CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 69/GT/2013

Coram:
Shri Gireesh B Pradhan, Chairperson
Shri A.K.Singhal, Member
Shri A.S. Bakshi, Member

Date of Hearing: 13.01.2015
Date of Order: 21.09.2015

In the matter of

Approval of generation tariff of Mauda STPS, Stage-I (2 x 500 MW) for the period from the anticipated date of commercial operation of Unit-I to 31.3.2014

And in the matter of

NTPC Limited,
Core-7, Scope Complex,
7, Institutional Area, Lodhi Road,
New Delhi -110003 …**Petitioner**

Vs

1. Madhya Pradesh Power Management Company Limited
Shakti Bhawan, Vidyut Nagar,
Jabalpur - 482008

2. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Bandra (East),
Mumbai 400051

3. Gujarat UrjaVikas Nigam Ltd.,
Sardar Patel VidyutBhawan, Race Course,
Vadodara-390007, Gujarat1

4. Chhattisgarh State Electricity Distribution Co. Ltd.
P.O. Sundar Nagar,
Danganiyan, Raipur - 492013

5. Government of Goa,
Electricity Department, VidyutBhawan,
Panaji, Goa

6. Electricity Department,
Administration of Daman & Diu
Daman - 396210

7. Electricity Department,
Administration of Dadra & Nagar Haveli, Silvasa …**Respondents**

Parties present

Shri Ajay Dua, NTPC
Shri T. Vinodh Kumar, NTPC
Ms. Suchitra Maggon, NTPC

Shri Sachin Jain, NTPC
Shri Natesan, NTPC
Shri Anurag Naik, MPPMCL
Shri Arvind Banerjee, CSPDCL

ORDER

The petitioner, NTPC Ltd has filed this petition for approval of tariff of Mauda Super Thermal Power Station, Stage-I (2 x 500 MW) ('the generating station") for the period from the anticipated date of commercial operation of Unit-I (1.10.2012) to 31.3.2014, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The project is being implemented by the petitioner in two stages, with Stage-I comprising of two units of 500 MW each and Stage-II comprising of two units of 660 MW each. The investment approval of Stage-I (1000 MW) was accorded on 26.11.2007 by the Board of the Petitioner company at a project cost of ₹5459.28 crore, including IDC & FC of ₹526.342 crore, at a price level of 4th quarter of 2007. The petitioner has entered into Power Purchase Agreement (PPA) with the respondents and the power generated from the generating station shall be supplied to the respondents in terms of the allocation made by the Ministry of Power, Government of India vide letter dated 18.8.2010. The petitioner has accordingly filed the petition for determination of tariff of the generating station from the anticipated date of commercial operation of Unit-I (1.10.2012) to 31.3.2014.

3. The petitioner vide affidavit dated 6.7.2012 had claimed capital cost and the annual fixed charges considering the anticipated COD of Unit-I as 1.10.2012 and Unit-II as 1.4.2013. Thereafter, the petitioner vide letter dated 13.3.2013 had submitted that Unit-I of the generating station has been declared under commercial operation with

effect from 13.3.2013 and accordingly interim tariff for the period from 13.3.2013 to 31.3.2014 was granted by Commission's order dated 5.4.2013, based on the capital cost of ₹276922.04 lakh as on 13.3.2013, subject to adjustment after determination of final tariff by the Commission. Subsequently, the petitioner vide affidavit dated 10.9.2013 had revised the tariff of Unit-I based on the actual audited capital expenditure upto the COD of Unit-I (13.3.2013) and the expected additional capital expenditure upto the anticipated COD of Unit-II (25.9.2013). Thereafter, the petitioner by letter dated 27.3.2014 informed that Unit-II of the generating station has been declared under commercial operation from 30.3.2014 and prayed that provisional tariff may be granted in order to bill the respondents for the power supplied from the generating station. Accordingly, the Commission by order dated 2.7.2014 granted interim tariff based on 85% of the actual capital cost as on COD of Unit-I (13.3.2013) and anticipated COD of Unit-II (25.9.2013) respectively, subject to adjustment after determination of final tariff by the Commission.

4. Thereafter, the petitioner vide affidavit dated 9.7.2014 submitted that Unit-II of the generating station had been declared under commercial operation with effect from 30.3.2014 and accordingly revised its claim for annual fixed charges based on the audited capital cost as on actual COD of Unit-II of the generating station and the actual additional capital expenditure incurred up to 31.3.2014. The capital cost and the annual fixed charges claimed by the petitioner vide affidavit dated 9.7.2014 is summarised as under:

Capital Cost

(₹ in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	**2013-14**	
		1.4.2013 to 29.3.2014	**30.3.2014 to 31.3.2014**
Capital Cost	286767	0.00	354172
Add: Additional capitalization as on COD of Unit-II	0.00	0.00	198426
Add: Notional IDC	1041.00	0.00	379.00
Add: FERV charged to revenue	(-) 1257.00	0.00	(-) 1282.91

Add: Inter-Unit Transfer - Outward	2924.33	0.00	0.00
Less: Inter-Unit Transfer – Inward	168.09	0.00	0.00
Opening Capital Cost	**289307**	**299025**	**551694**
Add: Additional capital expenditure	9717.66	55147.22	443.67
Closing Capital Cost	**299025**	**354172**	**552138**
Average Capital Cost	**294166**	**326599**	**551916**

Annual Fixed Charges

(₹in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	**2013-14**	
		1.4.2013 to 29.3.2014	**30.3.2014 to 31.3.2014**
Depreciation	15166	16845	29005
Interest on Loan	16568	17784	29934
Return on Equity	20248	23007	38879
Interest on Working Capital	4864	5022	17230
O&M Expenses	7680	8120	16240
Secondary Fuel Oil Cost	2388	2388	5291
Compensation Allowance	0	0	0
Special Allowance	0	0	0
Total	**66914**	**73165**	**136578**

5. Reply to the petition has been filed by the respondents, MPPMCL, MSEDCL and CSEDCL and the petitioner has filed its rejoinder to the said replies. The petitioner has also filed additional information in compliance with the directions of the Commission. We now proceed to examine the claim of the petitioner, on prudence check, based on the submissions of the parties and the documents available on records, as stated in the subsequent paragraphs.

Commissioning Schedule

6. As stated, the project comprises of two units of 500 MW each for Stage-I and two units of 660 MW each for Stage-II. The investment approval of Stage-I (1000 MW) was accorded by the Board of the Petitioner Company on 26.11.2007, at a project cost of ₹5459.28 crore, including IDC & FC of ₹526.342 crore at a Price Level of 4th Quarter of 2007. As per Investment approval, the commercial operation of the first unit of the generating station was envisaged to be within 42 months from date of main plant award and the second unit within 6 months thereafter i.e. 48 months. The details of the actual COD of the units of the generating station as against the schedule COD as per Letter of Award (LOA) is as under:

Unit Nos.	Date of LOA	Schedule COD as per LOA	Actual COD	Time Overrun (in months)
I	28.11.2008	28.05.2012	13.3.2013	9.5
II		28.11.2012	30.3.2014	16.0

It could be observed that as against the scheduled COD as per LOA, there is time overrun of about 9.5 months for Unit-I and 16 months for Unit-II in actual COD of the generating station.

Admissibility of Additional Return on Equity

7. The investment approval of Stage-I (1000 MW) was accorded by the Board of the Petitioner Company on 26.11.2007. The actual COD of Unit-I and Unit-II is 13.3.2013 and 30.3.2014 respectively. Accordingly, Unit-I was declared under commercial operation after 63.58 months and Unit-II has been declared under commercial operation after 76.14 months from the date of investment approval. In order to avail additional ROE of 0.5%, the time line as specified in the 2009 Tariff Regulations is 42 months from the date of investment approval for the first unit of 500MW for coal/lignite project and for subsequent units at an interval of 6 months. Hence, both the units were declared under commercial operation beyond the time line specified under the 2009 Tariff Regulations. Therefore, both the units of the generating station are not entitled to additional return of 0.5% on equity for timely completion in terms of the 2009 Tariff Regulations.

Time over run and Cost over run

8. As indicated above, there is a time over run of about 9.5 months for Unit-I and 16 months for Unit-II as compared to the schedule COD as per Investment Approval. In order to examine the delay in the commissioning of the project, the Commission during the proceedings held on 13.1.2015, directed the petitioner to submit information on the following:

"*Detailed break-up of time overrun of 9.5 months & 16 months for Unit-I & II respectively in a tabular form on the basis of each and every reason of delay, the number of working* *days/ months lost, the activities suffered due to particular reason, documentary evidence, wherever necessary, such as delay in coal linkage, transportation of coal through Indian Railways system, completion of railway siding, etc.;*

9. In compliance with the above directions, the petitioner vide affidavit dated 3.3.2015 has furnished the main reasons for delay in declaration of commercial operation of both the Units. Before the submissions of affidavit dated 3.3.2015 the petitioner vide affidavits dated 10.9.2013, 4.12.2014 has also submitted the reasons for delay due to some specific issues. We now set forth the submissions of the parties as under:

Submissions of the Petitioner

10. The main reasons for the delay in declaration of commercial operation of said units of the generating station as submitted by the petitioner are as under:

Unit-I

(a) Heavy rain-fall

11. The petitioner vide affidavit dated 3.3.2015 has submitted that there was an effective delay of 31 days due to heavy rainfall affecting all civil works of Unit-I. It has also submitted that the unprecedented rainfall of about 792 mm in month of July,2009 resulted in flooding of site and forced the stoppage of all the works at site. The petitioner in the said affidavit has attached the rainfall data as received from Irrigation Department, Govt. of Maharashtra and has submitted that the soil strata at Mauda comprises of black cotton soil and the movement of piling rigs and associated heavy machines was almost impossible in wet black cotton soil until and unless the soil gets dried-up, which resulted in delays in all the piling foundation works of Unit-I.

(b) Work 'Stop order' by Govt. of Maharashtra

12. The petitioner vide affidavit dated 4.12.2014 has submitted as under:

"*The Rehabilitation Action Plan (RAP) for the project was to be finalized in line with the NRRP 2007 and Maharashtra State Project Affected Persons Rehabilitation Act*

1999 and in consultation with the District Administration, Nagpur. As per the State R&R Act, the RAP is to be forwarded through the District Collector and the Divisional Commissioner to the State Rehabilitation Authority, GOM under the Revenue & Forest Dept. The R&R Plan/RAP was submitted by the petitioner to the District Collector, Nagpur on 24.9.2009, which in turn was forwarded to the Divisional Commissioner, Nagpur Division on 3.11.2009. Meanwhile Govt. of Maharashtra issued a stop order to the petitioner vide order dated 10.5.2010 citing non receipt of the R&R Plan/RAP. Subsequently, vide letter dated 12.5.2010, the Divisional Comm. Nagpur Division forwarded the R&R Plan/ RAP to the R&R Section, Revenue & Forest Department, GOM. Against this stoppage order, the petitioner vide letter dated 13.5.2010 addressed to Collector & District Magistrate, Nagpur submitted that the Rehabilitation Action Plan (RAP) has been duly approved by the Divisional Commissioner, Nagpur and NTPC is already implementing (RAP) in line with NRRP-2007 and hence, requested for revoking of the above order. The matter of revoking of order was taken up vigorously with Govt. of Maharashtra at all levels. Finally vide minutes of meeting issued on 16.9.2010 of the 9th SRA meeting the stop order was revoked by SRA Committee, Govt. of Maharashtra. The above procedural time taken within the Govt. of Maharashtra has resulted in stoppage of construction activities at Mauda STPS during the period 10.5.2010 to 16.9.2010 which was beyond the control of petitioner and resulted in delay in major milestone activities for both the units of Mauda STPS-I".

13. The petitioner, vide affidavit dated 3.3.2015 has submitted that the Work order with effect from 10.5.2010 to 16.9.2010 issued by the Govt. of Maharashtra resulted in complete stoppage of construction work at site. The petitioner has pointed out that detailed reasons and sequence of events along with documentary evidence have already been furnished vide affidavits dated 10.9.2013 and 4.12.2014. It has also stated that the submissions made evidently justify that all hindrances in timely completion of the project were unexpected and unintentional and were beyond the control of the petitioner. While pointing out that 128 days was lost in the construction activity, the petitioner has submitted that the Work Stop order issued by the Govt. of Maharashtra has caused the delay of more than four months and the same was beyond the control of the petitioner.

(c) Delay in completion of Railway Siding works

14. The petitioner vide affidavit dated 10.9.2013 has submitted as under:

"The petitioner submits that as per the feasibility report Mauda STPP was to be developed as non-pit head station. The coal linkage of the project was granted by standing linkage committee (SLC) from the IB valley coal fields of MCL. Based on the feasibility study the transportation of coal was envisaged through Indian Railways system by constructing a dedicated railway line from Chacher station on Nagpur-Gondia line which is about 8 kms from the project site. As NTPC was not having necessary expertise to carry out the works of railway siding package, immediately after placement of

Main plant Order, NTPC has awarded the Railway siding package to M/s RITES on 10.12.2008. This was a turnkey package to RITES as a project Management & Execution Consultant, entrusted with the responsibility of the work of detailed engineering of Railway siding system and in Plant rail facilities package. Based on the studies conducted by M/s RITES, a Detailed project Report (DPR) for the above work was prepared and submitted for approval to Railways in June 2009. However, Railways raised various queries which were replied and after incorporating the necessary suggestions as agreed upon with the railways, the DPR was finally approved on 10.05.2010. The Engineering scale plans, drawings & specifications to meet the safety standards set by Commissioner of Railway safety were accorded approval by Railways in Nov 2011. As per DPR the work was required to be completed in 24 months.

18. As the work of railway siding for Project involves linking of rail track and systems with the associated railways lines and systems of Chacher station of Indian Railways, the work at Chachar station were identified to be carried out by Indian Railways on deposit basis and its scope of work inter-alia included Railways boundary, Signalling & Telecommunication (S&T), Overhead Electrification (OHE) and track works. However, railways refused to carry out the work citing that work couldn't be taken up by them due to shortage of manpower and gave clearance to RITES for carrying out the work under its supervision.

19. Till the linkage of railway track and completion of associated system for movement of rake at Chachar station, in order to reduce the project completion time the Petitioner procured the coal through e-auction which was transported to the site through road thereby expediting the synchronization of the unit for initial synchronization, and other commissioning activities of Unit which were required for declaring the unit commercial. Further, it was also anticipated that during the period between initial synchronization and COD, RITES after obtaining approval from Railways would be able to complete the 8 km rail link between Chacher station and the project site. Based on the efforts made by the Petitioner, the Unit-I was test synchronized with the grid on 8.4.2012 and commissioned on 9.4.2012. But for demonstrating the maximum continuous rating and for sustained full load operation completion of work at Chacher station and loco movement was critical. The Petitioner submits that immediately before & after first synchronization, the status of the Railway siding package was reviewed and commitments were made by RITES/Railways to complete all the work related to load line by June, 2012. However, the work of Railway siding could not be completed as expected due to delay in approvals from Railways as well as heavy rains in the area. The petitioner submits that for engine rolling and engine rolling stabilization, erection of overhead electrification, signalling & Tele Communication & formation work at Chacher railway area and surface connectivity were critical activities which are to be completed by RITES after obtaining approval of Indian Railways. The works of signalling & Tele Communication involved the excavation of land at the Chacher station and laying of communication and signalling lines. Thus, taking care of existing lines of Indian Railways while excavation of land considerable time was consumed due to safety consideration of existing heavy traffic movement along this corridor of Railways. Also, it is noteworthy to mention that the Chacher station is in the Mumbai-Howrah line, one of the busiest corridors of Indian Railways. Due to the heavy traffic the surface connectivity with Indian Railways could only be achieved after getting necessary clearance from Indian Railways which was completed in May 2013."

15. In addition to the above, the petitioner vide affidavit dated 4.12.2014 has submitted as under:

"….*the petitioner submits that the execution of railway siding works in the premises of Chacher station was envisaged to be completed by May, 2012 on the railway land which was to be taken on long term lease from railways. Accordingly, the petitioner had requested railways vide letter dated 25.3.2011 for executing the land lease agreement at the earliest for enabling it to start the construction of railway siding in the premises of Chacher railway station. However due to non-finalisation of policy in regard to long term leasing of railway land by Govt.of India, the land license agreement could not be executed even after regular follow up by the petitioner. Finally railways vide circular dated 21.8.2012 cleared the policy decision of railway land leasing. Based on the above notified policy circular, the railways executed land licensing agreement with the petitioner on 25.9.2012 thereby allowing RITES to work within the railway boundary circular of Chacher station. The above delay in handing* *over of railway land has resulted in the delay in start of work by RITES at the Chacher station which was earlier identified to be executed by railways. Further the petitioner submits that the work at Chacher station also includes works of Signalling & Tele communication involving excavation of land for laying of communication and signalling lines. The excavation of land for laying the communication lines was done manually in order to avoid damage of existing signaling cables in line with the directions of railway authorities. This manual excavation has also resulted in considerable delay in work of railway siding at Chcaher station. Finally the work was completed and surface connectivity with Indian Railways could only be achieved after getting necessary clearance from Indian Railways which was completed in May, 2013. After the surface connectivity with the main line, the track fitness certificate for engine rolling was obtained from Indian Railways on 12.6.2013 for stabilisation of railway tracks. However due to unprecedented rainfall which commenced from June, 2013 leading to flooding of area and consequently, track formations at many places got eroded, especially in the areas of approaches to culverts and bridges which were newly constructed. It is pertinent to mention that the area has block cotton soil and black cotton soil has low slope stability and it takes time in settling completely. The erosion of track formation made the track unfit for the Railway rake movement. Additionally, the foundation of the Overhead Transmission line carrying the Electrical traction system suffered heavy damage, some illustrative photographs taken at Railway siding site supporting the above facts have been enclosed. Under these circumstances, it was unsafe to electrically charge the traction system and making it for rake movement. As the period of heavy rainfall continued uptomid August, 2013, the restoration activities were started immediately on war footing from mid of August, 2013 for making the track available fro rake movement. Finally after getting track fitness certificate and other clearances, the commercial notification of railway siding was issued on 13.9.2013 and the first coal rake was received in Mauda STPS on 20.9.2013."*

16. Also, the petitioner vide affidavit dated 3.3.2015 has submitted that the delay of 169 days between actual synchronisation and COD of the Unit-I had occurred as the Railway siding work got delayed due to (i) Delay in approval of DPR by Railway (ii) Delay in approvals of Engineering scale plans, drawing etc. for meeting safety standards (iii) Non-finalisation of Railway Land licensing Policy and (iv) Heavy rain fall in final leg of Railway siding work. The petitioner has submitted that all the above reasons were beyond the control of petitioner. It has also submitted that the explanation for delay along with PERT chart and other supporting documents have been submitted vide reply submission dated 10.9.2013 and 4.12.2014.

Unit-II

(a) Heavy rainfall during construction activities (July, 2009)

17. The petitioner while pointing out that there has been a delay of 31 days due to heavy rainfall in the month of July, 2009, affecting all civil works of Unit-II, has vide affidavit dated 3.3.2015 submitted as under:

"Unprecedented rainfall of about 792 mm in month of July'2009 resulted in flooding of site and forced the stoppage of all the works at site. The rainfall data as received from Irrigation Department, Govt. of Maharashtra is attached at Annexure-A. Further it is noteworthy to mention that soil strata at Mauda comprising of black cotton soil. The movement of piling rigs and associated heavy machines is almost impossible in wet black cotton soil until and unless the soil gets dried-up and which accordingly, all the piling foundation works of Unit-II got delayed."

(b) Non-availability of Sand and Moorum

18. The petitioner vide affidavit dated 4.12.2014 has submitted as under:

"Subsequent to the declaration of commercial operation of Unit-I, the petitioner had made all out efforts for completing all the major systems of Unit-II and making it ready for testing and commissioning activities keeping in view the implementation schedule as envisaged in the investment approval for declaring the second unit commercial 6 months after COD of first unit. Consequently after completion of major systems, the Unit-II was test synchronised on 25.3.2013. However, all the major TG and SG systems including the auxiliaries were ready at the time of first synchronization of Unit-II, except the civil and mechanical works of LHS coal conveying system for Unit-II (Tripper) and Milling system (LHS) which were not ready. These systems were critical and essentially required to be completed for demonstration of maximum rated capacity for declaring the unit commercial and further for sustained operation of Unit-II. The civil work of milling system and coal conveying system got delayed due to non-availability of Sand and Moorum. The supplies of these raw materials got affected from third week of January, 2013 for around 3 months on account of delay in getting the environmental clearances. It is relevant to mention here that Dy. Secretary, Revenue and Forest Department, Maharashtra Government, vide letter dated 21.1.2013 informed Divisional Commissioners and District Collectors that approval of State Pollution Committee is necessary for obtaining the secondary mineral excavation permits as per order dated 27.2.2012 passed by the Hon'ble Supreme Court. In view of the above change in procedure for secondary mineral excavation, following Hon'ble Supreme Court Order supplies of sand and Murom got affected from third week of January, 2013 for around 3 months and this delayed the construction activities of coal conveying system, milling system and other civil works which were in full swing. Further with the onset of heavy monsoon in June 2013 which continued up to August 2013 and delay in auction of sand bed of Nagpur &Bhandara district, the construction activities for Unit-II especially the civil works were hampered on account of non-availability of sand to agencies working at site. As the above resulted in delay in civil works of Unit-II, the Petitioner took up the above issue with the mining in charge officer of Nagpur district requesting for sand availability on priority for this project. Earlier also, the petitioner had faced similar problems of non-availability of sand in the FY 2009-10, 2010-11, 2011-12 which resulted in stoppage of civil works and in turn delayed the execution of project vis a vis schedule."

19. The petitioner while pointing out that there has been a delay of 303 days which has affected the activities such as Boiler Foundation, Civil works of Turbine generator and Coal feeder Floor (RHS) and Tripper Floor (RHS) by vide affidavit dated 3.3.2015 has submitted as under:

"During the execution of project, the delay in auction of Sand Beds in Nagpur area during 2009-10, 2010-11 and 2011-12 as mentioned in the letter from District mining officer of

vide submission dated 4.12.2014 has led to shortage in availability of Sand for civil works at Mauda STPS Stage-I. During above period availability of sand was insufficient for carrying out the civil works for both the units. As per the original schedule Unit-I was plannedto be declared commercial operation ahead of Unit-II.Accordingly, available sand during this period was mainly used for the construction activities for Unit-I. This has resulted in reduced availability of sand for Unit-II civil works and accordingly the civil works and its sequential works got further delayed."

(c) Work 'Stop Order' by Govt. of Maharashtra

20. The petitioner while pointing out that there has been a delay of 128 days which has affected all the construction activities, by affidavit dated 3.3.2015 has submitted as under:

"Work order with effect from 10.5.2010 to 16.9.2010 issued by the Govt. of Maharashtra resulted in complete stoppage of construction work at site. The detailed reasonsand sequence of events along with documentary evidence have already been furnishedvide affidavits dated 10.9.2013 and 4.12.2014.Therefore for a period of more than four months delay in construction activities was beyond the control of the petitioner was attributed to this Work stop order of Govt. of Maharashtra.

(d) Non-availability of secondary material and delay in auction of secondary material

21. The petitioner while pointing out that there has been a delay of 119 days which has affected the activities such as Mill & Bunkering system and coal conveyancing LHS), [Mill reject handling system, Boiler main & Auxiliary Coulmn encasement, Boiler & ESP paving works] has by affidavit dated 3.3.2015 submitted as under:

'*As the non-availability of sand in FY 2009-10, 2010-11 and 2011-12 had resulted in delay of most of the civil works of Unit-II. These delays have resulted in delay in start of civil work of left hand side coal feeder floor and tripper floor and by around 18 months from the original schedule which is critical for commercial declaration of Unit/Station*.

Further due to change in procedure for excavation of Secondary Minerals in Nagpur-Bhandara Region in accordance with the Hon'ble Supreme Court directives, leading to non-availability of secondary material for around 3-4 months starting from Jan' 2013, the civil works of LHS coal Conveying system and Milling system got further delayed. The petitioner has already submitted these details at para 2(3) along with supporting documents of the submission dated 4.12.2014 filed in compliance to the Record of Proceeding issued for the hearing held on 11.11.2014.'

(e) Heavy rainfall during 2013-14

22. The petitioner vide affidavit dated 4.12.2014 has submitted as under:

"While implementation/completion of Mauda project, Mauda and surroundings (Vidarbha region) experienced unprecedented heavy rainfall from the month of June, 2013 to upto

mid-August, 2013. In the month of June, 2013, total rainfall recorded was about 487.8 mm against the normal rainfall of 201 mm. It led to flooding at site and in & around Vidarbha region of Maharashtra which resulted in restriction of movement of men & machinery and virtually complete stoppage of work. These heavy rains delayed the pending activities of coal conveying system for Unit-II. The rainfall data as received and duly certified by Tahsildar, Mauda is enclosed as Annexure-O."

23. The petitioner while pointing out that there has been a delay of 111 days by affidavit dated 3.3.2015 submitted as under:

> *"The work of LHS coal conveying system got further delayed due to the unprecedented rainfall (240% of normal rainfall) in Mauda region during June, 2013 to September, 2013,resulting in flooding of site and forced stoppage of all the work of the Unit-II (as already submitted vide affidavit dated 4.12.2014). In view of the above the delay was beyond the reasonable control of the petitioner. Accordingly it is prayed that the Hon'ble Commission may please allow the tariff as claimed in the instant petition."*

Submissions of Respondents

24. The respondent, CSPDCL vide affidavit dated 5.11.2014 has submitted that the project has been delayed by 19.6 months for Unit-I and about 14 months for Unit-II due to various reasons as submitted by the petitioner and due to the delay, the project cost as on 31.3.2014 on account of IDC (₹379 crore) only, has increased to the extent of ₹5879.90 crore (including of liabilities of ₹359.78 crore). It has also submitted the time frame has been determined after accounting for all reasonable delay which may happen in normal course during a project execution. The respondent has stated that the various reasons given by the petitioner for delay in COD of the projects are not tenable and the delay is solely attributable to the petitioner and various agencies which have been engaged by the petitioner for execution of this project. It has also submitted that the respondents are not at all responsible and hence IDC on account of this delay should not be allowed to be capitalised as the work got delayed due to poor planning and careless execution and not due to reasons submitted by the petitioner. The respondent has further submitted that the delay on account of laying of railway line and its electrification and hence the cost overrun of the project are the sole responsibility of the petitioner and the agencies and the same has to be compensated to the

beneficiaries by the petitioner. Similar submissions have been made by the respondent, MPPMCL.

Rejoinder of Petitioner

25. In response, the petitioner vide rejoinder dated 4.12.2014 has stated that the reasons for the delay in execution of the project as submitted vide affidavit dated 10.9.2013 are not attributable to the petitioner. It has also pointed out that the Commission vide order dated 8.2.2013 in Petition No. 230/MP/2012 filed by the petitioner for extension of time (beyond six months from the date of synchronisation) for injection of infirm power had observed that the reasons for the delay in COD of the generating station is beyond the reasonable control of the petitioner sand in view of the above, the contention of the respondents are erroneous and is liable to be rejected.

Analysis

26. We have examined the submissions of the parties and the documents available on record. As regards the contention of the petitioner that the delay is not attributable to the petitioner in view of the findings of the Commission in order dated 8.2.2013 in Petition No. 230/MP/2012, it is noticed that the Commission while granting extension of time for injection of infirm power had concluded that the delay is not attributable to the petitioner. However, this does not preclude the Commission from exercising prudence check of the time and cost overrun based on the submissions of the parties and the principles laid down by the Appellate Tribunal for Electricity (the Tribunal) in its judgment dated 27.4.2011 in Appeal No. 72 of 2010 (MSPGCL Vs MERC & others). We proceed to do so accordingly. The Tribunal in the said judgment had laid down the following principle for prudence check of time over run and cost overrun of a project as under:

> *"7.4. The delay in execution of a generating project could occur due to following reasons:*

i. Due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.

ii. Due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.

Situation not covered by (i) & (ii) above.

In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/supplied of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.

7.5 In our opinion, the above principle will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers ' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner."

27. The reasons for the delay in the commissioning of Unit-I & Unit-II as submitted by the petitioner are on account of the following:

(i) Heavy rainfall in the year July, 2009 (31 days) and from June, 2013 to September, 2013 (111 days) during the commissioning period,

(ii) Work stoppage order by the Government of Maharashtra (128 days)

(iii) Delay in the completion of Railway siding works (169 days)

(iv) The non-availability of secondary material and delay in auction of secondary material (119 days); and

(v) The non-availability of sand and Moorum in 2009-10, 2010-11 and 2011-12 (303 days)

28. The scheduled date of commercial operation of Unit-I was 28.5.2012 whereas the actual COD of the said unit is 13.3.2013. Thus, there is a total time overrun of 9.5

months in the completion of Unit-I of the generating station. The scheduled date of commercial operation of Unit-II was 28.11.2012 whereas the actual COD of the said unit is 30.3.2014. Thus, there is a total time overrun of 16 months in the completion of Unit-II of the generating station. The reasons for the delay in completion of the project are analysed as under:

Heavy rainfall during July, 2009 (31 days and 111 days)

29. It is observed from the rainfall data submitted by the petitioner as received from the Irrigation Department of the Government of Maharashtra that there has been unprecedented rains of about 792 mm during the month of July, 2009 thereby affecting all the civil works of the project. Accordingly, the delay of 31 days for Unit-I and Unit-II due to rainfall is in our view beyond the control of the petitioner and hence, condoned. However, we find from PERT chart that rain did not have any impact in the overall actual commissioning of Unit-I and the delay of 9.5 months in the commissioning of Unit-I is due to other reasons. Further, there has been a delay of 111 days for Unit-II due to heavy rain from June, 2013 to September, 2013 (19.9.2013). From the rainfall data received from the Irrigation Department of Government of Maharashtra, it is observed that there was an average rain of 487.8 mm during the period from June, 2013 to September, 2013 as against the normal rain of 201 mm thereby resulting in flooding at site. Thus, there has been complete stoppage of construction activities like Civil works and the pending activities of coal conveying system for Unit-II. Accordingly, the delay of 111 days due to rain is beyond the control of the petitioner, and is thereby condoned. The petitioner cannot be held responsible and the generating company is to be given the benefit of additional cost incurred due to time overrun.However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

Work Stop Order by Government of Maharashtra (128 days)

30. The petitioner has submitted that the work stop order issued by the Government of Maharashtra on 10.5.2010 had resulted in a complete stoppage of all construction activities of Unit I & II from 10.5.2010 to 16.9.2010 i.e. 128 days. From the letter dated 10.5.2010 of the Revenue and Forest department of Government of Maharashtra, it is evident that the petitioner had undertaken the construction activities in the project without taking the prior approval of the Rehabilitation plan for PAPs. It is also noticed that the Government of Maharashtra had vide its letters dated 14.11.2007, 8.3.2008, 2.5.2008, 8.7.2008, 1.9.2008 and 26.6.2009 had advised the petitioner for submission of the Rehabilitation plan for PAPs as per the Maharashtra PAP Rehabilitation Act, 1999 and the National Rehabilitation Policy (NRP). Despite this, the Rehabilitation Plan for PAPs had not been furnished to the Government of Maharashtra. It is further observed from the letter dated 10.5.2010 of the Government of Maharashtra that the Rehabilitation Plan for PAPs submitted by the petitioner was not in line with the Maharashtra PAP Rehabilitation Act 1999 and National Rehabilitation Policy 2007. Moreover, the rehabilitation plan for PAPs was incomplete and vague. Accordingly Government of Maharashtra by letter dated 10.5.2010 was constrained to order the stoppage of work in the project. From the above facts, it is clearly evident that the delay of 128 days could have been avoided if the Rehabilitation plan for PAPs was submitted in accordance with the Maharashtra PAP Rehabilitation Act, 1999 and the National Rehabilitation Policy, 2007 as advised by the Govt. of Maharashtra. The stoppage of work from 10.5.2010 to 16.9.2010 is on account of the non-performance of the obligations by the petitioner in terms of the provisions of the said Act/Policy and is therefore fully attributable to the petitioner. In this background, the delay on this count cannot been condoned and the same is therefore covered by the principle [(situation (i)] of the judgment of the Tribunal dated 27.4.2011 and the entire cost for time overrun

for this period is required to be borne by the petitioner. However, the LD /Insurance proceeds recovered in such cases may be retained by the petitioner.

Delay in completion of Railway siding works (169 days)

31. The petitioner has submitted the delay of 169 days in the declaration of commercial operation was on account of the non-completion of the Railway siding work. From the submissions of the petitioner, it is noticed that the work order for Railway siding package was awarded on turnkey basis to M/s RITES as per schedule on 10.12.2008 and M/s RITES had prepared the DPR for Railway siding package and submitted to Railway authorities in June'2009 for approval. The DPR was approved on 10.5.2010 by the Railways authorities after incorporating the necessary modifications/ suggestions as agreed to with the Railways. It is also observed that the Safety approval was accorded by the Railways in November, 2011. Thus, three years had elapsed for obtaining approval for DPR and Safety clearances from the Railway authorities from date of award of contract to RITES on 10.12.2008. Considering the fact that the petitioner's role in obtaining the approval for DPR and Safety clearances from Railway authorities is minimal, it would not be proper to conclude that the delay of 3 years in obtaining approvals from Railway authorities is attributable to the petitioner. The Railway siding work from Chacher station to project site consist of two parts namely (i) Signaling, Telecommunication, OHE and Civil works in the Chachar railway station and (ii) laying of 8 km Railway track from Chachar station to plant site and associated work. Though Railways had initially agreed to do the siding work at Chachar station, it refused to do later due to inadequate man power. In this background, the petitioner had no other alternative but to get the railway siding work implemented through M/s RITES in May'2011. All the required processes starting from obtaining approval of DPR and Safety clearances by Railways, the shifting of work of OHE, Signalling& Telecommunication, Civil works etc. in Chachar station from Railways to RITES took

considerable period of time of about $2^1/2$ to 3 years, thereby resulting in the delay in completion of Railway siding work. As against the scheduled date of completion of work on 6.12.2010, the Railway siding work was completed only on 20.9.2013. Considering the factors in totality, we are of the considered view that the delay due to non-completion of railway siding as per schedule (6.12.2010) was beyond the control of petitioner and is not attributable to the petitioner. The petitioner has claimed effective delay of 169 days due to non-completion of railway siding work on the basis of the fact that the delay after 6.12.2010 due to non-completion of railway siding work has been subsumed on account of the delay due to non-availability of sand and moorum in 2009-10, 2010-11 and 2011-12. The delay due to stoppage of work by Govt. of Maharashtra (138 days), the delay of one month due to rain and delay due to railway siding (169 days) constitute the delay of 9.5 months. It is observed that Unit-I was test synchronized on 8.4.2012 and commissioned on 9.4.2012. However, the COD of Unit-I was declared by the petitioner only on 13.3.2013 i.e. before the completion of railway siding work on 20.9.2013. The petitioner has not clearly indicated as to how COD of Unit-I was declared six months prior to the completion of Railway siding work. From the perusal of the submissions and the documents with regard to Railway siding work, it is evident that the petitioner had declared the COD of Unit-I in March' 2013 by arranging coal transportation through road, with the expectation that the Railway siding work would be completed by that time. However, due to the non-completion of the Railway siding work, the petitioner was not able to declare COD of the unit as per the scheduled date of 28.5.2012. In this background, the delay of 2 years 9 months [from the scheduled date of 6.12.2010 to the actual completion date of 20.9.2013] in the completion of Railway siding work, leading to the delay of 9.5 months in the actual COD of Unit-I and 16 months in case of Unit-II, is for reasons beyond the control of the petitioner and the petitioner cannot be made attributable to the same. Accordingly, the delay of 9.5 months and 16 months in the COD of Unit-I and Unit-II respectively has been condoned. The delay is not attributable to the petitioner and is therefore covered by the principle [(situation (ii)] of the judgment of the Tribunal dated 27.4.2011 and the generating company is given benefit of the additional cost incurred due to time over-run. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

32. In case of Unit-II, apart from above reasons, there was one more reason far delay in actual COD which have been analysed as under.

Non Availability of Sand and Secondary material (Moorum)

33. The petitioner has submitted that there has been an effective delay of 303 days due to non-availability of sand and secondary materials from 1st Aug to 20th December, in the year 2009-10, 2010-11 and 2011-12. It is observed from the letter dated 2.6.2014 of the District Mining Officer, Nagpur that sand was not available during the period from August to December during the years from 2009-10 to 2013-14. The petitioner has not submitted any document which would reveal the measures taken by the petitioner to arrange sand from alternative sources or that the sand and other materials were not available from alternate sources. In view of above, we are of the view that the delay due to non-availability of sand was not beyond the control of the petitioner. In our view, the delay on this count could have been avoided if the petitioner and contractor made sincere efforts to arrange sand or other materials from other sources. We are of the view that there has been slackness in project management like improper co-ordination between the petitioner and the various contractors. Accordingly, we are not inclined to condone the delay on this count. However, the period of delay due to non-availability of sand and other secondary materials has been subsumed in the delay due to non-completion of Railway siding work, which we have condoned as the same was found to be beyond the control of the petitioner as stated in para 31 above. In this view, the

delay under this head has no overall impact in the project completion schedule. Based on the discussions above, the delay of 16 months in the actual COD of Unit-II as compared to the scheduled COD of Unit-II is found to be beyond the control of the petitioner and is therefore condoned. Consequently, the increase in IDC, IEDC etc. due to time overrun of 16 months has also been considered and allowed.

34. Based on the above discussions, the time overrun allowed (against the actual time overrun) for the said Unit and the schedule COD (reset) for the purpose of computation IDC due to time overrun is summarized as under:

Units	Scheduled COD as per LOA	SCOD shifted to	Actual COD	Time overrun
I	28.5.2012	13.3.2013	13.3.2013	-
II	28.11.2012	30.3.2014	30.3.2014	-

Capital Cost

35. Regulation 7(1) of the 2009 Tariff Regulations, provides as under:

> *"The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan- (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the finds deployed, by treating the excess equity as normative loan, or (i) being equal to the actual amount of loan in the event of the actual equal less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;*
>
> *Capitalized initial spares subject of the ceiling rates specified in regulation 8; and*
>
> *Additional capital expenditure determined under regulation 9:*
>
> *Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.*
>
> *The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff;*
>
> *Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time.*

Approved Cost

36. As stated, the Investment Approval of the project was accorded by the Board of the Petitioner Company on 26.11.2007 at an estimated current cost of ₹5459.28 crore, including IDC & FC of ₹526.342 crore and Working Capital Margin (WCM) of ₹102.271 crore at a price level of 4thQuarter of 2007. The corresponding indicative estimated completed cost as approved by the Board was ₹6010.19 crore.

Actual Capital Cost as on COD

37. The petitioner vide affidavit dated 3.3.2015 has claimed the capital cost of ₹289307.61 lakh as on COD of Unit-I (13.3.2013) and ₹551694.21 lakh as on COD of Unit-II (30.3.2014) duly reconciled and audited as detailed below:

(₹ in lakh)

		COD ofUnit-I (13.3.2013)	**COD of Unit-II (30.3.2014)**
1	Gross Block	322620.30	587990.90
2	Un-discharged liabilities	35853.22	35978.16
3	**Gross block excluding un-discharged liabilities (1-2)**	**286767.08**	**552012.74**
4	Add: Notional IDC	1041.00	1420.0
5	Add: Short Term FERV	(-) 1256.70	(-) 2539.61
6	Add:Inter-unit transfer up to COD	2756.23	801.08
7	**Capital cost claimed**	**289307.61**	**551694.21**

38. The respondent, CSPDCL vide affidavit dated 5.11.2014 has submitted that there is huge variation in the completed project cost at the time of scheduled COD and the actual cost of the project as on the date of COD. It has also submitted that no justification has been given by the petitioner for this variation and the items where cost variation (excess cost) is found listed and the estimated cost in respect of items like Cost of Steam/ Turbine Generator equipment, CHP, CW System and Start-up fuel and pre-commissioning expenses of ₹144.33 crore. The respondent has also underlined the variation in actual cost as compared to the estimated cost in respect of following assets/items, for which no justification has been given by the petitioner:

(₹in crore)

Name of the Item	As per estimated cost	Actual cost	Variation
Steam Generator equipment	1503.73	1520.16	16.43
Turbine Generator equipment	830.78	975.16	144.40
Coal Handling Plant	280.47	333.13	52.66
CW System	80.56	131.55	50.99
Cooling Tower	64.51	83.12	18.61
Ash Disposal & Area Development	94.106	41.26	52.84
Road & drainage including Site Development	0.00	74.56	74.56
Establishment cost	252.53	365.17	112.64
Start-up fuel	0.00	144.33	144.33
IDC	527.22	717.66	190.44
Financing Charges	32.46	337.88	305.42

39. The respondent, CSPDCL has further submitted that the petitioner has incurred an expenditure of ₹144.33 crore towards Start-up fuel and Pre-commissioning expenses which is a substantial amount and has urged that the matter may be critically examined by the Commission as to why so much fuel has been burnt during the pre-commissioning period. It has also submitted that the petitioner cannot be allowed to burn any quantity of fuel, at any cost before COD, as the same has a long term financial implications as the said amount will be capitalized for purpose of tariff. The respondent, MPPMCL vide affidavit dated 11.11.2014 has submitted that there is high variation in the completed cost at the time of scheduled COD and the actual cost of project as on date of COD. It has also submitted that no justification has been provided by the petitioner for this variation. The respondent has submitted that only justified and appropriate financing cost may be allowed after scrutinizing the same minutely. In response, the petitioner vide affidavit dated 4.12.2014 has submitted that there is an increase in cost incurred as in COD of the station vis a vis the value estimated in 2007 based on the prevailing cost then. It has also submitted that the actual project cost of ₹5520.12 crore claimed is well below the Completed cost of ₹6010.18 crore as envisaged in the Investment approval. It has further submitted that the per unit capacity

charges appear to be higher as the respondents have not availed the entire energy available to it. The petitioner has submitted the asset-wise justification for the variance in actual cost vis a vis estimated cost on the assets indicated by the respondents and has submitted that the excessive cost variation as raised by the respondents may be ignored by the Commission. As regards the claim towards Start-up fuel and Pre-commissioning expenses, the petitioner has submitted that at the time of preparing the Feasibility Report (FR) in 2007, the sale of infirm power was frequency linked with no cap on price and at the time of commissioning the units under revised Regulations in force, the revenue for sale of infirm power has been capped @ ₹1.65/ kWh. It has also further submitted that as the recovery is frequency linked and most of the time actual frequency was around 50 Hz, the revenue earned through sale of infirm power remained very low, even sometimes zero. It has therefore clarified that at the time of commissioning, coal from other sources were also used including import of coal. The petitioner has submitted that the said expenditure pertains to pre-commissioning expenses claimed in accordance with Regulation 11 of the 2009 Tariff Regulations which provides that any revenue earned by the generating station from sale of infirm power shall be adjusted in the capital cost after taking into account the fuel expenses incurred in view of the above regulations. Accordingly, the petitioner has stated that the pre-commissioning expenses have been claimed and included in the capital cost.

40. We have considered the submission of the parties on the issue of abnormal increase in the start-up fuel and pre-commissioning expenses. Pursuant to the hearing of the petition on 13.1.2015, the Commission had directed the petitioner to furnish details of actual expenditure of ₹144.33 crore on Start-up fuel along with details of computation of coal and secondary fuel oil and their price, units generated, activities undertaken and revenue earned from sale of infirm power up to COD in the prescribed format as specified by the Commission. In response, the petitioner vide affidavit dated

3.3.2015 has submitted these details. On scrutiny of the details submitted by the petitioner, it is noticed that the capitalisation of ₹144.33 crore as on COD of Unit-II/generating station is based on actual cost of fuel consumption and adjustment of revenue earned from the sale of infirm power from synchronisation to COD of the generating station. It is further observed that the capitalisation towards Start-up fuel cost & Pre-commissioning expenses up to the COD of Unit-I is ₹64.08 crore. Accordingly, considering the submissions of the petitioner, the Start-up fuel cost & Pre-commissioning expenses of ₹64.08 crore as on COD of Unit-I and ₹144.36 crore as on COD of Unit-II is found reasonable and the same is allowed in the capital cost of Unit-I and Unit-II of the generating station. The Establishment cost of ₹252.253 crore is as per original estimate. However, the increase in Establishment cost due to pay revision as submitted by has the petitioner is found acceptable. Also, the cost of Steam Generator & Turbine Generator Equipment, CHP, CW System Cooling Tower etc. appear to be reasonable considering the fact that the estimated cost was based on 2007 Price level and that the plant has been commissioned in March, 2014. It is noticed that some of the packages having shorter commissioning cycle are awarded on firm price and other packages such as SG and TG packages are awarded with a provision for price escalation to be calculated based on price variation adjustment formula as per the contract agreement. The contract agreement for these packages includes mentioning of various milestones like scheduled date of supply of erection. As stated by the petitioner, in none of the packages, the scheduled milestones have been revised and the petitioner has therefore paid only the price escalation from award of contract upto scheduled dates of supply of erection of various packages.

Reasonableness of Capital Cost

41. The per MW capital cost (hard cost) based on the Investment Approval and Gross block as on COD of Unit-I & II of the generating station is tabulated as below:

(₹in crore)

S. No.		Completed capital cost as per Investment approval	As per Gross Block	
			As on COD of Station	As on 31.3.2014
1	Capital Cost including IDC & FC	6010.19	5879.91	5880.15
2	IDC & FC	559.69	1055.54	1055.54
3	Hard Cost	5450.50	4824.36	4824.61
4	Hard Cost (Rs /MW)	5.45	4.82	4.82
5	Benchmark capital cost (December' 2011) as per Commission's order dated 4.6.2012	-	-	4.71

42. The petitioner has not furnished the details of balance /deferred work along with the estimated expenditure as on COD of the station to be executed within the cut-off date of the station i.e. 31.3.2017. In view of this, the reasonableness of capital cost has been assessed based on capital expenditure as on COD of the generating station and up to 31.3.2014. The reasonableness of the capital cost along with additional capital expenditure up to cut-off date shall however be re-examined after submission of such details of balance work by the petitioner during the next tariff period.

43. The total capital cost (hard cost) of the generating station as on COD, excluding IDC & FC works out as ₹4824.36 crore (₹4.82 crore/MW). It is therefore evident that the capital cost of Phase-I of (Unit-I & Unit-II) of the generating station as on COD is marginally higher than the benchmark capital cost of ₹4.71 crore/MW, based on December'2011 Price level, specified in the Commission's order dated 4.6.2012. The reason for this marginally higher capital cost is on account of the inclusion of expenditure on net Start-up fuel cost & Pre-commissioning expenses, the increase in establishment cost and the escalation in prices due to time overrun, since December' 2011. In this background, the hard cost of project as on COD can be considered to be reasonable.

Additional Capital Expenditure

44. Regulation 9(1) of the 2009 Tariff Regulations, provides as under**:**

"9. ***Additional Capitalisation.****(1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

(i) Un-discharged liabilities;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;

(iii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law:

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

45. The additional capital expenditure claimed for the period from 13.3.2013 (COD of Unit-I) to 31.3.2013, 1.4.2013 to 29.3.2014 and 30.3.2014 (COD of Unit-II) to 31.3.2014 are as under:

(₹ in lakh)

	Head of Work/ Equipment	**2012-13**	**2013-14**		
		13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**	**Total**
1	Merry Go Round system	-	15496.58	-	15496.58
2	Steam Generator	-	10485.61	-	10485.61
3	Roads	-	4833.24	-	4833.24
4	Township	-	3418.12	-	3418.12
5	Coal handling plant	-	3017.15	-	3017.15
6	Land	-	1616.71	-	1616.71
7	Turbine generator	-	1246.76	-	1246.76
8	Fire detection and protection system	-	1057.57	-	1057.57
9	Electrical equipment package	-	563.33	-	563.33
10	Site enabling works	-	493.53	-	493.53
11	Tools & plant	-	455.52	-	455.52
12	Main plant & off-site civil package	-	314.76	-	314.76
13	Spares	-	337.77	-	337.77
14	Cooling tower	-	275.77	-	275.77
15	Chimney	-	210.40	-	210.40
16	Furniture & fixtures-MBOA	-	58.23	-	58.23
17	Station piping	-	99.09	-	99.09
18	Communication equipment	-	106.95	-	106.95

19	LT switch gear and LT bus duct	-	102.92	-	102.92
20	Instrumentation cables	-	88.13	-	88.13
21	Ash water recirculation system	-	35.54	-	35.54
22	Pre-treatment plant	-	62.23	-	62.23
23	Switch yard	-	59.25	-	59.25
24	Laboratory and workshop equipment	11.91	50.37	-	62.28
25	Locomotive	-	46.17	-	46.17
26	De-mineralized plant	-	36.96	-	36.96
27	EDP equipment's	55.30	35.82	-	91.12
28	Air condition system	-	29.89	-	29.89
29	Other office furniture-MBOA	0.59	19.55	-	20.14
30	LT switchgears & LT bus ducts package	-	8.35	-	8.35
31	Water supply system	-	6.36	-	6.36
32	Ash handling plant	-		-	
33	Temporary structure	-	5.47	-	5.47
34	HT cables	-	4.19	-	4.19
35	Hospital equipment's-MBOA	-	**3.75**	-	**3.75**
36	Ash dyke	-	2.41	-	2.41
37	Cooling water system	-	2.0	-	2.0
38	Construction power system	-	0.57	-	0.57
39	Control cable	-	0.86	-	0.86
40	Station C&I	-	0.54	-	0.54
41	Condensate polishing unit	-	0.35	-	0.35
42	De-capitalization of other office equipment's	-	(-) 0.05	-	-0.05
43	De-capitalization of furniture and fixtures	-	(-) 0.15	-	-0.15
44	De-capitalization of IT equipment's	-	(-) 2.14	-	-2.14
45	De-capitalization of tools & plant	-	(-) 10.37	-	-10.37
46	Construction equipments	315.84	-	-	315.84
47	Discharge on un-discharged liabilities	9334.02	10471.14	443.67	20248.83
	Grand Total	**9717.66**	**55147.22**	**443.67**	**65308.55**

46. The petitioner vide affidavit dated 9.7.2014 has submitted that the additional capital expenditure claimed in respect of the items/works after the COD of the units are within the original scope of work and are covered under Regulation 9(1) of the 2009 Tariff Regulations. It has also submitted that the additional capital expenditure from COD of Unit-I i.e. from 13.3.2013 to 31.3.2013 and from 1.4.2013 to 29.3.2014 have been included in the capital cost as on COD of Unit-II (30.3.2014). The additional capital expenditure of ₹443.67 lakh claimed for the period from 30.3.2014 to 31.3.2014

are in respect of balance /deferred works which are within the original scope of work and hence the same has been allowed under Regulation 9(1)(i), (ii) and (iii) of the 2009 Tariff Regulations. In view of the above, the additional capital expenditure claimed by the petitioner after COD of the units of the generating station has been allowed for the purpose of tariff.

Capital Cost of Units I & II after adjustment of IDC, FC, FERV and liabilities

(a) **Capital cost as on COD of Unit-I (13.3.2013)**

47. The details of the capital cost as on COD of Unit-I, duly certified by auditor, as claimed by the petitioner is as under:

(₹in lakh)

Gross Block as on COD of Unit-I i.e. 13.3.2013	324891.82
Less: Gross Block pertaining to other Stages	2271.52
Gross Block pertaining to Stage-I (as on COD of Unit-I) on accrual basis	322620.30
Less: Un-discharged liabilities included above	35853.22
Gross Block pertaining to Stage-I (as on COD of Unit-I) on cash basis	286767.08
Add: Notional IDC	1041.00
Add: FERV charged to revenue	(-) 1257.00
Add: Inter-Unit Transfer - Outward	2924.33
Less: Inter-Unit Transfer – Inward	168.09
Capital cost claimed as on COD of Unit-I	**289307.61**

48. As stated in para 47 above, the capitalization of ₹289307.61 lakh, as on COD of Unit-I has been allowed. The auditor certified capital cost of ₹322620.30 lakh, on accrual basis and the capital cost of ₹286767.08 lakh, as cash basis, includes IDC & FC of ₹30035.89 lakh and FERV of ₹11410.88 lakh. The claim of the petitioner for IDC & FC and FERV has been examined as shown below:

IDC & FC: It is observed that the petitioner has claimed IDC & FC on FIFO basis of repayment as against the Weighted Average method of repayment of loan consistently adopted by the Commission in various tariff orders for the period 2009-14 and confirmed by the Appellate Tribunal. Accordingly, the Weighted Average method of repayment has been considered and the claim of the petitioner has been worked out as ₹29632.30 lakh as on COD of Unit-I. Accordingly, IDC & FC deducted as on COD of Unit-I works out to ₹403.59 lakh.

FERV: The petitioner's claim of FERV has been considered for the purpose of tariff.

Notional IDC - There is no provision under the 2009 Tariff Regulations for allowing Notional IDC. However, clause (a) of Regulation 7 of Tariff Regulations, 2009 provides for Normative IDC, over and above the actual IDC. Accordingly, after considering the quarterly debt-equity position corresponding to the actual cash expenditure, the admissible Normative IDC, over and above the actual IDC works out as ₹1876.41 lakh.

FERV charged to revenue–As per methodology adopted by the Commission, FERV charged to revenue upto COD has been considered as part of capital cost for the purpose of tariff.

Inter-unit transfer of temporary nature –In line with the prevailing practice of Commission of excluding inter-unit transfers of temporary nature for the purpose of tariff, the petitioner's claim under this head is allowed.

49. Based on the above, the admissible capital cost as on COD of Unit-I is worked out and allowed as ₹289739.45 lakh**.**

(b) **Additional Capital Expenditure as on COD of Unit-II (30.3.2014)**

50. As stated in para 45 above, the additional capital expenditure from COD of Unit-I amounting to ₹9717.66 lakh (13.3.2013 to 31.3.2013) and ₹55147.22 lakh (1.4.2013 to 29.3.2014) has been allowed. The petitioner has claimed ₹197521.72 lakh as additional capital expenditure as on COD of Unit-II as detailed under:

(₹ in lakh)

Gross Block addition as on COD of Unit-II	**212704.24**
Less: Un-discharged liabilities included in the above	14278.61
Gross Block addition as on COD of Unit-II (on cash basis)	198425.63
Add: Notional IDC	379.00
Add: FERV charged to revenue	(-) 1282.91
Additional capital expenditure claimed as on COD of Unit-II	**197521.72**

51. The auditor certified gross block addition as on COD of Unit-II (on accrual and on cash basis) includes IDC & FC amounting to ₹41730.35 lakh and FERV amounting to ₹22378.11 lakh. The petitioner's claim of IDC & FC and FERV has been examined as under:

IDC & FC: It is observed that the petitioner has claimed IDC & FC on FIFO basis of repayment as against the Weighted Average method of repayment of loan consistently adopted by the Commission in various tariff orders for the period 2009-14 and confirmed by the Appellate Tribunal. Accordingly, the Weighted Average method of repayment has been considered and the claim of the petitioner has been worked out as ₹41489.63 lakh as on COD of Unit-II. Accordingly, the IDC & FC to be deducted as on COD of Unit-II works out to ₹240.71 lakh.

FERV – The petitioner's claim of FERV has been considered for the purpose of tariff.

Notional IDC - There is no provision under the 2009 Tariff Regulations for allowing Notional IDC. However, clause (a) of Regulation 7 of Tariff Regulations, 2009 provides for Normative IDC, over and above the actual IDC. Accordingly, after considering the quarterly debt-equity position corresponding to the actual cash expenditure, the admissible Normative IDC, over and above the actual IDC works out to ₹1407.84 lakh.

FERV charged to revenue – As per methodology adopted by the Commission, FERV charged to revenue upto COD has been considered as part of capital cost for the purpose of tariff.

52. Based on the above, the additional capital cost capitalized as on COD of Unit-II works out to ₹198309.85 lakh and has been allowed.

53. Accordingly, the capital cost considered for the purpose of tariff is as under:

(Rs. in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
Opening Capital Cost	289739.45	299457.11	552914.18
Add: Additional capital expenditure	9717.66	55147.22	443.67
Closing Capital Cost	**299457.11**	**354604.32**	**553357.85**
Average Capital Cost	**294598.28**	**327030.71**	**553136.01**

54. The Interest on normative loan is to be treated as income in the Financial Statement i.e. Profit & Loss Account and Balance Sheet by the petitioner as it forms part of capital cost for the purpose of allowing tariff.

55. The petitioner has reconciled the actual additional capital expenditure for the years 2012-13 and 2013-14 with the books of accounts as under:

(₹ in lakh)

		2012-13 13.3.2013 to 31.3.2013	**2013-14 1.4.2013 to 29.3.2014**	**2013-14 30.3.2013 to 31.3.2014**	**Total**
1	Opening Gross Block of the year	322620.30	323010.15	587990.90	1233621.35
2	Closing Gross Block of the year	323010.15	587990.90	588014.95	1499016.00
3	Additional Capital Expenditure as per the books of accounts (2 -1)	389.85	264980.75	24.05	265394.65
4	Additional Capital expenditure for Unit-II	0.00	212704.24	0.00	198425.63
5	Additional capital expenditure excluding capitalisation for Unit-II (3-4)	389.85	52276.51	24.05	66969.02
4	Exclusions for additional capitalization as per books of Accounts.	0.00	1943.86	24.05	1967.91
5	Additional Capital Expenditure allowed including liabilities (3-4)	389.85	50332.65	0.00	65001.11
6	Un-discharged liabilities in the above	6.21	5656.57	0.00	19941.39
7	Additional Capital Expenditure excluding liability(5-6)	383.64	44676.08	0.00	45059.72

8	Discharge out of un-discharged liabilities	9334.02	10471.14	443.67	20248.83
9	**Total Additional Capital Expenditure claimed (7+8)**	**9717.66**	**55147.22**	**443.67**	**65308.55**

Exclusions

56. The summary of exclusions claimed by the petitioner as per books of accounts is as under:

(₹ in lakh)

	2012-13	2013-14		Total
	1.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2013 to 31.3.2014**	
Inter-Unit transfer	0.00	1955.15	0.00	1955.15
FERV	0.00	0.00	24.05	24.05
Reversal of Liabilities	0.00	(-)11.29	0.00	(-)11.29
Total Exclusions	**0.00**	**1943.86**	**24.05**	**1967.91**

Inter unit transfer

57. An amount of (-)₹1955.15 lakh in 2013-14, has been excluded under this head on account of transfer of certain items.These inter-unit transfers are indicated to be of temporary nature. The Commission while dealing with the petitions for additional capitalization in respect of other generating stations of the petitioner had decided that both positive and negative entries arising out of inter unit-transfers of temporary nature shall be ignored for the purpose of tariff. In consideration of the same, the exclusion of the amount oof ₹1955.15 lakh in 2012-13 on account of inter-unit transfers is in order and has been allowed.

FERV

58. The petitioner has excluded an amount of ₹24.05 lakh in 2013-14 on account of FERV. As the petitioner has billed FERV directly on the beneficiaries, the exclusion of FERV is in order and has been allowed.

Reversal of Liabilities

59. The petitioner has excluded an amount of (-) ₹11.29 lakh in 2013-14 on account of reversal of liabilities from un-discharged liabilities. The exclusion of the reversal is in order and hence allowed.

60. Based on the above discussions, the exclusions allowed are summarized as under:

(₹ in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	**1.4.2013 to 26.3.2014**	**27.3.2013 to 31.3.2014**
Inter unit transfer	0.00	1955.15	0.00
FERV	0.00	0.00	24.05
Reversal of Liability	0.00	(-)11.29	0.00
Total Exclusions allowed	0.00	1943.86	24.05

Capital Cost for 2012-14

61. Accordingly, the capital cost considered for the purpose of tariff for the generating station is as under:

(₹ in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	2013-14	
		1.4.2013 to 29.3.2014	**30.3.2014 to 31.3.2014**
Opening Capital Cost	289739.45	299457.11	552914.18
Add: Additional capital expenditure	9717.66	55147.22	443.67
Closing Capital Cost	**299457.11**	**354604.32**	**553357.85**
Average Capital Cost	**294598.28**	**327030.71**	**553136.01**

Debt-Equity Ratio

62. Regulation 12 of the 2009Tariff Regulations provides as under:

> *"(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.*
>
> *Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*
>
> *Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.*

Explanation.-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, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 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.

63. The details of cash expenditure as submitted by petitioner at Form-14A and the net loan position as on COD's of the units, the debt-equity ratio as on COD of Unit-I & Unit-II works out to 64.92:35.08 & 70.76:29.24, respectively. The debt-equity ratio as on COD of Unit-I is well within the normative norm of 70:30, as such, debt-equity ratio of 70:30 has been considered for the purpose of tariff as on COD of Unit-I & additional capital expenditure between COD of Unit-I & Unit-II. However, since the debt-equity ratio as on COD of Unit-II has exceed the normative norm of 70:30 the actual debt-equity ratio of 70.76:29.24 has been considered for the purpose of tariff as on COD of Unit-II. Further, considering the cumulative cash expenditure position as on COD of Unit-II along with additions (on cash basis) to Gross Block & CWIP and discharges during the period from COD of Unit-II to 31.3.2014, the debt-equity ratio as on 31.3.2014 works out to 70.24:29.76 which is also beyond the normative debt-equity ratio of 70:30. As such the actual debt-equity ratio of 70.24:29.76 has been considered for the purpose of additional capital expenditure incurred during the period from COD of Unit-II to 31.3.2014.

Return on Equity

64. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.

***Provided** that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**.*

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

(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

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

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

Where t is the applicable tax rate in accordance with clause (3) of this regulation.
(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed charges on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

***Provided** further that Annual Fixed Charge with respect to tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations."*

65. Accordingly, return on equity has been worked out after accounting for the additional capital expenditure as under:

(₹ in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	**2013-14**	
		1.4.2013 to 29.3.2014	**30.3.2014 to 31.3.2014**
Notional Equity- Opening	86921.83	89837.13	164368.73
Addition of Equity due to Additional capital expenditure	2915.30	16544.17	132.04
Normative Equity – Closing	89837.13	106381.30	164500.78
Average Normative Equity	88379.48	98109.21	164434.76
Return on Equity (Base Rate)	15.500%	15.500%	15.500%
Applicable Tax Rate	32.445%	33.990%	33.990%
Rate of Return on Equity (Pre-tax)	**22.944%**	**23.481%**	**23.481%**
Return on Equity	**20277.79**	**23037.02**	**38610.93**

Interest on loan

66. Regulation 16 of the 2009 Tariff Regulations provides as under*:*

"(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.

(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 annual depreciation allowed.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

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

Provided further that if the generating station 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 beneficiary or the transmission customers 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".

67. Interest on loan has been worked out as mentioned below:

(i) The gross normative loan corresponding to admissible capital cost works out to ₹202817.61 lakh and ₹388545.44 lakh as on COD of Unit-I and II, respectively.

(ii) The net loan opening as on COD of Unit-I is same as gross loan. The cumulative repayment of loan up to the previous year/period is 'nil'.

(iii) Depreciation allowed for the period has been considered as repayment of loan.

(v) Average net loan has been calculated as average of opening and closing.

(vi) Weighted Average Rate of Interest has been has been computed considering the details of actual loan portfolio till 31.3.2014 as submitted by the petitioner. The calculations of weighted average rate of interest on loan is enclosed as Annexure-I to this order.

68. The necessary calculations for interest on loan is as under:

(₹ in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	2013-14	
		1.4.2013 to 29.3.2014	30.3.2014 to 31.3.2014
Gross opening loan	202817.61	209619.97	388545.44
Cumulative Repayment	-	783.20	17400.54
Net Loan Opening	202817.61	208836.77	371144.90
Addition due to Additional capitalisation	6802.36	38603.05	311.63
Repayment of loan during the year	783.20	16617.34	156.67
Net Loan Closing	208836.77	230822.49	371299.87
Average Loan	205827.19	219829.63	371222.39
Weighted Average Rate of Interest on Loan	8.0557%	8.1530%	8.0932%
Interest on Loan	**16580.72**	**17922.68**	**30043.62**

69. Regulation 17 of the 2009 Tariff Regulations provides as under:

"(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) 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 stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site.*

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

(3) 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.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.*

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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.

70. The petitioner has claimed depreciation considering weighted average rate of depreciation of 5.1557%, 5.1577% & 5.2553% for the period from COD of Unit-I to 31.3.2013, 1.4.2013 to COD of Unit-II & COD of Unit-II to 31.3.2014, respectively. However, considering the rate of depreciation as enclosed in the Appendix-III to the 2009 Tariff Regulations, the weighted average rate of depreciation is worked out as 5.1072%, 5.1093% and 5.1690% for the period from COD of Unit-I to 31.3.2013, 1.4.2013 to 29.3.2013 and from 30.3.2014 to 31.3.2014, respectively. Accordingly, depreciation has been calculated as under:

(₹ in lakh)

	2012-13 (13.3.2013 to 31.3.2013)	**2013-14**	
		1.4.2013 to 29.3.2014	**30.3.2014 to 31.3.2014**
Average Capital Cost	294598.28	327030.71	553136.01
Weighted Average Rate of Depreciation	5.1072%	5.1093%	5.1690%
Depreciable Value	265138.45	294327.64	497822.41
Remaining Depreciable Value	265138.45	293544.44	480421.87
Depreciation for the period	**783.20**	**16617.34**	**156.67**
Depreciation for the year (annualised)	**15045.71**	**16708.89**	**28591.77**
Cumulative depreciation adjustment at the end	783.20	17400.54	17557.20

Normative Annual Plant Availability Factor

71. The Normative Annual Plant Availability Factor (NAPAF) of 85% has been considered for the purpose of tariff.

O&M Expenses

72. Regulation 19 (a) of the 2009 Tariff Regulations provides the following O&M expense norms for 500 MW units of coal based generating stations as under:

(₹ in lakh / MW)

2012-13	**2013-14**	
13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
15.36	16.24	16.24

73. Accordingly, as per Regulation 19 (a) of the 2009 Tariff Regulations, the O&M expenses have been worked out and allowed as under:

(₹in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
O&M Expenses (annualized)	7680	8120	16240

Interest on Working Capital

74. Regulation 18(1)(a) of the 2009 Tariff Regulations provides that the working capital for coal based generating stations shall cover:

(i) Cost of coal for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;

(ii) 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 liquid fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and

(v) O&M expenses for one month.

75. Clause (3) of Regulation 18 of the 2009 Tariff Regulations as amended on 21.6.2011 provides as under:

"Rate of interest on working capital shall be on normative basis and shall be considered as follows:

(i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1st April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.

(ii) SBI Base Rate plus 350 basis points as on 01.07.2010 or as on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the units or station whose date of commercial operation lies between the period 01.07.2010 to 31.03.2014.

Provided that in cases where tariff has already been determined on the date of issue of this notification, the above provisions shall be given effect to at the time of truing up.

76. Working capital has been calculated considering the following elements:

Fuel Component and Energy charges in working capital

77. The petitioner has claimed fuel component in working capital based on price and GCV of coal and oil for the preceding three months prior to the date of commercial operation of both the units separately i.e. December,2012 to February, 2013 for Unit-I and December,2013 to February, 2014 for Unit-II as given under:

(₹ in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	1.4.2013 to 29.3.2014	30.3.2014 to 31.3.2014
Cost of Coal for 2 months	11152.19	11152.19	51141.56
Cost of Secondary Fuel Oil for 2 months	398.00	398.00	882.00

78. In line with the norms specified by the Commission under the 2009 Tariff Regulations, the cost for fuel component in working capital, based on price and GCV of coal and oil for the preceding three months prior to the date of commercial operation of both the units have been worked out and allowed as under:

(₹ in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	1.4.2013 to 29.3.2014	30.3.2014 to 31.3.2014
Cost of Coal for 2 months	11050.83	11050.83	50673.93
Cost of Secondary Fuel Oil for 2 months	397.95	397.95	881.85

Cost of Secondary Fuel Oil

79. The petitioner has claimed the cost of Secondary fuel oil based on the price and GCV of oil for the preceding three months prior to the date of commercial operation of both the units separately i.e. December, 2012 to February, 2013 for Unit-I and December,2013 to February, 2014 for Unit-II as given under:

(₹ in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	1.4.2013 to 29.3.2014	30.3.2014 to 31.3.2014
Cost of Secondary Fuel Oil	2388.00	2388.00	5291.00

80. The cost of secondary fuel oil claimed as above is allowed for the purpose of tariff as under:

(₹in lakh)

	2012-13	**2013-14**	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
Cost of Secondary Fuel Oil	2387.71	2387.71	5291.08

Maintenance Spares

81. The maintenance spares claimed by the petitioner for the purpose of working capital is as under:

(₹in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	1.4.2013 to 29.3.2014	30.3.2014 to 31.3.2014
Cost of maintenance spares	1536.00	1624.00	3248.00

82. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation and maintenance expenses as specified under Regulation 19. Accordingly, the maintenance spares @ 20% is worked out and considered for the purpose of tariff is as under:

(₹in lakh)

	2012-13	**2013-14**	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
Cost of maintenance spares (annualized)	1536.00	1624.00	3248.00

O&M expenses for 1 month

83. O & M expenses for 1 month claimed by the petitioner for the purpose of working capital are as under:

(₹in lakh)

	2012-13	**2013-14**	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
O & M for 1 month (annualized)	640.00	677.00	1353.00

84. For the purpose of computation of interest on working loan, the O&M expenses for one month as per norms have been considered as under:

(₹in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
O & M for 1 month (annualized)	640.00	676.67	1353.33

85. The interest on working capital has been calculated considering the rate of interest of 13.50% (i.e. SBI base rate of 10% as on 1.4.2012 plus 3.50 bps) for the period from COD of Unit-I to COD of Unit-II and considering the rate of interest of 13.20% (i.e. SBI base rate of 9.70% as on 1.4.2013 plus 3.50 bps) for the period from COD of Unit-II to 31.3.2014. Accordingly, the interest on working capital is computed as under:

(₹in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
Cost of Coal for 2 months	11050.83	11050.83	50673.93
Cost of Secondary Fuel oil for 2 months	397.95	397.95	881.85
Maintenance Spares	1536.00	1624.00	3248.00
O&M expenses for 1 month	640.00	676.67	1353.33
Receivables for 2 months	22185.21	23245.94	73318.62
Total Working Capital	**35809.98**	**36995.38**	**129475.73**
Weighted Average Rate of Interest	13.50%	13.50%	13.20%
Interest on Loan	**4834.35**	**4994.38**	**17090.80**

Annual Fixed Charges for 2012-14

86. Accordingly, the annual fixed charges approved in respect of the generating station for 2012-14 are summarized as under:

(₹in lakh)

	2012-13	2013-14	
	13.3.2013 to 31.3.2013	**1.4.2013 to 29.3.2014**	**30.3.2014 to 31.3.2014**
Depreciation	15045.71	16708.89	28591.77
Interest on Loan	16580.72	17922.68	30043.62
Return on Equity	20277.79	23037.02	38610.93
Interest on Working Capital	4834.35	4994.38	17090.80
O&M Expenses	7680.00	8120.00	16240.00
Cost of Secondary Fuel Oil	2387.71	2387.71	5291.08
Total	**66806.28**	**73170.68**	**135868.20**

Note:*i) All figures are on annualized basis. ii) All the figures under each head have been rounded. The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.*

Operational Norms

87. The operational norms for 500 MW units and above considered by the petitioner are as under:

Normative Annual Plant Availability Factor	85%
Heat Rate (kcal/kWh)	2446.59
Auxiliary power consumption	6.50%
Specific Oil Consumption (ml/kwh)	1.0

The respondents CSPDCL and MPPMCL have tabulated the values of design heat rate, the Gross Station Gross Heat Rate etc claimed by the petitioner, the values considered by Commission for grant of interim tariff and the claims of the respondent as under:

	As claimed by petitioner	**As granted by Commission in interim tariff order**	**As claimed by Respondents**
Turbine Heat Rate	1932 kCal/kWh	Maximum value 1935 kCal/kWh	1932 kCal/kWh
Boiler efficiency	84.10 %	Minimum value 85 %	85 %
Design Heat Rate	2297.27 kCal/kWh	2276 kCal/kWh	2272.94 kCal/kWh
Gross Station Heat Rate (GSHR)	2446.59 kCal/kWh	2424.44 kCal/kWh	2420.68 kCal/kWh

88. The said respondents have further submitted that the 2009 Tariff Regulations provide for a maximum Turbine Cycle Heat Rate of 1935 kCal/kWh and Minimum Boiler efficiency as 85% and accordingly, the maximum design unit Heat Rate will be 2276 kCal/kWh. They have also submitted that the Turbine Heat Rate of 1935 kCal/kWh specified in the 2009 Tariff Regulations is the maximum limit, and it could be less than the design criteria of Turbine. They have also submitted that the Boiler efficiency of 85% specified in the 2009 Tariff Regulations is the minimum limit and therefore considering all these aspects, the GSHR would be as under:

Design Heat Rate: 1932/0.85=2272.94 kCal/kWh
GSHR = 1.065x2272.94=2420.68 kCal/kWh

89. Accordingly, the respondents have submitted the Gross Station Heat-Rate of 2420.68 kCal/kWh may be considered for the purpose of tariff of the generating station.

90. We have examined the matter. The operational norms considered by the petitioner are in order except for the Heat Rate. The petitioner has considered the Heat Rate of 2446.59 kcal/kWh computed based on the Guaranteed Turbine Heat Rate of 1932 kcal/kWh and the Guaranteed Boiler efficiency of 84.10% with a deviation factor of 6.5% from the design Heat Rate value. Admittedly, the Heat Rate considered by the petitioner is in deviation to the norms specified by the Commission under the 2009 Tariff Regulations and hence not considered. We have also examined the Heat Rate value of 2420.68 kCal/kWh calculated by the respondents CSPDCL and MPPMCL. It is observed that the respondents have computed the design unit Heat Rate of 2272.94 kCal/kwh by considering the Turbine cycle heat rate of 1932 kCal/kWh (as per the guaranteed design value) submitted by the petitioner as the same is lower than the maximum Turbine cycle heat rate (as per ceiling norms) specified by the Commission. Similarly, the said respondents have considered the Boiler efficiency of 85% as per minimum boiler efficiency ceiling norm specified by the Commission as the same is higher as compared to the design value of 84.10%. We are not inclined to accept the submissions of the respondents. In the 2009 Tariff Regulations, the Commission has specified the maximum ceiling of design unit heat rate at different pressure and temperature ratings of unit in order to keep the design heat rate to a reasonable value, so that any higher design heat rate over the ceiling heat rate could be restricted to ceiling design value. Since, the design unit heat rate as per guaranteed design value works out to 2297.27 kCal/kWh (1932/ 0.841), the same is restricted to 2276 kCal/kWh as per norms specified by the Commission. In view of above, the Gross Station Heat Rate has been worked out as 2424.44 kCal /kWh and the same is considered for the purpose of tariff.

Energy Charge Rate (ECR)

91. The petitioner has claimed Energy Charge Rate (ECR) of 192.22 paisa/kWh and 440.75 paisa/kWh respectively for Unit-I and Unit-II of the generating station, based on the weighted average price, GCV of fuel procured and burnt for the preceding three months of COD of each unit separately i.e. December, 2012 to February, 2013 for Unit-I and from December, 2013 to February, 2014 for Unit-II and the operational norms based on the 2009 Tariff Regulations. The ECR of 190.476 paisa/kWh for Unit-I and 436.718 paisa/kWh for Unit-II is considered for the purpose of tariff. The relevant calculations are as under:

	Unit	**2012-13**	**2013-14**	
		13.3.2013 to 31.3.2013	1.4.2013 to 29.3.2014	1.4.2013 to 29.3.2014
Capacity	MW	500	500	1000
Specific Oil Consumption	ml/kWh	1.0	1.0	1.0
Gross Station Heat Rate	kcal/kWh	2424.44	2424.44	2424.44
Auxiliary Energy Consumption	%	6.50	6.50	6.50
Weighted average GCV of coal	kcal/kg	3250.0	3250.0	3100.33
Weighted average price of coal	Rs/MT	2397.09	2397.09	5242.11
Weighted average GCV of oil	kcal/lit	9800	9800	9450.0
Weighted average price of oil	Rs/Kl	64134.08	64134.08	71059.43
Rate of energy charge ex-bus	**Paisa/kWh**	**190.476**	**190.476**	**436.718**

92. The Energy charge on month to month basis shall be billed by the petitioner as per Regulation 21 (6) (a) of the 2009 Tariff Regulations.

Application fee and the publication expenses

93. The petitioner has prayed for reimbursement of application fee and publication of notice expenses. In terms of our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application and the expenses incurred on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees for the period 2012-14 in connection with the present petition and the publication expenses of ₹625009/- incurred shall be directly recovered from the beneficiaries, on *pro rata* basis.

94. The difference between the tariff determined by this order and the provisional tariff granted vide orders dated 5.4.2013 and 2.7.2014 shall be adjusted in accordance with the proviso to Regulation 5(3) of the 2009 Tariff Regulations.

95. Petition No. 69/GT/2013 is disposed of in terms of the above.

-Sd/-	**-Sd/-**	**-Sd/-**
(A.S. Bakshi)	**(A.K.Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Chairperson**

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

(₹ in lakh)

S. No.	Lender	Particulars	2012-13 (13.3.2013 to 31.3.2013)	2013-14 (1.4.2013 to 29.3.2014)	2013-14 (30.3.2014 to 31.3.2014)
1	Vijaya Bank-IV (T1,D2)	Gross Opening	3,500.00	3,500.00	3,500.00
		Less: Cumulative Repayment	-	-	250.00
		Net Opening Loan	**3,500.00**	**3,500.00**	**3,250.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	250.00	-
		Net Closing Loan	**3,500.00**	**3,250.00**	**3,250.00**
		Average Loan	3,500.00	3,375.00	3,250.00
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**357.00**	**344.25**	**331.50**
2	Vijaya Bank-IV (T1,D4)	Gross Opening	1,500.00	1,500.00	1,500.00
		Less: Cumulative Repayment	-	-	107.14
		Net Opening Loan	**1,500.00**	**1,500.00**	**1,392.86**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	107.14	-
		Net Closing Loan	**1,500.00**	**1,392.86**	**1,392.86**
		Average Loan	1,500.00	1,446.43	1,392.86
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**153.00**	**147.54**	**142.07**
3	Allahabad Bank-III (T1,D1)	Gross Opening	1,500.00	1,500.00	1,500.00
		Less: Cumulative Repayment	-	-	107.14
		Net Opening Loan	**1,500.00**	**1,500.00**	**1,392.86**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	107.14	-
		Net Closing Loan	**1,500.00**	**1,392.86**	**1,392.86**
		Average Loan	1,500.00	1,446.43	1,392.86
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**153.00**	**147.54**	**142.07**
4	Axis Bank-I (T1,	Gross Opening	17,000.00	17,000.00	17,000.00
		Less: Cumulative	-	-	1,214.29

		Repayment			
		Net Opening Loan	**17,000.00**	**17,000.00**	**15,785.71**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	1,214.29	1,214.29
		Net Closing Loan	**17,000.00**	**15,785.71**	**14,571.43**
		Average Loan	17,000.00	16,392.86	15,178.57
		ROI	10.2500%	10.4038%	10.5000%
		Interest	**1,742.50**	**1,705.49**	**1,593.75**
5	CBI-III (T1,D3)	Gross Opening	7,000.00	7,000.00	7,000.00
		Less: Cumulative Repayment	1,500.00	1,500.00	2,500.00
		Net Opening Loan	**5,500.00**	**5,500.00**	**4,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	1,000.00	-
		Net Closing Loan	**5,500.00**	**4,500.00**	**4,500.00**
		Average Loan	5,500.00	5,000.00	4,500.00
		ROI	10.2500%	10.2260%	10.2500%
		Interest	**563.75**	**511.30**	**461.25**
6	HUDCO-I (T1,D1)	Gross Opening	3,500.00	3,500.00	3,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**3,500.00**	**3,500.00**	**3,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**3,500.00**	**3,500.00**	**3,500.00**
		Average Loan	3,500.00	3,500.00	3,500.00
		ROI	10.1700%	9.9300%	9.9300%
		Interest	**355.95**	**347.55**	**347.55**
7	Indian Bank-II (T1,D3)	Gross Opening	3,000.00	3,000.00	3,000.00
		Less: Cumulative Repayment	214.29	214.29	642.86
		Net Opening Loan	**2,785.71**	**2,785.71**	**2,357.14**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment			

		during the year / period	-	428.57	-
		Net Closing Loan	**2,785.71**	**2,357.14**	**2,357.14**
		Average Loan	2,785.71	2,571.43	2,357.14
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**284.14**	**262.29**	**240.43**
8	Indian Bank-III (T1,D1)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Average Loan	5,000.00	5,000.00	5,000.00
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**510.00**	**510.00**	**510.00**
9	IDFC-II (T1,D2)	Gross Opening	6,000.00	6,000.00	6,000.00
		Less: Cumulative Repayment	300.00	450.00	1,050.00
		Net Opening Loan	**5,700.00**	**5,550.00**	**4,950.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	150.00	600.00	-
		Net Closing Loan	**5,550.00**	**4,950.00**	**4,950.00**
		Average Loan	5,625.00	5,250.00	4,950.00
		ROI	10.2700%	10.2700%	10.2700%
		Interest	**577.69**	**539.17**	**508.37**
10	LIC-V (T1,D2)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	357.14	714.29	1,428.57
		Net Opening Loan	**4,642.86**	**4,285.71**	**3,571.43**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	357.14	714.29	-
		Net Closing Loan	**4,285.71**	**3,571.43**	**3,571.43**
		Average Loan	4,464.29	3,928.57	3,571.43
		ROI	11.0000%	11.0000%	11.0000%

		Interest	**491.07**	**432.14**	**392.86**
11	PFC-V (T1,D2)	Gross Opening	12,000.00	12,000.00	12,000.00
		Less: Cumulative Repayment	-	-	750.00
		Net Opening Loan	**12,000.00**	**12,000.00**	**11,250.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	750.00	-
		Net Closing Loan	**12,000.00**	**11,250.00**	**11,250.00**
		Average Loan	12,000.00	11,625.00	11,250.00
		ROI	9.9700%	9.9700%	9.9700%
		Interest	**1,196.40**	**1,159.01**	**1,121.63**
12	PFC-V (T1,D4)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	312.50
		Net Opening Loan	**5,000.00**	**5,000.00**	**4,687.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	312.50	-
		Net Closing Loan	**5,000.00**	**4,687.50**	**4,687.50**
		Average Loan	5,000.00	4,843.75	4,687.50
		ROI	9.6600%	9.6600%	9.6600%
		Interest	**483.00**	**467.91**	**452.81**
13	PFC-V (T1,D10)	Gross Opening	8,000.00	8,000.00	8,000.00
		Less: Cumulative Repayment	-	-	500.00
		Net Opening Loan	**8,000.00**	**8,000.00**	**7,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	500.00	-
		Net Closing Loan	**8,000.00**	**7,500.00**	**7,500.00**
		Average Loan	8,000.00	7,750.00	7,500.00
		ROI	9.3300%	9.3300%	9.3300%
		Interest	**746.40**	**723.07**	**699.75**
14	PFC-V (T1,D12)	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	156.25

		Net Opening Loan	**2,500.00**	**2,500.00**	**2,343.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	156.25	-
		Net Closing Loan	**2,500.00**	**2,343.75**	**2,343.75**
		Average Loan	2,500.00	2,421.88	2,343.75
		ROI	9.1858%	9.3100%	9.3100%
		Interest	**229.64**	**225.48**	**218.20**
15	PFC-V (T1,D20)	Gross Opening	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	-	-	625.00
		Net Opening Loan	**10,000.00**	**10,000.00**	**9,375.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	625.00	-
		Net Closing Loan	**10,000.00**	**9,375.00**	**9,375.00**
		Average Loan	10,000.00	9,687.50	9,375.00
		ROI	7.8200%	7.8200%	7.8200%
		Interest	**782.00**	**757.56**	**733.13**
16	PFC-V (T1,D22)	Gross Opening	4,000.00	4,000.00	4,000.00
		Less: Cumulative Repayment	-	-	250.00
		Net Opening Loan	**4,000.00**	**4,000.00**	**3,750.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	250.00	-
		Net Closing Loan	**4,000.00**	**3,750.00**	**3,750.00**
		Average Loan	4,000.00	3,875.00	3,750.00
		ROI	8.8900%	9.2045%	9.9700%
		Interest	**355.60**	**356.67**	**373.88**
17	PFC-V (T1,D23)	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	156.25
		Net Opening Loan	**2,500.00**	**2,500.00**	**2,343.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	156.25	-

		Net Closing Loan	**2,500.00**	**2,343.75**	**2,343.75**
		Average Loan	2,500.00	2,421.88	2,343.75
		ROI	9.3600%	9.4919%	10.0000%
		Interest	**234.00**	**229.88**	**234.38**
18	PFC-V (T1,D24)	Gross Opening	8,000.00	8,000.00	8,000.00
		Less: Cumulative Repayment	-	-	500.00
		Net Opening Loan	**8,000.00**	**8,000.00**	**7,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	500.00	-
		Net Closing Loan	**8,000.00**	**7,500.00**	**7,500.00**
		Average Loan	8,000.00	7,750.00	7,500.00
		ROI	9.8400%	9.8503%	10.0900%
		Interest	**787.20**	**763.40**	**756.75**
19	PFC-V (T1,D33)	Gross Opening	4,700.00	4,700.00	4,700.00
		Less: Cumulative Repayment	-	-	293.75
		Net Opening Loan	**4,700.00**	**4,700.00**	**4,406.25**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	293.75	-
		Net Closing Loan	**4,700.00**	**4,406.25**	**4,406.25**
		Average Loan	4,700.00	4,553.13	4,406.25
		ROI	9.9300%	9.9300%	9.9300%
		Interest	**466.71**	**452.13**	**437.54**
20	PFC-V (T1,D34)	Gross Opening	10,300.00	10,300.00	10,300.00
		Less: Cumulative Repayment	-	-	643.75
		Net Opening Loan	**10,300.00**	**10,300.00**	**9,656.25**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	643.75	-
		Net Closing Loan	**10,300.00**	**9,656.25**	**9,656.25**
		Average Loan	10,300.00	9,978.13	9,656.25
		ROI	9.9700%	9.9700%	9.9700%
		Interest			

			1,026.91	**994.82**	**962.73**
21	PFC-V (T1,D36)	Gross Opening	3,500.00	3,500.00	3,500.00
		Less: Cumulative Repayment	-	-	218.75
		Net Opening Loan	**3,500.00**	**3,500.00**	**3,281.25**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	218.75	-
		Net Closing Loan	**3,500.00**	**3,281.25**	**3,281.25**
		Average Loan	3,500.00	3,390.63	3,281.25
		ROI	9.9900%	9.9900%	9.9900%
		Interest	**349.65**	**338.72**	**327.80**
22	PFC-V (T1,D37)	Gross Opening	12,000.00	12,000.00	12,000.00
		Less: Cumulative Repayment	-	-	750.00
		Net Opening Loan	**12,000.00**	**12,000.00**	**11,250.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	750.00	-
		Net Closing Loan	**12,000.00**	**11,250.00**	**11,250.00**
		Average Loan	12,000.00	11,625.00	11,250.00
		ROI	10.0600%	10.0600%	10.0600%
		Interest	**1,207.20**	**1,169.48**	**1,131.75**
23	Punjab & Sindh Bank-I (T1,D3)	Gross Opening	9,500.00	9,500.00	9,500.00
		Less: Cumulative Repayment	-	678.57	2,035.71
		Net Opening Loan	**9,500.00**	**8,821.43**	**7,464.29**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	678.57	1,357.14	-
		Net Closing Loan	**8,821.43**	**7,464.29**	**7,464.29**
		Average Loan	9,160.71	8,142.86	7,464.29
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**938.97**	**834.64**	**765.09**
24	SBI-V (T1,D6)	Gross Opening	3,000.00	3,000.00	3,000.00
		Less: Cumulative Repayment	642.86	857.14	1,071.43
		Net Opening Loan			

			2,357.14	**2,142.86**	**1,928.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	214.29	214.29	214.29
		Net Closing Loan	**2,142.86**	**1,928.57**	**1,714.29**
		Average Loan	2,250.00	2,035.71	1,821.43
		ROI	10.7000%	10.8321%	11.0000%
		Interest	**240.75**	**220.51**	**200.36**
25	SBI-V (T1,D8)	Gross Opening	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	2,142.86	2,857.14	3,571.43
		Net Opening Loan	**7,857.14**	**7,142.86**	**6,428.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	714.29	714.29	714.29
		Net Closing Loan	**7,142.86**	**6,428.57**	**5,714.29**
		Average Loan	7,500.00	6,785.71	6,071.43
		ROI	10.7000%	10.8321%	11.0000%
		Interest	**802.50**	**735.04**	**667.86**
26	SBI-VI (T1,D4)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	357.14	714.29	1,071.43
		Net Opening Loan	**4,642.86**	**4,285.71**	**3,928.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	357.14	357.14	357.14
		Net Closing Loan	**4,285.71**	**3,928.57**	**3,571.43**
		Average Loan	4,464.29	4,107.14	3,750.00
		ROI	10.7000%	10.8321%	11.0000%
		Interest	**477.68**	**444.89**	**412.50**
27	SBI-VI (T1,D5)	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	178.57	357.14	535.71
		Net Opening Loan	**2,321.43**	**2,142.86**	**1,964.29**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	178.57	178.57	178.57
		Net Closing Loan			

			2,142.86	**1,964.29**	**1,785.71**
		Average Loan	2,232.14	2,053.57	1,875.00
		ROI	10.7000%	10.8321%	11.0000%
		Interest	**238.84**	**222.45**	**206.25**
28	SBI-VII (T1,D-1,2,4,5,6,7,11,15,16,17)	Gross Opening	30,000.00	30,000.00	54,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**30,000.00**	**30,000.00**	**54,500.00**
		Add: Drawl during the year / period	-	24,500.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**30,000.00**	**54,500.00**	**54,500.00**
		Average Loan	30,000.00	42,250.00	54,500.00
		ROI	9.9500%	10.0821%	10.2500%
		Interest	**2,985.00**	**4,259.71**	**5,586.25**
29	Syndicate Bank-III (T1,D-3,6)	Gross Opening	5,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**5,000.00**	**10,000.00**	**10,000.00**
		Add: Drawl during the year / period	5,000.00	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**10,000.00**	**10,000.00**	**10,000.00**
		Average Loan	7,500.00	10,000.00	10,000.00
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**768.75**	**1,025.00**	**1,025.00**
30	Dena Bank (T1,D5)	Gross Opening	-	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**5,000.00**	**5,000.00**
		Add: Drawl during the year / period	5,000.00	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Average Loan	2,500.00	5,000.00	5,000.00
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**256.25**	**512.50**	**512.50**

31	UCO Bank-II (T1,D6)	Gross Opening	-	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**5,000.00**	**5,000.00**
		Add: Drawl during the year / period	5,000.00	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Average Loan	2,500.00	5,000.00	5,000.00
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**255.00**	**510.00**	**510.00**
32	UBI Bank-IV (T1,D-6,7)	Gross Opening	-	5,000.00	6,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**5,000.00**	**6,500.00**
		Add: Drawl during the year / period	5,000.00	1,500.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,000.00**	**6,500.00**	**6,500.00**
		Average Loan	2,500.00	5,750.00	6,500.00
		ROI	10.2500%	10.2816%	10.5000%
		Interest	**256.25**	**591.19**	**682.50**
33	IDBI Bank-I (T1,D6)	Gross Opening	-	-	4,285.70
		Less: Cumulative Repayment	-	-	2,142.85
		Net Opening Loan	**-**	**-**	**2,142.85**
		Add: Drawl during the year / period	-	4,285.70	-
		Less: Repayment during the year / period	-	2,142.85	-
		Net Closing Loan	**-**	**2,142.85**	**2,142.85**
		Average Loan	-	1,071.43	2,142.85
		ROI	0.0000%	7.5625%	7.5625%
		Interest	**-**	**81.03**	**162.05**
34	UBI Bank-II (T1,D8)	Gross Opening	-	-	2,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**2,500.00**

		Add: Drawl during the year / period	-	2,500.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**2,500.00**	**2,500.00**
		Average Loan	-	1,250.00	2,500.00
		ROI	0.0000%	10.2500%	10.2500%
		Interest	**-**	**128.13**	**256.25**
35	Bond-XXVIII	Gross Opening	7,500.00	7,500.00	7,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**7,500.00**	**7,500.00**	**7,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**7,500.00**	**7,500.00**	**7,500.00**
		Average Loan	7,500.00	7,500.00	7,500.00
		ROI	11.0000%	11.0000%	11.0000%
		Interest	**825.00**	**825.00**	**825.00**
36	Bond-XXX	Gross Opening	3,500.00	3,500.00	3,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**3,500.00**	**3,500.00**	**3,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**3,500.00**	**3,500.00**	**3,500.00**
		Average Loan	3,500.00	3,500.00	3,500.00
		ROI	7.8900%	7.8900%	7.8900%
		Interest	**276.15**	**276.15**	**276.15**
37	Bond-XLII	Gross Opening	2,400.00	2,400.00	2,400.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**2,400.00**	**2,400.00**	**2,400.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**2,400.00**	**2,400.00**	**2,400.00**

		Average Loan	2,400.00	2,400.00	2,400.00
		ROI	9.0000%	9.0000%	9.0000%
		Interest	**216.00**	**216.00**	**216.00**
38	Bond-XLIV	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,000.00**	**5,000.00**	**5,000.00**
		Average Loan	5,000.00	5,000.00	5,000.00
		ROI	9.2500%	9.2500%	9.2500%
		Interest	**462.50**	**462.50**	**462.50**
39	Bond-XLVII	Gross Opening	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**2,000.00**	**2,000.00**	**2,000.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**2,000.00**	**2,000.00**	**2,000.00**
		Average Loan	2,000.00	2,000.00	2,000.00
		ROI	8.8400%	8.8400%	8.8400%
		Interest	**176.80**	**176.80**	**176.80**
40	Bond-XLVIII	Gross Opening	1,800.00	1,800.00	1,800.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**1,800.00**	**1,800.00**	**1,800.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**1,800.00**	**1,800.00**	**1,800.00**
		Average Loan	1,800.00	1,800.00	1,800.00
		ROI	8.7300%	8.7300%	8.7300%
		Interest	**157.14**	**157.14**	**157.14**
41	Bond - XL	Gross Opening			

			-	-	2,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**2,000.00**
		Add: Drawl during the year / period	-	2,000.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**2,000.00**	**2,000.00**
		Average Loan	-	1,000.00	2,000.00
		ROI	0.0000%	8.8000%	8.8000%
		Interest	**-**	**88.00**	**176.00**
42	Bond-L1A	Gross Opening	-	-	2,844.50
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**2,844.50**
		Add: Drawl during the year / period	-	2,844.50	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**2,844.50**	**2,844.50**
		Average Loan	-	1,422.25	2,844.50
		ROI	0.0000%	8.4100%	8.4100%
		Interest	**-**	**119.61**	**239.22**
43	Bond-L2A	Gross Opening	-	-	1,456.83
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**1,456.83**
		Add: Drawl during the year / period	-	1,456.83	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,456.83**	**1,456.83**
		Average Loan	-	728.41	1,456.83
		ROI	0.0000%	8.4800%	8.4800%
		Interest	**-**	**61.77**	**123.54**
44	Bond-L3A	Gross Opening	-	-	1,818.68
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**1,818.68**
		Add: Drawl during the			

		year / period	-	1,818.68	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,818.68**	**1,818.68**
		Average Loan	-	909.34	1,818.68
		ROI	0.0000%	8.6600%	8.6600%
		Interest	**-**	**78.75**	**157.50**
45	Bond-L1B	Gross Opening	-	-	1,216.07
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**1,216.07**
		Add: Drawl during the year / period	-	1,216.07	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,216.07**	**1,216.07**
		Average Loan	-	608.03	1,216.07
		ROI	0.0000%	8.6600%	8.6600%
		Interest	**-**	**52.66**	**105.31**
46	Bond-L2B	Gross Opening	-	-	532.69
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**532.69**
		Add: Drawl during the year / period	-	532.69	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**532.69**	**532.69**
		Average Loan	-	266.34	532.69
		ROI	0.0000%	8.7300%	8.7300%
		Interest	**-**	**23.25**	**46.50**
47	Bond-L3B	Gross Opening	-	-	2,331.24
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**2,331.24**
		Add: Drawl during the year / period	-	2,331.24	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**2,331.24**	**2,331.24**
		Average Loan			

			-	1,165.62	2,331.24
		ROI	0.0000%	8.9100%	8.9100%
		Interest	**-**	**103.86**	**207.71**
48	Bond-L1C	Gross Opening	-	-	9,700.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**9,700.00**
		Add: Drawl during the year / period	-	9,700.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**9,700.00**	**9,700.00**
		Average Loan	-	4,850.00	9,700.00
		ROI	0.0000%	8.6100%	8.6100%
		Interest	**-**	**417.59**	**835.17**
49	5.625% Eurobond (Due 2021)	Gross Opening	56,598.07	56,598.07	62,599.80
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**56,598.07**	**56,598.07**	**62,599.80**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**56,598.07**	**56,598.07**	**62,599.80**
		Average Loan	56,598.07	56,598.07	62,599.80
		ROI	7.1213%	7.1775%	7.1775%
		Interest	**4,030.54**	**4,062.32**	**4,493.10**
50	4.75% Eurobonds (Due 2022)	Gross Opening	23,244.11	23,244.11	25,708.94
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**23,244.11**	**23,244.11**	**25,708.94**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**23,244.11**	**23,244.11**	**25,708.94**
		Average Loan	23,244.11	23,244.11	25,708.94
		ROI	5.0134%	5.0215%	5.0215%
		Interest	**1,165.31**	**1,167.21**	**1,290.98**
51	BTM U-I	Gross Opening	16,945.90	16,945.90	18,742.87

		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**16,945.90**	**16,945.90**	**18,742.87**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**16,945.90**	**16,945.90**	**18,742.87**
		Average Loan	16,945.90	16,945.90	18,742.87
		ROI	1.9033%	1.7955%	1.7157%
		Interest	**322.54**	**304.26**	**321.57**
52	BTMU-II	Gross Opening	31,332.99	31,332.99	34,655.56
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**31,332.99**	**31,332.99**	**34,655.56**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**31,332.99**	**31,332.99**	**34,655.56**
		Average Loan	31,332.99	31,332.99	34,655.56
		ROI	1.9033%	1.7955%	1.7157%
		Interest	**596.37**	**562.58**	**594.57**
53	SBI, New York	Gross Opening	-	-	4,009.40
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**4,009.40**
		Add: Drawl during the year / period	-	3,946.14	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**3,946.14**	**4,009.40**
		Average Loan	-	1,973.07	4,009.40
		ROI		2.2401%	2.2180%
		Interest	**-**	**44.20**	**88.93**
54	**Grand Total**	Gross Opening	3,50,821.07	3,70,821.07	4,43,102.28
		Less: Cumulative Repayment	5,692.86	8,342.86	22,884.82
		Net Opening Loan	**3,45,128.21**	**3,62,478.21**	**4,20,217.46**
		Add: Drawl during the year / period	20,000.00	58,631.84	-
		Less: Repayment during the year / period	2,650.00	14,541.96	2,678.57
		Net Closing Loan	**3,62,478.21**	**4,06,568.10**	**4,17,538.89**
		Average Loan	3,53,803.21	3,84,523.15	4,18,878.17
		ROI	8.0557%	8.1530%	8.0932%
		Interest	**28,501.15**	**31,350.12**	**33,900.48**