

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 23/GT/2017

Coram:

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

Date of Order: 20th January, 2024

In the matter of

Petition for approval of tariff of Nabinagar Thermal Power Project (1000 MW) for the period from COD of Unit-1 (15.1.2017) to 31.3.2019.

And

In the matter of

Bhartiya Rail Bijlee Company Limited,
Nabinagar Thermal Power Project,
Post- Khaira, Distt. - Aurangabad,
Bihar-824303

.....Petitioner

Vs

1. East Central Railway,
Hazipur, Bihar
2. North Bihar Power Distribution Company Limited,
Vidyut Bhawan, Bailey Road, Patna (Bihar) 800001.
3. South Bihar Power Distribution Company Limited,
Vidyut Bhawan, Bailey Road, Patna (Bihar) 800001.

....Respondents

Parties present:

Ms. Swapna Seshadri, Advocate, BRBCL
Shri Anand K. Ganesan, Advocate, BRBCL
Ms Ritu Apurva, Advocate, BRBCL
Shri. Sitiesh Mukherjee, Advocate, ECR
Shri. Deep Rao Palepu, Advocate, ECR
Ms. Harneet Kaur, Advocate, ECR
Shri. Arjun Agarwal, Advocate, ECR
Shri. Rajnish Goyal, NTPC
Shri. Shashwat Kumar, Advocate, NBPDC & SBPDCL
Shri. Rahul Chouhan, Advocate, NBPDC & SBPDCL
Shri. Nadim Ahmad, ERLDC



ORDER

This petition has been filed by the Petitioner, Bhartiya Rail Bijlee Company Limited (in short “the Petitioner”), for approval of tariff of Nabinagar Thermal Power Project (1000 MW) for the period from COD of Unit-1 (15.1.2017) to 31.03.2019 in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short “the 2014 Tariff Regulations”).

2. The Petitioner, has established a power project named as Nabinagar Thermal Power Project (4X250 MW) (in short “generating station”) located in Aurangabad district of Bihar. Ministry of Power, Government of India vide its letter dated 30.6.2007 allocated 90% power from this project to Railways and the remaining 10% power to the other users. Further, MOP vide their letter dt 2.7.2010, allocated 10% power to state of Bihar and after unbundling of Bihar State Electricity Board, 10% power from the generating station has been allocated to the two distribution companies namely North Bihar Power Distribution Company Ltd. (NBPDC) (Respondent No.2) and South Bihar Power Distribution Company Ltd. (SBPDC) (Respondent No.3). The actual and anticipated date of commercial operation (COD) of various units of the generating station are as under:

	COD
Unit-I	15.1.2017
Unit-II	10.9.2017
Unit-III	26.2.2019
Unit-IV	1.12.2021

3. The Petitioner vide affidavit dated 2.1.2017 had filed this petition for approval of tariff of the generating station, on the basis of projections and estimates since Unit No. 1 was expected to be commissioned. Subsequently, Unit-I of the generating



station achieved COD on 15.1.2017 and Unit-II on 10.9.2017, therefore Petitioner vide affidavit dated 15.2.2018, filed amended Petition along with revised forms. Further, consequent to achieving COD of Unit-III on 26.2.2019, the Petitioner vide its affidavit dated 31.10.2019 submitted the balance sheets as on COD of Unit-III and as on 31.3.2019 also along with revised tariff filing forms. Since, the tariff from the period from 15.1.2017 i.e. COD of Unit-I to 31.3.2019, during which three out of four units of the generating station has achieved COD, shall be dealt in terms of the 2014 Tariff Regulations. The capital cost and annual fixed charges claimed by the Petitioner from 15.1.2017 to 31.3.2019, is as under:

Capital cost claimed

Sl. No.		(Rs. in lakh)				
		2016-17 15.1.2017 (COD of Unit-1) to 31.3.2017 (Unit#1)	2017-18 1.4.2017 to 9.9.2017 (Unit#1)	10.9.2017 (COD of Unit-2) to 31.3.2018 (Unit#1&2)	2018-19 1.4.2018 to 25.2.2019 (Unit#1&2)	26.2.2019 (COD of Unit-3) to 31.3.2019 (Unit#1,2&3)
	Number of Days	76	162	203	331	34
1.0	Opening Capital Cost					
a	Capitalization as on actual/anticipated COD on cash basis	224086.47	245738.37	360223.40	388740.89	620665.66
b	Notional IDC Capitalised	21371.56	-	21426.42	-	21542.32
c.	Pre-Payment charges for re-financing of loan	-	-	-	2935.04	2935.04
c	Short Term FERV Charged to P&L A/c	-	-	-	-	-
	Opening Capital Cost	245458.03	245738.37	381649.82	391675.93	645143.02
2.0	Add: Addition during the year / period	126.45	1542.70	4901.87	-	638.92
3.0	Less: Decapitalisation during the year / period	(-)0.62	-	(-)2.23	-	-
4.0	Less: Liability Reversal during the year / period	-	-	-	-	-
5.0	Add: Liability Discharges during the year / period	154.51	360.54	2191.43	110.44	1656.79
6.0	Closing Capital Cost	245738.37	247641.61	388740.89	391786.37	647438.72



Annual fixed charges claimed*(Rs. in lakh)*

Sr. No.		2016-17	2017-18		2018-19	
		(Annualized)	(Annualized)		(Annualized)	
		15.1.2017 (COD of Unit-1) to 31.3.2017 (Unit-1)	1.4.2017 to 9.9.2017 (Unit-1)	10.9.2017 (COD of Unit-2) to 31.3.2018 (Unit-1&2)	1.4.2018 to 25.2.2019 (Unit#1&2)	26.2.2019 (COD of Unit-3) to 31.3.2019 (Unit-1,2&3)
	Number of Days	76	162	203	331	34
1	2	4	5	6	7	9
1.1	Depreciation	10967.09	11015.84	18191.06	18499.71	31100.35
1.2	Interest on Loan	18246.37	17233.16	25674.84	24422.86	40541.10
1.3	Return on Equity	14518.88	14583.42	22771.36	23218.65	38306.90
1.5	O & M Expenses	7097.53	7205.31	14828.85	15668.19	23329.22
1.4	Interest on Working Capital	2887.84	2995.53	5276.96	5443.28	8338.54
	Total	53717.71	53033.27	86743.07	87252.69	141616.10
2	Additional O&M Expenditures					
2a	Impact of Pay revision	347.64	1544.10	1544.10	3155.79	3155.79
2b	Impact of GST	0.00	161.24	161.24	284.30	284.30
2c	Ash Transportation Expenditure	0.00	0.00	0.00	0.00	0.00
2d	Minimum wage	0.00	697.50	697.50	1366.90	1366.90
	Total additional O&M Expenses	347.64	2402.84	2402.84	4806.99	4806.99
	Total Annual Fixed Charges	54065.35	55436.10	89145.91	92059.69	146423.09

4. As mentioned above, the Petitioner vide affidavit dated 15.2.2018, filed amended Petition along with revised forms. The Petitioner has also filed additional information as directed by the Commission vide affidavits dated 15.2.2018, 3.10.2018, 14.11.2018, 13.3.2019, 31.10.2019, 24.12.2020 and 4.8.2022 with a copy to the Respondents. The Respondent No. 1, ECR has filed its preliminary objections on the amended petition on 12.4.2018 and 1.6.2018, on which the Petitioner has filed rejoinder vide affidavit dated 21.5.2018 and 12.7.2018. Subsequently, the Respondent ECR, filed an IA No. 31 of 2017 and IA No. 58 of 2018 in the present petition stating that the Respondent, ECR has been referred to as a captive user in the BPPA and therefore, the generating station does not fall under the jurisdiction of the Commission and vide order dated 18.9.2018, the Commission rejected the I.A No. 31 of 2017 and further disposing of I.A No. 58 of 2018 (for placing on record



necessary documents) directed the Petitioner to furnish copies of the relevant documents available with it to the Respondent ECR. Subsequently, the Respondent ECR, filed detailed reply vide affidavit dated 20.7.2018 and the Petitioner has filed its rejoinder to the same, vide affidavit dated 13.9.2018. In compliance to the order dated 18.9.2018 in IA No. 58 of 2018 the Petitioner has filed written submissions along with the necessary documents vide affidavit dated 3.10.2018 and 14.11.2018. Accordingly, the matter was listed for hearing on 13.3.2019 and the Commission after directing the Petitioner to file additional information, adjourned the matter. In compliance, the Petitioner has filed the additional information on 26.4.2019, with a copy to the Respondents. The Respondent ECR, has filed a reply on the additional information dated 26.4.2019, vide affidavit dated 30.5.2019 and the Petitioner has filed a rejoinder to the same vide affidavit dated 21.6.2019. Accordingly, the matter was again listed for hearing on 27.8.2019 and the Commission after directing the Petitioner to file additional information, adjourned the matter. In compliance, the Petitioner has filed additional submissions vide affidavit dated 31.10.2019. The Respondent ECR, vide affidavit dated 2.1.2020 has filed reply to the additional submissions of the Petitioner dated 31.10.2019 and the Petitioner vide affidavit dated 20.2.2020 has filed Rejoinder to the reply of the Respondent. The matter was heard and adjourned on 25.5.2021. Pursuant to the hearing on 25.5.2021, the Respondent ECR has filed an aide memoir on 28.5.2021 in support of its oral submissions made on 25.5.2021. The Petitioner has also filed its final submissions on 12.7.2021. Accordingly, the matter was heard on 10.8.2022 and the Commission after hearing the parties and allowing the Respondent, ECR to file additional submission, reserved its order in the Petition. Respondent, ECR has filed its additional submissions on 18.8.2022. Based on the submissions of the parties and documents available on



record, we proceed to determine the tariff of the generating station as stated in the subsequent paragraphs.

Commissioning Schedule and Time Overrun

5. The Investment Approval (IA) of the generating station was accorded by Petitioner's Board at its 3rd meeting held on 10.1.2008 at an estimated cost of Rs.5352.5 crore at price level of IVth Qtr. 2006. Subsequently, the revised cost of project was approved by Petitioner's Board at its 62nd meeting held on 21.12.2015 at revised cost of Rs. 7998.00 crore, at price level of IInd Qtr 2015. The scheduled COD of the Unit-I of the generating station was 36 months from date of main plant order and COD of subsequent units was at an interval of 6 months thereafter. The main plant TG and SG packages were awarded to BHEL on 22.1.2008. Accordingly, scheduled COD, actual COD and time overrun suffered by the various units are as under:

Units	Scheduled COD as per Investment Approval	Actual COD	Time overrun (days)
Unit-I	21.1.2011	15.1.2017	2186
Unit-II	21.7.2011	10.9.2017	2243
Unit-III	21.1.2012	26.2.2019	2593
Unit-IV	21.7.2012	1.12.2021	3421*

Submissions of the Petitioner with respect to Time overrun in achieving COD of Units-I, II and III:

6. The Petitioner has submitted that there is a time overrun of approximately 71 months and 25 days in COD of Unit-I, 73 months and 20 days in COD of Unit- II, 85 months and 5 days in COD of Unit- III and 112 months and 10 days in COD of Unit- IV. The Petitioner vide affidavit dated 15.2.2018, has also furnished the reasons for time overrun, in justification of the period of delay. According to the Petitioner, the following events which were beyond the control of the Petitioner have led to the



delay in the declaration of commercial operation, with respect to time overrun in declaring the COD of Unit-I, Unit-II and Unit-III:

- a) Delay of 394 days due to Naxal Bandhs;
- b) Delay of 8 months (240 days) due to Ban on mining of stone by Government of Bihar;
- c) Delay of 9 months (270 days) due to non-availability of approach road;
- d) Land acquisition related problems i.e Local work-hinderance /stoppage due to land related issues, Lawsuits/Litigations on various pockets of land, strike & bandh called by local labours at numerous occasions for their various unwarranted issues/demands:
 - Issue faced due to incorrect ownership records maintained by State Authorities – (102.7 months);
 - De-notification of earlier notified Govt. Land-(70.67 months)
 - Ownership claims on transferred Govt. Land- (76 months)
 - Identification of correct ownership- (65.5 months)
- e) Delay of 2.5 months due to consideration of land within the vicinity of residential complex as Homestead land residential area;
- f) Delay of 24 months due to Writ Petition filed by villagers before the Hon'ble High Court of Patna, demanding of adoption of “one project one rate” philosophy;
- g) Delay of 30 months due to demand of revised rates of compensation.

7. We now proceed to examine the aforesaid reasons for time overrun in the declaration of COD of the units of the generating station as stated below:

Units I & II

A. Delay due to Naxal Bandhs and attack/threat calls by Naxalites and related violence (394 days)

8. The Petitioner has submitted that the generating station is situated in the Aurangabad district in the State of Bihar, which is a Naxal infested region, and there are constant disturbances in the area pertaining to law and order. The Petitioner has further submitted that since the time of the inception of the project there were calls of Naxal-bandhs on different occasions and even the Minister of State for Home Affairs, GOI in his reply against Lok Sabha Question number 1374 dt 5.3.2013 mentioned



Distt. Aurangabad, Bihar amongst the list of 106 districts which were covered under the Security Related Expenditure (SRE) scheme for the purpose of expenditure incurred by the State Governments on Counter Left Wing Extremism (LWE) measures. The Petitioner has further stated that various incidents of violence and blast due to Naxal activities in this area have caused numerous casualties and as per estimate, the total incidents of violence during the year 2011 till November, 2016 in Bihar, due to LWE movement were 1047 and the numbers of casualties was 252. The Petitioner has also stated that the generating station has suffered due to the violence and blasts in the area and since inception, it has experienced calls of naxal-bandhs for 136 days on 68 occasions during the period from June-2010 till Aug-2017.

9. Further, the Petitioner has submitted that in view of poor law and order situation in this area, the workers did not turn up for the job or turned up in very small numbers during the bandh calls and all the activities of the project literally came to halt during these periods. Moreover, the working momentum during the bandh call got disturbed and it took considerable time to bring the progress back to the same momentum which existed prior to the bandh. In addition, the Petitioner has stated that movement of goods, vehicles etc. were also affected during the bandhs which were beyond the control of the Petitioner. It has pointed out that one of the executing agency M/s ERA vide its letter dated 5.10.2013 has expressed the Naxal problem stating that:

“This project is most difficult project and situated in the most disturbed area having influence of terrorist activities and full control by different Moist groups mixed with locals, hence cannot be compared with other normal area project. “

“You will appreciate that working in such a difficult area is very frustrating and demoralizing to all project team and PC/contractor working on the project. In such situation, such one- or two-day work stoppage to the complete project by external forces is actually cause at least one week’s delay to all the project activities.”



10. The Petitioner has submitted that in this highly naxal-prone area, even one day of bandh has a cascading effect of a minimum of 5 working days. However, after considering the bandh days overlapping, net delay due to this reason comes out to be 394 days i.e. approximately 13 months. The Petitioner has attached the details of bandh in tabulated form at 'Annexure G1' to the Petition along with supporting documents related to each date of Bandhs. Further, the Petitioner has submitted that there have been reported incidents of violence against the contractors of the Petitioner and such reports have also been placed on record i.e the various communications received from the Petitioners contractors such as M/s EIEL, M/s ABB, M/s ERA, letters from Police Aurangabad & Khaira, News clippings & Communication from state police, News clips of Naxals having targeted construction sites like bridges, road, or even Rajdhani trains are also attached.

11. The Petitioner has also submitted that on 24.11.2010, the office of one of the executing agency M/s ERA was attacked by 40-50 nos. of Naxalites (*Photos, news clipping & FIR copy have been attached*) and Machinery (4 nos. dumper & 3 nos. Hywas) was burnt and the staff were harassed and beaten up. In another incident on 17.4.2010, M/s ABB site was subjected to Naxal attack with deadly weapons, wherein, the Naxals opened fire and one transformer were put on fire (*Agency's letter, news clipping & Photos are also attached*). It has further submitted that threat letter was also served by T.P.C. (Thrutiya Prasthuti Committee) to M/s ABB, one of the main executing company, calling to vacate the work site and they had also threatened of dire consequences, if the demands were not fulfilled (*copy is attached*). The same kind of intimidating communication was received by EIEL also (*letter is attached*). In view of the above, the Petitioner has submitted that the Project has suffered considerable delay in view of the bandh calls, attack/threat call by



Naxalites and related violence in the Naxal prone area, which are all beyond the control of the Petitioner and hence prayed that the delay of 13 months caused due to these Bandh calls, attack/threat calls by Naxalites and related violence, may be condoned.

12. The Respondent No.1 ECR, has submitted that the site for the generating station was chosen wilfully by the Petitioner and hence the Petitioner is precluded from raising the defence of law and order issues in the area. It has further submitted that since 2003, there has been a decrease in Naxal activities in the State of Bihar. Also, the Respondent has pointed out that vide order dated 3.4.2018 in Petition No. 110 / MP/2016 (*Purulia Kharagpur Transmission Company Limited vs PGCIL & ors*), the Commission had observed as under:

“57.xx

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(d) Frequent Bandhs, Naxalite Attacks and bad law and order situation in the States of Jharkhand and West Bengal are not covered under force majeure events as no evidence has been placed on record by the Petitioner to substantiate its claim that work on the project was affected due to the said events.”

13. In response, the Petitioner has submitted that a Project Committee consisting of 6 members (3 from the ECR and 3 from NTPC) was constituted after approval of the Minister of Railways (MoR), GOI and this Committee ad examined the four different sites in various parts of the country i.e (i) Mouda in Maharashtra, (ii) Manuguru in Andhra Pradesh, (iii) Raigarh in Chhattisgarh and (iv) Nabinagar in Bihar, for identifying a suitable site for setting up the plant and after examination of the sites, it was seen that out of the four sites i.e. only Nabinagar met with the site prerequisites as the Government of Bihar (GOB) had committed the land availability and water availability for the project. It has stated that all other sites were deficient in some way or other and did not fit the set criteria for the setting up the plant. The



Respondent has further submitted that during the PIB meeting on 13.2.2004, the had Member (E), Railway Board pointed out that four sites were examined jointly by MoR and NTPC and the selection committee had found only Nabinagar site suitable. The Petitioner has further submitted that since June, 2010 to February, 2016, there were 118 days when the bandhs were called, which affected the work and also three districts in the State of Bihar, including Aurangabad, account for 60% of Naxal violence and Left wing extremism has caused about 1047 violent incidents since 2011 to November 2016 with 252 casualties. The Petitioner has further stated that the disturbance from the law and order point of view is of crucial importance and has led to a substantial amount of delay in the work and the contentions of the Respondent are devoid of merits. The Petitioner has reiterated its submissions in the Petition with respect to bandhs, their consequent impact on work progress, attack on executing agencies and has prayed that after considering the overlapping period between bandhs, the net delay is 394 days i.e. approximately 13 months and the same may be condoned as these events were beyond the control of the Petitioner.

14. As regards the relevance to the Commission's order dated 3.4.2018, raised by the Respondent, the Petitioner has clarified that the Commission in the relevant paragraph of the order dated 3.4.2018, had considered that incidents like Bandhs, Naxal attacks, and bad law and order situation can be considered as a force majeure event, if they had hindered the works, and if the said hindrance has been demonstrated. Moreover, in the order dated 3.4.2018, it has been clearly stated that the delay due to Naxal activities, and bad law and order situation needs to be substantiated, in order to be considered as force majeure and accordingly, the Petitioner, in this case, has provided substantial details with respect to the delays caused, which includes FIRs, letters from contactors of the Petitioner regarding



effecting work due to Naxal violence/bandh etc., photographs, newspaper reports, communications with state authorities, of the violent incidents that took place and documents showing the effect of such incidents. Further, the Petitioner has stated that it has also furnished the certified records by District Magistrate, Aurangabad vide letter dated 19.7.2018, regarding details of bandh, strike, call given by various organisation, agitation from year 2010 to year 2017 which affected the work at the generating station. Accordingly, based on the above documents, the Petitioner has submitted that it has stood true to the test of the Commission, which calls for substantive details to be provided in the event of bad law and order situation and Naxal attacks.

15. As regards the submission of the Respondent that the Petitioner has arbitrarily increased the number of days of delay from 322 days in the main Petition to 394 days in the amended Petition, the Petitioner has clarified that this is an incorrect averment as the main Petition was filed in January 2017 and hence the data was only till that period, but in the amended Petition, the Petitioner has considered the period up to August, 2017 and included the number of days of Naxal bandhs caused from January 2017 till August 2017 and therefore the figures have only been revised.

16. The matter has been considered. It is observed that the Petitioner has furnished the documents in support of the delay caused on account of Naxal Bandhs/Violence and attack on the contractors, as summarised below:

- a) Letter dated 19.7.2018 from District Magistrate, Aurangabad vide which details with respect to band calls given by various organization have been certified for the period from year 2010 to year 2017- It is observed from the letter that there were 95 reported cases of bandh calls by Maoist Communist Centre (MCC), Rashtriya Janta Dal (RJD) & All India Trade Union Congress (AITUC) and stoppage of work by locals. It is further observed that number of reported days for which work was directly affected is 221 days from 2010 to 2017;
- b) Newspaper clippings;



- c) Copy of the reply of Minister of State for Home Affairs, GOI against Lok Sabha Question number 1374 dt 5.3.2013 indicating that the Distt. Aurangabad, Bihar was amongst the list of 106 districts which were covered under the Security Related Expenditure (SRE) scheme for the purpose of expenditure incurred by the State Governments on Counter Left Wing Extremism (LWE) measures;
- d) Various letters (8 nos.)/photographs etc. from various contractors citing the stoppage of work due to violence and attacks by Naxalites;
- e) FIR copies, communication with district authorities, photographs, newspaper clippings with respect to prevailing law and order situation.

17. Further, it is observed that the Petitioner has suitably replied to the allegations made by the Respondent with respect to the selection of site, prevailing law and order situation and the quantum of delay due to Bandhs/attacks and Violence. With respect to the contention of Respondent ECR, that since the Petitioner itself has selected the site knowingly well that the State has law and order problems, and therefore precluded to claim the delay due to law and order, the Petitioner has clarified that the site of the project was selected by a six member Committee (which also comprise of three members of the Railway) based on the set criteria for the setting up the plant and based on the commitment of the Government of Bihar, on the land availability and water availability for the Project. In this backdrop, we are not inclined to agree with the contention of the Respondent ECR that the Petitioner is precluded from claiming any delay due to law and order issues, in the State, affecting the progress of the work of the Project. As regards the quantum of delay i.e. 394 days, we are of the view that the impact of each Naxal bandh/violence, in terms of number of days lost is directly related to the prevailing restrictions, including the fear factor caused by the violent incidences which occur during bandhs, which happened time and again. It is also observed that one of the executing agency M/s ERA, while reporting one of the incidence to the Petitioner authorities vide letter dated 5.10.2023, has informed that *working in such a difficult area is very frustrating*



and demoralizing to all project team and PC/contractor working on the project, in such situation, one or two day work stoppage to the complete project by external forces actually causes at least one week's delay to all the project activities.” We observe that the Petitioner has provided ample documentary proof of the prevalent law and order problems, in terms of newspaper clippings, letters from authorities, FIRs, letters from affected executing agencies etc. Thus, the claim of the Petitioner for a delay of 394 days, corresponding to 95 cases of bandhs, which also include the directly stopped work at site for 221 days, appear reasonable, even after considering only two additional days for mobilization after each incident ($411=221+2\times 95$). As the Petitioner has established that the delay of 394 days, caused due to bandhs and violence during the period 2010-17, by supporting documents as stated above, we hold that the delay of 394 days for Project execution, was due to force majeure events/conditions, which were beyond the control of the Petitioner. For the aforesaid reasons, we condone the said delay of 394 days for the period from January 2010 to August 2017, in the Project execution as claimed by the Petitioner.

B. Delay due to ban of Mining/Mining lease (8 months)

18. With regard to the delay due to ban on Mining/Mining lease, the Petitioner has mainly submitted as under:

a) At the time of inception of the project, it was envisaged that the stone aggregates and other civil construction material, shall be sourced from the quarries situated in the State of Bihar. These quarries (Karvandia in Rohtas District) were situated within 40 km range of the Project;

b) The Government of Bihar had banned mining in all parts of Bihar vide Bihar Gazette (Extra-ordinary) dated 26.2.2010, through Bihar Minor Mineral Concession (Amendment) Rules, 2010 with a view to save environment, forest and fast depleting hill area, which stated that - a) No mining lease for stone would be granted with immediate effect. b) Existing lease for stone granted would be allowed to subsist for remaining period for which they have already been granted but would not be renewed thereafter due to various



reasons mentioned thereon. Because of this ruling of the Bihar state, number of stones crushing units to be run in Bihar were limited in each district as per the government's policy decision;

c) Due to this ban, the crusher industries were not getting sufficient stones for crushing, resulting in unprecedented crisis of stone aggregates in the market with enhanced demand in the State, which led to a limited supply of aggregates. Despite the best efforts made by the Petitioner, to source it from other locations outside the State, there was considerable impact noticed on the civil construction activities;

d) The numbers of stone crushers in Rohtas district, from where the generating station was getting most of the supply of aggregates, for construction works, had reduced to 76 as against 250 applications. Before stone crushing was banned by the State government, at least 500 stone crushers were available in the district;

e) Due to limited mining, all the crushing and extraction activities were affected severely. Further, during 2012, since all the quarries in the Rohtas area were stopped due to expiry of valid license, the supply of aggregate was stopped from the quarries situated in the vicinity of the project. To cater to the requirement of project construction, stone aggregates were sourced from quarries situated in Gaya, Bihar, where licences were valid during this period, and approximately 230 km from the Project site, the aggregated were transported through road. This resulted in significant delay in the Project construction activities, as no civil work could be carried out in the absence of the aggregates and as a result, civil fronts could not be handed over to the other agencies, for subsequent equipment erection and other works, thereby delaying the entire Project completion. This resulted in loss of approximately 8 months during 2012 (February, 2012 to September, 2012) on account of shortage/non-availability of stone aggregates, due to ban of mining lease by the Government of Bihar, which was also beyond the control of the Petitioner.

19. The Respondent, ECL has submitted that the Petitioner has not shown any proof to reflect that the ban by the Government of Bihar, for mining, in all parts of Bihar vide Bihar Gazette (Extra-ordinary) dated 26.2.2010, had affected the Petitioner. The Respondent has also stated that there is no such blanket ban in Bihar, analogous with the cases before the Hon'ble Supreme Court. With regard to the ban on new mining leases, the Respondent has submitted that the said ban was

only extended to the grant of new mining leases for stone aggregates in the State of Bihar and as such there were no restrictions on sourcing aggregates, from the existing authorized stone miners with valid leases or from outside the State. The Respondent has further submitted that the Petitioner is just pleading commercial hardship, which is an inadmissible excuse for time or cost overrun, and has also not produced any evidence to demonstrate as to why, it could not procure stone aggregates from alternate sources, as it is duty bound to do so, before claiming any time or cost overrun. The Respondent has also stated that the quarries in the vicinity of the Project, from where the Petitioner was sourcing its civil construction materials, stopped functioning in the year 2012, due to expiry of their license and the Petitioner had almost 2 years to stock the requisite amount of aggregates, and identify alternate quarries, from where it could continue to source its material, without any hindrance. It has further stated that despite having so much time and opportunity, the Petitioner has failed to foresee and control the impact of such a development. In response, the Petitioner has clarified that all the quarries in the Rohtas area were stopped due to the non-renewal of valid license on expiry due to the ban and the supply of aggregates, was stopped from the quarries situated in the vicinity of the Project. It has submitted that to cater to the requirement of the Project construction, stone aggregates were sourced from quarries situated in Gaya, Bihar (wherein the mining licenses were valid) which is approximately 230 km from the Project site and accordingly stone aggregates were transported through road. This resulted in a significant delay in the Project construction activities, as no civil work could be carried out in the absence of the stone aggregates and as a result, civil fronts could not be handed over to the other agencies, for subsequent equipment erection and other works, thereby delaying the entire project. The Petitioner has further submitted



that its CEO had informed during the 34th Board meeting dated 20.12.2011, that quarrying had been stopped in the stone mines, which were near the project due to which supply of materials had been stopped and the Board desired that to resolve the matter, alternate arrangements may be made for ensuring the supply of construction materials. The Petitioner has submitted that it took necessary steps thereafter to complete the work, and since the Respondent, ECR has a Nominee Director in the Board, it had full knowledge of all the activities which took place. The Petitioner has also clarified that it was not incompetent, since time and again, it had informed the Respondent of the developments and the delays being caused through various Board meetings, including the steps taken by the Petitioner, as per the Board's advice, but at no point of time, did the Respondent raise any objections, on this count.

20. Further, the Petitioner has pointed out that the Commission vide its order dated 22.5.2017 in Petition No. 45/GT/2016 (approval of tariff of Bongaigaon TPS of NTPC) had condoned the delay as claimed due to shortage of aggregate availability.

The relevant portion of the order dated 22.5.2017 is extracted below:

"25. As regards time over-run due to non-availability of aggregates, it is noticed that restrictions on mining of minerals including aggregates was imposed by Hon'ble Supreme Court by its Judgment dated 27.2.2012 in the matter SLP(C) 19628-19629 of 2009 in Deepak Kumar v/s the State of Haryana and others after the start of the project. Due to above restriction on the aggregates sourced from quarries located in Assam within the 100 km range of the project site, the petitioner had started to source aggregate from Pakud quarries which are located 550 km away from the project site which was initially sourced from quarries located in Assam within the 100 km range of the project site. Considering the time consumed in making arrangement and the distance of the quarries in the sourcing of aggregates, we are inclined to condone the delay of 60 days on account of non-availability of aggregate."

21. The Petitioner has further submitted that it has worked incessantly to ensure the mitigation of the delay, but there have been instances which were unfavourable and the delay caused as a result of such instances, cannot be attributed to them, under any circumstances.



22. The matter has been examined. The Petitioner has claimed the delay of 8 months during 2012 for completion of the Project works, due to the non-availability of stone aggregates. It is noticed that the Bihar Notification, 2010 clearly stated that the existing lease for mining stone which had been granted would be allowed to subsist for the remaining period for which they have already been granted, but would not be renewed further. Consequently, this led to the stoppage of stone aggregate supplies to the Project, from the quarries situated in the vicinity of the project and under construction Projects suffered huge delays due to this shortage. Thus, in our view, the Bihar Notification, 2010, had caused the shortage of stone aggregates in the market, which ultimately affected the works of Project of the Petitioner, during the year 2012, when all the quarries in Rohtas area were stopped due to the expiry of valid licenses. We also observe that the Board of the Petitioner, which include Members from the Respondent ECL, were also aware of the stone aggregate supply problems and the corresponding delay in Project execution. Also, the Petitioner, based on the advice of the Board was sourcing the requisite stone aggregates, from distant sources (approx. 230 kms from site) which has also caused the delay in Project execution. As pointed out by the Petitioner, similar issue (delay due to shortage of aggregate availability) was considered by the Commission as change in law event, and the delay on this count, was condoned vide order dated 22.5.2017 in Petition No. 45/GT/2016. Similarly, the delay caused due to non-availability of stone aggregates, was examined and allowed vide Commission's order dated 29.4.2019 in Petition No. 74/GT/2017 (approval of tariff of Muzaffarpur TPS of KBUNL). In these circumstances, we accept the submissions of the Petitioner and hold that the delay of 8 months, caused in Project execution, due to shortage of stone aggregates, was for reasons beyond the control of the Petitioner. However, considering the fact



that delay of around 103 days due to Naxal Bandhs/violence (67 days,18 cases) has been allowed during the delay period of 8 months i.e February, 2012 to September, 2012 claimed on account of ban on mining lease, the effective delay of only 137 days (240-103) is allowed, on account of the non-availability of stone aggregates pursuant to the Government of Bihar Notification, considering 103 days to be concurrent with the delay of 240 days.

C. Delay due to non-availability of proper approach road for movement of heavy consignments to the Project (9 months)

23. As regards the delay due to the non-availability of proper approach road to the Project, for movement of heavy consignments at the generating station, the Petitioner has mainly submitted as under:

- a) For the movement of heavy consignments for construction of the Project, Nabinagar is connected to National Highway-2 at a distance of 25 km through Barun. At the time of inception of the Project, there was no proper road to move the heavy material/equipment and therefore the matter for of constructing 7meters wide road was taken with Road Construction Department, Govt of Bihar in July 2008;
- b) The existing road required widening to 7 meters with hard shoulders, construction of a few bridges & culverts (34 nos.) leading to the generating station, and strengthening top layers of DBM and BC construction to meet heavy traffic of 30MT/40MT trailers. The matter was taken up for deposit work with local authorities Road Construction Department (RCD) Govt of Bihar state for strengthening/ double lane of the route from Barun to Nabinagar site (25km) as early as in July 2008 i.e. before any major land acquisition at site and regular meetings for the same were taken at the Principal Secretary and Chief minister level. Keeping in view the requirements of the Project the original schedule for construction was given as 15 months from (12.06.2009 to 11.09.2010);
- c) However, the total time taken for the completion of above work was 24 months and the road were declared open in June, 2011 (work completed on 10.6.2011).This resulted in the delay in transportation of heavy consignments/equipment's etc. for the project. The total delay on account of non-availability of sufficient capacity road works out to be approximately 9 months (September,2011 to June,2011) as the



consignments were transported in parts or through smaller vehicles. The copy of various communications with the Public Works Department is attached.

24. The Respondent ECL has submitted that the process of construction work of the approach road began only in June 2009, which is 18 months, after the contracts were awarded to BHEL, in January, 2008. In response, the Petitioner has submitted that the delay claimed by the Petitioner was due to the difficulty in transportation of heavy machinery and construction equipment, on account of which the work could not commence. It has further submitted that the matter was taken up for deposit work with the local authority i.e Road Construction Department (RCD), Government of Bihar for strengthening/ double lane of the route from Barun to Nabinagar site (25 km) as early as in July 2008 i.e. before any major land acquisition at site and regular meetings for the same was taken at the Principal Secretary and at the level of the Chief minister. The Petitioner has clarified that keeping in view the requirements of the Project, the original schedule for construction was given as 15 months from 12.6.2009 to 11.9.2010.

25. The submissions have been examined. It is observed that the Petitioner had initiated the process for construction of approach road with the Road Construction Department (RCD), Government of Bihar, much before the scheduled start date and communications were being made regularly with the RCD, for timely completion of the road. Further, the Petitioner had escalated the matter to the highest possible level i.e .Chief Minister of the State of Bihar. In view of the above, the Petitioner cannot be faulted for the delay of 9 months in the Project execution, due to non-availability of proper approach road for movement of consignments to the Project. Accordingly, we condone the delay of 9 months (11.9.2010 till 10.6.2011) in the execution of the Project. However, considering the fact that during the said period,



the delay of 24 days (10 days directly affected during 7 incidence) during 2010 and 8 days (4 days, 2 incidence) during 2011, has already been allowed on account of Bandhs/Naxal violence, after considering two additional days for each incidence, the effective delay allowed on account of non-availability of approach road is 238 days {270- (14+2x9)}.

D. Delay due to various litigations before the Hon'ble High Court and delay in execution of judgments by the State Authorities in respect of land acquisition

26. On this issue, the Petitioner has mainly submitted as under:

a) In May 2007, land as per the following details was identified for the generating station:

Sl.No.	Category of land	Quantity (acres)
1.	Private land	635
2.	Bandobasti land	727
3.	Government land	159
	Total	1522.18

b) The summary of issues faced at the Project in land acquisition, which were beyond the control of Petitioner have been categorized broadly and tabulated as below:

(i) Issues with awarded land:

S.N.	Uncontrollable Factor/ Issue		Start of issue	End of issue	Delay (in months)
A	Litigation before Hon'ble High Court Patna (CWJC 14314/2009) due to issues faced due to incorrect ownership records maintained by State Authorities.	With the start of work at site, many people claimed their ownership & asked for compensation. Number of villagers filed different cases in Hon'ble High Court Patna (CWJC 14314/2009) and were granted compensation by the Court. This led to considerable delay in taking physical possession of land and was beyond control of the Petitioner.	24.7.2009	31.12.2017	102.7
B	Litigation by villagers for consideration of land within the vicinity of residential area as Homestead land & demand of compensation as per residential area. (Hon'ble High Court	Many villagers demanded higher rates of homestead land and for consideration & compensation of 500-meter peripheral area of their residential complex as homestead land from the start of the project itself i.e. in the year 2008, even though it was not as per land acquisition Act'07. The High Court allowed the relief to the villagers. This led to delay that was beyond the	26.9.2008	24.5.2016	93



	Patna (CWJC 10684 of 2010) case.	control of Petitioner.			
C	Writ Petition filed Villagers demanding of adoption of "one project one rate" philosophy. Hon'ble Court Petition No 18253 of 2011	The land of main plant & Ash Dyke area was spread over 9 'moujas' for which majority awards were made in the year 2008 & 2009. The basic rates considered while making awards were Rs. 2,61,371.00 per acre for 4 moujas & Rs. 5,16,222.00 for 5 moujas as per the prevailing land acquisition norms. Against this difference in rates of different moujas, the land owners of 4 moujas (covering approx 487 acre) started agitation & didn't allow to work in the project since 23/11/11 and even stopped the entry of project employees /workers continuously for the period 7/02/12 to 19/03/12. The villagers filed a writ petition at Hon'ble HC of Patna. Hon'ble High Court in its order dated 02/12/2013 dismissed the petition.	23.11.2011	2.12.2013	24.3
D	De-notification of earlier notified Govt. Land by Govt of Bihar on direction by Hon'ble High Court Patna in CWJC 14314/2009.	Initially 159.920-acre land transferred to BRBCL as Govt. land on 24.07.2009. When Petitioner had started taking physical possession of land, some of the "raiyaats" claimed the ownership on this Government land and demanded compensation. Subsequently, a petition was filed by concerned "raiyaats" to Hon'ble High Court Patna CWJC 14314/2009. Hon'ble HC Patna admitted the petition & issued the direction to local villagers/raiyaats to file petition before Land Acquisition Officer, Aurangabad. Consequently, in the process, 89.828-acre land was declared as "raiyaat land" by State Authorities. However whole process caused considerable delay which was beyond the control of Petitioner.	24.7.2009	14.5.2015	70.67
E	Ownership claims on transferred Govt. Land on 70.89 Acres declared by State Govt on direction of HC in CWJC 14314/2009. Some Villagers have filed a case Hon'ble High Court Patna (CWJC 16079/2015)	Even after reassessment in light of Hon'ble High Court direction, District Collector, Aurangabad communicated that 70.89 Acre is still the Govt land out of 159.92 acre vide their letter dt. 11.04.15, the local villagers/raiyaats still making their claims on transferred Govt. Land & even some of the raiyaats have filed a case (CWJC 16079/2015) in Patna High Court.	24.7.2009	5.11.2015	76

(ii) Issues with new awards on lands:



S. N	Uncontrollable Factor/ Issue		Start of issue	End of issue	Delay (months)
A	Physical possession held due to higher demand of Revised rates of compensation Hon'ble High Court Patna (CWJC 13055/2013) judgment	Land for makeup water, Railway corridor, some part of main plant & ash dyke area award (185 acre) were made by District Authorities in Dec-12, Aug 2013 & Feb 2014, which were not accepted by land owners & physical possession held up due to demand of rate revision by land owners. They approached Hon'ble HC, Patna vide CWJC 13055/2013 and Hon'ble HC revised basic rate as Rs. 7,30,030.00 per acre in place of Rs.5,16,000.00 per acre and revised award were made in Feb/March 2015.	12.12.2012	13.6.2015	30
B	Ongoing issue in identification of Correct Ownership of land.	Even for as on date there are ownership issues on 70-acre Govt. land, 20 acres out of 89-acre de-notified Govt. land, 25-acre land on which the awards were made in year 13/14, 5-acre land on which claims were considered under one project one rate policy. So, in all there are ownership issues on 120-acre land is under dispute.	12.12.2012	31.12.2017	65.5

27. It is observed that the total period of the delay claimed by the Petitioner (from 24.7.2009 to 31.12.2017) at Point b (i) Sl. No.(A) above, subsumes the period of delay claimed towards Naxal Bandhs (period from 2010-17), Ban on mining (8 months, in 2012) and the delay due to the non-availability of approach road (9 months in 2010-11), including the delay claimed at Point b(i) Sl. No. (C), (D) and (E) above and the delay claimed at Point b(ii) Sl. No.(A) and (B) above. Accordingly, in order to arrive at the allowable time-overrun, the reasons for the delay claimed in Point b(i) at Sl. Nos.(A) and (B) are being examined.

28. The Respondent ECR, has alleged that until September 2008, there was no clarity on the acquisition of land despite assuring that a major chunk of the required land would be acquired by June 2008, in its 5th Board meeting. The Respondent has stated that the land requirement as assessed by the Petitioner was excessive and



the Petitioner has also failed to provide a detailed chart/ map/ plan, to show on which land parcels, the various components of the Project were planned to be located. The Respondent has also stated that the Petitioner had placed orders for Machinery and other equipment's, without ensuring any adequate arrangement of land for the Project. The Respondent has further stated that there was a wrong declaration of Private land as Government land and that the delay in land acquisition was a controllable factor in terms of Regulation 12 of the 2014 Tariff Regulations. It has also submitted that no stay orders passed by any Courts have been produced by the Petitioner and therefore, the work of the project could have continued unhindered. The Respondent placing reliance on the Judgement dated 30.4.2015 in Appeal No. 64 of 2014 and Judgement dated 7.11.2017 in Appeal No. 212 of 2016 has pointed out that when a party claims the benefit of a force majeure event in the transmission service agreement, or the bulk power transmission agreement, the said party is obliged to give proper notice of force majeure, so as to satisfy the other party of the existence of such an event. The Respondent has further submitted that as per the Statement of Objects and Reasons (SOR) to the 2014 Tariff Regulations, inefficiency of the contractors and land acquisition issues are controllable events, and does not entitle the Petitioner to any relief of force majeure. *In response*, the Petitioner has submitted that the assurance on acquisition of land provided by the Petitioner was based on the time estimate and commitment given by the Government of Bihar. However, it has submitted that major hindrances were caused due to the demand of the villagers for considering additional land as homestead land. The Petitioner has also submitted that it was constantly following up with the Government of Bihar, the District Administration to resolve the issues pertaining to land acquisition and the Petitioner had even met with and followed up with the villagers to settle this dispute



with an alternate remedy. The Petitioner has further submitted that in order to resolve the dispute, a joint meeting was convened on 24.7.2008, by the District Magistrate, Aurangabad, between the CEO of the Petitioner, and the affected villagers and in the said meeting it was decided that 50 metres of land surrounding the dwelling units/ residences, would be considered as 'Residential land' subject to the approval of the Government of Bihar. It has stated that the matter was put up in the 8th Board meeting on 9.9.2008 and the Board passed the following resolution:

"RESOLVED THAT the proposal for considering 50 metres of land surrounding the residences as 'residential land' for the purpose of compensation against land acquisition be and is hereby approved."

29. The Petitioner has further submitted that the Respondent was fully aware of the status of land acquisition throughout, and despite being aware of the delay being caused, did not opt for moving out of the PPA, but in terms of the 7th Board meeting dated 22.7.2008, the Respondent had released their proportion of equity at 26% amounting to Rs. 20 crore, for the execution of the Project work, which clearly indicates that the Respondent was aware of the status of the Project and was in fact a stake holder. As regards the Respondent's contentions that excessive land assessment was made by the Petitioner, the Petitioner has clarified that as per the CCEA note, the total land required for the project was 1700 acres as the project capacity was identified as 2 x 500 MW. The Petitioner has stated that however, 4x250 MW project was set up, through optimum utilisation of the available land, and therefore it has brought down the land requirement from 1700 acres to 1521 acres, which indicates the fact that the Petitioner was diligent in assessing the land requirements and undertaking the Project activities. In this regard, the Petitioner has furnished the PERT/CPM chart for critical activities of units and has also submitted a chart of land parcel showing various sections of the Plant and the corresponding



litigation nos. affecting these areas. Also, the Petitioner has furnished the drawings showing the relocation of various Balance of Plants due to non-acquisition of land.

30. As regards the contention of the Respondent regarding placing of orders for Machinery and other equipment without ensuring adequate arrangement of land, the Petitioner has clarified that as per the 3rd Board meeting dated 10.1.2008, the Board had resolved the proposal to award the contract for Steam Turbine Generator package to BHEL, and had approved the same, wherein, the Respondent's nominated member was also present. The Petitioner has submitted that the decision to place order for Machinery and other equipment's, was made jointly by the Petitioner and the Respondent ECR and as such, the Respondent, was aware of the same. As regards the contention of the Respondent that delay in land acquisition is a controllable factor under Regulation 12 of the 2014 Tariff Regulations, the Petitioner has submitted that the issues which led to the delay in the completion of the land acquisition process cannot be attributed to the Petitioner, as the delay had occurred due to unpredictable and unfavourable circumstances, on account of the various litigations, faulty land records maintained by the State Administration, excessive time taken by the State administration for rectification of records, the disturbance created by land owners in terms of demanding an increased compensation amount beyond the Land Acquisition Act, 2007 and the constant hindrances caused by the Naxal violence, agitation, strikes etc. It has also submitted that in the present case, the delay was caused due to the ongoing litigation pertaining to the land in question, and the Petitioner had gone ahead and completed all the requisite tasks from its own end. The Petitioner has pointed out that the order of the Hon'ble High Court of Patna, directing the local villagers to file a Petition before the Land Acquisition Officer, and subsequently the declaration of 70.89 acres of land as 'raiyat land' also led to the



delay in the process of land acquisition and due to the ongoing litigation, the delay caused cannot be attributed to the Petitioner. Therefore, the Petitioner has contended that there was no delay on its part in the release of land compensation/R&R activities. As regards the contention of the Respondent that no stay orders of Courts, have been produced by the Petitioner, the Petitioner has clarified that even if the dispute in Courts relate to compensation to be paid for land acquisition, till the possession of proper and continuous parcels land are handed, the progress on the Project was adversely affected. It has stated that the land of 1061.84 acres was affected in bits and pieces, and what was handed over on 1.1.2010, was not the complete land requirement of the Project, which worked out to 1522.20 acres. The Petitioner has further submitted that the Commission, in various orders pertaining to the delays due to issues in land acquisition, relating to the State Administration had condoned the delays therein. The Petitioner has submitted that the Commission in its order dated 19.7.2018 in Petition No. 230/TT/2016 had held as under:

“36. It is noticed that petitioner was required to obtain the forest clearance from 16 sections in respect of the transmission line. petitioner had submitted the proposal for forest clearance for line on 28.6.2012. The forest approval in Ghumsur south division section was obtained on 29.1.2016. The last forest approval was obtained for Berhampur section on 11.2.2016. Accordingly, the forest clearance for the entire transmission line was obtained on 11.2.2016. The forest clearance took around 03 years and 08 months. As per the Forest (Conservation) Amendment Rules, 2004 notified by MoEF on 3.2.2004, the timeline for forest approval after submission of proposal is 210 days by the State Government and 90 days by the Forest Advisory Committee of Central Government, resulting in processing time of 300 days. As against the statutory period of 300 days for processing and obtaining the forest clearance, the forest authorities have taken 1335 days for grant of forest clearance. We are of the view that this period is beyond the control of petitioner and petitioner cannot be held responsible for the delay.

37. It is also observed that there were severe RoW problems at location nos. 60/1, 49, 101. petitioner faced similar RoW issues and court cases at other locations as well. petitioner has also submitted the documents in support of the same. BRBCL was not able to take up any work from 15.9.2014 to 14.10.2016 at location no.60/1. We are of the view that the delay at this location from 15.9.2014 to 14.10.2016 (25 months) is beyond the control of petitioner.



38. ***In our view, on account of delay in forest clearance, which is beyond the control of petitioner, the COD of the assets was delayed. Accordingly, the entire period of time overrun in respect of instant asset is condoned.*** Since, the other reason for time over-run such as RoW issues and court cases were resolved during the period of obtaining the forest clearance, the said period ran parallel to the period consumed for obtaining the forest clearance and accordingly, subsumed in the time for obtaining forest clearance.”

[Emphasis Supplied]

31. Further, the Petitioner has submitted that as per the provisions of the Land Acquisition Act, 1894, the delay in getting possession of the land, even after land acquisition, is the responsibility of the District administration, and thus the Petitioner cannot be burdened with the same, as held by the APTEL vide judgment dated 1.8.2017 in Appeal No. 35 of 2016 & IA Nos. 90 & 189 of 2016 (*GMRKEL V CERC & ors*),as under:

“10. Let us first take all the questions of law together raised by the Appellant related to time overrun i.e. Question nos. 6 a) to 6 g)

.....
10 (b) Question No. 6 d) i.e. ***Whether the Central Commission has erred in dis-allowing the time overrun due to delays in Land Acquisition for all three units of the Power Plant even though the same was beyond the control of the Appellant and was on account of uncontrollable parameters for which the Appellant is entitled to be compensated in terms of time and cost over-run***
.....

10(A) From the above it can be seen that the Central Commission has held that in view of Land Acquisition Act, 1894, the MOU only provides for facilitation of acquisition of land by GoO through IDCO and PPA does not provide it as responsibility of GoO. ***The Central Commission has further held that the Appellant has not placed any documentary evidence in support related to litigations and resistance from locals. In view of the Central Commission, there has been slackness on the part of the Appellant in coordinating with the District Administration to ensure the timely completion of the process of acquisition of land for main plant. In this background, the Central Commission has held that the said delay in the acquisition of land cannot be said to be beyond the control of the Appellant and the Appellant is responsible for the said delay.***
.....

In view of our discussions at 10 b) A. ii to x above we hold that the initial delay in possession of land to the Appellant was due to reason beyond the control of the Appellant and the impugned findings of the Central Commission denying ***time overrun in initial delay of handing over possession of land to the Appellant by GoO/IDCO is set aside.*** The Central Commission is hereby directed to rework and grant consequential reliefs to the Appellant by considering time overrun from 27.7.2009 to 9.2.2010 i.e. initial delay in handing over possession of land to the Appellant for all the three units of the Station.”



32. As regards the contention of the Respondent that timely and adequate notice is necessary for obtaining the force majeure relief, the Petitioner has submitted that it has not claimed any contractual reliefs against the Respondent. The Petitioner has also submitted that in both the judgements, which have been relied upon by the Respondent, the respective appellants therein, were claiming the benefit of force majeure relief under the TSA, namely, that they are not likely to pay the transmission charges to the transmission licensee, since for the period in question, the generating plant was affected by force majeure event. While pointing out that in both cases, the parties were claiming a contractual relief against the transmission licensee, the Petitioner has clarified that force majeure would mean that the obligations assumed by a party for the period in question, would stand suspended or postponed. Accordingly, the Petitioner has stated that in the present case, it has not claimed any contractual relief against the Respondent, but is only seeking the condonation of time overrun in the execution of the project along with reasons and evidence to justify the time taken in completion of the project. The Petitioner has stated that these aspects were succinctly brought out in the various Board meetings, wherein, the Respondent (represented through its Nominee Director) was aware and had full knowledge of the events with regard to the project activities being delayed and was also in a position to take necessary action in the happening of such events. The Petitioner has further submitted that it is not seeking any force majeure relief and also no condonation of time overrun has been sought on account of any non-performance or slow performance by its contractors/suppliers or agencies. On the issue of land acquisition, the Petitioner has added that the reasons for time overrun is for the fact that despite all efforts taken by it, peaceful and complete possession of the land was not handed over by the District Administration. The Petitioner while



contending that the SOR to the Tariff Regulations do not override the Regulations, has stated that the Commission, needs to examine whether the circumstances cited by the Petitioner were beyond its control to justify the condonation of the time overrun claimed.

33. It is observed that the Respondent ECR in its reply dated 31.5.2019, had pointed out to the compilation of a series of charts exhibiting the various packages, the original schedule and the delay in these packages, and the reasons for the said delays, by the Petitioner in order to effectively assess and adjudicate the present petition for determination of tariff for Unit-I and Unit-II of the generating station and has submitted that these charts succinctly describe the glaring lacunae in the execution of the Project by the Petitioner. In response, the Petitioner has clarified, as under:

	Respondents submissions	Petitioner's Reply
1	If land was not acquired, there was no need to initiate the project. In fact, till 31.03.2009, equity of Rs 331.49 crore was invested carrying a notional IDC of Rs 26 crore. The overall land acquired till 31.03.2009 was barely 10.51 acre (Annexure H1). It is important to note that work on none of the contracts have been initiated till this time. The total cost of land is around Rs 441 crore. The purpose of such high equity deployment in the project is not explained in the petition.	<p>It is submitted that in spite of initial problems of naxal disturbances and delay in land acquisition, BRBCL has made all efforts to bring the project back on track.</p> <p>Deployment of Equity on land acquisition were made as the payments were to be paid to Govt of Bihar. However, various legal issues were involved while taking physical possession of the land such as de-notification of earlier notified Govt land by Govt of Bihar on direction of Hon'ble High Court Patna, owner ship claim and then causing litigation on already transferred Govt land to BRBCL etc., Regarding the point raised by Railways that land acquired was less till 31.03.2009, it is submitted that the Minutes of 8th Board Meeting dtd 9.9.2008 indicates the efforts made at that time by BRBCL to acquire the land. The extracts of MOM of Board Meeting regarding land acquisition is reproduced below -</p> <p>In the 8th Board Meeting dtd 09.09.2008 CEO apprised the Board about the status land acquisition.</p> <p><i>"Notification under Section 9 of Land Acquisition Act was done on 7th June, 2008 for acquisition of 394 acres of land and Rs.20 crore was deposited</i></p>



		<p>with Govt. of Bihar on 27th June, 2008. However, villagers were refusing to accept the compensation being offered and instead were demanding higher rates. A major break-through was achieved on 24.07.2008, where the issue pertaining 'Compensation' was settled across the table with the farmers in a joint-Meeting held amongst Collector (Aurangabad), BRBCL Authorities and farmers. He further informed that in view of the agreement, District Authorities have processed the case for onward payment for 394 Acres of Private land. He further informed that for 162 acres of land of two villages which had become time barred, re-notification is required to be done after consent from the Gram Sabha. CEO then informed that Section 4 & 6 notification of Bandobasti Land of 531 acres is under approval with Higher authorities of Govt. of Bihar. CEO then stated that Chairman & Managing Director, NTPC Limited, Director (Operations) / Chairman (BRBCL), Director (Technical), NTPC Limited had discussions with Hon'ble Chief Minister, Government of Bihar on 20th August, 2008 on various issues of BRBCL including that of Land Acquisition."</p> <p>From the above it is clear that all the efforts were being made and regular follow up was done with State Govt., District Authorities and villagers for land acquisition and was apprised to the Board in which Railways is also a member.</p>
2	In original schedule, boiler erection started 4 months after the civil works for BTG, however in actual timelines, the boiler erection has started after one year of the commencement of civil works of TG	The delay of boiler erection started after one year from SG civil works start date since initially the project progress suffered badly due to frequent interruption of work because of Naxal Bandh, strikes, agitation by villagers and delay in land acquisition process. The details of these reasons have already been attached in the petition and additional submission.
3	As per original schedule, Boiler hydro test was to be undertaken after 1 year from commencement of Boiler Erection. However actual boiler hydro test as conducted only after a delay of 3 years after the commencement of the Boiler Erection.	Land for DM Tank/ Water pumping system was not available since various litigations were filed due to change in ownership of awarded land from Govt to Raiyatikara & One project One rate etc. After the re-location of DM Tanks boiler hydrotest was carried out.
4	It is not clear whether Boiler Hydro Test was actually conducted or not since the DM plant was only completed in Nov 2018. Even the Boiler Erection works are shown to get completed by 2017. This is a separate matter raised by the respondent in another petition questioning the COD of the units.	It is already submitted that land for DM Tank was not available due to change in ownership of awarded land from Govt to Raiyatikara. DM Tanks were relocated & alternative arrangements were carried out for Hydro test. The allegation of ECR regarding conduction of boiler Hydro test Is not possible since without proper maintaining of water chemistry in absence of DM Plant, boiler will be severe damaged.



5	As per original estimates, TG erection had to be started in Aug 2009 and was to be completed before the completion of TG civil works. However, it has started way after the completion of TG civil works.	The various delay reasons which were beyond the control of the Petitioner are already provided in amended petition.
6	COD of unit, the initial schedule mentions that the same can be done in a day. However, actual time taken is around 9 months. If such an activity has commenced, then it implies that all your basic infrastructure is in place. Taking time of 10 months signifies that the either the unit had some technical issues or there was delays in making the other required infrastructure available. Currently, all such issues have been brushed under the carpet of legal issues.	Commercial Operation Date (COD) in PERT is indicated as a mile stone and is therefore indicated as that day. However as per norms, 6 months were provided for achieving commercial operation of the Unit from its first date of synchronisation. There have not been inordinate delays except for the reasons already explained.

Time overrun with regard to COD of Unit-III

34. The Petitioner has submitted that the execution/commissioning of all four units are parallel activities and the reasons for delay of Unit-I and Unit-II, as stated above, are also applicable for Unit-III, since as per the investment approval of the generating station, the units were to be achieved COD within a gap of 6 months. However, the Petitioner has stated that due to reasons beyond its control, the COD of Unit-III, got delayed by 11 months, with a gap of 17 months from COD of Unit-II, hence achieving COD on 26.2.2019, as against the schedule COD of 21.12.2011, with a total delay of 85.9 months. The Petitioner has also submitted that other than the delays mentioned for Units-I and II, affecting the COD of Unit-III, there were also certain specific delays affecting the COD of Unit-III like challenges/non-availability in land acquisition for the ESP of Unit-III and Variable Frequency Drive (VFD) (ESP) Control Room. The Petitioner has further clarified that the land for construction of ESP of Unit-III and its control room, could be made available in February, 2016 and therefore, there was delay in achieving COD of Unit-III and this has no linkage with COD of Unit-II. The Petitioner has also stated that it has furnished the documents on



record vide additional submissions dated 31.10.2019 (*copy of record of meeting dated 13.2.2015 of Chairman BRBCL and Secretary Energy, Govt. of Bihar*) and affidavit dated 20.2.2020 (*Annexure-1*) and it is clear from records that the 44 acres of land, on which the ESP of Unit-III was to be constructed, was under dispute and the District Administration faced several hurdles in acquiring the said piece of land. The Petitioner has further submitted that the issue of land for ESP-3 was final resolved on 12.1.2016, and the land was acquired on 22.2.2016, and the activities required to construct the ESP started such as site levelling, Raft casting, Structure erection, superstructure works, transfer foundation/floor casting etc., which further took time resulting in the delay of 11 months. The Petitioner has also submitted that it has shown the challenges faced due to partial land for ESP/VFT control room, which was resolved after continuous follow up with the District Administration.

35. The Respondent ECR has submitted that the ESP/Variable Frequency Drive control room and other purportedly delayed components associated with Unit-III could have been re-engineered and relocated. In response, the Petitioner has submitted that each component of a thermal plant has their own characteristics and uses, depending upon which their design and the locations are fixed. It has pointed out that ESP installation is a critical part of Steam Generator design and its performance and is a prototype to its Original Equipment Manufacturer (OEM) and as such, the same cannot simply be relocated/reengineered. The Petitioner has stated that its relocation may not be a feasible, as stated by the Respondent ECR, without major implications of capital as well as time and overall performance of Boiler. It has submitted that generally, as in case of ESP's installation, the area/land is fixed depends upon the following:



- a. Easy access to all potential maintenance areas, fans, motors, hoppers, discharge devices, dampers, flue gas flow rate and temperature monitors, insulators, rappers, T-R sets, and discharge and collection electrodes.
- b. Easy access to all inspection and test areas like stack testing ports and continuous emission monitors (opacity monitors)
- c. Weather conditions—the ESP must be able to withstand inclement weather such as rain or snow.
- d. Further ESP is located in the flue gas path between the boiler and ID Fans. Any relocation of the ESP would have increased the ducting and the fan power requirement would have increased substantially. This would have lead to re-engineering the basic design of Fan Power which would have increased the cost. This would have delayed the project as well as ordering and installing the equipment as per the re-engineered specifications would take more time.

36. The Respondent ECR has also submitted that burden of proof lies with the Petitioner and has also referred to certain legal cases in this regard. In response, the Petitioner while stating that there is no dispute on the principle that the burden of proof is on the party contending such fact., has pointed out it has placed extensive proof on each of the issues claimed, for condoning the time overrun in the execution of the project. The Petitioner has also submitted that it has not only given the orders passed by the District Magistrate, the FIRs registered, the newspaper articles contemporaneously reporting the events, but has also indicated the various proceedings before the Courts, the Minutes of the Meeting held by the Petitioner to sort out the issues at the highest political and administrative level etc.. The Petitioner has stated that for each claim, in proof of support to its pleadings, the Petitioner has provided relevant documents from various agencies, State Authorities etc., to rely upon. In response to the reliance placed by the Respondent ECR, on the judgement dated 20.11.2017 of APTEL in Appeal No. 178 of 2015 (PGCIL v CERC), wherein, the APTEL gave a specific finding that PGCIL has not placed on record any documentary evidence to explain the delay of 36 months, the Petitioner has submitted that there is no ratio decided in the said case and that there was a factual



finding that the time overrun was not explained with evidence in that case. In contrast, the Petitioner has stated that in the present case, it has furnished proper reasons along with supporting documents/evidence for time overrun. In response to Respondent ECR reliance on the decision of the Hon'ble Supreme Court in NG Dastane vs S Dastane (1975) 2 SCC 326 (which lays down the principle enumerated in Section 3 of the Evidence Act on the preponderance of probabilities), the Petitioner has submitted that there is no question of applying the said principle in this case, since it is not that the Petitioner and Respondent are arguing on the existence of a particular fact or not. The Petitioner has submitted that the question is whether the documentary evidence given by the Petitioner fully supports its claim for seeking condonation of time overrun.

37. The matter has been examined. Based on the submissions and documents placed on record by the Petitioner, it is observed that the issue of incorrect ownership and compensation thereon, was sub-judice before the Hon'ble High Court of Patna which continued till the end of 2017, as the said issue could not be resolved by the State authorities, based on the directions of the Hon'ble High Court. As such, the acquisition of land in patches, delayed the works in various areas like Track Hopper, Ash Dyke, CHP area, Boiler Area of Unit-1, ESP, Switchyard area, TG, CW Channel, Cooling Towers etc. It is observed that due to continuation of the legal proceedings, the land acquisition process was interrupted at the initial stage itself which resulted in the delay in completion of the project work. In our view, the delay of 102.7 months (24.7.2009 to 31.12.2017) was beyond the control of the Petitioner, and as such, the Petitioner cannot be held responsible for the same, subject to the scrutiny of CPM charts submitted by the Petitioner for ascertaining as to how the acquisition of land in patches delayed the commissioning activities of various units.



38. As regards the delay of 93 months claimed on account of litigation by the villagers for consideration of land within the vicinity of the residential complex as Homestead land & demand of compensation as per residential area before the Hon'ble High Court Patna (CWJC 10684 of 2010), we are of the view that despite the Petitioner's consent to make compensation payments, in terms of the decided rates as early as in 2008, the delay in land acquisition was caused by various factors related to land measurement, which were to be finalized by the State agencies. As such, in spite of number of follow ups by the Petitioner, the matter could be resolved till 24.5.2016. It is observed that the Petitioner had taken all steps to mitigate the issue by follow up letters (as annexed with the Petition) and as such, the delay caused by State agencies in the measurement of land for ascertaining the consequent compensation to land owners, was beyond the reasonable control of the Petitioner. Accordingly, based on the materials placed on record, the delay of 93 months (from 26.9.2008 to 24.5.2016) was beyond the control of the Petitioner and as such, the Petitioner cannot be held responsible for the same. Hence, the same is condoned, subject to scrutiny of CPM charts submitted by the Petitioner for ascertaining as to how the acquisition of land in patches delayed the commissioning activities of various units.

39. Accordingly, considering the fact that major period of the condoned delay (26.9.2008 to 24.5.2016) is concurrent with the delay of 102.7 months (24.7.2009 to 31.12.2017) condoned and allowed as above, on account of various litigations, the effective period affecting the process of land acquisition works out to around 110.7 months (26.9.2008-31.12.2017) i.e. combined period as at Sl nos (A) and (B) of Point b(i) in the table above at para 26 above.



40. It is pertinent to mention that during the period when Project was under consideration, land could be acquired only in patches. Also, various critical activities could start only after possession of land patch, where the Plant equipment was scheduled to be erected. It is observed that the Petitioner had to relocate certain Plant equipment's in the absence of availability of land patch initially marked for Plant equipment. As such, the period (from 26.9.2008 to 31.12.2017) can only be termed as the affected period and during this period apart from land acquisition problems, other concurrent problems like Bandhs/Naxal violence, non-availability of approach road, etc., affected the commissioning of the units, which needs to be looked into based on the CPM charts submitted by the Petitioner. Based on the above deliberations, the time overrun that has been considered for condonation is as under, subject to scrutiny of CPM charts submitted by the Petitioner for ascertaining as to how the acquisition of land in patches delayed the commissioning activities of various units:

Reason of delay	Delay Condoned /Affected period
Naxal Bandhs/Violence	394 days during the period 2009-2017
Ban on Mining lease	137 days during the period from February 2012 to September, 2012
Non-availability of approach road	238 days during the period from September, 2010 to June, 2011
Litigation before Hon'ble High Court Patna (due to issue faced due to incorrect ownership records maintained by State Authorities & Litigation by villagers for consideration of land within the vicinity of residential area as Homestead land	110.70 months during the period from 26.9.2008-31.12.2017

Impact Analysis in respect of Unit-I due to reasons of delay as analysed above

41. From the records furnished, it is observed that the Petitioner has submitted the CPM charts indicating delay in major milestones of various units. Further, the Petitioner has submitted a chart showing land parcels for various section of plants and the corresponding litigation numbers affecting the acquisition of land in these



sections of Plant and the drawings showing the relocation of various Balance of Plant (BoP) equipment due to non-acquisition of land. It is observed from the CPM charts submitted by the Petitioner that for Unit-I, the last commissioning activity on boiler side i.e boiler light up with scheduled completion date of 20.4.2010, could be completed on 30.3.2015 with a delay of 60 months. The major reason for this delay is attributable to initial delay in the acquisition of land patches for Main Plant Equipment, due to various court cases, frequent interruption of work, Naxal Bandhs/violence, the non-availability of approach road, ban on mining/mining lease etc., and the non-availability of land earmarked for i) Fuel oil handling system and Motor Control Centre (MCC) ii) D.M tank iii) Fire water pump house. The land for these Plant equipment could only be acquired in later part of the year 2014, with a delay of almost six years, which as per schedule should have been in the possession of the Petitioner, in June, 2008. In certain cases, the Petitioner had to relocate the Plant equipment e.g. fuel oil trestle and fuel oil MCC after availability of the land during later part of the year 2014. As such considering the (i) non-availability of land for some of the boiler side equipment/fronts, till later part of the year 2014 and (ii) concurrent problems like Naxal Bandhs/violence, non-availability of approach road, ban on mining/mining lease etc., prevailing intermittently between the zero date i.e 21.1.2008 and the actual completion date of Boiler Light Up activity i.e 30.3.2015, we hold that the delay of 60 months for boiler light up, is beyond the control of the Petitioner.

42. It is observed that on the Turbine side, the last activity i.e. TG Oil Flushing (before the steam blowing) with a scheduled completion date of 19.5.2010, could be completed only on 23.12.2015, with a delay of 68 months. The major reason for this delay is attributable to the initial delay in the acquisition of land patches, earmarked



for EOT Crane and Fire Water Pump house & Fire Water MCC (required in view of safety). The delay in the acquisition of land for EOT crane, was the prime reason for the delayed start of the previous activity i.e T. G erection start. The land for Fire water Pump house & Fire Water MCC could only be acquired in January, 2015 with a delay of around six and half years, which as per schedule, should have been in the possession of the Petitioner, in June, 2008. Further, due to unavailability of land earmarked for Fire Water Pump house and Fire Water MCC, these were relocated to other available land patches, which caused another delay by four to five months. As such considering (i) non-availability of land for some of the turbine side equipment/ fronts till 2015 and (ii) concurrent problems like Naxal Bandhs/Violence, non-availability of approach road, ban on mining etc., resulting in the delay of around two years prevailing during the zero date i.e 21.1.2008, and the actual completion date of this activity i.e 23.12.2015, we hold that the delay of 68 months for TG oil flushing was beyond the control of the Petitioner.

43. It is further observed that the COD of the Unit-I with the scheduled completion date of 21.1.2011, could only be completed on 15.1.2017, with a delay of 72 months i.e an additional period of four months over and above the 68 months delay, till the activity of T.G. oil flushing. The major reason for the delay is on account of the delay in acquisition of land patches for GT bay in Switchyard, Cooling Tower & CW Channel causing delay of Deck floating activities. It is observed from the submissions of the Petitioner that land (Mouja 'Kairka', Khasra 1572, Khata No 126) for GT bay in Switchyard, free from all encumbrances, could be acquired only on 5.11.2015. The 'Raiyats' collectively were stopping the work, which was delaying the GT-1 bay. For resolving this issue, the Petitioner had approached the concerned 'Raiyats' and requested them to allow the work and assured them to provide all



assistance in re-examination of their ownership claim on the Government notified land. On strong persuasions of the Petitioner, the 'Raiyats' gave the consent on 5.11.2015, to work on the said piece of land. Once this patch of land for Switchyard was in the possession of Petitioner, the balance work for switchyard was completed and Unit-I was synchronized on 20.3.2016. As such, the synchronisation was achieved in scheduled time, as the time overrun till synchronisation remained at 68 months, as condoned, for the last turbine side activity i.e. Turbine oil flushing.

44. The further delay of four months in achieving COD (72 months) was due to the late acquisition of land patches for ESP and its Duct foundation, on account of the Court cases associated with the change in ownership of the awarded land from Government land to Private land. Further, due to the non-availability of small patches of land earmarked for Cooling Tower & CW Channel, certain components of the Cooling towers and CW channel, were relocated, thereby causing delay in deck floating activities for turbine, consequent to completion of CW channel. This land was under litigation before the Hon'ble High Court of Patna (CWJC 14314/2009). As such considering the (i) non-availability of land for some of the critical equipment/fronts resulting in late commissioning of switchyard and requiring relocation of certain components of Cooling towers and CW channel (ii) concurrent problems like Naxal Bandhs/violence, non-availability of approach road, ban on mining etc. (for which delay has been approved above) prevailing during the zero date i.e. 21.1.2008 and the actual COD i.e. 15.1.2017, we hold that the delay of 72 months for COD of Unit-I was beyond the control of the Petitioner.

Impact Analysis in respect of Unit-II due to reasons of delay as analysed above

45. In case of Unit-II, the COD was delayed by around 73 months 20 days (2243 days). In addition to the reasons for time overrun in the case of Unit-I, another major



reason for delay in case of Unit-II was the delayed acquisition of a land patch for ESP and VFD only in February, 2016. This land was under litigation before the Hon'ble High Court of Patna (CWJC 14314/2009) and it is noticed that land Khata 40 Plot 309 Village Ekghara of area 0.28 acres for ESP was left out from the land acquisition due to litigation and delay in solving the issue by State authorities. The issue was taken up and the DM was asked to resolve the ownership issue, for left out land for ESP-2, before 31.1.2015. However, after lot of persuasion, the issue could be resolved only in February, 2016 only. As such, the left-out work of ESP and VFD of Unit-II, started in March, 2016 and could be completed only in August, 2017 i.e. within 18 months, though the scheduled time for commissioning of the ESP for Unit-II was 34 months. Thereafter, the Petitioner could achieve the COD of Unit-II in September, 2017 (10.9.2017) i.e. within one month from the completion of ESP, though the scheduled time between the completion of ESP and COD is 8 months. As such considering the (i) non-availability of land for some of the boiler side equipment/fronts till 2014, last land patch of ESP was made available in February, 2016 and (ii) non-availability of land for some of the turbine side equipment/fronts till Jan.2015 (ii) concurrent problems like Naxal Bandhs/violence, non-availability of approach road, ban on mining etc. prevailing during the zero date i.e 21.1.2011 and the actual COD i.e 10.9.2017, we hold that the delay of 73 months 20 days (2243 days) in achieving the COD of Unit-II, was beyond the control of the Petitioner.

Impact Analysis in respect of Unit-III due to reasons of delay as analysed above:

46. In case of Unit-III, the COD had delayed by 86 months i.e by 13 more months in comparison to the time overrun of 73 months, in achieving COD of Unit-II. In addition to the reasons for time overrun in case of Units-I and II above, another major reason



for the delay in case of Unit-III as submitted by the Petitioner is the delayed acquisition of a land patch for ESP and VFD in February, 2016 which, as per schedule should have been in the possession of the Petitioner in August, 2009.

47. It is observed that the last land patch of ESP and VFD control room of both Units-II and III came in the possession of the Petitioner on 18.2.2016. Subsequently, the work for ESP & VFD of Unit-II resumed in March, 2016 and for Unit-III it resumed in May, 2016. As such, the balance work associated with ESP and VFD as on 18.2.2016 for Units-II and III has not been submitted by the Petitioner. Considering the fact that as on 31.1.2015 (date mentioned in the MOM taken by Chief Secretary, Bihar to discuss the issue of yet to be acquired land for ESP-II and III), the status of unacquired land for ESP-II (0.68 acre) and ESP-III (0.82 acre) was almost similar in quantum. After resuming the ESP work for Unit-II, COD was achieved on 10.9.2017 i.e after a period of 18 months 9 days. However, in case of Unit-III, after resuming of ESP work on 22.5.2016, the COD was achieved only on 26.2.2019 i.e. in about 33 months. We find no additional reasons which can explain as to why the time taken in the completion of ESP work for Unit-III is in excess of the time taken for the completion of Unit-II from date of start of work, for the respective ESPs. Accordingly, considering the fact that from 1.3.2016 (start date of ESP-II work) the Unit-II achieved COD on 10.9.2017 i.e after a period of 18 months 9 days, COD of Unit-III could have been achieved in a similar time frame of about 19 months i.e, by 30.11.2017 . However, considering the fact that on overall consideration of resources available with the contractors, there is a scheduled gap of six months between CODs of Unit-II and Unit-III and that the time overrun till the COD of Unit-II has been allowed, COD of Unit-III should have been achieved on 10.3.2018 i.e after six months from the COD of Unit-II which is 10.9.2017. Accordingly, on overall



consideration, the time overrun till 10.3.2018 in achieving COD of Unit-III is allowed and the IDC and IEDC for the period from 10.3.2018 till 25.2.2019, will not be allowed as a part of the capital cost of the Project for the purpose of tariff.

48. Thus, the total time overrun from SCOD to actual COD of the project and the time overrun allowed/disallowed for Unit-I, Unit-II, Unit-III and Unit-IV are summarized as under:

Units	Scheduled COD as per investment approval	Actual COD	Time overrun (days)	Time overrun allowed (days)	Time overrun disallowed (days)
I	21.1.2011	15.1.2017	2186	2186	0
II	21.7.2011	10.9.2017	2243	2243	0
III	21.1.2012	26.2.2019	2593	2240	353
IV	21.7.2012	1.12.2021	3421	Beyond the scope of the Petition	

49. Consequent upon the above, the COD of the units of the generating station has been reset for the computation of IDC & IEDC, as under:

Unit	Reset/revised COD
I	15.1.2017
II	10.9.2017
III	10.3.2018

Cost overrun

50. The comparison of the capital cost, excluding WCM, as approved by CCEA as per IA, the RCE approved by the Board of the Petitioner Company and the actual expenditure claimed by the Petitioner as on 31.3.2019, is as under:

	Capita cost as per IA (4 units)	Capital cost as per RCE approved by Board (4 units)	Actual expenditure as on 31.3.2019 (3 units) (Accrual basis)
Hard cost excluding IEDC	442474.10	626664.81	477303.47
IEDC	20013.10	23267.68	52406.76
IDC	62455.30	139560.00	143566.92
Total	524942.50	789492.49	673277.15



51. It is observed that the Petitioner while submitting the reasons and justification for cost overrun, as per Form 5 Ei of the Petition, has compared the actual capital expenditure incurred for the three units till 31.3.2019, with the capital cost as per RCE approved by the Board for the four units of the project. As such, there is not a one to one comparison. However, the Petitioner has submitted the reasons and justification for cost overrun, between the original investment approval for four units and RCE approved by the Board, which represents the estimated expenditure till the COD of the generating station, after taking into account the CWIP, and other likely expenditure. Accordingly, keeping in view that the COD of the fourth unit of the project is during 2019-24 and that the project cost may further increase in comparison to the RCE approved by the Board, the following approach is being adopted to arrive at the allowable cost as on the COD of the various units (till COD of Unit-III):

- a) Considering the fact that some period of time overrun has not been found to be beyond the control of the Petitioner, the increase in capital cost on account of IDC and IEDC needs to be restricted corresponding to the time overrun condoned.
- b) The reasons and justification for cost overrun in hard cost (excluding IDC and IEDC) between the original investment approval and RCE approved by the Board shall be put to prudence check for arriving at the allowable hard cost of four units, which then would be prorated to the three units. The allowable hard cost of the three units for the purpose of tariff, shall be arrived at by comparing the actual capital expenditure as on COD of third unit, and as on 31.3.2019, with prorated hard cost of three units.

52. The variation analysis as submitted by the Petitioner between the original approved cost and the RCE as approved by the Board, is as under:

	Original Cost	Revised cost	Variation w.r.t the original cost	(Rs. in crore) Variation w.r.t IA (%)
Hard cost excluding IDC, IEDC (a)	4424.74	6266.65	1841.90	41.62%



IEDC (b)	200.13	232.68	32.55	16.26%
Project Cost excluding IDC (c)=(a)+(b)	4624.87	6499.32	1 874.45	35.02%
IDC (d)	624.55	1 395.60	771.05	14.41%
WCM (e)	103.08	103.08	0.00	0.00%
Project Cost incl. IDC & WCM (f)=(c)+(d)+(e)	5352.50	7998.00	2645.50	49.43%

53. The major reasons for the variation under different heads are as under:

(Rs. in crore)			
Sl. No.		Variation	% of total approved cost
a	Land and R&R Cost Increase	342.67	6.4%
b	Increase in Prices	794.80	14.85%
c	Change in Scope	172.37	3.22%
d	Exchange Rate Variation (ERV)	309.50	5.78%
e	Changes in taxes and duties etc.	214.91	4.02%
f	Change in Project Management	40.20	0.75%
g	IDC	771.05	14.41%
	Total	2645.50	49.43%

54. The reasons for variation between approved cost in revised cost estimate and original approved cost are examined below:

Variation due to land and R&R cost increase (Rs. 342.67 crore)

55. The Petitioner has submitted that out of the total 1521 acres approx., only around 1260 acres was acquired by Government of Bihar for the Petitioner by December, 2009 which could not be made available to the Petitioner due to non-updation of the correct owners of land with State Authorities, prevailing higher compensation rates for the neighboring NPGC project, applicability of formula of one uniform compensation rate for the entire project at NPGC. Consequently, the Petitioner has stated that demands and agitations for higher compensation rates were made, which were accepted & implemented by Govt. of Bihar, thereby increasing the land cost to substantial amount. In addition to above for balance land, acquisition process could not commence due to non-updation of land records and faulting land acquisition process by Govt. Of Bihar, certain patches of land could not be acquired. These lands were then subsequently acquired, for which enhanced



rates as per the new "FCT (Right to Fair Compensation and Transparency) in LA, R&R Act" were made applicable, thereby further increasing the land cost. The Petitioner has submitted that all the above reasons were beyond the control of the Petitioner.

56. The matter has been examined. Considering the fact that the "delay in land acquisition" based on the elaborate submissions of the Petitioner have been accepted in the preceding paras while considering the time overrun, we are of the view that consequent increase of Rs. 342.67 crore in land acquisition due to enhanced compensation paid by the Petitioner was not within the control of the Petitioner. As such, the cost overrun claimed by the Petitioner in the Board approved revised cost estimate is considered in the land cost, as indicated by the Petitioner, and the actual audited expenditure under this head claimed by the Petitioner on various relevant dates i.e CODs of three units and closing/opening date of each financial year is allowed and considered for the purpose of tariff.

Variation due to Increase in Prices (Rs. 794.80 crore)

57. The details regarding the variation due to increase in prices are tabulated below

<i>(Rs. in crore)</i>		
Sl. No.		Variation w.r.to FR
1.	Increase in awarded cost w.r.t. Investment Approval	308.10
2.	Increase in Prices from original cost to payment due to escalation	486.70
	Grand Total- (A) + (B)	794.80

58. The Petitioner has submitted that the reason for increase in the awarded cost for Investment Approval is that the major contracts were awarded after 2009-10, keeping in view the prevailing conditions at site and land acquisition issues, which led to the increase in the awarded cost from the approved original cost of Project, which was based on 4th Qtr. 2006 price level, having no escalation. Further, the



Petitioner has stated that the variation during the currency of contract, has also been on account of difference in indices at the time of award, and at the time of execution of contract.

59. The matter has been considered. The cost overrun of Rs. 308.10 crore is on account of increase in the awarded cost for Investment Approval. The award of the contracts was delayed considering Naxal Bandhs/violence and land acquisition issues which were prevailing from the zero date. Major contracts (except for main plant package) could be awarded during 2009-10 as against the zero date of 21.1.2008. Considering the fact that (i) the investment approval was at 4th Qtr. 2006 price level against the year of placement of orders i.e 2009-10 and (ii) the contracts were awarded based on the transparent bidding process, the consequent cost overrun of Rs.308.10 crore was not under the control of the Petitioner.

60. With regard to cost overrun of Rs. 486.70 crore due to "Increase in Prices" from original cost to the actual payment, due to escalation, the Petitioner has submitted that the variation during the currency of contract has also been on account of the difference in indices at the time of award, and at the time of execution of contract. The matter has been considered. It is observed from Form 5D that most of the construction and equipment packages were awarded through DCB/ICB with escalation clause. Against the time overrun of more than 8 years in the project, the increase of Rs.486.70 crore translates to 10.52% $(486.70 \times 100 / 4,624.87)$ with respect to the original project cost excluding IDC. As such, the increase in price @1.3% per year is beyond the control of the Petitioner and is justifiable.

Variation due to change in Scope (Rs. 172.37 crore)



61. The Petitioner has submitted that as there were land issues in different patches of land affecting erection/commissioning of different systems, it was decided to relocate some of the facilities to have the commissioning of units at the earliest. It has submitted that the variation is due to non-availability of land patches causing quantity changes in works like Main plant Civil Works, Offsite Civil Works, Piling & Foundation, Chimney & Elevator Works, Site Levelling & infrastructure, CW System, enabling works, provisions of raising of ash dyke etc. The Petitioner has also stated that the cost change under this head, was mainly on account of site-specific conditions and meeting the requirements of detailed engineering subsequent to approval of the project and the details of layout changes due to non-acquisition of land affecting different sections/components has been furnished. The Petitioner has also submitted that variation was due to recommendation of RITES due to non-availability of certain pieces of land for railway siding and additional facilities had been included as proposed by RITES based on requirement/insistence of Railways, like Road Over Bridge, Road Under Bridge, Overhead Electrification, Foot Over Bridge and additional one track had been created in up line to plant entry. It has further stated that the take off point had been changed from middle section to Nabinagar Road Railway Station and augmentation of service station, which included the laying of additional track in station yard, S&T System, overhead electrification in Railway premises etc. to be done as deposit work through Indian railway. Also, the track length increased from 20 Km to 34.4 km.

62. The matter has been considered. The hardships faced by the Petitioner during the project execution due to land acquisition have been deliberated at length while examining the time overrun involved in the preceding paras. It has been brought out that number of equipment were relocated to the available patches to reduce the time

overrun to the possible extent and this relocation of plant equipment has caused cost overrun of Rs.172.37 crore in hard cost of the project, which is 3.73% of the original project cost excluding IDC $[172.37 \times 100 / 4,624.87]$. Considering the fact that relocation of listed equipment was a need based proactive step taken by the Petitioner to mitigate the issue of non-availability of patches of land, the consequent cost overrun of Rs. 172.37 crore is allowed.

Exchange Rate Variation (Rs. 309.50 crore)

63. The Petitioner has submitted that major component of Exchange Rate Variation was due to BHEL SG & TG Packages. It has submitted that the exchange rates of Rs. 57.40 and 57.69 per Euro were considered as the base rate at the time of BODs (Oct. & Nov.'2007) respectively for SG & TG Packages. The Petitioner has stated that ERV was due to increase in the Euro rate which has gone up by 33.79 %. The matter has been considered. ERV for the construction period is allowed to be capitalized for the purpose of tariff, in terms of the 2014 Tariff Regulations. As such, the consequent cost overrun is allowed.

Changes in Taxes and Duties (Rs. 214.91 crore)

64. The Petitioner has submitted that major component is Entry Tax (Rs. 213.57 crore) which had been increased due to the imposition of State tax on the entry of Goods into the areas of the State of Bihar w.e.f. 1993 as per the "Bihar tax on entry of goods into local areas for Consumption, use or sale therein Act, 1993". The matter has been considered. The cost overrun due to the changes in taxes and duties, is allowable under change in law during the construction period as per the 2014 Tariff Regulations. Accordingly, the same is allowed.

Change in Project Management cost (Rs. 40.20 crore)

65. The Petitioner has submitted that the project management cost had increased from the original investment approval of Rs. 200.13 crore to Rs. 240.33 crore (IEDC-Rs.232.68 crore+ MBOAs-Rs.7.66 crore not envisaged in IA, which includes IEDC. It has further submitted that the increase of Rs.40.20 crore is mainly on account of pay revision and increase in the construction period, due to delay in land acquisition, which was beyond the control of Petitioner. The matter has been considered. The major component of this increase is the increase in IEDC, which mainly consists of man power cost, which is directly related to time consumed (Scheduled time + time overrun) in construction of the project. Accordingly, the same is considered subject to deduction of IEDC corresponding to time overrun disallowed in achieving COD of Unit-III.

Interest during Construction (Rs. 771.05 crore)

66. The Petitioner has submitted that IDC has increased from Rs. 624.55 crore to Rs. 1395.60 crore, which is mainly due to delay in project execution. Considering the fact that IDC is a cost and time dependent element of capital cost, the actual IDC shall be restricted to the time overrun allowed by deducting IDC for the disallowed time overrun from actual IDC claimed.

67. Based on the above deliberations, the hard cost of the project (4 units) excluding IEDC and IDC is Rs.6266.65 crore as per revised cost estimate, is allowed for the purpose of tariff. It is observed that the actual audited expenditure on accrual basis excluding IDC and IEDC till COD of third unit i.e. 26.2.2019 is Rs.476709.07 lakh and is Rs.477303.47 lakh as on 31.3.2019, which works out to be 76.07% and 76.17% of the hard cost (excluding IEDC and IDC) of Rs. 6266.65 crore allowed for the purpose of tariff as above for four units. As such, considering the cost of common

auxiliaries and land, this percentage cost of around 76% is reasonable in comparison to prorated percentage of 75% for three units.

Capital cost for the purpose of tariff

Actual Capital Cost as on COD of Unit-I (15.1.2017)

68. The details of the capital cost claimed by the Petitioner, as on COD of Unit-I is as under:

	<i>(Rs. in lakh)</i>
Gross Block as per IND AS as on COD of Unit-I	254411.82
Add: IND AS adjustment to Gross Block as on COD of Unit-I	886.56
Gross Block as per IGAAP as on COD of Unit-I (on accrual basis)	255298.38
Less: Un-discharged liabilities included above	27807.70
Gross Block as per IGAAP as on COD of Unit-I (on cash basis)	227490.68
Add: Notional IDC	21371.56
Less: Inter-unit transfer of assets included above	3405.34
Add: Rounding off error	1.13
Capital cost claimed as on COD of Unit-I	245458.03

68. The auditor certified capital cost, on accrual as well as cash basis, amounting to Rs.255298.38 lakh and Rs.227490.68 lakh as on COD of Unit-I, includes IDC & FC amounting to Rs.42491.21 lakh, IEDC amounting to Rs.22121.48 lakh, inter-unit transfer of assets amounting to (-) Rs.3405.34 lakh and contingency amounting to Rs.44.07 lakh. Accordingly, the hard cost component of capital cost as on COD of Unit-I works out to Rs.190641.62 lakh on accrual basis and Rs.162833.92 lakh on cash basis. Having held that the time and cost overrun (except for Unit-III) were beyond the control of the Petitioner and as such hard cost of the station as claimed by the Petitioner till 31.3.2019 is reasonable in comparison to prorated RCE cost of the three units, the Commission is inclined to allow the capital expenditure towards hard cost of Rs.162833.92 lakh (net of un-discharged liabilities of Rs.27807.70 lakh)



as on COD of Unit-I subject to prudence check of cost of initial spares and adjustment of capital cost on account of sale of infirm power.

69. We now proceed to examine the Petitioner's claim for IDC & FC, Notional IDC, IEDC, inter-unit transfer of assets, contingency and rounding off difference as under:

(a) IDC & FC- The Petitioner has claimed IDC & FC amounting to Rs.42491.21 lakh as on the COD of Unit-I. Considering the fact that entire time overrun as on COD of Unit-I has been allowed for the purpose of tariff the Petitioner's claim under this head is allowed for the purpose of tariff.

(b) Notional IDC- The Petitioner has claimed Notional IDC amounting to Rs.21371.56 lakh as on COD of Unit-I. There is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, Regulation 9(2)(b) of the 2014 Tariff Regulations provides for allowance of Normative IDC (over and above actual IDC). Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, the allowable Normative IDC (up to SCOD) over and above actual IDC works out to Rs.2468.67 lakh as on COD of Unit-I.

(c) IEDC- The Petitioner has claimed IEDC amounting to Rs.22121.48 lakh as on COD of Unit-I. Considering the details of IEDC as furnished in the Petition the allowable IEDC after deduction of depreciation amounting to Rs.1996.55 lakh included in the capital cost as on COD of Unit-I works out to Rs.20124.93 lakh.

(d) Inter-unit transfer of assets: The Petitioner has claimed (-) Rs.3405.34 lakh towards inter-unit transfer of assets, the same is allowed.

(e) The Petitioner's claim as on COD of Unit-I also includes provision towards contingency amounting to Rs.44.07 lakh. The provisions of the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency. Accordingly, the Petitioner's claim under this head is not allowed.

(f) The rounding off difference of Rs.1.13 lakh claimed over and above gross block is not allowed for the purpose of tariff.

70. *Based on the above discussions, the capital cost allowed as on COD of Unit-I works out to Rs.224513.39 lakh.*

Actual Capital Cost as on COD of Unit-II (10.9.2017)



71. The details of the capital cost claimed by the Petitioner, as on COD of Unit-II is as under:

	<i>(Rs. in lakh)</i>
Gross Block as per IND AS as on COD of Unit-II	397486.98
Add: IND AS adjustment to Gross Block as on COD of Unit-II	886.56
Gross Block as per IGAAP as on COD of Unit-II (on accrual basis)	398373.54
Less: Un-discharged liabilities included above	34743.81
Gross Block as per IGAAP as on COD of Unit-II (on cash basis)	363629.73
Add: Notional IDC	21426.42
Less: Inter-unit transfer of assets included above	3405.34
Add: Rounding off error	(-) 0.99
Capital cost claimed as on COD of Unit-II	381649.82

72. The auditor certified capital cost, on accrual as well as cash basis, amounting to Rs.398373.54 lakh and Rs.363629.73 lakh as on COD of Unit-II, includes IDC & FC amounting to Rs.82004.39 lakh, IEDC amounting to Rs.32198.36 lakh, inter-unit transfer of assets amounting to (-) Rs.3405.34 lakh and contingency amounting to Rs.199.32 lakh. Accordingly, the hard cost component of capital cost as on COD of Unit-II works out to Rs.283971.47 lakh on accrual basis and Rs.249227.66 lakh on cash basis. Having held that the time and cost overrun (except for Unit-III) were beyond the control of the Petitioner and as such hard cost of the station as claimed by the Petitioner till 31.3.2019 is reasonable in comparison to prorated RCE cost of the three units, the Commission is inclined to allow the capital expenditure towards hard cost of Rs.249227.66 lakh (net of un-discharged liabilities of Rs.34743.81 lakh) as on COD of Unit-II subject to prudence check of cost of initial spares and adjustment of capital cost on account of sale of infirm power.

73. We now proceed to examine the Petitioner's claim for IDC & FC, Notional IDC, IEDC, inter-unit transfer of assets, contingency and rounding off difference as under:

(a) IDC & FC- The Petitioner has claimed IDC & FC amounting to Rs.82004.39 lakh as on the COD of Unit-II. Considering the fact that entire time overrun as on COD of



Unit-II has been allowed for the purpose of tariff the Petitioner's claim under this head is allowed for the purpose of tariff.

(b) Notional IDC- The Petitioner has claimed Notional IDC amounting to Rs.21426.42 lakh as on COD of Unit-II. There is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, Regulation 9(2)(b) of the 2014 Tariff Regulations provides for allowance of Normative IDC (up to SCOD) over and above actual IDC. Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, the allowable Normative IDC (over and above actual IDC) works out to Rs.5061.83 lakh as on COD of Unit-II.

(c) IEDC- The Petitioner has claimed IEDC amounting to Rs.32198.36 lakh as on COD of Unit-II. Considering the details of IEDC as furnished in the Petition, the allowable IEDC after deduction of depreciation amounting to Rs.2131.23 lakh included in the capital cost as on COD of Unit-II works out to Rs.30067.13 lakh.

(d) Inter-unit transfer of assets: The Petitioner has claimed (-) Rs.3405.34 lakh towards inter-unit transfer of assets, the same is allowed.

(e) The Petitioner's claim as on COD of Unit-II also includes provision towards contingency amounting to Rs.199.32 lakh. The provisions of the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency. Accordingly, the Petitioner's claim under this head is not allowed.

(f) The rounding off difference of (-) Rs.0.99 lakh claimed over and above gross block is not allowed for the purpose of tariff.

74. Based on the above discussions, the capital cost allowed as on COD of Unit-II works out to Rs.362955.67 lakh.

Actual Capital Cost as on COD of Unit-III (26.2.2019)

75. The details of the capital cost claimed by the Petitioner, as on COD of Unit-III is as under:

	<i>(Rs. in lakh)</i>
Gross Block as per IND AS as on COD of Unit-III	674516.65
Add: IND AS adjustment to Gross Block as on COD of Unit-III	1824.61
Gross Block as per IGAAP as on COD of Unit-III (on accrual basis)	672692.04
Less: Un-discharged liabilities included above	52026.38
Gross Block as per IGAAP as on COD of Unit-III (on cash basis)	620665.66
Add: Notional IDC	21542.32
Add: Prepayment charges for refinancing of loan	2935.04
Capital cost claimed as on COD of Unit-III	645143.02

72. The auditor certified capital cost, on accrual as well as cash basis, amounting to Rs.672692.04 lakh and Rs.620665.66 lakh as on COD of Unit-III, includes IDC &



FC amounting to Rs.143579.76 lakh, IEDC amounting to Rs.52403.20 lakh and contingency amounting to Rs.390.13 lakh. Accordingly, the hard cost component of capital cost as on COD of Unit-III works out to Rs.476318.95 lakh on accrual basis and Rs.424292.57 lakh on cash basis. Having held that the time overrun of 2240 days and cost overrun excluding increase in IDC and IEDC, were beyond the control of the Petitioner and as such hard cost of the station as claimed by the Petitioner till 31.3.20019 is reasonable in comparison to prorated RCE cost of the three units, the Commission is inclined to allow the capital expenditure towards hard cost of Rs.424292.57 lakh (net of un-discharged liabilities of Rs.52026.38 lakh) as on COD of Unit-III subject to prudence check of cost of initial spares and adjustment of capital cost on account of sale of infirm power.

73. We now proceed to examine the Petitioner's claim for IDC & FC, Notional IDC, IEDC, inter-unit transfer of assets, contingency and rounding off difference as under:

(a) IDC & FC- The Petitioner has claimed IDC & FC amounting to Rs.143579.76 lakh as on the COD of Unit-III. Considering the fact that out of total time overrun of 2593 days as on COD of Unit-III time overrun of 353 days has been disallowed for the purpose of tariff, the allowable IDC & FC as on COD of Unit-III works out to Rs.115484.13 lakh.

(b) Notional IDC- The Petitioner has claimed Notional IDC amounting to Rs.21542.32 lakh as on COD of Unit-III. There is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, Regulation 9(2)(b) of the 2014 Tariff Regulations provides for allowance of Normative IDC (up to SCOD) over and above actual IDC. Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, the allowable Normative IDC (over and above actual IDC) works out to Rs.7136.12 lakh as on COD of Unit-III.

(c) IEDC- The Petitioner has claimed IEDC amounting to Rs.52403.20 lakh as on COD of Unit-III. Considering the details of IEDC as furnished in the Petition along with disallowed time overrun of 353 days as on COD of Unit-III, the allowable IEDC after deduction of depreciation amounting to Rs.2190.30 lakh included in the capital cost as on COD of Unit-III works out to Rs.43968.34 lakh.

(d) Prepayment charges for refinancing of loan: The Petitioner has claimed Rs.2935.04 lakh towards prepayment charges for refinancing of loan as on 1.4.2018



and as on COD of Unit-III. This amount claimed by the Petitioner is in addition to the gross block as per IND AS as well as as per IGAAP. Further, the Petitioner has not submitted any justification for claiming the same as on these dates. Accordingly, the Petitioner's claim under this head over and above audited gross block that too without any proper justification for its inclusion in the capital cost is not allowed for the purpose of tariff.

(e) The Petitioner's claim as on COD of Unit-III also includes provision towards contingency amounting to Rs.390.13 lakh. The provisions of the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency. Accordingly, the Petitioner's claim under this head is not allowed.

74. Based on the above discussions, the capital cost allowed as on COD of Unit-III works out to Rs.590881.16 lakh.

Additional Capital Expenditure

75. Regulations 14 of the 2014 Tariff Regulations provides as under:

"14. Additional Capitalization and De-capitalization:

(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) Un-discharged 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 un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.



Xxxx

(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 de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from the outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalised."

76. The reconciliation of additional capital expenditure claimed by the Petitioner on cash basis (including discharge of liabilities) from the audited books of accounts is as under:

(Rs in lakh)

	2016-17	2017-18		2018-19	
	15.1.2017 (COD of Unit-1) to 31.3.2017 (Unit#1)	1.4.2017 to 9.9.2017 (Unit#1)	10.9.2017 (COD of Unit-2) to 31.3.2018 (Unit#1&2)	1.4.2018 to 25.2.2019 (Unit#1&2)	26.2.2019 (COD of Unit-3) to 31.3.2019 (Unit#1,2&3)
Closing Gross Block as per audited books	254540.81	397486.98	398936.99	674516.65	675210.48
Less: Opening Gross Block as per audited books	254411.82	254540.81	397486.98	398936.99	674516.65
Additional capital expenditure as per audited books	128.99	142946.17	1450.01	275579.66	693.83
Less: IND AS Adjustment	0.00	0.00	0.00	2711.17	11.14
Additional capital expenditure as per IGAAP for the generating station	128.99	142946.17	1450.01	272868.49	682.69
Less: Exclusions	0.00	141387.46	0.00	272868.49	0.00
Additional capital expenditure claimed for the generating station as per IGAAP (on accrual basis)	128.99	1558.71	1450.01	0.00	682.69
Less: De-cap claimed	0.62	0.00	2.23	0.00	0.00
Less: Un-discharged liabilities included in ACE above	2.54	16.01	0.57	0.00	54.92
Additional capital expenditure claimed for the generating station (on cash basis)	125.83	1542.70	1447.21	0.00	627.77
Add: Discharges of liabilities	154.51	360.54	2200.94	110.44	1656.79
Net Additional capital expenditure claimed including discharges for the generating station	280.34	1903.24	3648.15	110.44	2284.56



77. The additions have been claimed under Regulation 14(1) by the Petitioner. It is observed from Form-9A that the expenditure has been claimed for assets of original scope essentially required for operation of thermal generating stations, accordingly, the expenditure is allowed under Regulation 14(1)(ii) as the expenditure has been capitalized within cut-off date. However, during the period from COD of Unit-II (i.e. 10.9.2017 to 31.3.2018) the Petitioner has claimed and adjusted undischarged liabilities of Rs.0.57 lakh from its additional capital expenditure claim as against liability addition of Rs.107.74 lakh as per Form-18 (i.e. Liability Flow Statement) during this period. The Petitioner has not furnished any justification / reconciliation towards considering lower liability of Rs.0.57 lakh in its additional capital expenditure claim for the period from COD of Unit-II (i.e. 10.9.2017 to 31.3.2018). Accordingly, liability of Rs.107.74 lakh has been adjusted while allowing additional capital expenditure for the period from COD of Unit-II (i.e. 10.9.2017 to 31.3.2018).

78. Further, minor decapitalization of certain assets has been claimed under Regulation 14(4). As such, the same is allowed under Regulation 14(4) as these assets are not rendering any useful service in generation of power.

79. In view of above the additional capital expenditure allowed for the purpose of tariff is as under:

	<i>(Rs. in lakh)</i>				
	2016-17	2017-18		2018-19	
	15.1.2017 (COD of Unit-I) to 31.3.2017 (Unit-I)	1.4.2017 to 9.9.2017 (Unit-I)	10.9.2017 (COD of Unit-II) to 31.3.2018 (Unit-I & II)	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Additional capital expenditure claimed by the Petitioner on cash basis	280.34	1903.24	3648.15	110.44	2284.56



	2016-17	2017-18		2018-19	
	15.1.2017 (COD of Unit-I) to 31.3.2017 (Unit-I)	1.4.2017 to 9.9.2017 (Unit-I)	10.9.2017 (COD of Unit-II) to 31.3.2018 (Unit-I & II)	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Less: Differential un-discharged liabilities included as per Form-18	0.00	0.00	107.17	0.00	0.00
Net Additional capital expenditure allowed including discharges for the generating station	280.34	1903.24	3540.99	110.44	2284.56

Adjustment of revenue generated from Sale of infirm power

80. As regards the adjustment of the revenue earned from sale of infirm power, it is observed from the balance sheets, that these figures pertaining to pre-commissioning expenses are on net basis, after reduction of revenue generated from the sale of infirm power, amounting to Rs.1002.50 lakh till COD of first unit (page nos.1211 and 1212 of consolidated petition), Rs.1547.09 (1002.50 +546.17) till COD of second unit (page nos.1250 and 1252 of consolidated petition) and Rs.2022.05 lakh (1002.50 +546.17+474.96) (page no.2508 of consolidated petition) till the COD of third unit. As such, considering the fact that the revenue generated from sale of infirm power has been reduced by the Petitioner to arrive at the net capital expenditure claimed on COD of various units, no further adjustment is required in claimed capital cost on account of revenue generated from sale of infirm power.

Prudence check of the capital spares claimed as a part of the hard cost

81. Regulation 13 of the 2014 Tariff Regulations, indicates the ceiling limit in respect of initial spares as 4% of Plant & Machinery cost. The Petitioner has not separately furnished details of initial spares included in the capital cost claimed as on COD's. However, on perusal of Note-2 to the audited Financial Statements as at



26.2.2019 i.e. COD of Unit-III it is observed that capital spares of Rs.272.65 lakh is included in the audited capital cost as on COD of Unit-III. Considering the Plant & Equipment cost of Rs.312612.49 lakh (on accrual basis) as on COD of Unit-III as per Form-5B, the ratio of initial spares claimed works to 0.09% of the value of Plant & Equipment. This ratio being within the ceiling norm of 4% as stated no adjustment is required towards initial spares from the claimed capital cost. However, the Petitioner is directed to furnish proper details of initial spares vis-à-vis Plant & Equipment cost for the purpose of determination of tariff in Petition No. 59/GT/2022 pertaining to 2019-24 tariff period.

82. In view of above deliberations, the capital cost allowed for the purpose of tariff, is as under:

Sl. No.		(Rs in lakh)				
		2016-17 15.1.2017 (COD of Unit-1) to 31.3.2017 (Unit#1)	2017-18		2018-19	
			1.4.2017 to 9.9.2017 (Unit#1)	10.9.2017 (COD of Unit-2) to 31.3.2018 (Unit#1&2)	1.4.2018 to 25.2.2019 (Unit#1&2)	26.2.2019 (COD of Unit-3) to 31.3.2019 (Unit#1,2&3)
1.0	Opening Capital Cost	224513.39	224793.73	362955.67	366496.66	590881.16
2.0	Add: Additional Capital Expenditure allowed	280.34	1903.24	3540.99	110.44	2284.56
3.0	Closing Capital Cost	224793.73	226696.96	366496.66	366607.10	593165.72
4.0	Average Capital Cost	224653.56	225745.35	364726.16	366551.88	592023.44

Debt-Equity Ratio

83. Regulation 19 of the 2014 Tariff Regulations provides as under:

“19.(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 utilisation 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 modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

84. Considering the details of cash expenditure as submitted at Form-14A and the net loan position as on respective COD's, the debt-equity ratio as on COD of Unit-I works out to 70.03:29.97, as on COD of Unit-II works out to 72.40:27.60, as on COD of Unit-III works out to 71.46:28.54, which is not within the normative norm of 70:30. As such, the debt-equity ratio of 70.03:29.97 as on COD of Unit-I, 72.40:27.60 as on COD of Unit-II and 71.46:28.54 as on COD of Unit-III has been considered for the purpose of tariff. Similarly, for the purpose of funding of additional capital expenditure considering the debt-equity ratio at the end of various periods the debt-equity ratio allowed for the purpose of tariff is 70:30 for the period from COD of Unit-I to 31.3.2017, 72.40:27.60 for the period from 1.4.2017 to COD of Unit-II, 70:30 for the period from COD of Unit-II to 31.3.2018, 71.46:28.54 for the period from 1.4.2018 to COD of Unit-III and 70.63:29.37 for the period from COD of Unit-III to 31.3.2019.

Return on Equity

85. Regulation 24 of the 2014 Tariff Regulations 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 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 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 requirement 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 kilometres.”

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

“25. 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.

Illustration.

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess: Rate of return on equity = $15.50/(1-0.2096) = 19.610\%$

(ii) In case of generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2014-15 is Rs 1000 crore.

(b) Estimated Advance Tax for the year on above is Rs 240 crore.

(c) Effective Tax Rate for the year 2014-15 = Rs 240 Crore/Rs 1000 Crore = 24%

(d) Rate of return on equity = $15.50/(1-0.24) = 20.395\%$

(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."

87. The Petitioner has claimed tariff considering the rate of return on equity (ROE) of 19.7055% for the period from COD of Unit-I to 31.3.2018 and 19.7573% for the year 2018-19. The considering the base rate of ROE of 15.50% and the applicable MAT rate for the respective periods, the rate of ROE to be considered for the purpose of tariff works out to 19.705% for period from COD of Unit-I to 31.3.2018 and 19.758% for the year 2018-19. Accordingly, ROE has been worked out as under:

<i>(Rs. in lakh)</i>						
	2016-17	2017-18		2018-19		
	COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	1.4.2017 to COD of Unit-II (i.e. 9.9.2017)	COD of Unit- II (i.e. 10.9.2017) to 31.3.2018	1.4.2018 to COD of Unit-III (i.e. 25.2.2019)	COD of Unit- III (i.e. 26.2.2019) to 31.3.2019	
Normative Equity-Opening	67282.17	67366.27	100166.13	101228.43	168645.54	
Addition of Equity due to additional capital expenditure	84.10	525.24	1062.30	31.52	670.97	
Normative Equity-Closing	67366.27	67891.51	101228.43	101259.95	169316.52	
Average Normative Equity	67324.22	67628.89	100697.28	101244.19	168981.03	
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%	
Effective Tax Rate for respective years	21.3416%	21.3416%	21.3416%	21.5488%	21.5488%	



	2016-17		2017-18		2018-19	
	COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	1.4.2017 to COD of Unit-II (i.e. 9.9.2017)	COD of Unit- II (i.e. 10.9.2017) to 31.3.2018	1.4.2018 to COD of Unit-III (i.e. 25.2.2019)	COD of Unit- III (i.e. 26.2.2019) to 31.3.2019	
Rate of Return on Equity (Pre-Tax)	19.705%	19.705%	19.705%	19.758%	19.758%	
Return on Equity (Pre-tax) - (annualised)	13266.24	13326.27	19842.40	20003.83	33387.27	

Interest on Loan

88. Regulation 26 of the 2014 Tariff Regulations provides as under:

“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 de-capitalisation 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 upto the date of de-capitalisation 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 capitalised:

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 re-financing 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."

89. Interest on loan has been computed as under:

- Gross normative loan corresponding to admissible capital cost works out to Rs.157231.22 lakh as on COD of Unit-I, Rs.262789.54 lakh as on COD of Unit-II and Rs.422235.62 lakh as on COD of Unit-III.
- The net normative opening loan as on COD of Unit-I is same as gross normative loan, the cumulative repayment of normative loan up to the previous year/period being nil.
- Depreciation allowed has been considered as repayment of normative loan during the respective period of the 2014-19 tariff period. Also, repayments have been adjusted for de-capitalisation of assets considered for the purpose of tariff.
- The weighted average rate of interest (WAROI) has been considered based on various submission in the Petition.

90. Necessary calculation of interest of loan is as under:

		(Rs. in lakh)				
		2016-17	2017-18		2018-19	
		COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	1.4.2017 to COD of Unit-II (i.e. 9.9.2017)	COD of Unit-II (i.e. 10.9.2017) to 31.3.2018	1.4.2018 to COD of Unit-III (i.e. 25.2.2019)	COD of Unit-III (i.e. 26.2.2019) to 31.3.2019
A	Gross opening loan	157231.22	157427.46	262789.54	265268.23	422235.62
B	Cumulative repayment of loan upto previous year	0.00	2088.81	6562.93	16142.42	31840.54
C	Net Loan Opening (A-B)	157231.22	155338.64	256226.61	249125.81	390395.08
D	Addition due to additional capital expenditure	196.24	1377.99	2478.69	78.92	1613.59
E	Repayment of loan during the year	2088.82	4474.11	9579.59	15698.11	2653.76
F	Repayment adjustment on account of de-capitalisation	0.00	0.00	0.09	0.00	0.00
G	Net Repayment of loan during the year (E-F)	2088.81	4474.11	9579.50	15698.11	2653.76
H	Net Loan Closing (C+D-G)	155338.64	152242.52	249125.81	233506.61	389354.90
I	Average Loan [(C+H)/2]	156284.93	153790.58	252676.21	241316.21	389874.99
J	WAROI	10.6843%	10.2606%	9.9744%	9.7397%	9.5963%
K	Interest on Loan (J x I)	16697.97	15779.79	25203.01	23503.40	37413.61

Depreciation



91. 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) along with 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.

(8) In case of de- 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 decapitalized asset during its useful services.”

92. The Petitioner has claimed depreciation considering the weighted average rate of depreciation of 4.4655% for the period from COD of Unit-I to COD of Unit-II, 4.7226% for the period from COD of Unit-II to COD of Unit-III and 4.8121% for the period from COD of Unit-III to 31.3.2019. This is in accordance with the rates of depreciation specified as per Appendix-III to the 2014 Tariff Regulations. Accordingly, the same has been considered for the purpose of tariff. Depreciation has been calculated as under:

	<i>(Rs. in lakh)</i>				
	2016-17 COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	2017-18 1.4.2017 to COD of Unit-II (i.e. 9.9.2017)		2018-19 1.4.2018 to COD of Unit-III (i.e. 25.2.2019) to 31.3.2019	
Average capital cost	224653.56	225745.35	364726.16	366551.88	592023.44
Value of freehold land included above	28007.88	28007.88	28007.88	28007.88	34116.23
Aggregated depreciable Value	176981.11	177963.72	303046.46	304689.60	502116.49
Remaining depreciable value at the beginning of the year	176981.11	175874.91	296483.53	288547.18	470275.95
Weighted average rate of depreciation	4.4655%	4.4655%	4.7226%	4.7226%	4.8121%
Depreciation for the period	2088.82	4474.11	9579.59	15698.11	2653.76
Depreciation for the year (annualised)	10031.81	10080.57	17224.39	17310.61	28488.93
Cumulative depreciation at the end of the year/period, before adjustment of de-capitalisation adjustment	2088.82	6562.93	16142.52	31840.54	34494.30
Less: Cumulative depreciation adjustment on account of de-capitalisation	0.00	0.00	0.09	0.00	0.00
Cumulative depreciation, at the end of the year/period	2088.81	6562.93	16142.42	31840.54	34494.30



Operation and Maintenance Expenses

93. Regulation 29(1) (a) of the 2014 Tariff Regulations provides the following O&M norms for coal based generating stations of 200 MW series and above capacity:

(Rs. in lakh/ MW)

2016-17	2017-18	2018-19
27.00	28.70	30.51

94. The Petitioner has claimed the following O&M expenses:

(Rs. in lakh)

15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017	10.9.2017 (COD Unit II to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
6750.00	7175.00	14350.00	15255.00	22882.50

95. It is noticed that the claims made by the Petitioner in 2016-17, 2017-18 as well as in 2018-19, on annualized basis, are in line with the O&M norms and hence the O&M expenses claimed by the Petitioner are allowed as under:

(Rs. in lakh)

	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD of Unit-II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Annualized O&M expenses	6750.00	7175.00	14350.00	15255.00	22882.50
Normative O&M Expenses for the period	1405.48	3184.52	7980.96	13833.99	2131.52

Water Charges

96. Regulation 29(2) of the 2014 Tariff Regulations provide 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:

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 68apitalization or consumption of stores and spares and renovation and modernization”.



97. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the Petitioner. The details furnished by the Petitioner in respect of claimed water charges are as under:

	Remarks
Type of Plant	Coal
Type of cooling water system	Closed Circuit Cooling System
Allocation of Water	60 Cusecs and payable at actual water supply with a minimum guaranteed supply of 12 Cusec
Rate of Water charges	Capital cost recovery Charges- Rs 1.41 Lacs/Months and escalated at a rate of 10% per year Water Charge- Rs 4.5 per thousand Gallon. Further revised to Rs 18.00 per thousand gallons vide water resource department letter dated 3.10.2016.

98. The Petitioner has claimed Water charges vide Form 3A of the amended petition, as modified by the Petitioner vide auditor certificate dated 28.6.2021 (vide affidavit 12.7.2021). Accordingly, Water charges as per the auditor certified statement, are allowed, as under:

	(Rs in lakh)				
	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Auditor certified Water Charges claimed by Petitioner on annualized basis	0.00	68.30	379.02	455.63	537.62

Capital spares

99. The Petitioner has not claimed capital spares, on consumption basis and hence, the same has not been considered.

Additional O&M Expenses towards GST

100. The Petitioner has claimed additional O&M expenses of Rs. 161.24 lakh in 2017-18 and Rs. 284.30 lakh in 2018-19, on account of payment towards GST. The



Petitioner has submitted that the overall impact due to change in tax regime caused substantial increase in net taxes paid for carrying out O&M activities such as sourcing goods/ material from vendors/ OEMs, etc. The impact of increase in rate of indirect tax from 15% to 18% has been calculated on all taxable services by the petitioner and being claimed for the period 1.7.2017 to 31.3.2019. The petitioner has further prayed the Commission to incorporate the impact on account of GST in the O&M Expenses norms for thermal generating stations.

101. With regard to additional claim towards GST, it is observed that the Commission while specifying the O&M expense norms for the period 2014-19 had considered taxes to form part of the O&M expense calculations and accordingly had factored the same in the said norms. This is evident from paragraph 49.6 of the Statement of Objects and Reasons issued with to the 2014 Tariff Regulations which is extracted hereunder:

“49.6 With regards to suggestion received on other taxes to be allowed the Commission while approving the norms of O&M expenses has considered the taxes as part of O&M expenses while working out the norms and therefore the same has already been factored in...”

102. Further, the escalation rates considered in the O&M expense norms is only after accounting for the variations during the past five years of the period 2014-19, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties; no reimbursement is ordered. In this background, we find no reason to grant additional O&M expenses towards payment of GST. Accordingly, the claim of the Petitioner is not allowed.

Impact due to revision of Minimum Wages

103. The Petitioner has also claimed additional O&M expenses towards impact of revision of Minimum wages amounting to Rs.697.50 lakh for 2017- 18 and Rs.



1366.90 lakh for 2018-19. The Commission while specifying the O&M expense norms of the generating stations (including the norms for new generating stations) for the period 2014-19, had considered minimum wages to form part of the O&M expense calculations and had accordingly, factored the same in the said norms. Further, the escalation rates considered in the O&M expense norms, under the 2014 Tariff Regulations, is only after accounting for the variations during the previous years which in our view, takes care of any variation due to revision in minimum wages also. In this background, we find no reason to grant the additional O & M expenses incurred towards revision of minimum wages.

Additional O&M Expenses on account of impact of Wage Revision

104. The Petitioner has submitted that the Commission while specifying the 2014 Tariff Regulations applicable for the period 2014-19, had taken note in SOR to the said regulations that any increase in the employee expenses, on account of pay revision shall be considered appropriately, on case-to-case basis, balancing the interest of generating stations and consumers. The Petitioner has, therefore, claimed additional O&M expenses as under:

<i>(Rs. in lakh)</i>				
15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
347.64		1544.10		3155.79

105. In this regard the Petitioner vide affidavit dated 21.6.2021 in compliance to the RoP dated 25.5.2021, has submitted the additional information as under:

- (a) Detailed break-up of the actual O&M expenses booked by the Petitioner for the period 2016-19.
- (b) Detailed break-up of actual O&M expense of the Corporate Centre and its allocation to various operating stations, for the period 2014-19.



- (c) Break-up of wage revision impact on employee cost, expenses on corporate centre and on salaries of CISF of the generating station for the period 2014-19.

106. We have examined the submissions and the documents available on record. It is noted that the Petitioner has furnished the actual O & M data from COD of Unit I to 31.3.2019. The actual O&M (without water charges) from COD of Unit-I (15.1.2017) to 31.3.2017 are reported as Rs. 1970.13 lakh against normative O&M expenditure of Rs. 1405.48 lakh and as such there is under recovery of Rs. 564.65 lakh. During 2017-18, actual O&M expenses (without water charges) are Rs. 10270.71 lakh against normative O&M expenses of Rs. 11165.48 lakh. As such, there is excess recovery of Rs.894.77 lakh during 2017-18. During 2018-19, the actual O&M expenses (without water charges) are Rs.15390.65 lakh as against the normative O&M expenses of Rs. 15965.51 lakh. As such, there is excess recovery of Rs.574.86 lakh in 2018-19. On overall basis, there is excess recovery of Rs. 904.98 lakh $(-564.65+894.77+574.86)$ in comparison to the normative O&M expenses allowed to the generating for the period from COD of first unit i.e 15.1.2017 to 31.3.2019.

107. The Commission while specifying the O&M expense norms under the 2014 Tariff Regulations had considered the actual O&M expenses data for the period from 2008-09 to 2012-13. However, considering the submissions of the stakeholders, the Commission, in the SOR to the 2014 Tariff Regulations, had observed that the increase in employees cost due to impact of pay revision impact, will be examined on a case-to-case basis, balancing the interest of generating stations and the consumers. The relevant extract of the SOR is extracted under:

“29.26. Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be



considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macroeconomics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, the Commission is of the view that it shall be examined on case-to-case basis, balancing the interest of generating stations and consumers.

33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case-to-case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement.”

108. The methodology indicated in SOR quoted above suggests a comparison of the normative O&M expenses with the actual O&M expenses, on year-to-year basis. However, in this respect the following facts needs consideration:

- (a) The norms are framed based on the averaging of the actual O&M expense of past five years to capture the year-on-year variations in sub-heads of O&M;
- (b) Certain cyclic expenditure may occur with a gap of one year or two years and as such adopting a longer duration i.e., five years for framing of norms also captures such expenditure which is not incurred on year-to-year basis;
- (c) When generating companies find that their actual expenditure has gone beyond the normative O&M expenses in a particular year put departmental restrictions and try to bring the expenditure for the next year below the norms.

109. In consideration of above facts, we find it appropriate to compare the normative O&M expenses with the actual O&M expenses for a longer duration so as to capture the variation in the sub-heads. Accordingly, it is decided that for ascertaining that the O&M expense norms provided under the 2014 Tariff Regulations are inadequate/insufficient to cover all justifiable O&M expenses, including employee expenses, the comparison of the normative O&M expenses and the actuals O&M expenses



incurred shall be made for 2016-19 (COD of Unit-I to 31.3.2019) on a combined basis, which is commensurate with the wage revision claim being spread over these three years.

110. In order to substantiate wage revision, impact the Petitioner has furnished the detailed breakup of the actual O&M expenses for incurred during the period 2014-19 vide “Annexure A” in the additional affidavit dated 21.6.2021. The wage revision impact claimed by the Petitioner and wage revision impact claimed (excluding PRP and ex-gratia) for the generating station is as under:

(Rs. in lakh)		
Year	Wage revision impact claimed in Form 3A for the generating station	Wage revision impact claimed for the generating station (excluding PRP / ex-gratia and CC) <i>(page 15 of additional submissions dated 21.6.2021)</i>
2016-17(15.1.2017(COD of Unit-I to 31.3.2017)	347.64	344.60
2017-18	1544.10	1418.92
2018-19	3155.79	2894.89
Total	5047.52	4658.41

111. The impact of wage revision/pay revision could not be factored by the Commission while framing the O&M expense norms under the 2014-19 Tariff Regulations, since the pay / wage revision came into effect from 1.1.2016 (CISF) and 1.1.2017 (employees of the Petitioner) respectively. As such, in terms of SOR to the 2014 Tariff Regulations, the following approach has been adopted for arriving at the allowable impact of pay revision:

- (a) Comparison of the normative O&M expenses with the actual O&M expenses incurred for the period from 2017-18 to 2018-19, commensurate to the period for which wage revision impact has been claimed, after COD of the units. For like-to-like comparison, the components of O&M expenses like productivity linked incentive, water charges, filing fee, ex-gratia, loss of provisions, prior period expenses, community development store expenses, ash utilization expenses, RLDC fee & charges and other Miscellaneous (without breakup / details) which were not considered while



framing the O&M expense norms for the period 2014-19, have been excluded from the yearly actual O&M expenses. Having done so, if the normative O&M expenses for the period 2017-19 are higher than the actual O&M expenses (normalized) for the said period, then the impact of wage revision (excluding PRP and ex-gratia) as claimed for the said period is not admissible / allowed as the impact of pay revision gets accommodated within the normative O&M expenses.

- (b) However, if the normative O&M expenses for the period 2017-19 are lesser than the actual O&M expenses (normalized) for the same period, the wage revision impact (excluding PRP and ex-gratia) to the extent of under recovery or wage revision impact (excluding PRP and Ex-gratia), whichever is lower, is required to be allowed as wage revision impact for the period 2017-19.

112. In the present case, the normative expenses allowed to the generating station for the period from 15.1.2017 to 31.3.2019 exceeds the actual O&M expenses (without water charges) which also includes wage revision impact claimed by the Petitioner, by Rs. 904.98 lakh. As such, it is concluded that the normative O&M expenses allowed to the generating station is adequate to cover the wage revision impact. Accordingly, in terms of methodology described above, the wage revision impact (excluding PRP/ex-gratia) is not allowed for this generating station.

113. In view of the above deliberations, the total O&M expenses allowed to the generating station for the period 2016-19 is as under:

	(Rs. in lakh)				
	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
O&M Expenses claimed under Regulation 29(1)(a) on normative norms for the period	1405.48	3184.52	7980.96	13833.99	2131.52
Normative O&M expenses claimed under Regulation 29(1)(a) of the 2014 Tariff Regulations Annualised(a)	6750.00	7175.00	14350.00	15255.00	22882.50
Normative O&M expenses allowed under Regulation 29(1)(a) of the 2014 Tariff Regulations (b)*	6750.00	7175.00	14350.00	15255.00	22882.50



	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Water Charges Claimed €	0.00	68.30	379.02	455.63	537.62
Water Charges Allowed (d)	0.00	68.30	379.02	455.63	537.62
Capital Spares consumed claimed under Regulation 29(2) of the 2014 Tariff Regulations €	0.00	0.00	0.00	0.00	0.00
Capital Spares consumed allowed under Regulation 29(2) of the 2014 Tariff Regulations (f)	0.00	0.00	0.00	0.00	0.00
Total normative O&M expenses claimed under Regulation 29 of the 2014 Tariff Regulations (a + c + e)	6750.00	7243.30	14729.02	15710.63	23420.12
Total normative O&M expenses allowed under Regulation 29 of the 2014 Tariff Regulations (b + d + f)- (annualised)	6750.00	7243.30	14729.02	15710.63	23420.12
Additional O&M claimed/allowed					
Impact of Wage revision claimed (i)	347.64		1544.10		3155.79
Impact of Wage revision allowed (j)	0.00		0.00		0.00
Impact of GST claimed (k)	0.00		161.24		284.30
Impact of GST allowed (l)	0.00		0.00		0.00
Impact due to revision of Minimum Wages claimed (m)	0.00		697.50		1366.90
Impact due to revision of Minimum Wages allowed (n)	0.00		0.00		0.00
Additional O&M expenses allowed	0.00		0.00		0.00

Operational Norms

114. The operational norms in respect of the generating station i.e., normative annual plant availability factor, gross station heat rate, specific fuel oil consumption and auxiliary power consumption are discussed as under:

Normative Annual Plant Availability Factor

115. The Petitioner has submitted that low DC during the years 2017-18 and 2018-19 was affected due to low coal supply since there was shortage of coal country wide. Shortage of coal was being faced by the Petitioner during the period October 2017 to November 2018. It has stated that during this period, the station received less coal against the allocation from CIL. A table indicating the percentage (%) coal



receipt against the allocated coal from CIL, based on CEA Monthly Coal report has been attached by the Petitioner in the additional submission dated 31.10.2019 to support its claim.

116. Further, the Petitioner has submitted that in view of acute coal shortage situation, the Petitioner, through NTPC Limited, had approached CIL and its subsidiaries for supply of coal to the Petitioner for mitigating the coal shortage. The various letters written by NTPC Limited to Coal companies for supply adequate coal including the Petitioner are attached vide Annexure-L in the affidavit dated 31.10.2019. The Petitioner has also submitted that on account of the non-availability of the coal for reasons beyond the control of the Petitioner, there has been an uncertainty in the coal supply, on a sustained basis, experienced by the generating station, and fall within the scope of the proviso to Regulation 36 (A) of the 2014 Tariff Regulations. Accordingly, the Petitioner has prayed to allow NAPAF for the years 2017-18 and 2018-19 as 83% in view of the coal shortage faced by the generating station.

117. The Respondent has contended that even if it were to be assumed that the Petitioner has been suffering due to shortage of coal, there is no evidence to suggest that any steps have been taken by the Petitioner to remedy such shortage of coal. It has submitted that the Petitioner has also not provided the details of the coal stock position and since the FSA is not placed on record, there is no information about the Annual Contracted Quantity (ACQ) of coal under the FSA. The Respondent has also stated that no reports of coal sampling to exhibit the quality of coal have been placed on record either and that the Petitioner always had the opportunity to buy e-auction coal or imported coal to meet any coal shortfall.



118. The matter has been examined. Considering the coal stock availability in the country prevailing before the notification of the 2014 Tariff Regulations, Regulation 36(A) of 2014 Tariff Regulations provided for NAPAF of 83 % for three (3) years i.e., from 2014-15 to 2016-17 and for reviewing the same thereafter. In line with this, the coal availability was reviewed and it was observed that the availability of coal to the thermal generating stations in the country became normal and therefore, the NAPAF was considered as 85% in 2017-18 and 2018-19 for all thermal generating stations regulated by the Commission. In our view, the non-availability of coal to the generating station of the Petitioner, is a localised or a plant specific issue and cannot be a factor to reduce NAPAF, particularly, keeping in view that arrangement of coal supply is the sole responsibility of the generator (Petitioner). Thus, the continuation of the reduced NAPAF of 83% in 2017-18 and 2018-19 to the generating station is not allowed. Accordingly, the NAPAF of 83% for 2016-17 and 85% for 2017-18 and 2018-19 is allowed in accordance with the provisions of Regulation 36 (A) of the 2014 Tariff Regulations.

Gross Station Heat Rate (kCal/kWh)

119. Regulation 36 (C) (b) of the 2014 Tariff Regulations provides as under:

“New Thermal Generating Station achieving COD on or after 1.4.2014

*(i) Coal-based and lignite-fired Thermal Generating Stations
= 1.045 X Design Heat Rate (kCal/kWh)*

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

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

Pressure Rating (Kg/cm ²)	150	170	170	247
SHT/RHT (0C)	535/535	537/537	537/565	565/593
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	1850
Min. Boiler Efficiency				



Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86
Bituminous Imported Coal	0.89	0.89	0.89	0.89
Max Design Unit Heat Rate (kCal/kWh)				
Sub-Bituminous Indian Coal	2273	2267	2250	2151
Bituminous Imported Coal	2197	2191	2174	2078

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

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

Provided also that where the boiler efficiency is below 86% for Sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate”

120. The Petitioner has claimed the GSHR of 2414.03 kCal/kWh. The Petitioner has further submitted that Regulations prescribed boiler efficiency & turbine heat rate for arriving at the unit Heat Rate, when the unit Heat Rate is not guaranteed, for the first time in 2009 Tariff Regulations. It has stated that the generating station was envisaged prior to 2006 and the Petitioner's Board had accorded the investment approval on 10.1.2008 and accordingly the Petitioner had awarded Main Plant Award of SG and TG packages to BHEL on 22.1.2008, much earlier than the introduction of minimum boiler efficiency & maximum turbine heat rate introduced for the first time in the 2009 Tariff Regulations and subsequently continued in the 2014 Tariff Regulations. The Petitioner has accordingly prayed that at that time such limitations was not known to the Petitioner and therefore, it was not possible for the Petitioner to envisage such tighter norms. The Petitioner has added that based on the applicable norms at the time of NIT, it had awarded the SG and TG packages, in the most economical way, through international competitive bidding and accordingly, the Petitioner was able to install the TG set with a design heat rate of 1943.7 kcal/kwh. It has further submitted that a new 250 MW unit was supplied by BHEL with a



guaranteed boiler efficiency of 84.14%. The Petitioner has also submitted that as the units have been ordered in 2008 considering the Tariff Regulations in vogue, wherein, there was no separate benchmark for boiler efficiency, the Petitioner has prayed that the actual guaranteed Boiler Efficiency and Turbine Cycle Heat Rate may be used to derive the Normative Heat Rate.

121. The matter has been considered. It is observed that the Commission, in Para 37.55 and 37.56 of the SOR to the 2014 Tariff Regulations, has discussed the rationale for fixing the minimum boiler efficiency norm as 86% as under:

“37.55 Most of the generating stations have suggested to increase the margin to 6.50% to 8.00% over and above design heat rate as compared to 4.50% proposed for new coal based generating stations in the draft Regulations and have also suggested to relax the boiler efficiency. CEA, in its recommendation, has specified a margin of 3% for the station heat rate of new generating stations. As regards lowering the boiler efficiency, CEA in its report has stated that:-“...in most of the stations the boiler efficiency for subsequent units installed later has been much lower than the boiler efficiency for the previous units. In some of the cases, the boiler efficiency has been alarmingly lower. There appears to be no justification for such reduction in boiler efficiency when the earlier units have higher boiler efficiency with same/comparable coal quality. Technology must progressively lead to efficiency improvements and not the other way and thus improvements in technology over the years are expected to lead to higher boiler efficiency for subsequent units installed later. In some of the cases it is seen that utilities in their recent specifications have specified that a minimum carbon loss of 1 to 1.5% would be considered for quoting boiler efficiency - thus, leading to corresponding reduction in boiler efficiency (and consequent increase in design heat rate). Such practices defeat the purpose of specifying the normative heat rate in terms of the design heat rate. It needs to be understood that the operating margin (over the design heat rate) provided in the norms is intended to cover the variations over a certain base line, and the quantum of variation allowed has been fixed considering this base line as the design heat rate at design CW temperature/back pressure, zero percent makeup etc. as specified in the norms. Contrary to the above, the provisions of minimum carbon loss etc. lead to artificially inflating or jacking up the base line (design heat rate) itself. Thus such a practice by the utilities is seen as an attempt to build up certain margin upfront in the design heat rate thus leading to a higher design heat rate and consequently leading to a higher normative heat rate value ultimately. It is, therefore, recommended that such practices by the utilities should be discontinued forthwith. A review of all Specifications should be undertaken by CERC and where such provisions leading to build up of margin upfront in the design heat rate are found, the operating margin provided in norms should be correspondingly lowered to the extent that such build up in terms of additional losses etc. have been provided in the specifications. Only then would the true spirit of allowing intended operating margin over DHR for normative purposes would be realized.”

37.56 The Commission, in the draft Regulations, had proposed to limit the boiler efficiency to 87%. The Commission is of the view that the CEA's computation of 3% margin on design heat rate is based on the lower boiler efficiency, which for recently

installed units is in the range of 84%-85%. However, the Commission had proposed a margin of 4.50% at higher boiler efficiency of 87%. The Commission considering the recommendations of CEA and other suggestions received from the stakeholders, has revised the boiler efficiency to 86% from 87% proposed in the draft Regulations for new generating stations achieving COD on or after 01.04.2014 while retaining the margin of 4.50% for heat rate.”

122. It is therefore evident that the Commission after considering the comments/suggestions of the stakeholders, including the Petitioner, had specified the terms and conditions for determination of tariff, including the operational norms, applicable for the period from 1.4.2014. In our considered view, the operational norms specified under Regulation 36 (C) (b) of the 2014 Tariff Regulations, cannot be categorised as unreasonable so as to justify the exercise of power to relax.

123. The Petitioner has prayed for relaxation of the heat rate norms under Regulation 36 (C) (b) of 2014 Tariff Regulations, by considering the lower boiler efficiency than 86%, only on the premise that its units are not being able to meet the norms prescribed in the 2014 Tariff Regulations. In our considered view, the Petitioner through better and improved O&M practices can achieve the boiler efficiency of 86% as prescribed in the 2014 Tariff Regulations. Therefore, we do not find sufficient justification for relaxation of heat rate norms. In our view, there is no merit in the submissions of the Petitioner to grant the relief prayed.

124. Based on the above discussions, the prayer of the Petitioner is rejected and the Gross station heat rate in accordance with Regulation 36(C)(b) of the 2014 Tariff Regulations, is calculated as under:

- (a) Guaranteed Turbine Cycle Heat Rate indicated in the Form 2 of the tariff forms is 1943.70 Kcal/Kwh and design Boiler Efficiency is 84.14 % as submitted by the petitioner vide Form-2 in the amended petition. As the claimed boiler efficiency is less than 86%, accordingly boiler efficiency is considered as 86% for determination of allowable GSHR. Accordingly, the design heat rate of NTPP is 2260.12 (=1943.70/0.86) Kcal/Kwh. Hence,



normative station heat rate of NTPP considering operating margin of 4.5 % works out to be 2361.82 kCal/kWh (=1.045 X Design Heat Rate).

Secondary Fuel Oil Consumption

125. The Petitioner has claimed the secondary fuel oil consumption of 0.50 ml/kWh in terms of Regulation 36(D)(a) of the 2014 Tariff Regulations. Hence, the same is allowed for the period 2016-19.

Auxiliary Power Consumption

126. In terms of the Regulation 36(E)(a) of the 2014 Tariff Regulations, the auxiliary power consumption of 8.50% for coal based generating stations of 200 MW series units and additional 0.50% for stations with Induced Draft cooling tower has been considered for the generating station. Accordingly, AEC of 9.00% is allowed for the purpose of determination of tariff.

127. Based on the above, the operational norms allowed for the generating station are as under:

Normative Annual Plant Availability Factor (%)	2016-17: 83
	2017-19: 85
Gross Station Heat Rate (kcal/kWh)	2361.82
Auxiliary Power Consumption (%)	9.00
Specific Fuel Oil Consumption (ml/kWh)	0.5

Interest on Working Capital

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

“28 (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.”

Fuel Cost and Energy Charges in Working Capital

129. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as part of Interest on Working Capital (IWC) is to be based on the landed price and GCV of fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined.

130. Regulation 30(6)(a) of the 2014 Tariff Regulations provides as under:

“30. Computation and Payment of Capacity Charge and 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:

(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

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”.



131. Therefore, in terms of the above regulations, for determination of the cost of fuel and Energy charges in working capital, the GCV on 'as received' basis is to be considered. Regulation 30(7) of the 2014 Tariff Regulations provides as under:

“(7) The generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., as per the forms prescribed at Annexure-I to these regulations:

Provided that the details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal and the weighted average GCV of the fuels as received shall also be provided separately, along with the bills of the respective month:

Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal shall also be displayed on the website of the generating company. The details should be available on its website on monthly basis for a period of three months.”

132. The Petitioner has claimed the cost for fuel component in working capital based on price and “as received GCV” of coal and Secondary fuel oil procured and burnt for the preceding three months of October 2016, November 2016 and December 2016 for Unit-I, for the preceding three months of June 2017, July 2017 and August 2017 for Unit-II, and for the preceding three months of November 2018, December 2018 and January 2019 for Unit-III. The Petitioner has further submitted that CEA vide letter dated 17.10.2017 has opined that a margin of 85-100 kCal/kg for pit-head station and a margin of 105-120 kCal/kg for non-pit head station is required to be considered as loss of GCV of coal on “as received” and on “as fired basis respectively. Accordingly, the Petitioner has considered a margin of 120 kCal/kg on average GCV of coal for the period preceding three months for computation of working capital of the generating station. Accordingly, as per submissions of the Petitioner, the cost of fuel component in the working capital of the generating station is based on (i) 'as received' GCV of coal for with adjustment of 120 kCal/kg towards storage loss, (ii) landed price of coal for preceding three months for respective Unit-I, II and III and (iii) GCV and landed price of Secondary fuel oil procured for the



preceding three months for respective Unit- I, II and III for the generating station. Accordingly, the Petitioner has claimed the cost of fuel component in the working capital as under:

(Rs. in lakh)

	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 till COD of Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Cost of Coal towards stock (30 days)	2808.41	2808.41	5432.50	5432.50	8265.60
Cost of Coal towards Generation (30 days)	2808.41	2808.41	5432.50	5432.50	8265.60
Cost of Secondary fuel oil 2 months	64.63	64.63	129.89	129.89	297.34

133. The Petitioner has claimed the Energy Charge Rate (ECR) ex-bus of 208.915 paise/kWh from 15.1.2017 i.e., COD of Unit-I to 9.9.2017, 202.148 paise/kWh from COD of Unit II on 10.9.2017 to 25.2.2019 and 206.252 paise/kWh from COD of Unit III on 26.2.2019 to 31.3.2019 for the generating station based on GCV and price of fuel (coal and secondary fuel oil) prevailing during preceding three months. The summary is provided as below:

(in paise/kWh)

15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
208.915	208.915	202.148	202.148	206.252

134. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of IWC is to be based on the weighted average landed price and weighted average 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. Thus, calculation of IWC for the period 2014-19 is to be based on such values for months of October 2016, November 2016 and December 2016 for Unit-I, and for the preceding three months of June 2017, July 2017 and August 2017 for Unit-II, for the preceding three months of November 2018, December 2018 and January 2019 for



Unit-III. Also, the consideration of loss of GCV of 120 kCal/kg cannot be considered, as the same is not as per provisions of the 2014 Tariff Regulations.

135. Accordingly, the rate of energy charges, based on the operational norms, as approved above, is determined as under:

Sl. No		Unit	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
(1)	Capacity	MW	1x 250	1x 250	2x 250	2x 250	3x 250
(2)	Gross Station Heat Rate	Kcal/k Wh	2361.82	2361.82	2361.82	2361.82	2361.82
(3)	Auxiliary Power Consumption	%	9.00	9.00	9.00	9.00	9.00
(4)	Secondary fuel oil consumption	ml./kWh	0.50	0.50	0.50	0.50	0.50
(4)	Weighted Average GCV of Oil	Kcal/L	9409.31	9409.31	10100.00	10100.00	9146.96
(5)	Weighted Average GCV of Coal (as received)	Kcal/kg	3459.77	3459.77	3425.60	3425.60	4003.59
(6)	Weighted Average price of oil	Rs/KL	42669.58	42669.58	42874.46	42874.46	65432.87
(7)	Weighted Average price of Coal	Rs/MT	2606.08	2606.08	2494.80	2494.80	2972.50
(8)	Rate of energy charge ex-bus	Rs/kWh	1.975	1.975	1.910	1.910	1.959

136. Considering the above, the cost for fuel component in working capital is worked out and allowed as under:

	(Rs. in lakh)				
	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Cost of Coal towards stock (30 days per annum) corresponding to NAPAF	2652.60	2716.52	5252.17	5252.17	8033.21
Cost of Coal towards Generation (30 days per annum) corresponding to NAPAF	2652.60	2716.52	5252.17	5252.17	8033.21
Cost of Secondary fuel oil 2 months per annum corresponding to NAPAF	64.63	66.19	133.02	133.02	304.51



Working Capital for Maintenance Spares

137. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the O&M expenses. Accordingly, maintenance spares @ 20% of the O&M expenses are allowed as under:

<i>(Rs. in lakh)</i>				
15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit- III) to 31.3.2019 (Unit-I, II & III)
1350.00	1448.66	2945.80	3142.13	4684.02

Working Capital for Receivables

138. Receivables equivalent to two months of capacity charges and energy charges have been worked out and allowed as under:

	<i>(Rs. in lakh)</i>				
	15.1.2017 to 31.3.2017	1.4.2017 To 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
Variable Charges - for two months corresponding to NAPAF	5444.77	5575.97	10784.91	10784.91	16592.39
Fixed Charges - for two months corresponding to NAPAF	8238.27	8193.16	13657.45	13583.34	21698.03
Total	13683.03	13769.13	24442.36	24368.25	38290.42

O&M Expenses (1 month) for computation of working capital

139. In terms of Regulation 28(1)(a)(vi) of the 2014 Tariff Regulations, one month's O&M expenses allowed, is as under:

<i>(Rs. in lakh)</i>				
15.1.2017 to 31.3.2017	1.4.2017 To 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit-III) to 31.3.2019 (Unit-I, II & III)
562.50	603.61	1227.42	1309.22	1951.68

Rate of interest on working capital

140. In terms of Regulation 28(3) of the 2014 Tariff Regulations, the rate of interest on working capital has been considered as 12.80% (SBI Base rate 9.30% as applicable on 1.4.2016 + 350 bps) for the period from COD of Unit I to COD of Unit II, 12.60% (SBI Base rate 9.10% as on 1.4.2017+ 350 bps) for the period from COD of Unit II to COD of Unit III , 12.20 % (SBI Base rate 8.70% as on 1.4.2018 + 350 bps) for the period from COD of Unit III to 31.3.2019. Accordingly, Interest on working capital has been computed as under:

	(Rs. in lakh)				
	15.1.2017 to 31.3.2017	1.4.2017 to 9.9.2017 COD Unit II	10.9.2017 to 31.3.2018	1.4.2018 to 25.2.2019 (Unit-I & II)	26.2.2019 (COD of Unit- III) to 31.3.2019 (Unit-I, II & III)
Working Capital for Cost of Coal towards Stock (30 days per annum) corresponding to NAPAF	2652.60	2716.52	5252.17	5252.17	8033.21
Working Capital for Cost of Coal towards Generation (30 days per annum) corresponding to NAPAF	2652.60	2716.52	5252.17	5252.17	8033.21
Working Capital for Cost of Secondary fuel oil (2 months per annum) corresponding to NAPAF	64.63	66.19	133.02	133.02	304.51
Working Capital for Maintenance Spares @ 20% of O&M expenses	1350.00	1448.66	2945.80	3142.13	4684.02
Working Capital for Receivables – 2 months per annum corresponding to NAPAF	13683.03	13769.13	24442.36	24368.25	38290.42
Working Capital for O&M expenses – 1 month per annum	562.50	603.61	1227.42	1309.22	1951.68
Total Working Capital	20965.38	21320.63	39252.94	39456.95	61297.04
Rate of Interest	12.800%	12.800%	12.600%	12.600%	12.200%
Interest on Working Capital	2683.57	2729.04	4945.87	4971.58	7478.24

Annual Fixed Charges approved for the period 2016-19

141. Accordingly, the fixed charges approved for the generating station for the period from COD of Unit-1 (15.1.2017) to 31.3.2019, is summarized as under:

(Rs in lakh)					
	2016-17	2017-18		2018-19	
	COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	1.4.2017 to COD of Unit-II (i.e. 9.9.2017)	COD of Unit-II (i.e. 10.9.2017) to 31.3.2018	1.4.2018 to COD of Unit- III (i.e. 25.2.2019)	COD of Unit-III (i.e. 26.2.2019) to 31.3.2019
Depreciation	10031.81	10080.57	17224.39	17310.61	28488.93
Interest on Loan	16697.97	15779.79	25203.01	23503.40	37413.61
Return on Equity	13266.24	13326.27	19842.40	20003.83	33387.27
O&M Expenses	6750.00	7243.30	14729.02	15710.63	23420.12
Interest on Working Capital	2683.57	2729.04	4945.87	4971.58	7478.24
Total annual fixed charges approved	49429.59	49158.97	81944.69	81500.04	130188.17

Note: (1) All figures are on annualized basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column.

140. The pro rata tariff is to be calculated using the bases as shown below:

(Rs. in lakh)					
	2016-17	2017-18		2018-19	
	COD of Unit-I (i.e. 15.01.2017) to 31.3.2017	1.4.2017 to COD of Unit-II (i.e. 9.9.2017)	COD of Unit-II (i.e. 10.9.2017) to 31.3.2018	1.4.2018 to COD of Unit- III (i.e. 25.2.2019)	COD of Unit-III (i.e. 26.2.2019) to 31.3.2019
Capacity Considered (MW)	250	250	500	500	750
No. of days in year	365	365	365	365	365
No. of days for which tariff is to be calculated	76	162	203	331	34

Application filing fee and Publication Expenses

141. The Petitioner has sought reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2016-19. Accordingly, in terms of Regulations 52 of the 2014 Tariff Regulations, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees for the period 2016-19 and the expenses incurred on publication of notices directly from the Respondents, on production of documentary proof.



142. The fixed charges approved for the period 2016-19, as above, is subject to truing up exercise in terms of Regulation 8(1) of the 2014 Tariff Regulations.

143. Petition No. 23/GT/2017 is disposed of in terms of the above.

Sd/-
(Pravas Kumar Singh)
Member

Sd/-
(Arun Goyal)
Member

Sd/-
(I.S. Jha)
Member

