.56 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |

| Particulars | Derivation | Units | Unit-1 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| **AFC for 13% of Net Capacity** | **I=G x H** | **Rs. Cr.** | **51.87** | **56.20** | **49.77** |

**Table 184: Tariff for 13% of Total Net Capacity for Unit-2 as approved by the Commission (Fixed Charge).**

| Particulars | Derivation | Units | Unit-2 | | |
|---|---|---|---|---|---|
| | | | MYT Order | Petition | Approved |
| Gross Capacity | A | MW | 270 | 270.00 | 270.00 |
| Auxiliary Consumption | B | % | 9.00% | 9.00% | 9.00% |
| Net Capacity | C=A x (1-B) | MW | 245.70 | 245.70 | 245.70 |
| 12% of Net Capacity for Supply to JUVNL/JBVNL at Energy Charge | D=C x 12% | MW | 29.48 | 29.48 | 29.48 |
| Remaining Capacity from which Fixed Charges are to be recovered | E=C-D | MW | 216.22 | 216.22 | 216.22 |
| Annual Fixed Charge | F | Rs Cr. | 356.04 | 387.20 | 345.42 |
| Annual Fixed Charges/MW | G=F/E | Rs Cr./MW | 1.65 | 1.79 | 1.60 |
| 13% of Net Capacity for supply to JUVNL at full tariff | H=C x 13% | MW | 31.94 | 31.94 | 31.94 |
| **AFC for 13% of Net Capacity** | **I=G x H** | **Rs. Cr.** | **52.60** | **57.20** | **51.03** |

**Table 185: Total Tariff for JBVNL as submitted by the Petitioner**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Petition | Petition |
| Net Energy Supplied to JUVNL/JBVNL | MU | 482.07 | 482.07 |
| Rate of Energy Charge | Rs/kWh | 2.555 | 2.641 |
| AFC Entitlement on True Up | Rs Cr | 56.20 | 57.20 |
| Incentive | Rs Cr | 1.17 | 1.17 |
| Energy Charge Entitlement upon True up | Rs Cr | 123.16 | 127.31 |
| Water Charges | Rs Cr | 5.97 | 5.97 |
| Capital Spares | Rs Cr | 0.55 | 0.55 |
| Additional Ash Disposal Charge | Rs Cr | 0.23 | 0.23 |
| **Aggregate Revenue Requirement** | **Rs Cr** | **187.29** | **192.44** |

**Table 186: Total Tariff for JBVNL as Approved by the Commission**

| Particulars | Units | Unit-1 | Unit-2 |
|---|---|---|---|
| | | Approved | Approved |
| Net Energy Supplied to JUVNL/JBVNL | MU | 482.07 | 482.07 |
| Rate of Energy Charge | Rs/kWh | 2.555 | 2.641 |
| AFC Entitlement on True Up | Rs Cr | 49.77 | 51.03 |
| Incentive | Rs Cr | 1.17 | 1.17 |
| Energy Charge Entitlement upon True up | Rs Cr | 123.16 | 127.31 |
| Water Charges | Rs Cr | 0.22 | 0.22 |
| Capital Spares | Rs Cr | - | - |
| Additional Ash Disposal Charge | Rs Cr | 0.23 | 0.23 |
| **Aggregate Revenue Requirement** | **Rs Cr** | **174.56** | **179.96** |

## A 9: STATUS OF EARLIER DIRECTIVES AND NEW DIRECTIVES

9.1 The Commission has time and again issued various directives in order to improve the functioning of the Petitioner. However, the Commission observes that the Petitioner has not complied to the earlier directives. The Commission directs the Petitioner to comply with the earlier directives along with new directives as mentioned below with utmost sincerity failing which, penal action may be taken.

**Timely and Data Adequacy in the Next Tariff Petition**

9.2 The Commission directs the Petitioner to file the next Tariff Petition, after removing the deficiencies highlighted in this Tariff Order. The Petitioner should ensure that the data submitted to the Commission is accurate and justified with adequate certificate. The Commission also direct the licensee to ensure submission of the next Tariff Petition within the time frame as stipulated in the JSERC Generation Tariff Regulations 2015 and JSERC Generation Tariff Regulations 2020.

**Submission of Unit-wise Operational Parameters Separately**

9.3 The Commission directs the Petitioner to submit Unit-Wise Operational Parameters of the Plant effectively immediately from this Order.

**Development of a Fuel Procurement Plan**

9.4 The Petitioner is directed to develop a Fuel Procurement Plan and explore options with its suppliers in order to reduce the cost of coal. The Petitioner should prioritize the procurement of primary fuel from the least cost source.

**Transit Loss**

9.5 The Commission directs the Petitioner to devise ways to control the expense and maintain transit loss at the levels specified as per Generation Tariff Regulations 2015.

**Notice to the Commission**

9.6 The Petitioner is hereby directed that during the execution of work pertaining to any pre-approved schemes, any increase in the scope of work, procurement, service, price/cost etc. should be brought to the notice of Commission immediately.

**Fly Ash Brick Plant**

9.7 The Commission directs the Petitioner to develop a plan for setting up of fly ash bricks plant in order to generate Non-Tariff Income (NTI) for reduction of the burden on the Consumers as well as to controlled the air pollution or to reduce the air pollution in that area. The Petitioner may develop other sources of Non-Tariff Income generation in the process as well.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on June 22, 2023.

**Date: 22.06.2023**
**Place: Ranchi**

**Sd/-**
**(Atul Kumar)**
**Member (Technical)**

**Sd/-**
**(Mahendra Prasad)**
**Member (Legal)**

**Sd/-**
**(Hon'ble Justice Amitav K. Gupta)**
**Chairperson**

## ANNEXURE

### Annexure-1: List of participating members of the public in the public hearing

| Sr. No. | Name | Address/Organization |
|---|---|---|
| **Venue: Hotel B N R Chanakya, Ranchi, Date & Time: 20.03.2023 & 12:30 PM** | | |
| 1 | Amit Griwan | 468, 1st floor, Udyog Bihar, DLF Ph-III, Gurgram |
| 2 | Ravi Shankar Singh | 2IC Road Shanti Hari tower, Bistupur, Jamshedpur |
| 3 | Sarangdev Sarkar | 1st floor, Udyog Bihar, DLF Ph-III, Gurgram |
| 4 | Rajesh Kumar Sharma | Petrol Pump Road, No. 6, Sonari west, Jamshedpur |
| 5 | Ravi Verma | Flat NEI/2 ,Manav Shree Appt., Rd. IA, Basant Vihar, Harmu, Ranchi |
| 6 | Himanshu Kumar | A/3 Nishaant Vihar, adityapur |
| 7 | Rishi Nandan | GM, Commercial, JBVNL |
| 8 | Ravishankar Kumar | EEE, Revenue, JBVNL |
| 9 | Bhavesh Saw | APNRL |
| 10 | Arvind Kumar | ED (C&R), JBVNL |
| 11 | Radha Krishna Tripathy | JBVNL Representative |
| 12 | Jiwan Kumar Jalan | 101, Harmu Road, Ranchi |
| 13 | Anita Prasad | JBVNL |
| 14 | Birendra Kisku | JBVNL |
| 15 | R. K. Pandey | Ranchi |
| 16 | Eshan Singh | Ranchi |
| 17 | Sharat Kumar | JBVNL |
| 18 | Vijay Kumar | Ranchi |

# Annexure-1b

**Values from Tariff Order issued by the Hon'ble JSERC from FY 2013-14 to FY 2019-20**

| Particular | FY 2013-14 | FY 2014-15 | FY 2015-16 | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 |
|---|---|---|---|---|---|---|---|
| RoE | 121.38 | 137.67 | 141.92 | 141.95 | 142.14 | 142.22 | 142.2 |
| Total AFC (Approved by the Commission | 740.44 | 792.76 | 784.28 | 739.74 | 716.93 | 714.2 | 700.1 |

**Fixed Cost Allocation**

| Sl No | Contracted Capacity (MW) | % share from Total Net Capacity | Share in % | Capacity in MW | FY 2013-14 | FY 2014-15 | FY 2015-16 | FY 2016-17 | FY 2017-18 | FY 2018-19 | FY 2019-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 122.85 | 12% | 48% | 58.968 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | | 13% | 52% | 63.882 | 109.38 | 117.11 | 115.86 | 109.28 | 105.91 | 105.51 | 103.42 |
| 3 | 66 | 6% | 48% | 31.68 | NA | NA | NA | NA | 0.00 | 0.00 | 0.00 |
| 4 | | 7% | 52% | 34.32 | NA | NA | NA | NA | 56.90 | 56.68 | 55.56 |
| Total | 188.85 | | | | | | | | | | |

**Fixed Cost Recovery**

| Contracted Capacity (MW) | FY 2013-14 | | FY 2014-15 | | FY 2015-16 | | FY 2016-17 | | FY 2017-18 | | FY 2018-19 | | FY 2019-20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery | Full Recovery | Actual Recovery |
| 122.85 | 185.11 | 109.38 | 198.19 | 115.86 | 196.07 | 115.86 | 184.935 | 109.28 | 179.23 | 105.91 | 178.55 | 105.51 | 175.03 | 103.42 |
| 66 | NA | NA | NA | NA | NA | NA | NA | NA | 109.42 | 56.90 | 109.00 | 56.90 | 106.85 | 55.56 |
| Total | 185.11 | 109.38 | 198.19 | 115.86 | 196.07 | 115.86 | 184.935 | 109.28 | 288.65 | 162.81 | 287.55 | 162.41 | 281.88 | 158.99 |
| Total Loss | | (75.73) | | (82.33) | | (80.21) | | (75.66) | | -125.84 | | -125.15 | | -122.89 |

**REPORTABLE**

**IN THE SUPREME COURT OF INDIA**
**CIVIL APPELLATE JURISDICTION**

**CIVIL APPEAL NOS. 677-678 OF 2021**

**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED ...APPELLANT(S)**

**VERSUS**

**ADANI POWER MAHARASHTRA LIMITED AND ANOTHER ...RESPONDENT(S)**

## JUDGMENT

**B.R. GAVAI, J.**

**1.** The present appeals challenge the judgment and order dated 28th September 2020 passed by the Appellate Tribunal for Electricity (hereinafter referred to as 'APTEL'), in cross appeals being Appeal No. 116 of 2019, filed by Maharashtra State Electricity Distribution Company Limited (hereinafter referred to as 'MSEDCL'), the appellant herein, and Appeal No. 155 of 2019, filed by ADANI Power Maharashtra Limited (hereinafter referred to as 'APML'), respondent No. 1 herein, thereby challenging the order dated 7th February 2019, passed by Maharashtra Electricity Regulatory Commission (hereinafter referred to as 'MERC').

**2.** The facts, in brief, giving rise to the present appeals are as under:

APML and MSEDCL had entered into four long term Power Project Agreements (hereinafter referred to as 'PPA') dated (a) 8th September, 2008 for 1320 MW (hereinafter referred to as '1320 MW PPA'); (b) 31st March, 2010 for 1200 MW (hereinafter referred to as '1200 MW PPA'); (c) 9th August, 2010 for 120 MW (hereinafter referred to as '120 MW PPA') and (d)16th February, 2013 for 440 MW (hereinafter referred to as '440 MW PPA'), pursuant to the competitive bidding process conducted by MSEDCL.

**3.** APML, being aggrieved by the Change in Law on account of the Ministry of Coal bringing into force the New Coal Distribution Policy, 2013 (hereinafter referred to as 'NCDP, 2013'), which revised the arrangements prescribed under New Coal Distribution Policy, 2007 (hereinafter referred to as 'NCDP, 2007') for supply of coal, had filed a petition being Case No. 189 of 2013, seeking compensation in Tariff on account of Change in Law under the PPAs before MERC. Finally, in the light of the judgment of this Court in the case of ***Energy Watchdog v. Central Electricity Regulatory Commission and Others***[1], the said petition, after being remanded by the APTEL, was heard afresh by the MERC.

**4.** Vide order dated 7th March, 2018, the MERC allowed the claims of APML on account of Change in Law due to changes brought about by NCDP, 2013. APML, thereafter, preferred a review petition, being Review Petition No. 167 of 2018 seeking extension of Change in Law relief for domestic coal shortfall beyond March, 2017 on account of changes introduced by the Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India (hereinafter referred to as 'SHAKTI Policy') which had been released by the Ministry of Power on 22nd May, 2017. As per Clause 6.1 of the SHAKTI Policy, the Appropriate Commission was required to consider the cost of imported/market based e-auction coal procured for making up the shortfall in the domestic coal for pass-through.

1 **(2017) 14 SCC 80**

**5.** The MERC dismissed the said review petition. However, liberty was granted to APML to file a fresh petition to seek extension of Change in Law relief for domestic coal shortfall beyond March, 2017 in view of the introduction of the SHAKTI Policy. Subsequently, APML filed a fresh petition, being Case No. 290 of 2018, before the MERC seeking relief in support of Change of Law under the respective PPAs for non-availability/short supply of domestic coal under SHAKTI Policy after March, 2017.

**6.** The MERC, vide its order dated 7th February 2019, allowed the petition and granted relief for Change in Law due to the promulgation of SHAKTI Policy. However, the relief was directed to be computed on the same methodology and parameters as approved by the MERC vide its order dated 7th March, 2018. Cross appeals were filed before the APTEL by APML and MSEDCL against the aforesaid order.

**7.** The learned APTEL framed the following five issues for adjudication :

"**Issue No.1:-** Whether introduction SHAKTI Policy does not amount to Change in Law under the PPAs entered into between APML and MSEDCL and whether APML has not provided notice of such Change in Law to the Respondent MSEDCL.

**Issue No.2:-** Whether the MERC is correct in holding that for the purpose of Change in Law compensation, shortfall in domestic coal shall be limited to a maximum of 25% of ACQ after the introduction of SHAKTI Policy.

**Issue No.3:-** (a) whether the MERC was correct in holding that the SHR submitted by the Appellant in its bid or SHR and Auxiliary Consumption norms specified for new generating stations under the MYT Regulations, 2011, whichever is superior shall form the basis for computing Change in Law compensation under the PPAs?

(b) Whether the MERC was correct in holding that the reference GCV of domestic coal supplied by CIL shall be the middle value of GCV range of assured coal grade in LoA/PSA/MoU and not the GCV as received?

**Issue No.4:-** Whether the MERC was justified in directing APML to provide advance intimation of impact on energy charge by using alternate coal for the purpose of Merit Order Despatch?

**Issue No.5:-** Whether the Respondent MSEDCL is justified in contesting APML's entitlement to Carrying Cost."

**8.** The APTEL, vide judgment and order dated 28th September 2020, answered the issues as under:

"15.1 **<u>Issue No.1:-</u>**We hold that the introduction of SHAKTI POLICY amounts to change in law and all the ingredients of change in law are:, duly met under the respective PPAs. The impugned order is therefore affirmed on this issue.

15.2 **<u>Issue No.2:-</u>** We hold that findings in the impugned order relating to the issue of restricting the quantum of shortfall in domestic coal to a maximum of 25% are against the basic principles of restitution I under the change in law provisions of the PPAs.

15.3 **<u>Issue No.3:-</u>** In line with our judgment dated 14.09.2020 in Appeal No.182 of 2019, we hold that the change in law compensation shall be calculated based on the SHR specified in the MERC MYT Regulations, 2011 or the actual SHR <u>whichever is lower</u> and actual GCV of coal as received as the plant site.

15.4 **<u>Issue No.4:-</u>** We find that the directions issued by the State Commission regarding advance intimation requirement is not consistent with normal Rules of MOD preparation and also does not provide a level playing field for IPPs.

15.5 **<u>Issue No.5:-</u>** We find that allowance of carrying cost is a settled position of law and the State Commission has already allowed the same to the Appellant, APML."

**9.** Consequently, the APTEL dismissed the appeal preferred by MSEDCL and allowed the appeal preferred by APML. Hence, MSEDCL has preferred the present appeals.

**10.** We have heard Shri Gopal Jain, learned Senior Counsel appearing on behalf of the appellant-MSEDCL and Dr.

Abhishek Manu Singhvi, learned Senior Counsel appearing on behalf of respondent No. 1–APML.

**11.** Shri Jain submitted that the SHAKTI Policy (Part-B) restores the position as covered by NCDP 2007. He, therefore, submits that, since under the SHAKTI Policy there is 100% assured coal supply, then there is no question of APML being compensated on account of shortfall in coal supply. He submits that SHAKTI Policy is in continuation of NCDP 2007. However, this has not been taken into consideration by the learned APTEL.

**12.** Shri Jain further submits that both APTEL and MERC have failed to take into consideration that APML had not complied with the condition of serving a mandatory notice to MSEDCL for Change in Law under Article 13.3.2 of the 1320 MW PPA.

**13.** Dr. Singhvi, on the contrary, submits that undisputedly, SHAKTI Policy would amount to Change in Law. He submits that there is a concurrent finding of fact by both APTEL and MERC that SHAKTI Policy is a Change in Law event.

**14.** Dr. Singhvi further submits that there is also a concurrent finding by APTEL and MERC on the issue of mandatory notice. He submits that unless these findings are found to be perverse or are based on extraneous consideration, it will not be permissible for this Court to interfere with the same.

**15.** When the batch of appeals was being heard, it was agreed between all the parties that this Court should first decide Civil Appeal No. 684 of 2021 (***Maharashtra State Electricity Distribution Company Limited (MSEDCL) v. ADANI Power Maharashtra Limited (APML) and Others***[2]) and Civil Appeal No. 6927 of 2021 (***MSEDCL v. GMR Warora Energy Ltd. and Others***) inasmuch as three of the issues involved in all the appeals were common. It was submitted that those two appeals could be decided by deciding the three common issues. However, insofar as the other appeals are concerned, in addition to the three common issues, certain additional issues were also involved.

**16.** The said three common issues are thus:

2 **2023 SCC OnLine 233**

(i) Whether Change in Law relief on account of NCDP 2013 should be on 'actuals' viz. as against 100% of normative coal requirement assured in terms of NCDP 2007 OR restricted to trigger levels in NCDP 2013 viz. 65%, 65%, 67% and 75% of Assured Coal Quantity (ACQ)?

(ii) Whether for computing Change in Law relief, the operating parameters be considered on 'actuals' OR as per technical information submitted in bid?

(iii) Whether Change in Law relief compensation to be granted from 1st April 2013 (start of Financial Year) or 31st July 2013 (date of NCDP 2013)?

**17.** Vide the judgment and order dated 3rd March 2023 in the case of ***MSEDCL v. APML and Others*** (supra), this Court decided those two appeals after considering the aforesaid three issues.

**18.** The first issue was answered by this Court, holding that the Change in Law relief for domestic coal shortfall should be on 'actuals' i.e. as against 100% of normative coal requirement assured in terms of NCDP, 2007. Insofar as the second issue is concerned, it was held that the Station Heat Rate (SHR) and Auxiliary consumption should be considered as per the Regulations or actual, whichever is lower. The third issue was answered by holding that the Start date for the Change in Law event for the NCDP, 2013 is 1st April 2013.

**19.** Insofar as Issue Nos. 2 and 3 as framed by the APTEL are concerned, the same stand squarely covered by the judgment of this Court in the case of ***MSEDCL v. APML and Others*** (supra). The remaining three issues, which are required to be considered in the present appeals, are thus:

> "**Issue No.1:-** Whether introduction SHAKTI Policy does not amount to Change in Law under the PPAs entered into between APML and MSEDCL and whether APML has not provided notice of such Change in Law to the Respondent MSEDCL.
>
> **Issue No. 2:-** .....
>
> **Issue No. 3:-** ...........
>
> **Issue No. 4:-** Whether the MERC was justified in directing APML to provide advance intimation of impact on energy charge by using alternate coal for the purpose of Merit Order Despatch?
>
> **Issue No. 5:-** Whether the Respondent MSEDCL is justified in contesting APML's entitlement to Carrying cost."

**20.** We will first consider the question as to whether the SHAKTI Policy would amount to Change in Law.

**21.** It will be apposite to refer to some relevant parts of the judgment of this Court in the case of ***Energy Watchdog*** (supra), which read thus:

> "**50.** ......Even otherwise, from a reading of Clause 13, it is clear that Clause 13.1.1 is in four different parts. The first part speaks of enacted laws; the second speaks of interpretation of such laws by courts or other instrumentalities; the third speaks of changes in consents, approvals or licences which result in change in cost of the business of selling electricity; and the fourth refers to any change in the declared law of the land for the project, cost of implementation of resettlement and rehabilitation or cost of implementing the environmental management plan. "Competent court" in Clause 13.1.2 is defined as meaning only the judicial system of India.
>
> ......
>
> **56.** However, insofar as the applicability of Clause 13 to a change in Indian law is concerned, the respondents are on firm ground. It will be seen that under Clause 13.1.1 if there is a change in any consent, approval or licence available or obtained for the project, otherwise than for the default of the seller, which results in any change in any cost of the business of selling electricity, then the said seller will be governed under Clause 13.1.1. It is clear from a reading of the Resolution dated 21-6-2013, which resulted in the letter of 31-7-2013, issued by the Ministry of Power, that the earlier coal distribution policy contained in the letter dated 18-3-2007 stands modified as the Government has now approved a revised arrangement for supply of coal.

> It has been decided that, seeing the overall domestic availability and the likely requirement of power projects, the power projects will only be entitled to a certain percentage of what was earlier allowable……"

**22.** It can thus be seen that this Court has held that if there is a Change in any consent, approval or licence available or obtained for the project, otherwise than for the default of the seller, which results in any change in any cost of the business of selling electricity, then the said seller will be governed under Clause 13.1.1 of the PPA. As already discussed hereinabove, this Court has consistently held that modification to NCDP 2007 by the communication dated 31st July 2013 would amount to Change in Law and the generating companies would be entitled to compensation on account of such Change in Law. Undisputedly, SHAKTI Policy also reduces the ACQ as was assured under the 2007 NCDP. Consequently, SHAKTI Policy will also have to be held to be Change in Law.

**23.** A three-Judges Bench of this Court in the case of ***Jaipur Vidyut Vitaran Nigam Limited and Others v.***

***ADANI Power Rajasthan Limited and Another***[3], has also considered the effect of SHAKTI Policy and held that the seller would be entitled to the benefit occurring on account of SHAKTI Policy. As such, the contention that SHAKTI Policy does not amount to Change in Law is without substance.

**24.** Following the judgments in the case of ***Energy Watchdog*** (supra) and ***ADANI Power Rajasthan Limited*** (supra), this Court, in the case of ***MSEDCL v. APML and Others*** (supra), observed thus:

> "**130.** The MoP, thereafter, addressed a communication dated 31st July 2013 to the Secretary, CERC specifically pointing out the decision of the CCEA to the effect that the higher cost of imported coal was to be considered for pass-through as per the modalities suggested by CERC. The communication states that, as per the decision of the Government, the higher cost of import/market based e-auction coal will have to be considered for being made a pass-through on a case to case basis by CERC/SERC to the extent of shortfall in the quantity indicated in the LoA/FSA.
>
> **131.** The Tariff Policy dated 28th January 2016 issued by the MoP in paragraph 6.1 also specifically notes this position and states that, in case of reduced quantity of domestic coal supplied by CIL vis-à-vis the assured quantity or quantity indicated in LoA/FSA, the cost of imported/market based e-auction coal procured for making up the shortfall

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shall be considered for being made a pass-through by the Appropriate Commission.

**132.** Undisputedly, in the case of *Energy Watchdog* (supra) as well as in *Adani Rajasthan case* (supra) this Court has held that on account of the Change in Law, the generating companies were entitled to compensation so as to restore the party to the same economic position as if such Change in Law had not occurred. Had the Change in Law not occurred, the generating companies would have been entitled to the supply as assured by the CIL/Coal Companies under the FSA.

**133.** It is contended by the DISCOMS that in the case of *Energy Watchdog* (supra), this Court has specifically held that the doctrine of *force majeure* was not applicable if there was an unexpected rise in the price of coal and, as such, it will not absolve the generating companies from performing their part of the contract. It is submitted that when the bidders submitted their bids, this was a risk they knowingly took. We find the said submission to be without substance. The generators are not claiming compensation on the basis of rise in price of coal or on the ground of *force majeure.* Their claims, in fact, are on the basis of the Change in Law, which this Court, in the case of *Energy Watchdog* (supra) as well as in *Adani Rajasthan case* (supra), has upheld on the ground of Change in Law.

**134.** The contention of the DISCOMS that the *Adani Rajasthan case* (supra) is not applicable to the facts of the present case inasmuch as in *Adani Rajasthan case* (supra), the State of Rajasthan had assured 100% coal supply and that it was not a case of FSA, is, in our considered view, without substance. In the present case also, the NCDP 2007 had assured 100% fuel/coal supply of the normative value.

> **135.** The restitutionary principle has been stated by this Court in the case of *Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL)* (supra) thus:
>
> > "**10.** Article 13.2 is an in-built restitutionary principle which compensates the party affected by such change in law and which must restore, through monthly tariff payments, the affected party to the same economic position as if such change in law has not occurred. This would mean that by this clause a fiction is created, and the party has to be put in the same economic position as if such change in law has not occurred i.e. the party must be given the benefit of restitution as understood in civil law. …………""

**25.** As such the restitution principle, as has been consistently applied by this Court on account of Change in Law, will also be applicable on account of change occurring due to the introduction of SHAKTI Policy.

**26.** The contention of the appellant that the SHAKTI Policy brings back the position of NCDP 2007 and assures 100% coal supply, is not factually correct. A perusal of the SHAKTI Policy would reveal that SHAKTI Policy assures 70% of ACQ as against 100% in 2007 NCDP.

**27.** In that view of the matter, we find that the contention that SHAKTI Policy restores the position of 2007 NCDP is factually incorrect.

**28.** Insofar as Change in Law Notice is concerned, the APTEL, in its judgment and order, observed thus:

> "**13.7** We have considered the submissions made by APML vis-a-vis the findings in the impugned order. It is relevant to note that no submission to the contrary has been advanced by the Respondent, MSEDCL on this issue. In the Impugned Order, MERC appears to have expanded the intent of Change in Law notice as a means of intimation to the buyer of power that on account of intended use of alternate coal, the cost of power is likely to increase and then the distribution licensee may decide to not schedule such costly power. Firstly, no such intent can be deciphered from the provisions of the PPA which require a change in law notice to be given to the procurers. MERC has not deliberated upon how this regime will impact the implementation of change in law provision in other scenarios. For example, if there is a change in rates of taxes or duties, which entitles the generator to seek change in law relief, can it still be said that the procurer should be intimated about the impact of such changes in taxes or duties to enable them to decide whether to schedule power or not. In our view, this does not appear to be the intent of change in law notice to the procurers under the PPAs. This is for the simple reason that whether there will be impact on MSEDCL would be known only after MERC decides the change in law claim. Until such time notice given by sellers merely to intimate the occurrence of change in law event, in our view, will

> not influence decisions related to scheduling of power on merit order principles. In any event in far as preparation of MOD stack is concerned, the normal practice is to prepare MOD on the basis of the energy charge bill of (n-1)th or (n-2)th month is taken into account in the order of precedence. Therefore, the impact of a regular or consistent usage of alternate coal will in anyway be reflected in the MOD stack, albeit with the lag of one or two months."

**29.** The aforesaid finding of APTEL cannot be said to be perverse or based on extraneous consideration or in contravention of any of the statutory provisions.

**30.** That leaves us with the issue with regard to Carrying Cost.

**31.** In the case of ***ADANI Power Limited v. Central Electricity Regulatory Commission***[4], the CERC had come to a conclusion that there was no provision in the PPA for payment of Carrying Cost for the period from the date of the Change in Law event till the date of approval by the Commission. As such, the Commission had rejected the prayer of the generating company to grant carrying Cost on restitutionary principles from the date of Change in Law till

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the date of decision. The APTEL, while reversing the judgment of the CERC and allowing the Carrying Cost, had observed thus:

> "**29.** To our mind such adjustment in the tariff is nothing less then re-determination of the existing tariff.
>
> > x. Further, the provisions of Article 13.2 i.e. restoring the Appellant to the same economic position as if Change in Law has not occurred is in consonance with the principle of 'restitution' i.e. restoration of some specific thing to its rightful status. Hence, in view of the provisions of the PPA, the principle of restitution and judgement of the Hon'ble Supreme Court in case of *Indian Council for Enviro-Legal Action* v. *Union of India*, we are of the considered opinion that the Appellant is eligible for Carrying Cost arising out of approval of the Change in Law events from the effective date of Change in Law till the approval of the said event by appropriate authority. It is also observed that the Gujarat Bid-01 PPA have no provision for restoration to the same economic position as if Change in Law has not occurred. Accordingly, this decision of allowing Carrying Cost will not be applicable to the Gujarat Bid-01 PPA."

**32.** The same came to be challenged before this Court in the case of ***Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) and another v. Adani Power Limited and***

***Others***[5]. The court rejected the same and upheld the order of APTEL. As such, the contention in this regard needs to be rejected.

**33.** This Court, in the case of ***MSEDCL v. APML and Others*** (supra), after considering the relevant provisions under the Electricity Act, 2003 with regard to appointment, qualifications and Members of the CEA, CERC and the learned APTEL, held that these bodies are bodies consisting of experts in the field. After considering various judgments on the issue, this Court observed thus:

> "**123.** Recently, the Constitution Bench of this Court in the case of *Vivek Narayan Sharma* v. *Union of India* has held that the Courts should be slow in interfering with the decisions taken by the experts in the field and unless it is found that the expert bodies have failed to take into consideration the mandatory statutory provisions or the decisions taken are based on extraneous considerations or they are *ex facie* arbitrary and illegal, it will not be appropriate for this Court to substitute its views with that of the expert bodies."

**34.** In our view, the view taken by the APTEL cannot be said to be a view taken in ignorance of the mandatory statutory

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provisions nor can it be said that it is based on extraneous considerations. The view also cannot be said to be ex-facie arbitrary or illegal. As such, in our view, no interference would be warranted in the present appeals.

**35.** In the result, the appeals are dismissed. Pending application(s), if any, shall stand disposed of. No costs.

**..............................J.**
**[B.R. GAVAI]**

**..............................J.**
**[VIKRAM NATH]**

**NEW DELHI;**
**APRIL 20, 2023.**

# Annexure-3

**CENTRAL ELECTRICITY REGULATORY COMMISSION**
**NEW DELHI**

**Petition No. 216/MP/2018**

**Coram:**

**Shri P.K.Pujari, Chairperson**
**Shri A.K. Singhal, Member**
**Dr. M.K. Iyer, Member**

**Date of Order: 10th August, 2018**

**In the matter of**

Petition under sections 79(1)(b) read with 79(1)(f) of the Electricity Act, 2003 read with Regulation 111 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 seeking approval of the Supplementary Power Purchase Agreement dated 15.2.2018 executed between the Petitioner and the Respondent to pass on the discount on tariff under the SHAKTI Scheme -2017 issued by the Ministry of Coal, Government of India

**And**

**In the matter of**

Adhunik Power & Natural Resources Limited
9B, 9th Floor, Hansalaya Building,
15, Barakhamba Road, Connaught Place,
New Delhi-110001 …….**Petitioner**

Vs

Jharkhand Bijli Vitran Nigam Limted,
Engineering Building, HEC, Dhurwa,
Ranchi-834004
Jharkhand ..….**Respondent**

**Parties present:**

Shri Deepak Khurana, Advocate, APNRL
Shri Ajit Kumar, Senior Advocate, JBVNL
Shri Navin Kumar, Advocate, JBVNL
Ms. Aparajita Bhardwaj, Advocate, JBVNL
Shri Himanshu Shekhar, JBVNL
Shri K. Mano Raj, APNRL
Shri Sunil Kumar, JBVNL

## ORDER

The Petitioner has filed this Petition with the following prayers:

> *"(a) Pass an order approving the supplementary power purchase agreement dated 15.2.2018 executed between the Petitioner and the Respondent in terms of SHAKTI scheme;*
>
> *(b) Pass such other and further order or orders as this Hon'ble Commission may deem fit and proper under the facts and circumstances of the present case and in the interest of justice."*

**Background**

2. The Petitioner, Adhunik Power & Natural Resources Limited is a company incorporated under the Companies Act, 1956 and is a generating company within the meaning of section 28(2) of the Electricity Act, 2003 (hereinafter called 'the 2003 Act'). The Petitioner has set up a Thermal Power Project with an installed capacity of 540 MW (2 x 270 MW) (hereinafter referred to as 'the Project') at Saraikela-Kharsawn District in the State of Jharkhand pursuant to a Memorandum of Understanding (MOU) executed between the Petitioner and the Government of Jharkhand on 31.10.2005 and extended from time to time. As per the MOU read with the extension thereto, the Government of Jharkhand or Distribution licensees authorized by the Government has the first right of claim on purchase upto 25% of power delivered by the Project of the Petitioner and 12% of the total power generated at variable cost.

3. Pursuant to the MOU, the Petitioner executed a Power Purchase Agreement (PPA) with the Jharkhand State Electricity Board (*now Jharkhand Urja Vikas Nigam Ltd*) on 8.9.2012 for supply of contracted capacity of 122.85 MW (25% of 491.4 MW i.e gross capacity of two units of 270 MW each, totaling to 540 MW less normative auxiliary consumption) from the Project on long term basis. In terms of the PPA, 63.882 MW capacity i.e. 13% of the net capacity would be supplied to the Respondent and the balance 58.968 MW capacity i.e. 12% would be supplied at variable charges

only. The Petitioner and the Respondent executed a Supplementary PPA on 6.11.2017 for purchase of additional 66 MW of power as per clause 5.2 of the National Tariff Policy, 2016. The terms and conditions of the Supplementary PPA are same as that of the PPA dated 8.9.2012.

4. Unit-I of the Project achieved commercial operation on 21.1.2013 and Unit-II achieved commercial operation on 19.5.2013. In terms of Clause 3.1(ii) and (iii) of the PPA dated 8.9.2012, the tariff payable is to be determined by the State Electricity Regulatory Commission or any other competent authority authorized from time to time. The Petitioner has been supplying 122.85 MW power to the Respondent on long term basis from 21.7.2013 onwards by utilizing the linkage coal to the extent available and also after procuring from open market.

5. The Ministry of Coal, Govt. of India vide Circular No. 23011/15/2016-CPD/CLD dated 22.5.2017 introduced a 'New More Transparent Coal Allocation Policy for Power Sector, 2017', namely, SHAKTI (Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India) (hereinafter called the 'SHAKTI scheme') for the purpose of providing linkage coal to the IPPs having already concluded long term PPA with discoms. Thereafter, Coal India Limited (CIL) invited Expression of Interest (EOI) under the SHAKTI scheme on 4.8.2017 and further issued a Scheme document on 16.8.2017 for auction of coal linkage for IPPs having already concluded long term PPAs.

6. The Petitioner participated in the auction process under the 'SHAKTI scheme' and offered a discount of three (3) paise per kWh for securing coal linkage for supply of 122.85 MW power as per PPA with the Respondent, JBVNL for 25 years and also for supply of 100 MW of power under long term PPA (15 years) with TANGEDCO through

PTC on back to back basis. Accordingly, the Central Coalfields Ltd (CCL) issued Letter of Intent (LOI) dated 21.12.2017 declaring the Petitioner as Provisional successful bidder and allocating 900,000 tonnes of coal (G-11 grade) against the above mentioned PPAs.

7. The Petitioner has submitted that as per the LOI issued by CCL in its favour, the Petitioner was required to sign the FSA within 90 days from the date of LOI after executing the amended PPA duly approved by the Commission. Though the Petitioner was required to accept the LOI within a period of 45 days from the date of issuance of LOI, Coal India Ltd vide its corrigendums dated 3.2.2018 and 27.2.2018 has extended the deadline by 45 days, thereby enabling the Petitioner to comply with the requirements of SHAKTI Scheme for securing the linkage coal.

8. The Petitioner has stated that it is supplying 100 MW power to TANGEDCO through PTC under long term PPA executed between PTC and TANGEDCO and long term PPA dated 19.12.2013 between Petitioner and PTC on back to back basis. The Commission by order dated 18.5.2018 in Petition No. 84/MP/2018 had approved the Supplementary PPA executed between PTC and TANGEDCO in respect of the aforesaid supply of 100 MW of power for passing of discount in tariff to the Procurer in terms of Clause (B)(ii)(b) of the SHAKTI scheme. In respect of the 122.85 MW supply of power by the Petitioner to the Respondent, JBVNL, the Petitioner and Respondent executed a Supplementary PPA on 15.2.2018 for passing of discount of 3 paise per kWh in tariff to the Respondent in terms of the aforesaid provisions of the SHAKTI scheme.

9. Pursuant to the execution of the Supplementary PPA dated 15.2.2018, the Respondent filed petition (Case No.3 of 2018) before the Jharkhand State Electricity Regulatory Commission (JSERC) on 5.3.2018 seeking approval of the supplementary

PPA dated 15.2.2018 to avail the discount in tariff under the SHAKTI scheme. However, in view of the Commission's order dated 18.5.2018 in Petition No. 84/MP/2018 (for TANGEDCO supply) and Order dated 6.6.2018 in Petition No. 305/MP/2015 holding that this Commission has the jurisdiction to regulate the tariff of the Project of the Petitioner under Section 79(1)(b) of the 2003 Act, the JSERC by order dated 18.7.2018 disposed of the said Petition giving liberty to the Petitioner to approach this Commission for approval of the Supplementary PPA dated 15.2.2018 under the SHAKTI scheme. Pursuant to the said order of JSERC, the present Petition has been filed by the Petitioner seeking approval of the Supplementary PPA dated 15.2.2018 executed between the Petitioner and the Respondent.

10. The learned counsel for the Petitioner during the hearing on 7.8.2018 prayed for approval of the said supplementary PPA dated 15.2.2018 under the SHAKTI Scheme. This was not objected to by the learned counsel appearing for the Respondent. The supplementary PPA dated 15.2.2018 has been placed on record.

**Analysis and decision**

**(A) Issue of Jurisdiction**

11. The Petitioner is supplying power to the distribution licensees situated in more than one State by execution of (a) PPA dated 28.9.2012 with Respondent, JBVNL for supply of 122.85 MW (b) PPA dated 25.3.2011 for supply of 100 MW to WBSEDCL through PTC on back to back basis and (c) PPA dated 19.12.2013 for supply of 100 MW to TANGEDCO through PTC on back to back basis. Accordingly, the Petitioner has a composite scheme for supply of power in more than one State in terms of Section 79(1)(b) of the Electricity Act, 2003. The Commission in order dated 18.5.2018 in Petition No. 84/MP/2018 filed by the Petitioner for approval of Supplementary PPAs dated 8.5.2018 & 10.5.2018 in respect of supply to TANGEDCO under the 'SHAKTI

scheme' had decided that this Commission has the jurisdiction to regulate the tariff of the Project of the Petitioner, in terms of Section 79(1)(b) of the 2003 Act, in light of the judgment of the Hon'ble Supreme Court dated 11.4.2017 in Energy Watchdog case.

**(B) Relief**s

12. The Petitioner has sought the approval of supplementary PPA dated 15.2.2018 entered into between the Petitioner and Respondent, JBVNL for passing on the discount in tariff to the Procurers in terms of clause (B)(ii)(b) of the 'SHAKTI scheme' of the GOI dated 22.5.2017 and the LOIs issued by CIL. The relevant portions of Clause (B) of the Policy guidelines for allocation of Coal linkages to Power Sector under 'SHAKTI scheme' are extracted under:

> "(B) The following shall be considered under a New More Transparent Coal Allocation Policy for Power Sector, 2017-SHAKTI (Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India):
>
> (i) CIL/SCCL may grant Coal linkages for Central Government and State Government Gencos at the notified price of CIL/SCCL. Similarly, coal linkages may be granted for JVs formed between or within CPSUs and State Govt/PSUs. The recommendations shall be made by Ministry of Power.
>
> (ii) CIL/SCCL may grant coal linkages on notified price on auction basis for power producers/IPPs having already concluded long term PPAs (both under section 62 and section 63 of The Electricity Act, 2003) based on domestic coal. Power producers/ IPPs, participating in auction will bid for discount on the tariff (in paise/unit). Bid Evaluation Criteria shall be the non-zero Levellised Value of the discount (applying a pre-notified discount rate) quoted by the bidders on the existing tariff for each year of the balance period of the PPA. Ministry of Coal may, in consultation with Ministry of Power, work out a methodology on normative basis to be used in the bidding process for allocation of coal linkages to IPPs with PPAs.
>
>> (a) The discount by generating companies would be adjusted from the gross amount of bill at the time of billing, i.e., the original bill shall be raised as per the terms and conditions of the PPA and the discount would be reduced from the gross amount of the bill. The discount shall be computed with reference to scheduled generation from linkage coal supplied under this auction. This would be applicable to both the PPAs contracted under Section 62 as well as Section 63 of the Electricity Act, 2003.
>>
>> (b) Accordingly, PPA may be amended or supplemented mutually between the developer and the procurer to pass on the discount to the procurer and the approval of the Appropriate Commission obtained, as per the provisions of the PPA or Regulations.

(c) FSA shall be signed with the successful bidders after the terms and conditions for signing of FSA are met and the Appropriate Commission has approved the amendment or supplement to the PPA.

(iii) CIL/SCCL may grant future coal linkages on auction basis for power producers/ IPPs without PPAs that are either commissioned or to be commissioned. All such power producers/IPPs may participate in this auction and bid for premium above the notified price of the coal company. The methodology for bidding of linkages shall be similar to the bidding methodology in the policy on auction of linkages of Non-Regulated Sector dated 15.02.2016. Coal drawal will be permitted only against valid long term and medium term PPA with Discoms/State Designated Agencies (SDAs), which the successful bidder shall be required to procure and submit within two years of completion of auction process…"

13. In accordance with the above scheme, the Petitioner, who had already concluded the long term PPAs based on domestic coal was eligible to participate in the bidding process. The grant of coal linkage on notified price from each source will be based on the discount offered by the power producer on the existing tariff for the balance period of the PPA. The discount would be computed with reference to linkage coal supplied and received under the 'SHAKTI scheme'. Moreover, the discount offered by the generating companies would be adjusted from the gross amount of the monthly bill raised in terms of the PPA.

14. The quantum of coal allocation by CCL in the LOI dated 21.12.2017 against the above mentioned PPAs with TANGEDCO and JBVNL is extracted under:

| **Sl. No** | **Source** | **Grade** | **Quantity allocated (Tonne)** | **Offered discount (Paise / KWh** | **LoI Reference No. (Enclosed as Annexure -1 to the amendment)** |
|---|---|---|---|---|---|
| 1 | Central Coalfields Limited | G 11 | 900,000 | 3 | CCL/HQ/C-4/M&S/SHAKTI b(ii)/Adhunik/15522 dated 21.12.2017 |

15. The details of the supplementary PPA dated 15.2.2018 executed between the Petitioner and Respondent, JBVNL are as under:

"1. APNRL shall offer a discount of 3 paisa per unit for the contracted capacity of 122.85 MW supplied to JBVNL by using coal supplied under the long term FSA signed between APNRL and CCL under the SHAKTI scheme.

2. The above mentioned discount is applicable only on the units supplied using coal procured under the SHAKTI scheme.

3. Discount will be deducted from the gross bill raised by the Seller and shall be subject to quarterly reconciliation. The methodology for computation of discount as per terms and conditions of revised PPA is as follows:

| Particulars | Details |
|---|---|
| Annual Coal Quantity (CQ) million tonnes purchased from CCL under FSA | 1. Road Mode: Coal quantity as per delivery order of CCL with applicable transit loss<br>2. Rail Mode: Coal quantity as per railway receipt and invoice of CCL with applicable transit loss |
| Coal GCV (GCV) | As per sampling report done by independent agency at plant |
| Auxiliary Consumption (AUXn) | As per JSERC norms |
| Station Heat Rate (SHR) | As per JSERC norms |
| Number of units generated (KWHg) using SHAKTI coal | KWHg = CQ* (GCV/ SHR) |
| Number of units supplied (KWHs) to JBVNL | KWHs = KWHg * (1- AUXn) |
| DISCOUNT (DISC) in paisa/kWh | Discount applicable as per discount stream annexed to the LOI issued by CCL |
| Total Bill Discount applicable | Total Discount = KWHs * DISC/ 100 |

Where:

(a) $$CQ = \frac{\text{Total coal purchased from CCL under SHAKTI scheme during the month x 122.85 MW}}{(100\text{ MW} \div 122.85\text{ MW})}$$

Where, 122.85 MW and 100 MW are the long term PPA quantum between APNRL and PTC for supply of power to TANGEDCO and JBVNL respectively.

(b) AUXn is the normative Auxiliary consumption during the month as specified in the JSERC Tariff Regulations as notified from time to time.

16. Since the amendments to the Procurer PPA dated 8.9.2012 has been carried out through supplementary PPA dated 15.2.2018 by the parties pursuant to the SHAKTI Scheme, we approve the said amendments in terms of Article 15 of the PPA. Issues, if any, arising out of such adjustment shall be mutually settled by the parties.

17. Petition No. 216/MP/2018 is disposed of in terms of the above.

| Sd/- | Sd/- | Sd/- |
|---|---|---|
| **(Dr. M.K.Iyer)** | **(A. K. Singhal)** | **(P. K. Pujari)** |
| **Member** | **Member** | **Chairperson** |

सेंट्रल कोलफील्ड्स लिमिटेड
(भारत सरकार का एक उपक्रम)
विक्रय एवं विपणन विभाग
दरभंगा हाउस, रांची 834 029
CENTRAL COALFIELDS LIMITED
(Govt. of India Undertaking)
Sales & Marketing Department
DARBHANGA HOUSE, RANCHI
दूरभाष/Telefax- 0651-2360369 वेबसाइट/Website- www.ccl.gov.in

स्वच्छ भारत
एक कदम स्वच्छता की ओर

CCL
A Miniratna Company

By Regd. Post and email

**LOI**

Ref No. CCL/HQ/C-4/M&S/SHAKTI b(ii)-3rd round/APNRL/2020-21/2124 Date: 14.07.2020

To
M/s Adhunik Power and Natural Resources Limited,
Padampur Kandra, Chowka Road, Saraikela Kharaswan,
Jamshedpur- 832402 Jharkhand
Email: tahirali@adhunikgroup.co.in

**Subject: Declaration of Provisional Successful Bidder pursuant to Auction Process**

Dear Sir/Madam,

Pursuant to the Scheme Document for the Third Round of Auction of Coal Linkages for IPPs having already concluded long term PPAs, dated January 30, 2020 ("**Scheme Document**"), I am directed to declare **M/s Adhunik Power and Natural Resources Limited** as the Provisional Successful Bidder for award of the quantity of coal specified in ***Schedule 1***. This declaration is in pursuance of the provisions contained in the Scheme Document and the fulfilment of Conditions to Auction and the participation in the Auction by the Bidder in respect of the Specified End Use Plant: **Adhunik Power and Natural Resources Limited (540 MW)**.

Details of the Specified End Use Plant, the Provisional Allocated Quantity and other relevant details are set out in ***Schedule 1***.

Upon fulfilment of the provisions of Clause 3.6.6, as per Clause 3.6.8 of the Scheme Document, the Provisional Successful Bidder is required to submit the documents specified therein within the prescribed timelines. Upon submission of the required documents to our satisfaction, the Provisional Successful Bidder shall be declared as the Successful Bidder.

The Successful Bidder shall be required to depute an Authorised Signatory to execute the Fuel Supply Agreement ("**FSA**") on its behalf. The Authorised Signatory deputed by the Successful Bidder should be present at the aforementioned time and place *inter alia* along with: (a) original documents confirming identity of such person along with a self-attested photocopy of the same; and (b) true copy of power of attorney in favour of the Authorised Signatory to execute the FSA including the extract of the charter documents or documents such as a board or shareholders resolution authorizing the execution of such power of attorney and/or the FSA.

The Authorised Signatory should also procure 2 (two) sets of non-judicial stamp papers of **Rs. 100/-** each for execution of the FSA and submit the same at the time of execution of the FSA.

The Subsidiary may, at any time prior to execution of the FSA, determine whether the documents, information and/or payments in relation to the Conditions to Auction have been submitted or received from the Bidder in accordance with the requirements of the Scheme Document. The Subsidiary reserves the right to *inter alia* cancel this Letter of Intent ("**LOI**"), disqualify the Bidder and forfeit the Process Fee and the Bid Security per Clause 5 of the Scheme Document.

This LOI is only indicative of the quantity allocated to you and any entitlement to such quantities of coal are subject to execution of the FSA in accordance with the provisions of the Scheme Document and satisfaction of the conditions prescribed in the FSA.

The terms of the Scheme Document are incorporated in this LOI by reference and form part of this LOI. The relevant Subsidiary shall be entitled to exercise all its rights and remedies as stipulated in the Scheme Document.

14-07.2020

General Manager (M&S), CCL

Acknowledged and Accepted by:

______________________

(Signatory)

*Note:*
*The format of LOI set out hereinabove is merely indicative in nature. CIL/the relevant Subsidiary reserves the right to modify or amend the same at its sole and absolute discretion.*
*In the event that this letter of intent is not signed and the contents hereof are not acknowledged and accepted by the Successful Bidder within **60 days** hereof, the Successful Bidder shall no longer be entitled to receive the Allocated Quantity and we shall have the right to forfeit the Bid Security and the Process Fee.*

**Schedule 1: Details of Specified End Use Plant and Allocated Quantity**

**Name of Successful Bidder: M/s Adhunik Power and Natural Resources Limited**

**Details of Specified End Use Plant**

| Name of Specified End Use Plant | Address | Capacity |
|---|---|---|
| Adhunik Power and Natural Resources Limited | Jojobera Power Plant, PO Rahargora, Jamshedpur, 831016, Jhakhand, India | 540 MW |

**Allocated Quantity in Auction and other details pertaining thereto**

| *S. No.* | *Subsidiary Name* | *Source* | *Mode* | *Indicative Range of Grades* | *Source Grade* | *Quantity Provisionally Allocated (Tonne)* | *Levellised Discount (paise/kWh)* |
|---|---|---|---|---|---|---|---|
| 1 | CCL | CCL | Rail/Road/Captive^ | G9-G14 | G11 | 99000 | 8 |

^ Captive Mode developed by the consumer

**Details of Tariff Discount Stream**

| PPA No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Levelized discount (paise/KWhr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PPA1 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| PPA2 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | | | | | | | | 8 |

**COAL INDIA LIMITED**
***A Maharatna Company***
(Govt. of India Undertaking)
**COAL BHAWAN**
Marketing Division , Ground Floor
Premises no. 04MAR, Plot AF-III,
Action Area-1A, New Town,
Kolkata- 700156

**Phone:** 033-2324-6617
**Fax:** 033-2324-4229
**e-mail id:** eauction.cil@coalindia.in
**Website:** www.coalindia.in
**Corp. ID No.** L23109WB1973GOI028844

No. CIL/M&S/SHAKTI B(ii) 4th round/ 547

Dated: 18/11/2021
*By e-Mail*

To
General Manager (M&S)
Central Coalfields Limited,
Ranchi, Jharkhand

**Subject: Declaration of Provisional Successful Bidder pursuant to fourth round Auction under para B(ii) of SHAKTI Policy conducted by PFCCL**

Dear Sir,

Pursuant to the Scheme Document dated September 09, 2021 issued by PFCCL for fourth round of auction of coal linkages for IPPs having already concluded long term PPAs ("**Scheme Document**") under para B(ii) of SHAKTI policy and subsequent amendment, ***M/s Adhunik Power and Natural Resources Limited*** has been declared as the Provisional Successful Bidder for award of the quantity of coal specified in ***Schedule A (enclosed)*** as communicated by PFCCL. This declaration is in pursuance of the provisions contained in the Scheme Document and the fulfilment of Conditions to Auction and the participation in the Auction by the Bidder in respect of the Specified End Use Plant of ***Adhunik Power and Natural Resources Limited.***

Details of the Specified End Use Plant, the Provisional Allocated Quantity and other relevant details are set out in ***Schedule A***.

The Provisional Successful Bidder is required to submit the documents specified in ***Schedule B (enclosed)*** i.e. 'documents to be submitted to the relevant Subsidiary prior to execution of the FSA as per Annx-X of scheme document of PFCCL' within the prescribed timelines. Upon submission of the required documents, the Provisional Successful Bidder shall be declared as the Successful Bidder.

The Successful Bidder shall depute an Authorised Signatory to execute the Fuel Supply Agreement ("**FSA**") on its behalf with the concerned coal company.

You are requested to issue the formal Letter of Intent (LOI) to ***M/s Adhunik Power and Natural Resources Limited*** as per the format provided in Annexure IX of the Scheme Document.

Yours faithfully,
18/11/2021
GM(M&S-Commercial)

Copy to:

1. Director (M), CIL
2. Director-in Charge, M&S, CCL
3. TS to Chairman, CIL
4. CGM, PFCCL
5. M/s Adhunik Power and Natural Resources Limited

## Schedule A: Details of Specified End Use Plant and Allocated Quantity

**Name of Successful Bidder: M/s Adhunik Power And Natural Resources Ltd**
**MSTC Registration No.: 120989**

**Details of Specified End Use Plant-**

| Name of Specified End Use Plant | Address | Capacity |
|---|---|---|
| Adhunik Power And Natural Resources Ltd | Padampur Kandra, Chowka Road, Saraikela Kharaswan, Jamshedpur-832402 Jharkhand | Padampur Kandra Jamshedpur 2X270MW |

**Allocated Quantity Auction and other details pertaining thereto-**

| S. No. | Subsidiary Name | Source | Mode | Indicative Range of Grades | Source Grade | Quantity Provisionally Allocated (Tonne) | Levellised Discount (paise/kWh) |
|---|---|---|---|---|---|---|---|
| 1 | CCL | CCL | Rail/Road/RCR/ Captive^ | G9-G13 | G11 | 93000 | 10 |

*^Captive mode developed by the consumer*

**Details of Tariff discount stream-**

| | Year | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PPA No.** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **Levelized Discount (paise/kwhr)** |
| PPA1 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.00 |
| PPA2 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | | | | | | | | | | | 10.00 |

**Schedule B: Documents to be submitted to the relevant Subsidiary prior to execution of the FSA (Annx-X of Scheme document)**

1. Relevant Corporate Authorizations of the Successful Bidder for execution and performance of his obligations under the FSA such as:

   (a) Notarised Power of Attorney ("PoA");

   (b) Certified true copy of Board Resolution or Certified true copy of Shareholders Resolution etc.

   In case the Bidder wants a different person (different from the one who participated in the online auction on behalf of the Bidder) to enter into the FSA, a PoA authorizing such person

   To enter into the FSA on behalf of the Bidder has to be submitted in the format as provided in the Annexure IV of the Scheme Document.
2. Self-attested copy of valid Factory License with respect to the Specified End Use Plant or copy of application filed for renewal of the same, in case the Factory License has recently expired.*
3. Self-attested copy of Consent to Operate with respect to the Specified End Use Plant issued under the relevant pollution control laws or copy of application filed for renewal of the same, in case the Consent to Operate has recently expired. Alternatively, a valid no objection certificate from the relevant State Pollution Control Board may be submitted. Wherever, the relevant State Pollution Control Board does not specify the validity of the certificate issued by them to the Specified End Use Plant, such a certificate will be considered acceptable and an intimation will be sent by relevant Subsidiary to the authority responsible for the issuance of the certificate.*
4. Self-attested copy of GST registration certificate and PAN of the Successful Bidder.
5. Certificate of Incorporation/ Commencement of Business Certificate.
6. In-principle water allocation from state water supply authority.*
7. Certificate of Date of Commercial Operation (COD) issued by CEA.*
8. Certificate of commissioning in respect of the Specified End Use Plant.*
9. PPA duly amended/ supplemented and which has been approved by Appropriate Commission as per paragraph B(ii) of the Policy.
10. An undertaking in the form of an affidavit that all applicable laws of the land are duly complied with failing which coal supply would be suspended.
11. Written confirmation and undertaking that the Provisional Successful Bidder satisfies and shall continue to satisfy the Eligibility Criteria prescribed in Clause 4 of the Scheme Document.
12. Any other relevant information/documentation as may be requested for by CIL/the relevant Subsidiary.
13. Self-attested copy of valid boiler license(s) with respect to the Specified End Use Plant or copy of application filed for its renewal, in case the same has recently expired.
14. Balance life of each Unit of the Specified End Use Plant as certified by CEA.

*Notes:*

*For the Specified End Use Plant which has commissioned, all the documents set out in this Annexure X, including any corrigenda / addenda issued, have to be provided within the timelines prescribed in Clause 3.6.8.*

**For the Specified End Use Plant which has not commissioned, all documents set out in this Annexure X, including any corrigenda / addenda issued, other than the documents marked with (*), shall be provided within the timelines prescribed in Clause 3.6.8. Documents marked with (*) shall be provided forthwith upon commissioning of the Specified End Use Plant.*

ईस्टर्न कोलफिल्ड्स लिमिटेड
(कोल इंडिया का एक उपक्रम)
सांक्तोड़िया, पो: डिसेरगढ़
विपणन एवम विक्रय विभाग

Eastern Coalfields Limited
(A subsidiary of Coal India Ltd)
Sanctoria. PO. Dishergarh,
DEPT: *MARKETING & SALES*

Ref. No.: ECL/ HQ/ M&S/ Commercial/ 968(A) Date: 26.11.2021

**LOI**

*To*
M/s Adhunik Power And Natural Resources Ltd
Padampur Kandra, Chowka Road, Saraikela, Kharaswan
Jamshedpur- 832402 Jharkhand.
Email: vishnu@adhunikpower.co.in

**Subject: Declaration of Provisional Successful Bidder pursuant to Auction Process**

Dear Sir/Madam,

Pursuant to the Scheme Document for the Fourth Round of Auction of Coal Linkages for IPPs/ CPPs each having already Concluded PPAs, dated the 9th September, 2021 ("**Scheme Document**"), I am directed to declare **M/s Adhunik Power And Natural Resources Ltd** as the Provisional Successful Bidder for award of the quantity of coal specified in ***Schedule 1***. This declaration is in pursuance of the provisions contained in the Scheme Document and the fulfilment of Conditions to Auction and the participation in the Auction by the Bidder in respect of the Specified End Use Plant **Adhunik Power And Natural Resources Ltd.**

Details of the Specified End Use Plant, the Provisional Allocated Quantity and other relevant details are set out in ***Schedule 1***.

Upon fulfilment of the provisions of Clause 3.6.6, as per Clause 3.6.8 of the Scheme Document, the Provisional Successful Bidder is required to submit the documents specified therein within the prescribed timelines. Upon submission of the required documents to our satisfaction, the Provisional Successful Bidder shall be declared as the Successful Bidder.

The Successful Bidder shall be required to depute an Authorised Signatory to execute the Fuel Supply Agreement ("**FSA**") on its behalf. The Authorised Signatory deputed by the Successful Bidder should be present at the aforementioned time and place *inter alia* along with: (a) original documents confirming identity of such person along with a self-attested photocopy of the same, and (b) true copy of power of attorney in favour of the Authorised Signatory to execute the FSA including the extract of the charter documents or documents such as a board or shareholders resolution authorizing the execution of such power of attorney and/or the FSA.

The Authorised Signatory should also procure 2 (two) sets of non-judicial stamp papers of Rs. **100/-** each for execution of the FSA and submit the same at the time of execution of the FSA.

The Subsidiary may, at any time prior to execution of the FSA, determine whether the documents, information and/or payments in relation to the Conditions to Auction have been submitted or received from the Bidder in accordance with the requirements of the Scheme Document. The Subsidiary reserves the right to *inter alia* cancel this Letter of Intent ("**LOI**"), disqualify the Bidder and forfeit the Process Fee and the Bid Security per Clause 5 of the Scheme Document.

This LOI is only indicative of the quantity allocated to you and any entitlement to such quantities of coal are subject to execution of the FSA in accordance with the provisions of the Scheme Document and satisfaction of the conditions prescribed in the FSA.

The terms of the Scheme Document are incorporated in this LOI by reference and form part of this LOI. The relevant Subsidiary shall be entitled to exercise all its rights and remedies as stipulated in the Scheme Document.

20/11/21

(Signatory)

Acknowledged and Accepted by:

(Signatory)

*Note:*
*The format of LOI set out hereinabove is merely indicative in nature. CIL/the relevant Subsidiary reserves the right to modify or amend the same at its sole and absolute discretion.*
*In the event that this letter of intent is not signed and the contents hereof are not acknowledged and accepted by the Successful Bidder within [insert]days hereof, the Successful Bidder shall no longer be entitled to receive the Allocated Quantity and we shall have the right to forfeit the Bid Security and the Process Fee.*

## Schedule 1: Details of Specified End Use Plant and Allocated Quantity

**Name of Successful Bidder:** M/s Adhunik Power And Natural Resources Ltd
**MSTC Registration No.:** **120989**

**Details of Specified End Use Plant**

| Name of Specified End Use Plant | Address | Capacity |
|---|---|---|
| Adhunik Power And Natural Resources Ltd | Padampur Kandra, Chowka Road, Saraikela, Kharaswan Jamshedpur-832402 Jharkhand | Padampur Kandra Jamshedpur 2X270MW |

**Allocated Quantity Auction and other details pertaining thereto**

| *S. No.* | *Subsidiary Name* | *Source* | *Mode* | *Indicative Range of Grades* | *Source Grade* | *Quantity Provisionally Allocated (Tonne)* | *Levellised Discount (paise/kWh)* |
|---|---|---|---|---|---|---|---|
| 1 | ECL | Non-Rajmahal fields | Rail/Road/RCR/ Captive^ | G3-G8 | G4 | 200 | 10 |

^Captive mode developed by the consumer

**Details of Tariff Discount Stream**

| PPA No. | Year | | | | | | | | | | | | | | | | | Levelized Discount (paise/kwhr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
| PPA1 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.00 |
| PPA2 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | | | | | | | | | | | 10.00 |

# Annexure-4

# ECR Computation

1. Coal Detail (Weighted average GCV and Price for FY 2022-23) without SHAKTI Coal.

| Coal Details for FY 2022-23 (Excluding SHAKTI Coal) | | | |
|---|---|---|---|
| **Months** | **Quantity** | **GCV Coal (kCal/kWh)** | **Price of Coal (Rs./MT)** |
| Apr-22 | 76662 | 3481 | 3672 |
| May-22 | 155694 | 3222 | 3871 |
| Jun-22 | 133911 | 3327 | 4146 |
| Jul-22 | 78887 | 2913 | 3886 |
| Aug-22 | 90240 | 2306 | 5558 |
| Sep-22 | 115295 | 2606 | 5586 |
| Oct-22 | 95072 | 3267 | 8776 |
| Nov-22 | 26925 | 2644 | 5759 |
| Dec-22 | 60463 | 2844 | 6647 |
| Jan-23 | 82962 | 3185 | 7328 |
| Feb-23 | 53951 | 2552 | 5036 |
| Mar-23 | 33301 | 2391 | 3864 |
| **Total** | **1003366** | | |

| | |
|---|---|
| **Weighted average GCV (kCal/kWh)** | **2978** |
| **Weighted average Price (Rs./MT)** | **5273** |

2. Coal Detail (Weighted average GCV and Price for FY 2022-23) with SHAKTI Coal.

| Coal Details for FY 2022-23 (With SHAKTI Coal) | | | |
|---|---|---|---|
| **Months** | **Quantity** | **GCV Coal (kCal/kWh)** | **Price of Coal (Rs./MT)** |
| Apr-22 | 166267 | 3541 | 3535 |
| May-22 | 234446 | 3465 | 3792 |
| Jun-22 | 194932 | 3600 | 4027 |
| Jul-22 | 128025 | 3448 | 3875 |
| Aug-22 | 158852 | 3166 | 4851 |
| Sep-22 | 175530 | 3140 | 5057 |
| Oct-22 | 155026 | 3663 | 6842 |
| Nov-22 | 58528 | 3529 | 4698 |
| Dec-22 | 164773 | 3487 | 4688 |
| Jan-23 | 187005 | 3392 | 5156 |
| Feb-23 | 145126 | 3280 | 4032 |
| Mar-23 | 104126 | 3360 | 3567 |
| **Total** | **1872638** | | |

| | |
|---|---|
| **Weighted average GCV (kCal/kWh)** | **3422** |
| **Weighted average  Price (Rs./MT)** | **4510** |

3. Secondary Oil Details (Weighted average GCV and Price for FY 2022-23)

| **LDO Details for FY 2022-23** | | | |
|---|---|---|---|
| **Months** | **Quantity Consumed** | **GCV oil (kCal/kWh)** | **Price of oil (Rs./kL)** |
| Apr-22 | 192 | 9350 | 60392 |
| May-22 | 0 | 9350 | 69080 |
| Jun-22 | 38 | 9350 | 73238 |
| Jul-22 | 126 | 9350 | 78237 |
| Aug-22 | 89 | 9350 | 85943 |
| Sep-22 | 0 | 9350 | 89646 |
| Oct-22 | 40 | 9350 | 89646 |
| Nov-22 | 248 | 9366 | 89834 |
| Dec-22 | 42 | 9490 | 92173 |
| Jan-23 | 26 | 9519 | 93212 |
| Feb-23 | 7 | 9529 | 92919 |
| Mar-23 | 67 | 9525 | 92422 |
| **Total** | **875** | | |

| | |
|---|---|
| **Weighted average GCV (kCal/kWh)** | **9381** |
| **Weighted average  Price (Rs./kL)** | **81015** |

(Note: All details are as per the actuals for coal and oil procured by the Petitioner for FY 2022-23)

4. ECR Computation

| **ECR for FY 2022-23 (Without Shakti Coal)** | | |
|---|---|---|
| **Particulars** | **Unit** | **Unit 1** |
| Aux Consumption | % | 9% |
| Station Heat Rate | Kcal/Kwh | 2387 |
| Specific Oil consumption | ml / kWh | 1 |
| GCV of Oil | Kcal/ml | 9.4 |
| Weighted avg cost of oil | Rs/ml | 0.08 |
| Wt avg cost of coal | Rs/Kg | 5.27 |
| GCV of Coal | Kcal/kg | 2977.67 |
| **ECR** | **Rs/Kwh** | **4.723** |

| ECR for FY 2022-23 (With Shakti Coal) | | |
|---|---|---|
| **Particulars** | **Unit** | **Unit 1** |
| Aux Consumption | % | 9% |
| Station Heat Rate | Kcal/Kwh | 2387 |
| Specific Oil consumption | ml / kWh | 1 |
| GCV of Oil | Kcal/ml | 9.4 |
| Weighted avg cost of oil | Rs/ml | 0.08 |
| Wt avg cost of coal | Rs/Kg | 4.51 |
| GCV of Coal | Kcal/kg | 3421.65 |
| **ECR** | **Rs/Kwh** | **3.533** |

# SHAKTI Discount

| SHAKTI Scheme | Discount Offered (Paise/kWh | Total Units Generated Against which disc offered (In kWh) | Discount offered (Fo FY 2022-23) (In Rs. Cr) | Actual Discount offered to JBVNL (Rs. / kWh) |
|---|---|---|---|---|
| SHAKTI b(ii) 1st Round | 3 | 749,015,678 | 2.25 | 0.0300 |
| SHAKTI b(ii) 3rd Round | 8 | 14,862,790 | 0.12 | 0.0800 |
| SHAKTI b(ii) 4th Round | 10 | 26,255,838 | 0.26 | 0.1000 |
| **Total** | | **790,134,306** | **2.63** | **0.0333** |

Annexure-5

L B Jha & Co
CHARTERED ACCOUNTANTS

F2/2, GILLANDER HOUSE
8, NETAJI SUBHAS ROAD
KOLKATA-700 001
TEL : +91-33-2242 5858/4277
FAX : +91-33-2242 0650
E-mail : lbjha@lbjha.com
Website : www.lbjha.com

Ref: SA/A/31P

**To**
**The Board of Directors**
**Adhunik Power & Natural Resources Limited**

**Independent Auditors Certificate on the Statement of Interest rate of Long Term Debts for the year ended 31st March 2022.**

1. This certificate is issued with the terms of our engagement letter dated 6th April, 2022 with Adhunik Power & Natural Resources Limited ('The Company') having a 2x270MW thermal power plant situated at Padampur. Srirampur, District Sareikela Kharsawan – Jharkhand.

2. The accompanying statement of Interest rates of Long Term Debts has been prepared by the management in terms of the requirements pursuant to submission of interest certificate before Regulatory authority & Discoms, which we have initialed for identification purpose only.

**Management's Responsibility for the Statement**

3. The preparation of the statement (attached in Annexure) is the responsibility of the management of the company including the preparation and maintenance of all accounting and other relevant supporting records and documents.This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The management is also responsible for ensuring that the company complies with the applicable Power Purchase agreement & relevant Power regulations..

**Auditor's Responsibility**

5. Pursuant to the requirements of rate of interest certification, our responsibility is to provide a reasonable assurance whether the figures in the statement in respect of Interest rates and loan amounts of the company have been accurately extracted from the audited financial statements; books of accounts and other relevant records of the Company as at for the year ended 31st March 2022.

6. The audited standalone financial statements of the Company for the year ended 31st March 2022, referred to in paragraph 5 above, have been audited by us, on which we issued unmodified opinion vide our report dated August 22, 2022. Our audit of these financial statements was conducted in accordance with the Standards on Auditing and other applicable authoritative pronouncements issued by the Institute of Chartered Accountants of India ('ICAI'). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

L. B. JHA & CO. ★ Chartered Accountants ★

7. We have conducted our examination of the records, documents and books of accounts produced to us by the Company in accordance with the Guidance Note on Report or Certificates for Special Purposes (Revised 2016) issued by the ICAI. The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.

8. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

**Opinion**

9. Based on our examination as above and the information, explanations and representations given to us, we are of the opinion that the amounts in the statement (attached in Annexure 1) in respect of outstanding loan amount and interest rates of the Company, read with the notes therein, have been accurately extracted from the audited financial statements, books of accounts and other relevant records of the Company as at and for the year ended 31st March 2022.

**Restriction on Use**

10. This certificate has been addressed to and provided to the Board of Directors of the Company and issued solely for the purpose of submission by the Company to Regulatory authority & Discoms pursuant to the requirements of the interest rate certification and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come without prior consent in writing.

For L. B. Jha & Co.
Chartered Accountants
Firm Registration No : 301088E

L. B. JHA & CO. ★ Chartered Accountants ★

(D. N. Roy)
Partner
Membership No: 300389
**UDIN: 22300389BCSBAY2247**

Place : Kolkata
Date : 10th November, 2022

Statement of applicable interest rate for the interest bearing loan for **FY 2021-22**:

| Loan Description | Interest amount Rs in lakhs | Rate of Interest |
|---|---|---|
| Edelweiss Asset Reconstruction Co. Ltd. | 16775 | 9% |
| Life Insurance Corporation | 582 | 9% |
| **Average rate of interest** | **17357** | **9%** |

L. B. JHA & CO. ★ Chartered Accountants ★