CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 366/GT/2020

Coram:
Shri I.S Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of Order: 6th October, 2023

In the matter of

Petition for revision of tariff of Barsingsar Thermal Power Station (250 MW) for the period 2014-19, after truing-up exercise.

AND

IN THE MATTER OF

NLC India Limited,
Neyveli House, 135, EVR Periyar Road,
Kilpauk, Chennai - 600010 **...Petitioner**

Vs

1. Jodhpur Vidyut Vitaran Nigam Ltd,
   New Power House, Heavy Industrial Area, Jodhpur,
   Rajasthan - 342003

2. Jaipur Vidyut Vitaran Nigam Ltd,
   Vidyut Bhavan, I floor, Janpath, Jaipur,
   Rajasthan - 302005

3. Ajmer Vidyut Vitaran Nigam Ltd,
   Old Power House, Hathi Bhata, Jaipur Road, Ajmer,
   Rajasthan – 305001 **...Respondents**

Parties present:

Ms. Anushree Bardhan, Advocate, NLCIL
Ms. Surbhi Kapoor, Advocate, NLCIL
Shri Anukirat Singh, Advocate, NLCIL
Shri Ravi. S, NLCIL
Shri Vasughi. P, NLCIL
Shri P. Ravikumar, NLCIL
Shri A.Srinivasan. NLCIL
Shri Anand K Ganesan, Advocate, RUVNL
Ms. Swapna Seshadri, Advocate, RUVNL
Shri Amal Nair, Advocate, RUVNL
Ms. Sugandh Khanna, Advocate, RUVNL
Ms. Kritika Khanna, Advocate, RUVNL

ORDER

This petition has been filed by the Petitioner, NLC India Limited, for truing-up of tariff of Barsingsar Thermal Power Station (2 x 125 MW) (in short 'the generating station') for the period 2014-19, in accordance with Regulation 8(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations'). The generating station, with an installed capacity of 250 MW comprises of two units of 125 MW each with Circulating Fluidized Bed Combustion lignite fired boilers feeding to Turbines. Units I and II of the generating station were commissioned on 20.1.2012 and 29.12.2011, respectively. Accordingly, the date of commercial operation of the generating station is 20.1.2012.

2. The Commission vide its order dated 3.5.2017 in Petition No. 255/GT/2014, had approved the capital cost and annual fixed charges of the generating station for the period 2014-19 as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	169081.03	169385.93	169385.93	169385.93	169385.93
Add: Additional Capital Expenditure	304.90	0.00	0.00	0.00	0.00
Closing Capital Cost	169385.93	169385.93	169385.93	169385.93	169385.93
Average Capital cost	**169233.48**	**169385.93**	**169385.93**	**169385.93**	**169385.93**

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Depreciation	8426.81	8434.40	8434.40	8434.40	8434.40
Interest on Loan	9401.76	8515.28	7636.15	6760.03	5886.68
Return on Equity	9956.01	10013.25	10013.25	10013.25	10013.25
Interest on Working Capital	1647.52	1680.08	1689.05	1701.05	1715.13
O & M Expenses	7433.90	7781.40	8266.40	8783.90	9333.90
Total	**36866.00**	**36424.42**	**36039.25**	**35692.63**	**35383.36**

3. Clause (1) of Regulation 8 of the 2014 Tariff Regulations provides as under:

"8. Truing up
(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2019, as admitted by the Commission after

prudence check at the time of truing up:

Provided that the generating company or the transmission licensee, as the case may be, shall make an application for interim truing up of capital expenditure including additional capital expenditure in FY 2016-17."

4. In terms of the above regulation, the Petitioner has filed the present petition for truing up of tariff of the generating station for the period 2014-19 and has claimed capital cost and annual fixed charges as under:

Capital Cost claimed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	169081.04	174340.06	175017.06	174870.42	175117.42
Add: Addition during the year / period	265.00	680.00	115.00	247.00	441.05
Less: Decapitalization during the year /period	-	3.00	261.64	-	-
Less: Reversal during the year / period	-	-	-	-	-
Add: Discharges during the year /period	4994.02	-	-	-	-
Closing Capital Cost	**174340.06**	**175017.06**	**174870.42**	**175117.42**	**175558.47**
Average Capital Cost	171710.55	174678.56	174943.74	174993.92	175337.95

Annual Fixed Charges claimed

(Rs. in lakh)

	2014-15 (1.4.2014 to 19.1.2015)	**2015-16 (1.4.2015 to 31.3.2016)**	**2016-17 (1.4.2016 to 31.3.2017)**	**2017-18 (1.4.2017 to 31.3.2018)**	**2018-19 (1.4.2018 to 31.3.2019)**
Depreciation	6886.42	8697.25	8712.11	8716.27	8733.37
Interest on Loan	7712.47	8871.00	7982.00	7081.00	6202.00
Return on Equity	9791.88	10326.12	10341.80	10348.71	10396.94
Interest on Working Capital	1509.95	1807.55	1817.58	1830.25	1846.66
O&M Expenses	6362.87	8244.92	8741.30	9274.91	9840.26
Sub-total	**32263.60**	**37946.84**	**37594.78**	**37251.14**	**37019.23**

5. The Respondents, RUVNL (Rajasthan Urja Vikas Nigam Limited) on behalf of beneficiaries JVVNL, JoVVNL and AVVNL has filed a common reply vide affidavit dated 27.8.2021. The Petitioner vide its affidavit dated 4.10.2021 has filed its rejoinder to the said reply. The matter was heard on 23.8.2022 and the Commission vide Record of the Proceeding (ROP), directed the Petitioner to submit certain additional information and accordingly, reserved its order in the matter. In compliance thereof, the Petitioner vide

affidavit dated 29.9.2022, has submitted the additional information (also revising Form 9A, Form 9Bi, Form 9C, Form 9D, Form 11, Form 13, Form 16 and Form 18) after serving copies of the same, on the Respondents. The Respondents RUVNL vide affidavit dated 24.11.2022, has filed its reply on the additional information filed by the Petitioner. In response, the Petitioner vide affidavit dated 21.12.2022, has filed its rejoinder to the said reply. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner, on prudence check, as stated in the subsequent paragraphs.

Capital Cost

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

> *"9. Capital Cost:*
> *(3) The Capital cost of an existing project shall include the following:*
> *(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
> *(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
> (c) *expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15."*

7. The Petitioner has considered the closing capital cost of Rs. 169081.03 lakh, as on 31.3.2014, and has also submitted that the same is without prejudice to the appeal(s) (Appeal No. 171/2016 and Appeal No. 373/2017) filed by it and pending before Appellate Tribunal for Electricity (APTEL). The Commission vide its order dated 3.5.2017 in Petition No. 255/GT/2014 had allowed the closing capital cost of Rs. 169081.03 lakh, as on 31.3.2014. Accordingly, in terms of Regulation 9 of the 2014 Tariff Regulations, the closing capital cost of Rs. 169081.03 lakh has been considered as opening capital cost as on 1.4.2014, for the purpose of truing up of tariff for the period 2014-19.

Additional Capital Expenditure

8. Clause (3) of Regulation 7 of the 2014 Tariff Regulations provides that the application for determination of tariff shall be based on admitted capital cost including

any additional capital expenditure already admitted upto 31.3.2014 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the period during 2014-15 to 2018-19. Regulation 14 of the 2014 Tariff Regulations, provides as under:

9. Regulation 14(3) and 14(4) of 2014 Tariff Regulations provides as under:

"14(1) The capital expenditure in respect of the new project or an existing project 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, in accordance with the provisions of Regulation 13;
(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and
(v) Change in law or compliance of any existing law:
Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.

(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work after the cut-off date may be admitted by the Commission, subject to prudence check:
(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;
(ii) Change in law or compliance of any existing law:;
(iii) Deferred works relating to ash pond or ash handling system in the original scope of work; and
(iv) 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.

(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:
(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;
(ii) Change in law or compliance of any existing law;
(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;
(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;
(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 liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;
(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal/lignite based stations or transmission

system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) 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) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(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:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, 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. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite-based station shall be met out of compensation allowance:

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.

(4) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of decapitalization shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalized."

Projected additional capital expenditure allowed vide order dated 3.5.2017 in Petition No. 255/GT/2014

10. The details of the projected additional capital expenditure allowed vide order dated 3.5.2017 in Petition No. 255/GT/2014 is summarized as under:

(Rs. in lakh)

Sl. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Additional capital expenditure	304.90	0.00	0.00	0.00	0.00	304.90

Sl. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
2	Discharged of Liabilities	0.00	0.00	0.00	0.00	0.00	0.00
	Total Additional capital expenditure	**304.90**	**0.00**	**0.00**	**0.00**	**0.00**	**304.90**

11. The Commission vide its order dated 3.5.2017 in Petition No. 255/GT/2014 had allowed the projected additional capital expenditure of Rs 304.90 lakh towards phosphate dozing pump, vibration meter, battery operated trolley, cutting machine, ladders, pulling & lifting machines, pipe bending machines, shaft alignment device, torque wrenches, master level indicator, sump pump, effluent disposal pump, magnetic separators, portable fire extinguishers etc.

12. The Petitioner, in Petition No.255/GT/2014, had claimed (i) total additional capital expenditure of Rs1056.90 lakh in 2015-16 towards hydraulic jack, main oil pump, emergency oil pump, HP IP Rotor, LP rotor, power hack saw machine, drilling machine, for modification and up-gradation, vacuum cleaner, rotor for generator etc., (ii) total expenditure of Rs 2252.00 lakh in 2016-17 towards drilling machine, HP IP rotor, tractor, dozer, transformer ratio meter, oil filled transformer, infra-red camera, etc., (iii) total additional capital expenditure of Rs 4885.00 lakh in 2017-18 towards N-pit pump, LP rotor, Compressor/DG set, weather monitoring system, transport air compressor, welcome fountain, civil structure, Rotor for generator, modification work, 1600 KVA dry type transformer, replacement of wireless system, photocopier etc. and (iv) total additional capital expenditure of Rs 728.00 lakh in 2018-19, towards phosphate dozing pump, hot well makeup pump, ACW pump, MWCW pump, up-gradation of DCS software module, Instrument air compressor, building, four wheeler shed, RCC drain work, workshop machines & tools, generator tools, lab equipment's, retrofitting of 33 KV SF6 breaker etc. However, the Commission vide its order dated 3.5.2017 had granted liberty to the Petitioner to claim these items along with proper justification and the details of these assets with relevant provisions of the regulations, at the time of truing-up of the

tariff of the generating station.

13. The cut-off date of the generating station is 31.3.2015. Accordingly, the additional capital expenditure claimed by the Petitioner (on cash basis) for the period 2014-19 is shown as under:

Items c*laimed under Regulation 14(1)(i)* of the 2014 Tariff Regulations

14. The additional capital expenditure claimed by the Petitioner in 2014-15 under Regulation 14(1)(i) of the 2014 Tariff Regulations is discussed below:

(Rs. in lakh)

Sl. No.	Head of Work /Equipment	2014-15	Justification
1	4 Wheel Battery Operated Platform Trolly-4000 Capacity	6.56	The equipment's are installed at strategic locations throughout BTPS and hence the transportation of materials for maintenance consume more time if done manually. Also, some heavy spares which could not be transported manually needs to be transported by vehicles. the trolleys were procured for materials transportation within a short duration thus reducing critical equipment's downtime resulting in energy & revenue savings.
2	Primary Injection Test Set	7.79	The testing kit is necessary for preventive maintenance testing of existing contactors, bimetal relays and as high current injection source for any other purpose like CT ratio measurement. This ensures effective preventive maintenance as well as breakdown maintenance, thereby ensuring reliability of equipment's in-service.
3	Automatic Relay Testing Kit	33.49	The testing kit is necessary for preventive maintenance as well as breakdown maintenance testing of all types of numerical and electromechanical relays in-service in thermal station. This ensures reliability of protection system for fault detection and subsequent isolation of faulty section in case of electrical faults, thereby saving critical equipment's in-service. It is also being used for preventive as well as breakdown maintenance testing of Energy meters, transducers, bimetal relays, etc.
4	On-Line Dc Earth Fault Locator	5.20	Equipment is used for locating and rectifying DC earth fault and thus improves efficiency of the plant by prevention of tripping.
5	Testing Transformer (0-5) Kv.	0.92	The test kit is required for preventive as well as breakdown maintenance testing of electric motors, insulators and cables. This

			ensures the healthiness and reliability of the equipment in-service. It is also essential to identify and rectify the fault in the system to bring back the equipment's immediately into service and to keep up the production.
6	Wall mounted Axial Flow Fan	3.60	Ash handling system in Thermal evacuates the ash generated pneumatically. For this air compressors are used. The hot air generated in compressors has to be necessarily sent out of the compressor room. For this wall mounted exhaust fans are installed.
7	Rectifier Type (D.C) Welding Machine	0.74	For carrying out welding works at site during emergency break down conditions and to avoid interruption of generation.
8	NEC Sl1000 EPABX System	1.52	Since the old EPABX system had become obsolete the same had to be purchased to match with newer instruments of the market, the system which can support existing Exchange of AO & thermal without any troubleshooting.
9	Wireless E1 Link with Pri Between Exchanges	10.20	In BP three exchanges are there at Thermal Service Building, Administration Office Building and Township Administration Office. These Telephone Exchanges are connected to each other through BSNL OFC but due to frequent cable problem, NLCIL had procured two numbers of Outdoor units and two numbers of Indoor Units for each location, in total six numbers of Indoor Units and six numbers of Outdoor units were purchased.
10	Wireless Telephone System (5 Sets) BTPS to IGNP	13.93	Indira Gandhi Canal is the only source of water to fulfill BTPS water requirement. Total five locations are there between BTPS and IGNP (i.e. Reservoir, OST-2, Pump-2, OST-1 and Pump-1) for proper supply of water, so it was necessary to establish connectivity between all these five locations for smooth operation activity without any interruption. All the locations between BTPS and IGNP are in remote areas where getting mobile signal coverage was very difficult. Installation of multipoint wireless communication was absolutely necessary for day to day activity of IGNP. Then we established point to point communication (Reservoir to OST-2, OST-2 to Pump-2, Pump-2 to OST-1 and OST-1 to Pump-1) between all locations from BTPS to IGNP.
11	Water Pipeline Grid & Rain Gun At Silo Area	5.03	At silo area, fly ash is conveying to Brick Manufacturing companies and Cement manufacturing companies. Due to movement of lorries, fly ash is mixed in air and results in air pollution. To suppress the ash, a waterline has been laid and Rain guns provided.
12	Kent Ro15 lph 1 No. in Boiler Operation Services	0.18	Providing of potable drinking water supply is prime requirement, hence one RO is

			installed to in Boiler Operation Services.
13	Ip Based CCTV Surveillance Camera System-Thermal M	16.03	The Intelligent Bureau (IB) and C1D team of NLC BTPP had recommended after the security audit to establish the IP based surveillance CCTV camera system at 12 locations in the main station building of BTPP with the control station at CISF material gate for the men and material movement surveillance purpose.
14	Network Connectivity For NIC Intranet & ABT monitoring	23.69	The network connectivity through Optical Fibre Cables is not available at Switchyard, Mines and UCB. The ABT Monitoring System and other Intranet application users are finding difficult in carrying out the computer related web application works as the speed is very slow due to the telephone wire connectivity through modems etc.. To improve the present slow speed computer web-based application operation, the present modem connectivity through telephones wire have to be replaced with OFC connectivity.
15	Hp Scanjet G 4010	0.61	To troubleshoot, resolve and restore the network connectivity faster, a desktop PC was not efficient, and hence a laptop for LAN Network Troubleshooting was procured. Moreover, due to increase in computerization of various processes and work which includes online web application development like BP Intranet Website, Switch Yard-UCB Reports, HVBS, Daily Production Report etc., a dedicated development desktop was purchased.
16	Hp Laptop Pavillion 15-No12tx	0.48	
17	Dell Make Desktop Computer With Ups Emerson Make	0.54	
18	Hp LaserJet 401dn Printer	0.31	
19	42 Inch LED TV of Lg Make Full Hd For Audit Room	0.60	For official Meetings on day to day activities for presentation and display.
20	Room Heater 4 Nos.	0.08	Provided at Guest House due to extreme climate condition.
21	Erection & Commissioning of 245 kV Cvt & Ct-Energy Meter System	1.82	Value addition to existing assets
22	Construction of Waiting Shed Outside Material Gate BTPP	0.03	
	Sub-Total (A)	**133.34**	

15. The Petitioner has claimed additional capital expenditure for the aforesaid assets (serial nos. 1 to 22 above) for Rs 133.34 lakh in 2014-15 under Regulation 14(1)(i) of the 2014 Tariff Regulations. Considering the submissions of the Petitioner and since the actual expenditure incurred is within the original scope of work and is within the cut-off date of the generating station, the claims of the Petitioner, as above, is allowed under Regulation 14(1)(i) of the 2014 Tariff Regulations.

Items claimed under Regulation 14(1)(ii) of the 2014 Tariff Regulations

16. The Petitioner has also claimed additional capital expenditure in 2014-15 under Regulation 14(1)(ii) of the 2014 Tariff Regulations, as under:

(Rs. in lakh)

S. No.	Head of Work /Equipment	2014-15	Justification
1	Split AC 2 ton hot & cold type 1 no.	0.53	In Barsingsar Thermal and township, to ensure safety and security, patrolling of the plants and township are done by CISF. Since climatic conditions are extreme, split AC 2 ton hot & cold type are necessary.
2	2 Nos 1 kw roof top solar power system	3.10	Solar panels were used for lighting requirements in the pumping station so as to promote green energy and reduces auxiliary consumption also.
3	Heavy duty radial drilling machine-40 mm drill cap	3.25	For carrying out drilling works outside electrical workshop on emergency break down works at site and to avoid interruption of generation.
4	Construction of truck parking area in front of silo weigh bridge	4.21	A parking area constructed at Silo area, for vehicles taking Fly ash. This ash conveyed through truck and lorries.
5	Storage shed for conveyor & pulleys	19.29	Storage shed was constructed near warehouse to provide storage area for Conveyor and Pulleys for use of Lignite handling system to protect extreme climatic conditions.
6	Roof & open shed for stack yard near warehouse	74.94	A storage shed (Warehouse) has been constructed and the same is now being utilized for the take care of the need to store the mandatory spares handed over by the Package contractors and the equipment/tools/materials purchased for 0&M activities by NLC. to accommodate some of the materials stacked outside the building along the plinth. Some materials like MS pipes and clamps stacked in the open yard adjoining the warehouse.
7	Stock yard for stacking cable east of 33 kv sub station	3.55	Stock yard was constructed to stack the cable in systematic way and the requirement was received from the Electrical maintenance /BTPS.
8	16" Sheetal fiber body air cooler-for guest house	0.06	Air cooler is necessary due to extreme weather conditions to facilitate good health for employees
9	Folding wooden iron cot 2 nos.-staff room-hospital	0.06	Cot for General Hospital Out Patient room for checking the patients
10	Compactor 2 nos. for storing record in account centre	3.94	For keeping official records and all vouchers at place in organized manner so that it can be retrieved easily in future. The same was required for better handling of important official records of all payment and all accounting vouchers.
	Sub-Total (B)	**112.93**	

17. The Petitioner has claimed total additional capital expenditure of Rs 112.93 lakh for the aforesaid assets (serial nos. 1 to 10 above) in 2014-15, under Regulation 14(1)(ii) of the 2014 Tariff Regulations. Considering the submissions of the Petitioner and since

the actual expenditure incurred is within the original scope of work, but deferred for execution and is within the cutoff date, the claim of the Petitioner, as above, is allowed under Regulation 14(1)(ii) of the 2014 Tariff Regulations.

Items claimed under Regulation 14(1)(v) of the 2014 Tariff Regulations

18. The Petitioner has further claimed additional capital expenditure of Rs 19.26 lakh towards assets as detailed below, in 2014-15, under Regulation 14(1)(v) of the 2014 Tariff Regulations:

(Rs. in lakh)

Sl.No.	Head of Work /Equipment	2014-15	Justification
1	Additional street light-west side boundary wall in BTPS	5.71	For surveillance and prevention of unauthorized and suspected laundering near west side boundary of plant which are required for safety of the plant.
2	1 no. high mast lighting tower in thermal silo area	5.84	For surveillance and prevention of unauthorized and suspected laundering near west side boundary of plant which are required for safety of the plant
3	DC handling system	1.18	Ash handling system in Thermal evacuates the ash generated pneumatically. Since this is a critical location, uninterrupted lighting supply is required. Whenever AC supply fails. DC lighting supply provides adequate illumination for AHS activities.
4	Storewell plain with 4 shelves almirah 2 Nos-safety	0.41	Two numbers of storewel plain with 4 shelves almirah was procured due to need for safety of plant for keeping first aid medicines as per rules laid under Rajasthan Factory Rules (Rules-67) and it is statutory requirement.
5	Maruti omni ambulance 1 no.	3.10	Out of the two Ambulances available, one is positioned at Lignite Mines and another one is positioned at Thermal Power Plant to meet out any emergency. At the time of Purchase there was no Ambulance was available at Occupational Health Centre, Lignite Shakthi Nagar, Barsingsar. The committee constituted for the improvement of Medical Facilities at Barsingsar Project recommended as "An Ambulance (Preferably Maruti Omni) may be stationed at Occupational Health Centre, Barsingsar Project."
6	Water cooler 2 nos.-safety & fire services	0.36	For safe drinking water of workmen at site. Since the site is situated at a remote location and to prevent health related issues for employees.
7	25 lph (5nos.) & 50 lph kent RO elite model water purifier	2.65	Providing of potable drinking water supply is prime requirement, hence one RO is installed to Guest House, Mines Office (two nos.), one RO at AHS control room, one RO at thermal canteen and one installed at AO building.
	Sub-Total (C)	**19.26**	
	Total (A)+(B)+(C)	**265.52**	

19. Regulation 14(1)(v) of the 2014 Tariff Regulations provides for the consideration of additional capital expenditure incurred on account of 'Change in law or for compliance of any existing law'. It is noticed that the Petitioner has claimed expenditure for assets like Street light, High mast lighting tower, almirahs, ambulance, water cooler and water purifier, but has not submitted any documentary evidence or notification of any statutory authority or agency, in support of its claim towards change in law or for compliance to any existing law. In view of this, the claim of the Petitioner under this head, is not allowed.

Items claimed under Regulation 14(3)(iii) of the 2014 Tariff Regulations

20. The Petitioner has claimed the following additional capital expenditure during the period 2015-19 under Regulation 14(3)(iii) of the 2014 Tariff Regulations, which are discussed below:

(Rs. in lakh)

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
1	Storewell plain with 4 Shelves Almirah	1.22	-	-	-	1.22	Two numbers of storewel plain with 4 shelves almirah was procured due to need for safety of plant for keeping first aid medicines as per rules laid under Rajasthan Factory Rules (Rules-67) and it is statutory requirement.	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the Rajasthan Factory Rules (Rules-67). In view of this, the claim of the Petitioner is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	1.22
2	Hardware & Software for uploading	2.35	-	-	-	2.35	The continuous emission monitoring system	The Petitioner has claimed the said expenditure	2.35

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	Data to RSPCB						parameters (CEMS) from the stack are to be transmitted to RSPCB and CPCB through central station. As per the Pollution Control Board norms, The Rajasthan State Pollution Control Board (RSPCB) has given show cause notice under Air (Prevention & control of Pollution) Act, 1974. So the required system is installed and continuous data uploading is done to RSPSB & CPCB servers. Therefore, the same acquisition is on account of compliance of statutory law.	as a statutory requirement in terms of the Rajasthan State Pollution Control Board norms. In view of this, the claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	
3	Self-Oscillating Water cum foam monitor 2 nos.	9.96	-	-	-	9.96	Two numbers of self-oscillating water cum foam monitors were procured due to need for safety of plant as advised by Indian standard (IS:3034/1993-Fire Safety of Industrial Buildings: Electrical generating and distribution	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the Indian Standard (IS:3034/1993- Fire Safety of Industrial Buildings. In view of this, the claim of the Petitioner is **allowed**	9.96

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							station: Code of practice) Also self-oscillating water cum foam monitors is required to combat the fire at higher elevations such as- lignite carrying conveyor system, boiler and turbine, oil storage tanks up to 35-40 meters vertical length. Statutory requirement	under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	
4	2 nos. masonry sump & drain improvement inside TPS	12.15	-	-	-	12.15	As per MOEF and PCB, zero discharge was committed in the BTPP. To achieve the "0" discharge of CW blow down water and boiler IBD water in the thermal plant area, about 10 Km length of Drains were constructed for proper drainage of discharge plant maintenance water and rain water. The plant drainage network was carried out under RC-04 package. As per that two numbers of drain outlets were provided for the drainage	The Petitioner has claimed the said expenditure as a statutory requirement in terms of MOEF, GOI and PCB notifications. In view of this, claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	12.15

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							network of the entire plant i.e. one at the North West side of the thermal plant boundary and another one at middle of west end near lake without making any provision collection sump at dead end. However, huge amount of water from guard pond, the boiler IBD outlet water and CW blow down water in addition to leakage water from fire hydrant line are also being discharged continuously in the storm water drain network. The depth of outlet drain at the exit points is about 3m and the existing ground level inside and outside of the plant boundary is higher the bed level of the drain. Due to above, water is stagnating in the above outlets and also creating back flow in the upstream side. During the rain, the drainage problem is		

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							experienced in the plant area due to the back flow of water. Moreover, the drainage waters stagnated in the low lying area near compound wall on western side of thermal boundary. To meet out the problem, two masonry sumps were constructed for immediate solution & future requirement. Statutory requirement.		
5	Chain link fencing around BTPP Reservoir	0	11.58	0	0	11.58	The action was taken to provide kerb wall after the incident in BTPS, wherein one contract labour met with fatal accident. While matter has been examined by the department of Factory and Boiler GoR, it was suggested to have fencing over the bund to strengthen the safety and avoid untoward incident, chain link fencing has been proposed. To provide chain link fencing a small height (25cm) kerb	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the Department of Factory and Boiler Government of Rajasthan. In view of this, the claim of the Petitioner is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	11.58

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							wall otherwise also essential to ensure grip at bottom and avoid dry grass, plastic items to fall inside the reservoir. Statutory requirement.		
6	Installation & commissioning of continuous Ambient Air Quality Monitoring Station (CAAQMS) System BTPP	-	-	110.15	-	110.15	During the visit of Rajasthan State Pollution Control Board (RSPCB) officials to BTPP on 03.02.2014, they insisted that Continuous Ambient Air Quality Monitoring Station (CAAQMS) including metrological system (Weather Monitoring System) are to be established thermal plant. This was highlighted in the environment cell meeting also by the members of BTPS. During discussion with RSPCB, it has been informed that AAQ parameters have to be measured at 7 locations in BTPP.	The Petitioner has claimed the said expenditure as a statutory requirement in terms of Rajasthan State Pollution Control Board (RSPCB). In view of this, the claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	110.15

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							In view of the above, CAAQMS Parameters including metrological system (Weather Monitoring System) is very much essential to fulfill the statutory obligation of RSPCB.		
7	BP/Quality monitoring system	-	-	-	4.89	4.89	Quality Monitoring System was installed at BTPS as per statutory requirements. Central Pollution Control Board has issued a notification for National Ambient Quality Standard dated IS11' Nov 2009. As per the notification statutory compliance ambient air quality monitoring should be earned out in annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hours at uniform intervals. Also as per the	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the notification of the Central Pollution Control Board. In view of this, the claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	4.89

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							Ministry of Environment & Climate Change (MoEF &CC) Environment Clearance guidelines we have to submit the reports of the concentration parameters like SO2, NOx, PM2.5 and PM 10 to State pollution Control Board and MoEF & CC along with surrounding area also. This work will be only carried out by NABL or MoEFF &CC accredited laboratories..		
8	15 No. of Industrial lockers with 18 compartments	-	-	-	2.3	2.3	Industrial lockers are needed on account of need for safety of plant to keep personal protective equipment's in safe custody as per rules laid under Rajasthan Factory Rules 1951 (Rules-65-K&L) and to fulfill the non-compliance given by the Senior Inspector of Factories & Boilers, Bikaner, Government of Rajasthan.	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the Rajasthan Factory Rules 1951 (Rules-65-K &L). In view of this the claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	2.30

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
9	High pressure water mist cum compressed Air Foam	-	-	-	48.48	48.48	Eight numbers of high capacity water mist system-based fire extinguishers were procured on account of need for safety of the plant as advised by National Disaster Management Authority, Government of India.	The Petitioner has claimed the said expenditure as a statutory requirement in terms of the National Disaster Management Authority, Government of India. In view of this the claim of the Petitioner, is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations..	48.48
10	Online Oxygen Analyser 2 nos.	6.25	-	-	-	6.25	BTPS RA1, there are two Oxygen Analyzers in each unit for the measurement of oxygen concentration of flue gas before the air pre-heater on both sides in the boiler. The measurement of oxygen concentration in flue gas plays a very vital role as it ascertains the complete combustion inside the boiler. Oxygen measurement at Tubular Air Pre-Heater (TAPH) outlet (on both pass	The claim of the Petitioner is not covered /pertain to any statutory requirement. Further, the Petitioner has not furnished any documentary evidence or notification in support of these claims. Further, as the claim of the Petitioner against items such as Online Oxygen Analyser 2 Nos., Electrification Work for Newly Const Tea Stall, Electrification	0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							of ESP inlet duct) is required for ascertaining air ingress and leakage in TAPH of both units. These provisions are not available from the beginning of the plant itself. With this oxygen reading boiler efficiency can be ascertained. It is proposed to buy two numbers of oxygen probe & analyzer to install at unit 2 TAPH outlet.	Work of New Sheds At Ware House TP, Three Phase Transformer Turns Raio Tester 1 No., Ac/Dc HV Test With Accessories, Providing Safety Toe Wall at Reservoir, Construction of Tea Stall Outside Gate No.2 of Bt, Chain Link Fencing & Ramp For Ware House Extension, Parking Shed for Battery Operated Vehicle In BTPP, Providing Closed Shed for Rejected Matrl/Warehouse, Ladies Toilet And Rest Shed Inside BTPP, Two Numbers of Watch Tower at Thermal, Construction of Boundary Wall at Silo Area of BTPP, 18.5 Inch Led Monitor-13 Nos., 18.5 Inch Led Monitor-13 Nos., Desktop	
11	Electrification work for newly constructed Tea Stall	4.37	-	-	-	4.37	The TEA STALL are constructed in BTPS for welfare of the employees working in power station. Since power supply is required for illumination and other purposes.		0.00
12	Electrification work of new Sheds at Ware House TP	2.62	-	-	-	2.62	The ware house is used to store consumables and spares required for operation and maintenance of Thermal plant. Since power supply is required for various		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							activities in store.	Computer I3 with 4 Gb Ram, Laptop I5 & 4gb Ram, Purchase Of 2 Water Purifier System, Supply, Instal And Commis. of Silo Lighting In AHS, Electronic Weighing Machine/ Thermal Canteen, Wireless System Between Ta & Guest House of BTPP, Kent RO 3 Nos (25lph In Ta,50 LPH Canteen & Fire ST, Blue Star Deep Freezer 1 No. for Canteen in Thermal, Construction of Tea Stall/ Beeda Stall Inside BTPP, Hydraulic Operated Mobile Floor Crane-2ton Capacity, Toilet Facility at Labor Colony/Outside Thermal, Construction Of 2 & 4 Wheeler Vehicle Parking In BTPS, ABT Energy Meter	
13	Three phase Transformer turns Raio Tester 1 No.	6.16	-	-	-	6.16	There are approximately 150 nos. of Power Transformers in BTPS. The kit is necessary for turns ratio, phase shift and excitation current measurement of these Power transformers as well as automatic detection of transformer winding configuration. This test kit is important to check the healthiness of the transformer windings, thereby ensuring healthiness and reliability of the transformers in-service.		0.00
14	AC/DC HV Test with Accessories	9.31	-	-	-	9.31	The test set is required for preventive as well as breakdown maintenance testing of motors, generators, switch-gears, cables, busbars, bushings, insulators and other electrical equipment's. This ensures the healthiness and reliability		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							of the equipment in-service. It is essential to identify and rectify the fault in the system to bring back the equipment's immediately into service and to keep up the production	For Feeder 4 Nos., New Fire Hydrant Line INCD Hydro Test In Ware House, Digital Photocopier Machines 2 Nos.(1 AO & 1 TPS), Wall Mounting Fan 18 Inch Sweep In	
15	Com. of ABT-Energy Mgt (ABT-EMS) Monitoring System-BP	16.84	-	-	-	16.84	The day to day block wise energy export to grid from BTPS is to be monitored by shift engineer to avoid penalty and maximize the revenue from power sales. For this day to day declarations (DC), schedules (SG) are fed by shift engineer from their client PC. Communicatio n with energy meters is taken care by the server installed at switchyard. The data received from energy meters is processed and displayed in Shift energy meters is processed and displayed in shift engineer PC and net export to the grid is	Thermal 9 Nos., Prov & Fixing Chain Link Fencing at IDCT 1-2 at BTPS, Purchase Of Kent Ro/Purifier 50 LPH at UCB, Providing Concrete Flooring & Pavor Block In Silo, Supp & Inst Of Automatic Sliding Gate At Silo Bp, Construction Of Storage Room Near Pt Plant At BTPP, Const Of Sump & Laying PVC Pipeline Near Borewell 5, Infra-Red Thermal Imaging Camera With 320 X 240, Proc Of 2 No. Chain Electric Hoist/Capicit y-1/5 Me, Purchase Of 10 No. Led Tv	0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							continuously monitored to avoid penalty charges. For achieving this, necessary supporting hard ware like energy meters, computer server, client PC and software were purchased and commissioned.	For Guest House, 1 No. Oxide Scale Thickness Measuring Instrument, Purchase of 1 No. Pipe Grooving Machine Size 12 Ca, Supply, Installation and	
16	Providing Safety Toe Wall A-at Reservoir	6.19	-	-	-	6.19	Water is being conveyed from IGNP to Thermal and being stored in Reservoir. The reservoir is having two parts - Dead and Live Reservoir. The depth of reservoir is 7 meter. Since the labour is being engaged to cut the vegetation and any other maintenance works, as per safety point of view and safety committee recommendations, it was proposed to construct toe wall at around of reservoir.	Commissioning of Ip Based CCTV Surveillance, Bp/Flame Photometer, Barsingsar Project Biological Oxygen Demand (Bod) Incubator, Portable Oil Filtration Unit, 1 No. Uv Visible Spectrophotometer, Ultrasonic Flowmeter Portable Type, Laser Shaft Alignment Tool Kit With Accessories., Package Project of High Energy Drain	0.00
17	Construction of Tea stall outside Gate No.2 of BTPS	9	-	-	-	9	The workmen and visitors used to enter from Gate no. 2 of BTPS. Therefore, two nos. Tea and Beeda stall	System, Complete Set of ,Low Head Hydraulic Jack, Capacity 50 T, 2 No. Low Head	0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							were provided at Gate no. 2 of BTPS. Since Near BTPS, no such facility was available, it was proposed to provide these two shops near Waiting shed.	Hydraulic Jack 20 Ton, 1 No. Of Three Jaw Hydraulic Puller Capicity50 Ton, Three Jaw Hydraulic Puller Capicity10 Ton, Online Portable Leakage Current Monitor, Bp_4 Channel Vibration Data Collector Analyzer, Bp/Online Oxygen Analyser, 3 Phase, 380/415/440v , 600 Amps, Dc Welding Rectifier, Compactor for Contractor and Purchase Division, 3 Tr Tower Type Ac (18 No.S), Purchase Of Refrigerator for Guest House, 26 Nos Of Premium Executive Chairs High Back, Video Conferencing System At BTPS Service Building, 8 No. Purchase of Water	
18	Chain Link Fencing & Ramp for Ware House Extension	4.51	-	-	-	4.51	The open shed was constructed outside south east of warehouse as per requirement of user department. User department i.e. stores department requested to provide fencing around open shed to annex it to come under warehouse area. Fencing has to be provided for safety of materials that are going to be stacked there & for security reasons. A ramp was also required to connect existing warehouse and newly constructed open shed as the level between the two are different.		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
19	Parking shed for Battery operated vehicle In Btpp	4.79	-	-	-	4.79	3 no.s of battery operated vehicles are now in use for boiler, turbine maintenance division & AHS Division at BTPP. The above vehicles were required to be parked near maintenance bay under covered condition for the safety of above vehicles. Hence It is proposed to construct 3 no. cover shed of for parking the above three vehicles.	Purifier Ro 40 LHP & Kent Mineral Ro+25lph are in the nature of tools & tackles or repair and maintenance which can be met from the normative O&M expenses allowed to the generating station, the claim of the Petitioner *(@Sl. no.10 to 76*) is not **allowed.** However, additional capital expenditure such as ID FAN MOTOR is of the nature of capital spares and shall be allowed in capital spares when put to use. Therefore, the Petitioner is granted liberty to claim the same under capital spares when actually put to use.	0.00
20	Providing closed shed for rejected Material/Warehouse	5.19	-	-	-	5.19	A store for rejected material was required in warehouse, so a request has been made by the user Department for providing the closed shed for Warehouse in BTPP.		0.00
21	Ladies Toilet and Rest Shed Inside BTPP	5.32	-	-	-	5.32	During the environmental meeting held at BTPP on 19.08.2013, considering the importance of keeping a neat and tidy working area inside the plant it was pointed		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							out that the toilets which are meant for the employees inside the service building and nearby plant building are also being used by contract laborers. It was also pointed out that the air conditioned common areas inside the service building and nearby buildings are also used as a resting place by contract labourers. This unauthorized use is making these toilets nasty and occupied most of the time during lunch breaks. In view of the above mentioned necessity and to streamline it for long run, it is proposed to provide two waiting sheds with toilets one for ladies near LDO storage area and one for gents near Lignite Handling System area.	. .	
22	Two numbers of watch	5.26	-	-	-	5.26	Considering the location of BTPP in the border area		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	tower at thermal						and importance from security point of view, the CID & IB state special branch has been visiting our plant and review meetings are conducted on regular basis. Based on the above & Meeting held between NLC, CISF and IB & CID Team at Project Head chamber in Thermal, Construction of 2 more nos. watch tower in east & west direction of BTPS was done.		
23	Construction of Boundary wall at Silo area of BTPP	6.28	-	-	-	6.28	Silos are situated at outside of. BTPS. Brick manufacturing companies and cement companies are taking fly ash from silos. Since the area was open and fly ash spillage was spreading here and there. To make restrict the area and systematic traffic, it was proposed to construct boundary wall at silo.		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
24	18.5 INCH LED MONITOR -13 NOS.	0.88	-	-	-	0.88	In Barsingsar Project, all the activities of AO, BTPS, MINE and TA were computerized and connected through the NLC intranet. Computers that were there in service for operation and maintenance activities of Barsingsar Projects was having CRT monitors. These monitors were completed their service life and suffer breakdown frequently. Due to this, various official, operational and maintenance process like OL1MMS Purchase, Contracts and Bill payments were getting delayed. Considering the above facts 13 nos of 18.5 INCH LED MONITOR were purchased.		0.00
25	HP make Laptop 1 No. HP make I3 Desktop Computer-2 Nos.	1.5	-	-	-	1.5	1 no. of HP i5 Laptop and 2 nos. of HP i3 Desktops were purchased to carry out the official work.		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
26	Desktop computer I3 with 4 Gb Ram	9.51	-	-	-	9.51	In Barsingsar Project, all the activities of AO, Thermal, Mines and TA were computerized and connected through the NLC intranet. By the time, only 75 nos. of computers were available and in service for operation and maintenance activities of Barsingsar Projects. Considering the increasing online process, activities and number of employees, additional 19 nos. of Desktops and 1 no. of i5-4GB RAM Laptop were purchased to carry out the official works.		0.00
27	Laptop I5 & 4gb Ram	0.55	-	-	-	0.55			0.00
28	Purchase of 2 water Purifier System	0.86	-	-	-	0.86	Providing of potable drinking water supply is prime requirement and RO is installed at CISF barracks		0.00
29	Supply, Install and Commissioning of Silo Lighting In AHS	4.99	-	-	-	4.99	The ash generated from boiler is transported to silos. From Silos ash is evacuated by buyers through lorries		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							throughout the day. For illuminating this area Supply, Installation and Commissioning of Silo lighting is done.		
30	Electronic Weighing Machine/Thermal Canteen	0.07	-	-	-	0.07	Required in thermal canteen for daily routine		0.00
31	Wireless System between TA & Guest House of BTPP	2.89	-	-	-	2.89	NLC official, Delegates/VIPs stay at Guest house during their official visits to BTPS. Earlier telephone cables were used to provide intranet in Guest House and that was frequently getting disturbed, because of that sometimes one executive had to stay in Guest House during the NLC official visit in BP. For avoiding any type of problem Wireless system provided between TA and Guest House.		0.00
32	Kent Ro 3 Nos (25 lph in TA, 50 lph Canteen &	1.4	-	-	-	1.4	Providing of potable drinking water supply is prime requirement, hence one RO is installed to		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	Fire Station)						Thermal canteen, one installed at TA office of LSN and one installed at fire station		
33	Blue Star Deep Freezer 1 No. for Cantee In Thermal	0.28	-	-	-	0.28	Required in Thermal Canteen to preserve edible items.		0.00
34	Construction of Tea Stall/ Beeda Stall Inside Btps	11.32	-	-	-	11.32	2 nos tea Stall/Beeda stalls were constructed for refreshment of workmen at two different locations inside BTPS. One is near 200 W road junction and one is near LHS Control room. The most of the workmen are working near these areas..		0.00
35	ID FAN MOTOR	67.37	-	-	-	67.37	1. Spare motor is not available for ready replacement in case of emergency to avoid generation loss.		0.00
							2. The lead time for procurement of new motor is about 15-18 months.		
							3. The repair and rectification work will also take 6-9		

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							months approximately. 4. The ID Fan motor is a specially designed by BHEL to operate at variable frequency and non-standard voltage of 690 volts.		
36	Hydraulic Operated Mobile Floor Crane-2 ton Capacity	-	2.41	-	-	2.41	The blower room is located in the separate housing at boiler side. During the overhauling period the blower /ducts/blower parts which are heavier have to be handled for dismantling and assembly. Since the clearance in the mating parts is very less, during assembly of blower, small adjustment is required for fixing the components into the blower hosing. Hence with the help of hydraulic operated mobile crane this fine adjustment will be done. Hence the transportation / Lifting /shifting of blowers/ spares will be more effective.		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							The availability of machines will be increased due to lesser in down time.		
37	Toilet Facility at Labor Colony/outside Thermal	-	1.57	-	-	1.57	Major over hauling and major modification works of Unit - II & Unit - I of Barsingsar Thermal Power Plant was planned in the month of April - 2016 & July - 2016 respectively and about 125 workers will be engaged for this work from other states. In order to get executed the major overhauling works and major modification works and bring back both units within shortest possible time, accommodating labour at the nearby area will be much helpful. The plant is situated at a remote place and there is no nearby lodging facility.		0.00
38	Construction of 2 & 4 wheeler vehicle	-	29.99	-	-	29.99	During the construction activities of plant some parking facility was provided		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	parking in BTPS						near site office main gate. After commissioning of the plant, the service building is being utilized for accommodating official day to day activities and the existing parking sheds are not adequate enough to park the hired vehicles and personal vehicles of the executives, employees and visitors. It is a long pending work of providing the parking shed and already commitments were made to CISF and Superintendent of Police. In order to resolve the problem regarding parking of four wheelers and two wheelers inside the Thermal Power Plant premises, necessity has arisen for construction of suitable parking sheds.		
39	ABT Energy meter for	-	4.28	-	-	4.28	Due to implementation of ABT in		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	feeder 4 nos.						Rajasthan the meters were installed. These meters are necessary for accurate billing of energy exported to the grid. Therefore, the acquisition of the said capital item was required to fulfill the norms of CERC for billing on scheduled energy.		
40	New Fire Hydrant line in ware house	-	11.55	-	-	11.55	In BTPS, fire hydrant system is installed throughout the plant for handling any fire hazard thus ensuring uninterrupted power generation. However, in the BTPS ware house area, which is designated as a very high potential fire hazard area fire hydrant lines are not installed during construction of ware house. Unit level safety committee recommended erecting fire hydrant lines with sufficient hydrant points to meet any undue fire		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							emergency. To comply with the safety committee recommendation and in order to mitigate the emergency that may arise due to undue fire accidents, 500 Metres of pipe lines are erected above ground level with sufficient numbers of fire hydrant points around the ware house area. The pipeline erection work consists of ground work, pipeline installation work along with sufficient numbers of hydrant points and pipelines painting with anti-corrosive paint.		
41	Digital Photocopier Machines 2 Nos. (1 Ao & 1 Tps)	-	4.96	-	-	4.96	These photocopiers machines had served more thn their life time from the date of commissioning. thereafter frequent breakdowns and problems were encountering in these machines. AMC firm also had expressed their difficulties		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							to rectify the problems encountered in the in the photocopier machines due to the non-availability of the spares in the market and these models also had been discontinued from 2012.		
42	Wall mounting fan 18 inch sweep in Thermal 9 nos.	-	0.32	-	-	0.32	Used in various locations inside Thermal plant. Essentials for working.		0.00
43	Providing & fixing chain link fencing at IDCT 1-2 At BTPS	-	9.31	-	-	9.31	Cooling tower consisting basin, which are full of water every time. In Rajasthan, sand storms are occurring frequently. Plastic and fine material used to fly in basin and it leads to choking of pumps. As per safety concern and operational view of BTPS, it was proposed to provide chain link fencing all round the IDCTs.		0.00
44	Purchase of KENT RO/Purifier 50 lph AT UCB	-	0.55	-	-	0.55	Providing of potable drinking water supply is prime requirement, hence one RO is installed to		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							UCB control room		
45	Providing concrete flooring & Paver block in SILO	-	-	30.9	-	30.9	AHS division for smooth movement of transport vehicles during rainy and summer season and phase lifting of site office surrounding area. A proposal was initiated to provide concrete flooring and paver block in silo as per user division requirement.		0.00
46	SUPP & installation of automatic sliding gate at SILO BP	-	-	4.69	-	4.69	It is essential to monitor the area and for the surveillance of traffic movement at silo. Hence it has been proposed to provide automatic cantilever sliding gate at Silo, BTPP.		0.00
47	Construction of storage room near PT plant at BTPP	-	-	13.33	-	13.33	Construction of a shed to store the NaOcl (Sodium hypo chloride) near the PT plant which is very sensitive to sunlight and as per guidelines to be stored in a covered shed.		0.00
48	Construction of	-	-	4.88	-	4.88	To meet out the MoU		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
	SUMP & laying PVC pipeline near BOREWELL 5						targets achievement for horticulture, a location near Swaroopdeasr road was marked. Since the location was outside BTPS and no water supply source available near the site. Therefore, it is proposed to Construct sump for water storage and chain link fencing to protect the area from cattle. To develop green belt, a sump was constructed and pipelines were connected for distribution.		
49	Supply, formation of 11 KV ring main system at BP	-	-	61.65	-	61.65	Ring main system was commissioned to prevent redundancy of power supply in key areas and thereby prevent tripping of plant. The existing 11 KV Network has been established in different phases and different time periods as per the load requirement of the Project and		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							additional works carried out to strengthen the same. The current proposal is to interconnect the T7 location to ITC by overhead line for making an overall ring main system for the peripheral load of BTPS. The same is essential to provide alternate Power supply and to ensure uninterrupted power supply to all locations- A.O, Guest house, STP, Township, BW5, Mines and ITC.		
50	Infra-red thermal imaging camera with 320 X 240	-	-	5.22	-	5.22	In BTPS 2xl25MW Units, the power evacuation to Grid is through 220KV switchyard having ten numbers of bays. The Critical equipment's like Isolators, Breakers, Current Transformers, Capacitive Voltage Transformers, Power Transformers, Conductors,		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							Cables, and Lightning Arresters are in continuous service and needs regular monitoring and maintenance. Due to extreme climate condition the equipment's sustain heavy fault currents and cause the failure of internal components, termination joints and connectors as temperature raises during faults and in turn replacement of the equipments. By regular monitoring of temperatures of all these equipments, the breakdowns can be minimized by taking a timely corrective action and preventive maintenance. The thermal image camera is a very good tool for accurate & wide temperature measurements , superior thermal imagining capabilities		

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							and scalable P-I-P thermal images for identification of faults as early as possible and prevent generation loss.		
51	2 no. chain electric hoist//capacity-1/5 me	-	-	3.94	-	3.94	The cooled water from the IDCTs is fed in to the forebay of CWPH after filtering, for which two numbers of plate type screen filters are installed at the basin exit channel of each cooling tower. These screen filters are getting choked frequently. In order to clean the filters, the filters should be lifted from the guide channel and moved out. 4 These manually operated chain pulley blocks installed during commissioning is aged and more time taking process. 6 In order to carry out the work with the minimum available workforce and to ease out the lifting & moving operation, the "electrically		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							operated chain hoist with electric travelling trolley" were installed in place of the existing aged chain pulley block at CT - 1 and CT - 2.		
52	Purchase of 10 No. LED TV for guest house	-	-	4.15	-	4.15	Installed in rooms of BTPS Guest House where officials visiting to BTPS.		0.00
53	1 No. Oxide scale thickness measuring instrument	-	-	5.42	-	5.42	The oxide scale thickness measuring instrument is procured for measuring the thickness of the oxide scale thickness inside of the high temperature and high-pressure tubes. In the final super heater and final Re heater coils the temperature is more and the silica and other metal element will be oxidised and separated from the DM water. This will reduce the heat transfer and inner dia of tube. Due this effect the flow restriction and localised more heating will be will arises. Due to more		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							localised heating and more pressure the tube wall thickness will be reduced due to bulging that leads to failure of the pressure parts tube. Hence to avoid tube failure the oxide scale thickness will be measured and the required rectification will be done by replacement of tubes/acid cleaning		
54	Purchase of 1 No. pipe grooving machine size 12 CA	-	-	5.5	-	5.5	Since the existing pipelines in PT plant and DM plant have served over eight years, age related failures & punctures are frequently occurring due to wear & tear. As the rate of punctures per unit length is observed to be more, it is proposed to replace the pipeline of length measuring 750 meters each of size 100 NB, 150 NB and 200 NB using the modified pipe jointing method. In order to clamp		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							the pipe coupling for joining two different pipes, groove needs to be formed at the respective ends of the pipe to be coupled for which the pipe grooving machine was purchased and the same is used for successful completion of the pipe replacement work.		
55	Supply, Installation and Commissioning of IP based CCTV Surveillance	-	-	-	10.71	10.71	In Barsingsar project, 18 nos. of HD IP based PTZ CPPlus CCTV surveillance cameras are working at various locations of BTPS and Mines gate. To enhance / improve the security system further, it has been decided to extend the CCTV camera system to TA, CISF Barracks. and various other locations of Thermal with the already established control station at CISF material gate for surveillance of men and		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							material movement.		
56	BP/Flame PHOTOMETER	-	-	-	0.61	0.61	Frequent breakdown of Flame Photometer leads to interruption of analysis which is a serious concern to Boiler water analysis and DM water analysis. One Flame Photometer supplied by M/s Thermax by the package contractor in the year 2009 is being used to carry out the activities. In view of this, it is felt prudent to procure one new Flame Photometer		0.00
57	Barsingsar Project Biological Oxygen Demand (BOD) Incubator	-	-	-	0.73	0.73	In Chemical laboratory analysis of Biological Oxygen Demand (BOD) in Sewage treated water and effluent treated water is being earned out at regular intervals. The BOD in Sewage and effluent water result is reported every month to RSPCB, Jaipur and Bikaner to meet out statutory		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							requirement and in this connection BOD incubator is used to measure the BOD. One BOD incubator supplied by M/s Thermax by the package contractor in the year 2009 is being used to carry out the activities. The reliability of this instrument is observed to have come down during these 9 years of operation as it is unable to maintain the constant temperature bath. Frequent breakdown of BOD incubator instrument lead to interruption of analysis which is a serious concern to the lab activities.		
58	Portable Oil Filtration Unit	-	-	-	4.52	4.52	The oil is in continuous circulation when the turbine is in service. Purity and cleanliness of lubrication oil plays a vital role in trouble free operation of the Turbo-Generator. During continuous circulation, the		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							oil quality gets degraded due to impurities generated during wear and tear, dirt, rust etc. Excessive particulate matter in the oil will lead to bearings damage which requires complete replacement or repair of the bearings thus resulting in generation loss, for healthy operation of the Turbo-generator, duplex filters of 25 microns are installed in the existing oil system, for purifying the oil.		
59	1 No. UV visible SPECTROPHOTOMETER	-	-	-	6.51	6.51	The analysis report (chemical parameters like silica, ammonia, phosphates, iron in Boiler water, DM water and NoX) is being given to the UCB every four hours daily for safe boiler operation and to the DM plant. Silica slip will cause serious concerns to the boiler tubes		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							and turbine blades. One double beam spectrophotometer supplied by M/s Thermax, the package contractor in the year 2009 is being used to carry out the activities. Frequent breakdown and its repair lead to interruption of analysis which is a serious concern to Boiler water analysis and DM water analysis. In this context it is felt prudent to procure one new spectrophotometer for the Lab.		
60	Ultrasonic flowmeter portable type	-	-	-	4.96	4.96	Ensuring sufficient oil flow through the bearings is vital for uninterrupted power generation as insufficient oil flow may lead to complete bearing failure. In the existing system, lube oil flow measurement to the individual bearings is not available; hence flow optimization is		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							being carried out by non-scientific measurement method. In view of incorporating scientific methodology for flow measurement, portable ultrasonic flow meter was procured.		
61	Laser shaft alignment tool kit with Accessories	-	-	-	5.12	5.12	In all the rotating equipment (BFPs, CEPs, DMCWs, CWPs, CT fans), ensuring correct alignment of driver and driven is highly critical for healthy operation of the equipment's. Improper alignment of the equipment's may lead to overheating of couplings, fatigue failure, bearing failure and uncontrollable vibrations which will result in non-availability of the equipment's. As the conventional Rim-Face method of alignment using dial		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							gauges which is being used at present is time consuming and dependent of skill level of the user, laser shaft alignment equipment is procured for incorporating scientific method for alignment measurements .		
62	Package Project of High Energy Drain System	-	-	-	8.86	8.86	BTPS - C&I - Procurement of Temperature Scanner, thermocouple and cables for efficiency improvement & monitoring (High Energy Drain). To improve the performance and plant efficiency, temperature of line after drain valve have to be remotely monitored in DCS. Depending on the temperature indication in DCS, immediate action is to be initiated to arrest leakage. As per the requirement of operation, it is necessary to monitor the temperature of		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							drain valves for 36 numbers at boiler and for 90 numbers at turbine for both units.		
							In order to measure the temperature at various locations of boiler & turbine, total 126 nos of thermocouple with weld pad and 12 nos of temperature scanner were required for both units and was installed.		
63	Complete set of, low head hydraulic jack, capacity 50 T	-	-	-	0.63	0.63	For alignment process, the equipment's should be moved axially and radially from their respective position till the correct alignment readings are ensured. For adjusting the heavier equipment's, hydraulic jacks are used for shifting but for some of the equipment's viz., Boiler Feed Pumps, DMCW pumps etc., adjustment is highly difficult and time consuming due to non-availability of sufficient		0.00
64	2 No. low head hydraulic jack 20 Ton	-	-	-	0.55	0.55			0.00
65	1 No. of three JAW Hydraulic puller 50 Ton	-	-	-	4.05	4.05			0.00
66	1 No. of three jaw Hydraulic puller capacity 10 Ton	-	-	-	1.44	1.44			0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							space for installing regular jacks. In order to overcome this difficulty, low head hydraulic jacks are procured		
67	Online portable leakage current monitor	-	-	-	9.96	9.96	The measurement of resistive component is vital for understanding the healthiness of the arrestor which needs to be extracted from the total leakage current. Now, reliable on line measuring instruments are available in the market which operates on IEC recommended methods. These instruments analyses the LA total leakage current and helps to assess the condition of Lightning Arrestors. Based on the findings / results, planned replacements of LA can be carried out. In 220kV Switchyard all lighting arresters were commissioned		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							in 2007 by M/s BHEL /TBG for RA7 package. All Lighting arrester are in service last 10 year onward. Since testing of lightning of arresters is essential for safety of the critical electrical equipments like generator and transformer etc. one number of Online Leakage Current Monitor for Lightning Arrestors was purchased.		
68	BP_4 channel vibration data collector analyzer	-	-	-	21.83	21.83	The main function of the condition monitoring division is to periodically measure and monitor the conditions of all critical rotating equipments of the power plant on regular basis, to assess the condition of the rotating equipments in advance before breakdown.		0.00
							Further maintaining the records of data / information collected from		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							the field and to predict the equipments condition in advance by analyzing the data / records and to suggest remedial action to the concerned maintenance and operation departments, to take corrective measures in the form of adjustment in the operation parameters or to plan for preventive maintenance at the appropriate time, to enhance the performance of the critical rotating equipments and there by performance of BTPP. This will result in savings of our financial resources towards major repair of the equipments or replacement of the total equipment. This will further reduce the duration of Equipment outage and also minimize the partial loss of generation in BTPP.		

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
69	BP/Online Oxygen analyzer	-	-	-	8.97	8.97	BTPS RA1, there are two Oxygen Analyzers in each unit for the measurement of oxygen concentration of flue gas before the air pre-heater on both sides in the boiler. The measurement of oxygen concentration in flue gas plays a very vital role as it ascertains the complete combustion inside the boiler. Oxygen measurement at Tubular Air Pre-Heater (TAPH) outlet (on both pass of ESP inlet duct) is required for ascertaining air ingress and leakage in TAPH of both units. These provisions are not available from the beginning of the plant itself. With this oxygen reading boiler efficiency can be assessed. It is proposed to buy two numbers of oxygen probe & analyzers to		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							install at unit 1 TAPH outlet.		
70	3 PHASE, 380/415/440V, 600 AMPS, DC welding rectifier	-	-	-	1.21	1.21	Lignite handling division, BTPS is carrying out maintenance works in conveyors, structural fabrication and reconditioning of conveyor frames, tail ends, drive heads, feeders, crushers and screens. No welding rectifier and portable welding sets are available in LHS division. Welding machines are to be brought by contractor. Works got delayed due to non-availability of the welding machines. It is planned to provide the welding machines for future contracts to smooth maintenance work.		0.00
71	Compactor for contractor and Purchase division	-	-	-	2.65	2.65	For keeping official records and all tender documents at place in organized manner so that it can be retrieved easily in future. The same was		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							required for better handling of important official records of all tender documents and agreements/Pos/WOs and all agreement files in an organized manner.		
72	3 TR Tower Type AC (18 No.s)	-	-	-	25.51	25.51	Any failure of HVAC may affect the generation drastically and also non-availability of the HVAC system even for a short duration will result in the failure if critical electronic modules and components of the DCS and the other related systems. There are 130 numbers of Distributed Processing Units (DPU) in DCS panels located in the Main Control room. These DPUs are in continuous service for generation of power and they are to be kept in temperature-controlled atmosphere only. When the panel temperature		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							exceeds 50 degree Celsius, an alarm will come. Further increase in temperature will result in failure of DPUs. Apart from these VFD and UPS room are also to be equipped with tower type ACs To avoid generation loss and also to safeguard these high cost DPUs during peak summer/failure of main AC plant, these Tower type AC units are to be procured and commissioned.		
73	Purchase of Refrigerator for Guest House	-	-	-	0.41	0.41	Procured refrigerator for Use in Guest house for preserving edible items.		0.00
74	26 Nos of Premium executive chairs high back	-	-	-	3.79	3.79	Due to round the clock usage by varied operating executives, most of the chairs are now in dilapidated condition and are beyond repair. The rate of wear and tear of chairs in the above area is more as they are put into use for 24 x 365		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
							days. The present condition of the chairs is found not to be suitable for further continuous use. Moreover, these chairs have served their expected life by the extensive usage of more than four and half years. Hence it is felt necessary to replace all the 20 chairs with ergonomically comfortable chairs, taking into account of unhealthy/ damaged, shabby condition of the existing chairs.		
75	Video conferencing system at BTPS service building	-	-	-	35.54	35.54	Video Conferencing system was installed in Barsingsar Project for the time to time meetings and conferences that happens between various units, joint ventures and regional offices of NLC India Ltd. First floor hall was identified for the installation and commissioning of the VC room for BP.		0.00

S. No.	Head of Work /Equipment	2015-16	2016-17	2017-18	2018-19	Total	Justification	Reason for admissibility	Amount allowed
76	8 No. purchase of water purifier RO 40 LHP & KENT Mineral RO+25LPH	-	-	-	2.65	2.65	Providing of potable drinking water supply is prime requirement, hence one RO is installed in Thermal station for Employees and installed at Community Hall.		0.00
	Total	**219.37**	**76.52**	**249.84**	**216.88**	**762.60**			**203.09**

Value Addition

21. The Petitioner has claimed total value addition of Rs. 461.17 lakh i.e. (i) Rs. 222.19 crore towards Main Plant Package-TBG-RA I - Unit II, Rs. 227.75 lakh towards Main Plant Package-TGB-RA-1 Unit-I under Regulation 14(3)(v) of the 2014 Tariff Regulations, (ii) Rs. 4.38 lakh towards Mini Exchange of 64/120 Lines in A.O. Building under Regulation 14(3)(vii) of the 2014 Tariff Regulations (iii) Rs. 6.68 lakh towards 220 kV Switch Yard & Transformer RA-7 Package under Regulation 14(2)(iv) of the 2014 Tariff Regulations and (iv) Rs. 0.17 lakh towards Plant inter-communication system under Regulation 14(3)(v) of the 2014 Tariff Regulations in 2015-16. The Petitioner has also claimed Rs. 38.42 lakh i.e. Rs. 10.52 lakh towards Network Connectivity for NLC Intranet & ABT Monitor, Rs. 5.09 lakh towards Main Plant Package-TBG-RA I-Unit-II, Rs. 5.09 towards Main Plant Package-TGB-RA-1 Unit-I and Rs. 17.74 lakh towards 100T Capacity Portable Pitless Electric Weighbridge.

22. The Respondents have submitted that no justification has been submitted by the Petitioner for claiming value addition in 2014-15. They have also submitted that the work for “main plant package-TBG-RA 1” and similar works claimed by the Petitioner in 2015-16, though included in the original scope of work, has been incurred after the cut-off

date. The Respondents have further submitted that Regulation 14(3) of 2014 Tariff Regulations deals with works beyond the original scope of work and beyond the cutoff date and hence the expenditure claimed for these works are not admissible. In addition, these Respondents have submitted the following:

(a) "Mini Exchange of 64/120 Lines in A.O. building" claimed in 2015-16 under Regulation 14(3)(vii) of 2014 Tariff Regulations, are not applicable to coal/lignite generating stations. Also, the claim has not been substantiated with technical justification and by documentary evidence.

(b) "220 KV switch yard & Transformer RA-7 package" claimed in 2015-16 under Regulation 14(2)(iv) of 2014 Tariff Regulations, is without any reasons for withholding the payments and hence, the claim may be rejected.

(c) "Plant inter communication system" claimed in 2015-16 under Regulation 14(3)(v) of 2014 Tariff Regulations, is without adequate justification and under inappropriate provisions of the Regulations.

(d) The expenses for "Network connectivity for NLC intranet & ABT monitor" claimed in 2016-17 under Regulation 14(3)(vii) of 2014 Tariff Regulations is within the original scope of work but incurred after the cut-off date. However, the above Regulations is not applicable to coal/ lignite stations. Hence, the claim is made under inappropriate provisions of the Regulations.

(e) The expenses for "Main plant package- TGB-RA-1" claimed in 2016-17 under Regulation 14(3)(v) of 2014 Tariff Regulations, is stated to be within the original scope of work. However, Regulation 14(3) does not deal with work under original scope. Hence, the claim of the Petitioner is inadmissible.

(f) The expenses for "100T capacity portable pitless elect. weighbridge" is claimed in 2016-17 under Regulation 14(3)(vii) of 2014 Tariff Regulations. However, the said Regulation is not applicable to coal/ lignite stations. Hence, the claim should be supported with technical justification and documentary evidence, which has not been furnished by the Petitioner.

23. In response, the Petitioner has submitted that the value addition is included within the original scope of work, but could not be completed within the cut-off date. The Petitioner has also submitted that such amounts due and payable to the contractors could only be affected, as and when the specific performance of the contractual obligations have been completely fulfilled, more particularly on the aspect of the Performance guarantee compliances.

24. The matter has been considered. It is observed that in justification of the

abovementioned claim, the Petitioner has stated that these works pertain to the original scope of work, which were completed and capitalized within the cut-off date, but only the balance payments, which were withheld, were released to the vendors, after performance of the contractual obligations. Considering the fact that the said expenditure incurred by the Petitioner pertains to the original scope of work of the project and that the payment to the vendors were made after completion of the defect liability period against certain packages, and after reconciliation and closure of contracts, the additional capital expenditure claimed by the Petitioner in respect of the works namely, Main plant package-TBG-RA I -Unit II (Rs. 227.28 lakh i.e. Rs. 222.19 lakh in 2015-16 and Rs. 5.09 lakh in 2016-17), Main plant package-TGB-RA-1 Unit I (Rs. 232.84 i.e. Rs. 227.75 lakh and Rs. 5.09 lakh), Plant Inter communication system (Rs. 0.17 lakh in 2015-16) under Regulation 14(3)(v) of the 2019 Tariff Regulations and 220 KV switch yard & transformer RA-7 Package (Rs. 6.68 lakh in 2015-16) is **allowed**. It is also observed that the Petitioner has claimed additional capital expenditure towards Network connectivity for NLC Intranet & ABT monitor (Rs. 10.52 lakh in 2016-17) and 100T capacity portable pit less electric. weighbridge (Rs. 17.74 lakh in 2016-17) under Regulation 14(4) of the 2014 Tariff Regulations, which is applicable in case of decapitalization of assets. It is however evident from the justification furnished by the Petitioner, that the said additional capital expenditure claimed is within the original scope of work, which was deferred for execution and has been incurred after the cut-off date. In view of this, the claim is **allowed** in relaxation of under Regulation 14(3)(v) of the 2014 Tariff Regulations. However, the additional capital expenditure claimed by the Petitioner towards Mini Exchange of 64/120 Lines in A.O. Building under Regulation 14(3)(vii) of the 2014 Tariff Regulations is **not allowed**, as the same is applicable to generating stations other than coal/lignite-based stations.

25. Based on the above discussions, the additional capital expenditure for the period 2014-19 is allowed as under:

(Rs. in lakh)

Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
14(1)(i)	133.34	0.00	0.00	0.00	0.00	133.34
14(1)(ii)	112.93	0.00	0.00	0.00	0.00	112.93
14(1)(v)	0.00	0.00	0.00	0.00	0.00	0.00
14(2)(iv)	0.00	6.68	28.25	0.00	0.00	34.93
14(3)(iii)	0.00	25.68	11.58	110.15	55.68	203.09
14(3)(iv)	0.00	0.00	0.00	0.00	0.00	0.00
14(3)(v)	0.00	450.12	10.17	0.00	0.00	460.29
14(3)(vii)	0.00	0.00	0.00	0.00	0.00	0.00
14(4)	0.00	0.00	0.00	0.00	0.00	0.00
Total	**246.26**	**482.47**	**50.01**	**110.15**	**55.68**	**944.57**

Decapitalization

26. The Petitioner has claimed decapitalization of Rs. 19.81 lakh (i.e., Rs. 3.38 lakh in 2015-16 and Rs. 16.43 lakh in 2016-17) under Regulation 14(4) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that these assets were decapitalized as these became unserviceable. Regulation 14(4) of the 2014 Tariff Regulations provides that the original value of de-capitalized assets shall be deducted from the capital cost allowed to the generating station. Accordingly, the de-capitalization of these assets claimed by the Petitioner is allowed as under:

(Rs. in lakh)

Name of the Asset	Year of Put to use	2015-16	2016-17	Total
Water Treatment Plant- DM Plant & PT Plant RA-5	Dec-2011	3.18	0.00	3.18
Circulating water & fire protection system-RA 4	Dec-2011	0.21	0.00	0.21
Compound Wall in Plant Boundary	Jul-2006	0.00	16.16	16.16
BTPP Ladies Toilet and rest shed inside	Sept 2015	0.00	0.03	0.03
BTPP Parking shed for Battery operated vehicle	Sept 2015	0.00	0.16	0.16
BTP Prov & fixing chain link fencing at IDCT 1-2 AT	Jan 2017	0.00	0.08	0.08
BTPP closed shed for rejected material/ warehouse	Jul 2015	0.00	0.00	0.00
Total		**3.38**	**16.43**	**19.81**

Exclusions

27. The Petitioner has claimed exclusion as detailed below:

(Rs. in lakh)

	2016-17	2018-19	Justification of the Petitioner	Reasons for admissibility
Ash Handling System (RA-3)	244.66	0.00	The Original cost of asset capitalized is Rs. 27.90 Crore out of which Rs. 4.89 Crore is the value reduction to the asset. The value reduction of Rs. 2.45 crore is on account of battement to the capital cost of RA-3 Package towards LD withheld. Since the LD has already been adjusted by CERC in truing up order for 2009-14 dated 25.4.2017 (Point No 18 and 19), therefore the same should not be deducted again from the capital cost of the project. Auditor Certificate of LD enclosed in the petition. Balance Rs. 2.45 Crore, CPG encashed for non-performing of PG test and consequently value reduction was given to the package cost.	It is observed that the Commission vide order dated 24.4.2017 in Petition No. 130/GT/2016 has observed that the petitioner has recovered Liquidated Damages amounting to Rs 111.89 crore and Accordingly, the Commission has considered 50% of the LD amount of Rs111.89 crore towards adjustment in capital cost of the generating station. Owing to the above observation, the Commission in the said order had disallowed the total LD of Rs 55.94 cr. The Petitioner in Form 9Bi has claimed total decapitalization of Rs 8084.56 lakh during the period 2014-19 of which Rs 2689.86 has been recovered as depreciation till date of decapitalization. Further, the Petitioner has claimed total amount of Rs 55.94 Cr under exclusion i.e. Rs 524.35 lakh during 2016-17 and Rs 5070.15 lakh during 2018-19, which is the amount disallowed by the Commission in the said order dated 24.4.2017. Accordingly, the value of exclusion claimed of Rs 55.94 lakh during 2016-17 and 2018-19 has been considered for the purpose of exclusion.
Interplant Communication System (RB-2)	18.87	0.00	The Original cost of asset capitalized is Rs. 1.52 Crore out of which Rs. 16.69 Lakhs is the value reduction to the asset towards LD. Since the LD has already been adjusted by CERC in truing up order for 2009-14 dated 25.4.2017 (Point No 18 and 19), therefore the same should not be deducted from the capital cost of the project. Auditor Certificate of LD is enclosed for your verification.	
Compound Wall in Plant Boundary	16.16	0.00		
Main Plant Package-TGB-Ra-1 Unit I	0.00	3417.90	-	

	2016-17	2018-19	Justification of the Petitioner	Reasons for admissibility
Main Plant Package-TBG-Ra I -Unit II	0.00	3417.90	-	
220 KV Switch Yard & Transformer Ra-7 Package	0.00	712.76	-	
	524.35	**7548.56**		

28. Accordingly, the exclusions allowed are as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Claimed	0.00	0.00	524.35	0.00	7548.56
Allowed	0.00	0.00	524.35	0.00	5070.15
Not Allowed	0.00	0.00	0.00	0.00	2478.41

Un-discharged liabilities & Discharge of liabilities

29. The Petitioner has claimed the discharge of liabilities as follows:

(Rs. in lakh)

Name of Asset	Discharge of liability
RA1 - Main Plant Package	4354.31
RA7 - Switchyard	49.64
RA2 - Lignite Handling System	234.25
RA3 - Ash Handling System	6.86
RA4 - Circulating Water System & Fire Fighting System	16.66
RA5 - DM & PT Plant	1.69
RA6 - Chimney & Cooling Tower	221.74
RA8 - Water Carrier System	27.42
RB2- Inter Plant Communication System	16.18
Consultancy Services	65.27
Total	**4994.02**

30. The Respondents have submitted that there are no details of the undischarged liabilities claimed by the Petitioner and there is also no justification for the expenditure, or on the amount included in Form 9A in 2014-15. They have therefore submitted that no amount should be allowed to the Petitioner, without the requisite details being furnished by the Petitioner. In response, the Petitioner has submitted that the Commission vide order dated 25.4.2017 in Petition No. 130/GT/2014 had permitted the consideration of discharge of liabilities in 2014-15 at the time of truing -up of tariff and

therefore, the Petitioner has claimed the discharge of liabilities as submitted in Petition No. 130/GT/2014 in 2014-15.

31. The matter has been considered. It is observed that the Commission vide order dated 10.7.2015 in Petition No. 197/GT/2013 had considered the total undischarged liability of Rs. 12011 lakh at the time of COD of the generating station (20.1.2012). Further, the Commission vide order dated 25.4.2017 in Petition No. 130/GT/2014 had allowed the discharges of Rs. 1500.80 lakh and Rs. 6465.63 lakh in 2012-13 and 2013-14 respectively. Accordingly, the undischarged liability as on 1.4.2014, works out as Rs. 4044.57 lakh. However, the Petitioner has claimed discharge of liabilities for Rs. 4994.02 lakh in2014-15. Hence, these discharges have been restricted to the amount of undischarged liability as on 1.4.2014. Accordingly, the discharges of liabilities, allowed for the period 2014-19 is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Discharges claimed	4994.02	0.00	0.00	0.00	0.00
Discharges allowed	**4044.57**	0.00	0.00	0.00	0.00

32. Accordingly, the undischarged liability, as on 31.3.2015, is 'Nil'.

Capital Cost for the period 2014-19

33. Accordingly, the capital cost approved for the period 2014-19 is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost (A)	169081.03	173371.86	173850.95	173884.53	173994.68
Add: Addition during the year / period (B)	246.26	482.47	50.01	110.15	55.68
Less: Decapitalization during the year /period (C)	0.00	3.38	16.43	0.00	0.00
Add: Discharges during the year /period (D)	4044.57	0.00	0.00	0.00	0.00
Less: Exclusion not allowed (E)	0.00	0.00	0.00	0.00	2478.41
Closing Gross Block (F) = (A+B-C+D-E)	**173371.86**	**173850.95**	**173884.53**	**173994.68**	**171571.95**
Average Gross Block (G) = (A+F)/2	171226.45	173611.41	173867.74	173939.61	172783.31

Debt-Equity Ratio

34. Regulation 19 of the 2014 Tariff Regulations provides as follows:

> *"19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014 the debt equity ratio would be considered as 70:30 as on COD. 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:*
> *(i) where equity actually deployed is less than 30% of the capital cost actual equity shall be considered for determination of tariff:*
>
> *(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
>
> *(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.*
>
> *Explanation - The premium if any raised by the generating company or the transmission licensee as the case may be 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 only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*
>
> *(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system as the case may be.*
>
> *(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014 debt equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.*
>
> *(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014 but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014 the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.*
>
> *(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 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 (1) of this regulation."*

35. The gross normative loan and equity amounting to Rs. 118356.72 lakh and Rs. 50724.31 lakh, respectively, as on 1.4.2014, as considered in order dated 3.5.2017, has been retained for the purpose of tariff. Further, the additional capital expenditure approved above has been allocated to debt and equity ratio of 70:30. Accordingly, the debt-equity ratio in respect of the generating station, as on 1.4.2014 and as on

31.3.2019, is as under:

(Rs. in lakh)

	Capital cost as on 1.4.2014		Net Additional Capital Expenditure 2014-19		Capital cost as on 31.3.2019	
	Amount	**(%)**	**Amount**	**(%)**	**Amount**	**(%)**
Debt (A)	118356.72	70.00%	1743.64	70.00%	120100.36	70.00%
Equity (B)	50724.31	30.00%	747.28	30.00%	51471.59	30.00%
Total (A+B)	**169081.03**	**100.00%**	**2490.92**	**100.00%**	**171571.95**	**100.00%**

Return on Equity

36. Regulation 24 of the 2014 Tariff Regulation provides as under:

"24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.
(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the 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:
Provided that:

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:
ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:
iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometer."

37. Regulation 25 of the 2014 Tariff Regulations provides as under:

"Tax on Return on Equity: (1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate"
(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. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess
(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under- recovery or over recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis."

38. The Petitioner has claimed Return on Equity (ROE) after grossing up the base rate of ROE of 15.50%, with corporate tax rate of rate of 34.32% in 2014-15 and 21.34% in 2015-18 and 21.55% in 2018-19. The Petitioner has furnished the effective tax rate for 2014-15, based on the auditor certificate dated 26.8.2019. However, on scrutiny, it is observed that the calculation of effective tax rate is inclusive of penal interest of Rs. 684.30 lakh and the same has not been considered for working out the effective tax rate. Accordingly, the effective tax rate for 2014-15 works out to 33.99% and for the rest of the years i.e. 2015-19, the effective tax rate as claimed by the Petitioner is considered for the purpose of grossing up. Hence, the rate of ROE, considered for the purpose of tariff, works out to 23.481% for 2014-15, 19.705% for 2015-18 and 19.758% for 2018-19. Accordingly, ROE has been worked out as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Normative Equity-Opening (A)	50724.31	52011.56	52155.29	52165.36	52198.41
Addition of Equity due to additional capital expenditure (B)	1287.25	143.73	10.07	33.05	(-) 726.82
Normative Equity-Closing (C) = (A) + (B)	52011.56	52155.29	52165.36	52198.41	51471.59
Average Normative Equity (D) = (A+C)/2	51367.93	52083.42	52160.32	52181.88	51835.00
Return on Equity (Base Rate) (E)	15.500%	15.500%	15.500%	15.500%	15.500%

Effective Tax Rate for respective years (F)	33.990%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-Tax) (G) = (E)/(1-F)	23.481%	19.705%	19.705%	19.705%	19.758%
Return on Equity (Pre-Tax) annualized (H) = (D)*(G)	**12061.70**	**10263.04**	**10278.19**	**10282.44**	**10241.56**

Interest on Loan

39. Regulation 26 of the 2014 Tariff Regulations provides as follows:

"26. Interest on loan capital: (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.
(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.
(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of Decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset
(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.
(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:
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 or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered
(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.
(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such refinancing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.
(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.
(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute: Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

40. Interest on loan has been worked out as under:

(a) The gross normative loan amounting to Rs.118356.72 lakh as considered in order dated 3.5.2017 in Petition No. 255/GT/2014, has been retained as on 1.4.2014.

(b) Cumulative repayment of Rs. 23253.47 lakh, as considered in order dated 3.5.2017 in Petition No. 255/GT/2014, has been retained as on 1.4.2014.

(c) Accordingly, the net normative opening loan as on 1.4.2014 is Rs. 95103.25 lakh.

(d) Addition to normative loan on account of additional capital expenditure approved above has been considered.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2014-19. Further, the repayments have been adjusted for de-capitalization of assets considered for the purpose of tariff;

(f) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 10.3320% in 2014-15, 10.3000% in 2015-16, 10.2860% in 2016-17, 10.2730% in 2017-18 and 10.2610% in 2018-19. The WAROI, has been calculated by applying the actual loan portfolio existing as on 1.4.2014, along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest, the details of rate of interest, as furnished by the Petitioner, has been considered for the purpose of tariff.

41. Necessary calculation for interest on loan is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Gross opening loan (A)	118356.72	121360.30	121695.67	121719.17	121796.28
Cumulative repayment of loan upto previous year (B)	23253.47	32028.92	40926.97	49834.60	58750.40
Net Loan Opening (C) = (A) - (B)	95103.25	89331.38	80768.69	71884.57	63045.87
Addition due to additional capital expenditure (D)	3003.58	335.36	23.50	77.11	(-) 1695.91
Repayment of loan during the period (E)	8775.45	8898.72	8911.74	8915.80	8857.20
Repayment adjustment on account of de-capitalization (F)	0.00	0.67	4.11	0.00	874.38
Net Repayment of during the year (G) = (E) - (F)	8775.45	8898.05	8907.63	8915.80	7982.82
Net Loan Closing (H) =(C) +(D) -(G)	89331.38	80768.69	71884.57	63045.87	53367.14
Average Loan (I) = (C+H)/2	92217.31	85050.04	76326.63	67465.22	58206.50
Weighted Average Rate of Interest of loan (J)	10.3320%	10.3000%	10.2860%	10.2730%	10.2610%
Interest on Loan (K) = (I)*(J)	**9527.89**	**8760.15**	**7850.96**	**6930.70**	**5972.57**

Depreciation

42. Regulation 27 of the 2014 Tariff Regulations provides as under:

"27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or

the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. 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.

(3) 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: Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) alongwith justification and proposed life extension.

The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

43. The cumulative depreciation amounting to Rs. 23253.47 lakh as on 1.4.2014, as considered in order dated 3.5.2017, has been retained for the purpose of tariff. The Weighted Average Rate of Depreciation (WAROD) has been calculated in terms of Regulation 27 of 2014 Tariff Regulations and has been considered for computation of

depreciation for the period 2014-19. Accordingly, depreciation has been computed as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Average Capital Cost (A)	171226.45	173611.41	173867.74	173939.61	172783.31
Value of freehold land included in average capital cost (B)	175.00	175.00	175.00	175.00	175.00
Aggregated Depreciable Value (C) = (A-B)*90%	153946.30	156092.77	156323.47	156388.14	155347.48
Remaining aggregate depreciable value at the beginning of the year (D)=(C) - Cumulative Depreciation (shown at K) at the end of the previous year]	130692.83	124063.84	115396.49	106553.54	96597.08
No. of completed years at the beginning of the year (E)	2.23	3.23	4.23	5.23	6.23
Balance useful life at the beginning of the year (F) = 25 - (E)	22.77	21.77	20.77	19.77	18.77
Weighted Average Rate of Depreciation (WAROD) (G)	5.1251%	5.1257%	5.1256%	5.1258%	5.1262%
Depreciation during the year/ period (H) = (A) * (G)	**8775.45**	**8898.72**	**8911.74**	**8915.80**	**8857.20**
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (I) = (H) + (Cumulative Depreciation (shown at K), at the end of the previous year)	32028.92	40927.65	49838.71	58750.40	67607.61
Less: Depreciation adjustment on account of de-capitalization (J)	0.00	0.67	4.11	0.00	874.38
Cumulative depreciation at the end of the year (K) = (I) - (J)	**32028.92**	**40926.97**	**49834.60**	**58750.40**	**66733.22**

O&M expenses

44. Regulation 29(1) of the 2014 Tariff Regulations provides as follows:

> "*Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:*
> *xxxx.*
> *(d) Lignite-fired generating stations :*

Year	*125 MW Sets*
FY 2014-15	*29.10*
FY 2015-16	*30.94*
FY 2016-17	*32.88*
FY 2017-18	*34.95*
FY 2018-19	*37.15*

45. The O&M expenses claimed by the Petitioner in terms of the above regulations is as under:

Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
7275.00	7735.00	8220.00	8737.50	9287.50

46. As the normative O&M expenses claimed by the Petitioner is in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations, the same as allowed.

Water Charges

47. First proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as under:

> *"29(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:*
> *xxxxx."*

48. The Commission vide its order dated 3.5.2017 in Petition No. 255/GT/2014 had allowed projected water charges amounting to Rs.344.50 lakh during the period 2014-19. The details of the water charges allowed in the said order dated 3.5.2017 is as under:

(Rs in lakh)

Period	Projected Quantity Considered	Raw Water Charges	Water Cess	IVRCL	Projected Water charge allowed
2014-15	5432452.00	3836897.40	802923.53	11250835.20	158.91
2015-16	5432452.00	3836897.40	802923.53	0.00	46.40
2016-17	5432452.00	3836897.40	802923.53	0.00	46.40
2017-18	5432452.00	3836897.40	802923.53	0.00	46.40
2018-19	5432452.00	3836897.40	802923.53	0.00	46.40
TOTAL	**27162261.00**	**19184489.00**	**4014620.65**	**11250839.20**	**344.50**

49. Further, the Commission vide its order dated 3.5.2017 had directed the Petitioner to place on record all the relevant information at the time of truing-up of tariff.

50. Accordingly, the details for water charges comprising the water pumping charges, water cess, personal charges, O&M cost of water carrier system, spares consumption in water carrier system and power consumption charges of water carrier system have been submitted by the Petitioner, as under:

Period	Water pumping charges paid to IFGNP	Water Cess	Personnel charges	O&M Cost of water carrier System	Spares consumption in Water Carrier system	Power Consumption charges of water carrier system	Water Charges (Rs)
	1	2	3	4	5	6	7= 1+2+3+4+5+6
2014-15	3939023.00	619104.00	10462520.00	25352214.00	188871.00	21886865.00	62448597.00
2015-16	4078199.00	613384.00	11642911.00	13299499.00	678478.00	20679837.00	50992308.00
2016-17	4313305.00	650537.00	12442653.00	12155146.00	380139.00	22188195.00	52129975.00
2017-18	4439942.00	164033.00	9340174.00	18822813.00	820544.00	20153027.00	53740533.00
2018-19	3783976.00	0.00	8326878.00	24821307.00	659152.00	17684609.00	55275922.00
TOTAL	**20554446**	**2047060**	**52215139**	**94450983**	**2727189**	**102592539**	**274587335**

51. The Petitioner has claimed total actual water charges of Rs.2745.87 lakh during the period 2014-19 (i.e. Rs.624.49 lakh in 2014-15, Rs. 509.92 lakh in 2015-16, Rs.521.30 lakh in 2016-17, Rs.537.41 lakh in 2017-18 and Rs.552.76 lakh in 2018-19). It is observed from above two tables that the water charges allowed by the Commission on projection basis for the period 2014-19 is only Rs 344.50 lakh and the water charges now claimed is Rs 2745.87 lakh. Therefore, there is huge escalation on the total cost of water charges. The Petitioner in the present petition, has included Personnel charges, O&M cost of water carrier system and spares consumption in water carrier system as additional expenditure towards water charges.

52. As regards Personnel charges claimed, it is observed that the Petitioner, apart from basic pay, DA, common allowances of employees, have also included 'Other allowances' for which no justification has been submitted. The Petitioner in the Personnel charges have submitted the abstract of Manpower cost which constitutes of its own employees. Further, the Petitioner has also considered PRP of the employees in the Personnel charges. We are of the considered view that the said details of its own employees are already covered under the normative O&M expenses allowed to the generating station. Further, the Petitioner has not made out a point that the Normative O&M expenses allowed to the generating station is less than the actual O&M incurred

by the generating station. Accordingly, the Personnel charges (Basic pay, DA, Common allowance, Superannuation fund and PRP etc.) in case of Barsingsar Thermal Power Station is not allowed. As regards the water charges of the Barsingsar Thermal Power station, the Petitioner has admitted that the only source of water of the generating station is Indira Gandhi Nahar Pariyojana, and for the expenditure pertaining to the contracts for patrolling, security & safety and O&M expenses, it has separately claimed O&M cost of water carrier system, Spares consumption in water carrier system and pumping charges also.

53. As regards *O&M cost of water carrier system, it is observed that the said expenditure pertains to the contract awarded for the work of* operation and *preventive maintenance and security patrolling activities of water carrier system, contract for the work of manpower for operation of pumps and upkeeping of water carrier system, contract for the work of attending GRP pipeline puncture in water carrier system of the generating station and other contracts awarded* from *time to time for the water carrier system. Further, the spares include the total spares consumed during the period 2014-19 for consumption in water carrier system.* It is noticed that the Commission vide order dated 10.7.2015 in Petition No. 197/GT/2013, while considering the additional expenditure incurred for the work of Operation and Maintenance and Security Patrolling activities to external water carrier system had allowed the expenditure claimed by the Petitioner over and above the normative O&M expenses allowed to the generating station separately. In this background, we allow the claim of the Petitioner towards O&M cost of water carrier system and spares consumption of water carrier system separately without considering it as a part of the interest on working capital, as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
O&M expenses of water carrier system	253.52	132.99	121.55	188.23	248.21	944.51
Spares consumption in water carrier system	1.89	6.78	3.80	8.21	6.59	27.27

54. Further, the water charges paid to IFGNP, water cess and power consumption charges is allowed in the water charges claimed.

55. Based on the above discussions, the water charges allowed for the period 2014-19 is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
Water charges paid to IFGNP	39.39	40.78	43.13	44.40	37.84	205.54
Water Cess	6.19	6.13	6.51	1.64	0.00	20.47
Personnel Charges	0.00	0.00	0.00	0.00	0.00	0.00
Power Consumption charges of water carrier system	218.87	206.80	221.88	201.53	176.85	1025.93
Total	**264.45**	**253.71**	**271.52**	**247.57**	**214.69**	**1251.94**

Capital spares

56. Regulation 29(2) of the 2014 Tariff Regulations provides as follows:

> *"29(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*
> xxxx:
> *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 or special allowance or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization."*

57. In terms of the above proviso, capital spares consumed, are admissible separately, at the time of truing up of tariff, based on the details furnished by the Petitioner. The Petitioner has claimed total actual capital spares for Rs.2088.20 lakh during the period 2014-19 (i.e. Rs. 209.31 lakh in 2014-15, Rs. 336.95 lakh in 2015-16, Rs. 525.66 lakh in 2016-17, Rs.422.93 lakh in 2017-18 and Rs.593.36 lakh in 2018-19). The Petitioner has further submitted that the capital spares are not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization. The Petitioner has also submitted the auditor certificate towards capital spares

expenses. Therefore, the Petitioner has prayed that capital spares during the period 2014-19 may be allowed for recovery from the beneficiaries.

58. *The Respondents have submitted that the capital spares should be subject to prudence check for approval.* We have examined the list of the capital spares consumed by the Petitioner. It is evident from the audited statement and Form 9Bi of the respective years that capital spares claimed comprise of two categories i.e. (i) spares which form part of the capital cost and (ii) spares which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the same cannot be allowed as part of additional O&M expenses. Accordingly, only those capital spares, which do not form part of the capital cost of the project, are being considered. It is pertinent to mention that the term 'capital spares' has not been defined in the 2014 Tariff Regulations. The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view the principle of materiality and to ensure standardized practices in respect of earmarking and treatment of capital spares, the value of capital spares exceeding Rs. 1 (one) lakh, on prudence check of the details furnished by the Petitioner in Form-17 of the petition, has been considered for the purpose of tariff. Based on this, the details of the allowed capital spares considered for the period 2014-19 is summarized as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Capital Spares (not part of capital cost) claimed (A)	209.31	336.95	525.66	422.93	593.36
Value of capital spares (of Rs 1 lakh and below) disallowed on individual basis (B)	0.00	0.00	0.00	0.00	0.00
Net total value of capital spares considered (C) = (A) - (B)	209.31	336.95	525.66	422.93	593.36

59. We are also of the view that spares do have a salvage value. Accordingly, in line with the practice of considering the salvage value, presumed to be recovered by the

Petitioner on sale of other capital assets, on becoming unserviceable, the salvage value of 10% has been deducted from the cost of capital spares considered above, for the period 2014-19. Therefore, on prudence check of the information furnished by the Petitioner in Form-17 and on applying the said ceiling limit along with deduction of the salvage value @10%, the net capital spares allowed in terms of Regulation 29(2) of 2014 Tariff Regulations is as under:

(*Rs. in lakh)*

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Net total value of capital spares considered (A)	209.31	336.95	525.66	422.93	593.36
Salvage value @ 10% (B)	20.93	33.70	52.57	42.29	59.34
Net Claim allowed (C) = (A)*(B)	188.38	303.26	473.09	380.64	534.02

60. Based on the above discussions, the total annualized O&M expenses allowed for the period 2014-19 in respect of the generating station is summarized as under:

(Rs. in lakh)

		2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Installed Capacity (MW) (A)		250.00	250.00	250.00	250.00	250.00
O&M Expenses under Reg.29(1) in Rs lakh / MW (B)		29.10	30.94	32.88	34.95	37.15
Total O&M Expenses (in Rs lakh) (C) = (A)*(B)	Claimed	7275.00	7735.00	8220.00	8737.50	9287.50
	Allowed	**7275.00**	**7735.00**	**8220.00**	**8737.50**	**9287.50**
Water Charges (in Rs lakh) (D)	Claimed	624.49	509.92	521.30	537.41	552.76
	Allowed	**264.45**	**253.71**	**271.52**	**247.57**	**214.69**
Capital Spares Consumed (in Rs lakh) (E)	Claimed	209.31	336.95	525.66	422.93	593.36
	Allowed	**188.38**	**303.26**	**473.09**	**380.64**	**534.02**
Total O&M Expenses as allowed (including Water Charges and Capital Spares Consumed) (F) = (C+D+E)	Claimed	**8108.79**	**8581.87**	**9266.96**	**9697.84**	**10433.62**
	Allowed	**7727.83**	**8291.97**	**8964.61**	**9365.71**	**10036.21**

Operational Norms

Normative Annual Plant Availability Factor

61. The Normative Annual Plant Availability Factor of 75% for the period from 1.4.2014 till 19.1.2015 and 80% from 20.1.2015 till 31.3.2019, as approved by order dated 3.5.2017, in accordance with the provisions of Regulation 36 (A) of the 2014 Tariff Regulations, is allowed.

Auxiliary Energy Consumption

62. The Normative Auxiliary Energy Consumption of 11.50% for 2014-19, as approved by order dated 3.5.2017, in accordance with the provisions of Regulation 36 (E)(d)(ii) of the 2014 Tariff Regulations is allowed.

Cost of Limestone for Working Capital

63. Regulation 36(E)(iv) of the 2014 Tariff Regulations provides that the cost of limestone considered for this generating station is 0.056 kg/kWh. Accordingly, the same has been considered for the purpose of tariff.

Station Heat Rate

64. The Gross Station Heat Rate of 2547.80 Kcal/ kWh was approved by order dated 3.5.2017 in Petition No. 255/GT/2014. The Petitioner, in Form F2, has furnished the guaranteed turbine cycle heat rate of 1994.60 kCal/kWh, in terms of Regulation 36(C)(c)(i) of the 2014 Tariff Regulations. The computations for Gross Station Heat Rate of the generating station are as under:

Gross turbine cycle heat rate	Boiler efficiency	Design heat rate (kCal/kWh)	Gross station heat rate (kCal/kWh)
(A)	**(B)**	**(C=A/B)**	**(D=C*1.045)**
1994.60	81.81%	2438.09	2547.80

65. In accordance with the provisions of Regulation 36 (C) of the 2014 Tariff Regulations, Gross station heat rate of 2547.80 kCal/kWh is allowed.

Interest on working capital

66. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as follows:

"28. Interest on Working Capital:

(1) The working capital shall cover:

(a) Coal-based/lignite-fired thermal generating stations:

(i) 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;

(ii) Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;

(iii) 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;

(iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;

(v) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and

(vi) Operation and maintenance expenses for one month.

(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this regulation shall be based on the landed 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.

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof as the case may be is declared under commercial operation whichever is later.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."

Fuel Cost and Energy Charges in working capital

67. The Petitioner has claimed cost of fuel component and 2 months of energy charges in the working capital, as under:

(Rs. in lakh)

	2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
	1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Cost of lignite towards stock	1346.91	346.96	1783.66	1783.66	1783.66	1783.66
Cost of limestone towards stock	100.38	25.86	132.94	132.94	132.94	132.94
Cost of secondary fuel oil for 2 months	148.45	38.24	197.13	196.59	196.59	196.59

68. *Regulation 28(2) of the 2014 Tariff Regulations provides* for *computation of* the *cost of fuel as a part of IWC*, *to be based on the landed price and gross calorific value of the fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined.* The Petitioner has submitted that the price of lignite for the preceding three months of January 2014, February 2014 and March, 2014

considered for computing the fuel components and 2 months energy charges in working capital is subject to final decision in the appeal (Appeal No. 367 of 2017), filed against Commission's order dated in Petition No.227/MP/2015 (pertaining to the determination of trued up Lignite Transfer price for the period 2009-14), and is pending before APTEL. Accordingly, the Petitioner has adopted the lignite transfer price of Rs. 762/Tonne for the purpose of computation of Interest on working capital without pre-judice to the said appeal as under:

Weighted Landed Price of primary Fuel as per true up of the period 2009-14 (in Rs. /Tonne)	762.00
Additional O&M expenses as per Petition No. 32/MP/2018 (in Rs. /Tonne)	0.33
Total Base Price (in Rs. /Tonne)	762.33
Royalty @6% (in Rs. /Tonne)	45.74
Clean Energy Cess (in Rs. /Tonne)	50.00
Average Excise Duty paid from Jan-14 to Mar-14 (in Rs. /Tonne)	8.78
Average price from Jan-14 to Mar-14 (in Rs. /Tonne)	866.85

69. The Petitioner has also computed the lignite transfer price for the period 2014-19 in line with MOC guidelines and the same was approved by order dated 8.3.2018 in Petition No. 256/GT/2014. Further, the Petitioner has submitted that it has adopted the lignite transfer price including the impact of wage revision pursuant to the order in Petition 32/MP/2018 for the purpose of interest on working capital.

70. The Respondents have submitted that the Petitioner has not approached the Commission with fresh details of lignite transfer price considering the wage revision allowed in Petition No. 32/MP/2018 and after being granted liberty in Petition No. 27/RP/2017. The Respondents have further submitted that the additional lignite price claim of the Petitioner is erroneous and may not be allowed. The Respondents have also requested to consider the lignite price of Rs. 755 per tonne, till the time Petition No. 173/MP/2020 for true up of lignite transfer price for the period 2014-19 is adjudicated.

71. In response the Petitioner has submitted that the lignite price was already approved by order dated 3.5.2017 in Petition No. 255/GT/2014 and is subject to truing

up. It has also stated that Petition No. 173/MP/2020 has been filed in this regard and after truing up, the lignite transfer price would undergo revision for energy charge and tariff thereof.

72. We have considered the matter. The Commission vide order dated 14.3.2017 in Petition No. 227/MP/2015 had allowed the lignite transfer price Rs 755.MT for the generating station for 2013-14, which is exclusive of the clean energy cess w.e.f 1.7.2010 and excise duty on lignite and other taxes and duties, including revision of rates of royalty per tonne. Further, considering the wage revision impact in Petition No. 32/MP/2018, royalty of 6%, Clean Energy Cess and excise duty, the total lignite transfer price for 2013-14 is Rs 859.43/Ton. In case of lignite based generating stations, the lignite transfer price for the preceding 3 months means, the lignite transfer price incurred for the previous year (i.e. 2013-14 in this case). Accordingly, the lignite transfer price of Rs 859.43/MT inclusive of all the taxes & duties has been considered for computation of fuel component in working capital.

73. The Price & GCV of lignite and secondary oil as considered by the Petitioner in Form 15 and as adopted by the Commission is as under:

	As adopted by Petitioner	**As adopted by Commission**
Price of Lignite (Rs./Tonne)	866.85	859.43
GCV of Lignite (Kcal/kg.)	2664.00	2663.48
Price of Secondary fuel oil (Rs./KL)	67326.53	67328.33
GCV of Sec. Fuel oil (Kcal./Kg)	10040.00	10038.68
Price of Limestone (Rs./MT)	1099.00	1099.00

74. Based on the above, the cost of fuel components in working capital is worked out and allowed as under:

(Rs. in lakh)

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Cost of lignite towards stock corresponding to NAPAF (45 days)	1335.61	344.05	1768.70	1768.70	1768.70	1768.70
Cost of limestone towards stock corresponding to NAPAF (45 days)	100.11	25.79	132.94	132.94	132.94	132.94
Cost of Secondary fuel oil for 2 months corresponding to NAPAF	148.46	38.24	197.14	196.60	196.60	196.60

Energy Charge Rate (ECR) for calculating working capital

75. Regulation 30(6)(a) of the 2014 Tariff Regulations provides for computation and payment of Energy Charge for thermal generating stations:

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

For coal based and lignite fired stations
ECR = {(GHR – SFC x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (100 – AUX)
Where,
AUX = Normative auxiliary energy consumption in percentage.
CVPF = Gross calorific value of primary fuel as received, 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.
LC = Normative limestone consumption in kg per kWh.
LPL = Weighted average landed price of limestone in Rupees per kg.
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= Normative specific fuel oil consumption, in ml/ kWh
LPSFi= Weighted average landed price of secondary fuel in Rs/ ml during the month

76. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 100.900 Paise/kWh for the generating station based on the landed cost of lignite, wage revision impact for the period 2013-14, and is inclusive of all the taxes & duties during preceding three months, GCV of lignite & GCV and price of Oil procured and burnt for the preceding three months of the period 2014-19. Accordingly, the allowable ECR, based on the operational norms as specified under the 2014 Tariff Regulations and on weighted average of GCV is worked out as follows:

	Unit	2014-19
Capacity	MW	250
Gross Station Heat Rate	Kcal/kWh	2663.48
Auxiliary Energy Consumption	%	11.50
Weighted average GCV of oil (As received)	Kcal/lit	10038.68
Weighted average GCV of lignite	Kcal/kg	2663.48
Weighted average price of oil	Rs./KL	67328.33
Weighted average price of lignite	Rs./MT	859.43
Rate of energy charge ex-bus	**Paise/kWh**	**100.14**

Working Capital for Maintenance Spares

77. *Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses. Accordingly, maintenance spares in the working capital* claimed *is as under:*

(Rs. in lakh)

2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
1272.57	**307.32**	**1648.98**	**1748.26**	**1854.98**	**1968.05**

78. As specified in Regulation 29(2) of the 2014 Tariff Regulations, the cost of maintenance spares @20% of the O&M expenses including water charges and cost of capital spares consumed, is worked out and allowed as under:

(Rs. in lakh)

2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
1244.92	**300.64**	**1658.39**	**1792.92**	**1873.14**	**2007.24**

Working Capital for Receivables

79. Receivables equivalent to two months of capacity charge and energy charge has been worked out duly taking into account mode of operation of the generating station on secondary fuel, and allowed as under:

(Rs.in lakh)

	2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
	1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Variable Charges - for two months (A)	2089.72	538.30	2774.91	2767.33	2767.33	2767.33
Fixed Charges – for two months (B)	5356.71	1294.99	6340.84	6309.51	6225.02	6163.39
Total (C) = (A+B)	**7446.42**	**1833.29**	**9115.75**	**9076.84**	**8992.35**	**8930.72**

Working Capital for O & M Expenses (1 month)

80. O&M expenses for 1 month claimed by the Petitioner in Form-13B for the purpose of working capital is as under:

(Rs. in lakh)

2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
530.24	**128.05**	**687.08**	**728.44**	**772.91**	**820.02**

81. Regulation 28(a)(vi) of the 2014 Tariff Regulations provides for O&M expenses for one month for coal-based generating station as a part of working capital. Accordingly, the one-month O&M expenses, allowed is as under:

(Rs. in lakh)

2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
518.72	**125.27**	**691.00**	**747.05**	**780.48**	**836.35**

Rate of interest on working capital

82. In terms of clause (3) of Regulation 28 of the 2014 Tariff Regulations, the rate of interest on working capital has been considered as 13.50% (Bank rate 10.00 + 350 bps). Accordingly, Interest on working capital has been computed and allowed as under:

(Rs. in lakh)

	2014-15		**2015-16**	**2016-17**	**2017-18**	**2018-19**
	1.4.2014 to 19.1.2015	20.1.2015 to 31.3.2015	1.4.2015 to 31.3.2016	1.4.2016 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Cost of lignite towards stock corresponding to NAPAF (45 days) (A)	1335.61	344.05	1768.70	1768.70	1768.70	1768.70
Cost of limestone towards stock corresponding to NAPAF (45 days) (B)	100.11	25.79	132.94	132.94	132.94	132.94
Cost of secondary fuel oil - 2 months (C)	148.46	38.24	197.14	196.60	196.60	196.60
O&M expenses - 1 month (D)	518.72	125.27	691.00	747.05	780.48	836.35
Maintenance Spares - 20% of O&M (E)	1244.92	300.64	1658.39	1792.92	1873.14	2007.24
Receivables - 2 months (F)	7446.42	1833.29	9115.75	9076.84	8992.35	8930.72
Total Working Capital (G) = (A+B+C+D+E+F)	**10794.24**	**2667.28**	**13563.92**	**13715.05**	**13744.21**	**13872.55**
Rate of Interest (H)	13.50%	13.50%	13.50%	13.50%	13.50%	13.50%
Total Interest on Working capital (I) = (GxH)	**1457.22**	**360.08**	**1831.13**	**1851.53**	**1855.47**	**1872.79**

83. It is pertinent to mention that Interest on working capital for 2014-15 has been calculated in two parts i.e., 1.4.2014 to 19.1.2015 and 20.1.2015 to 31.3.2015, in line with NAPAF as mentioned above.

Annual Fixed Charges approved for the period 2014-19

84. Based on the above, the annual fixed charges approved in respect of the generating station for the period 2014-19 is summarized below:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Depreciation	8775.45	8898.72	8911.74	8915.80	8857.20
Interest on Loan	9527.89	8760.15	7850.96	6930.70	5972.57
Return on Equity	12061.70	10263.04	10278.19	10282.44	10241.56
Interest on Working Capital	1817.31	1831.13	1851.53	1855.47	1872.79
O&M Expenses	7727.83	8291.97	8964.61	9365.71	10036.21
Total	**39910.18**	**38045.02**	**37857.03**	**37350.12**	**36980.33**

Note: All figures under each head have been rounded off. The figure in total column in each year is also rounded off. As such, the sum of individual items may not be equal to the arithmetic total of the column.

85. Further, the reimbursement for O&M cost of Water Carrier System and Spares consumption in Water Carrier System as detailed in para 52 & 53 above, is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
O&M Cost of water carrier System	253.52	132.99	121.55	188.23	248.21	944.51
Spares consumption in Water Carrier system	1.89	6.78	3.80	8.21	6.59	27.27

86. The difference between the annual fixed charges recovered by the Petitioner in order dated 3.5.2017 in Petition No. 255/GT/2014 and the annual fixed charges determined by this order shall be adjusted in terms of Regulation 8 *(13)* of the 2014 Tariff Regulations.

87. Petition No. 366/GT/2020 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I.S. Jha)**
Member	**Member**	**Member**