

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 198/GT/2013**

**Coram:**

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

**Date of hearing: 13.10.2014**

**Date of Order: 08.02.2016**

**In the matter of**

Approval of tariff of Vallur Thermal Power Project (1500 MW) for the period from the date of commercial operation of Unit- I (29.11.2012) to 24.8.2013 and for Units I & II (combined) from COD of Unit-II i.e from 25.8.2013 to 31.3.2014.

**And**

**In the matter of**

NTPC Tamil Nadu Energy Company Ltd,  
NTPC Bhawan,  
Core-7, Scope Complex-7  
Institutional Area, Lodhi Road  
New Delhi-110 003

**...Petitioner**

Vs

1. AP Transmission Corporation,  
Vidyut Soudha, Khairatabad,  
Hyderabad-500082
2. AP Central Power Distribution Company Ltd,  
Mint Compound,  
Hyderabad-500063
3. AP Eastern Power Distribution Company Ltd,  
P&T Colony, Seemandhara,  
Vishakapatnam, Andhra Pradesh
4. AP Southern Power Distribution Company Ltd,  
Srinivassa Kalyana Mandapam Backside,  
Tiruchanoor Road, Kesavayana Gunta, Tirupati- 517501
5. AP Northern Power Distribution Company Ltd,  
Opp.NIT Petrol Pump, Chaitanapuri,Kaize  
Warangal-506004
6. Power Company of Karnataka Ltd,  
Corporate Office, Kaveri Bhavan,  
Bengaluru – 560 009



7. Bangalore Electricity Supply Company Ltd,  
K.R. Circle,  
Bangalore-506001

8. Mangalore Electricity Supply Company Ltd,  
Paradigm Plaza,  
AB Shetty Circle, Mangalore-575001

9. Chamundeshwari Electricity Supply Company Ltd,  
927, L J Avenue, GF, New Kantharaj Urs Road,  
Saraswatipuram, Mysore-570009

10. Gulbarga Electricity Supply Company Ltd,  
Station Road, Gulbarga,  
Karnataka - 585102

11. Hubli Electricity Supply Company Ltd,  
Navanagar, PB Road, Hubli,  
Karnataka - 580025

12. Kerala State Electricity Board,  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthapuram – 695004

13. Tamil Nadu Generation & Distribution Corporation Ltd,  
NPKRR Maaligai, 144, Anna Salai,  
Chennai-600 002

14. Electricity Department,  
Government of Puducherry,  
137, Netaji Subhash Chandra Bose Salai  
Puducherry – 605001

...Respondents

**Parties Present:**

Shri Venkata Krishna, NTECL  
Shri P. Satish Kumar, NTECL  
Shri K.M.K Prusty, NTECL  
Shri S.K. Mandal, NTECL  
Shri S. Vallinayagam, Advocate, TANGEDCO

**ORDER**

The petitioner, NTPC Tamil Nadu Energy Company Ltd (hereinafter 'NTECL'), a joint venture company of NTPC (shareholding of 50%) and Tamil Nadu Electricity Board (shareholding of 50%) has filed this petition for approval of tariff of Vallur Thermal Power Project, Stage-I (3 x 500 MW) ('the generating station') for the period from the anticipated date of commercial operation of Unit-I (31.8.2012), Unit-II (31.12.2012) and Unit-III (30.9.2013) till 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. As Unit-I of the generating station was declared under commercial operation on 29.11.2012, the Commission by order dated 24.12.2012 in Dock No.56/GT/2012 granted provisional tariff for Unit-I of the generating station from 29.11.2012 to 31.3.2013 based on the capital cost of ₹319474.75 lakh (85% of the capital cost of ₹377535.00 lakh less normative IDC), subject to adjustment as per Regulation 5(3) of the 2009 Tariff Regulations. The petitioner was also directed by the said order to revise the figures in the petition taking into consideration the date of commercial operation of Unit-II of the generating station.

3. Thereafter, Unit-II of the generating station was declared under commercial operation on 25.8.2013 and in terms of the prayer made by the petitioner, the Commission by order dated 20.11.2013 granted provisional tariff for Unit-I and Unit-II (combined) of the generating station for the period 2013-14 (1.4.2013 to 24.8.2013 for Unit-I and from 25.8.2013 to 31.3.2014 for Units I & II) based on the capital cost of ₹488251.05 lakh (85% of the capital expenditure of ₹574413.00 lakh) as on 25.8.2013, subject to adjustment as per Regulation 5(3) of the 2009 Tariff Regulations. The petitioner was also directed by the said order to revise the figures in the petition taking into consideration the date of commercial operation of Unit-III of the generating station.

4. In terms of the directions of the Commission, the petitioner vide affidavit dated 20.6.2014 has amended the original petition based on the audited capital cost as on COD of Units I & II and has submitted that since Unit-III will be declared under commercial operation during the tariff period 2014-19, the petitioner is not projecting the estimated expenditure as on COD of Unit-III/station and also additional capitalization for works within the original scope and before the cut-off date. Accordingly, the petitioner has submitted that a separate petition will be filed based on the 2014 Tariff Regulations.

5. Accordingly, the petition was heard on 13.10.2014 and the Commission after directing the petitioner to file certain additional information, reserved its order in the petition. In compliance with the direction of the Commission, the petitioner vide affidavit dated 14.11.2014 has submitted



the additional information with copy to the respondents. Since Unit-III has not been declared under commercial operation, we proceed to determine the tariff of Units I & II of the generating station for the period 2012-14 (i.e from 29.11.2012 to 31.3.2014) in terms of the 2009 Tariff Regulations as stated in the subsequent paragraphs.

6. The annual fixed charges claimed by the petitioner vide affidavit dated 24.5.2012 are as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Depreciation	17224	17467	28909
Interest on Loan	27096	26966	43652
Return on Equity	23893	24794	40627
Interest on Working Capital	4494	4443	11328
O&M Expenses	8121	8586	16706
Secondary Fuel oil cost	2278	2278	3523
<b>Total</b>	<b>83106</b>	<b>84534</b>	<b>144745</b>

7. Reply to the petition has been filed by the respondent, Kerala State Electricity Board (KSEB) and respondent, TANGEDCO and the petitioner has filed its rejoinder to the said replies.

### Commissioning Schedule

8. The investment approval of the project was accorded by the Board of the Petitioner Company at its 23th Board meeting held on 14<sup>th</sup> July, 2007 for Stage-I, Phase-I (2 x 500 MW) at a project cost of ₹5552.778 crore at the price level of 2<sup>nd</sup> quarter 2007 and subsequently in the 35<sup>th</sup> Board meeting held on 19<sup>th</sup> May, 2009 for Stage-I, Phase-II (1 x 500 MW) at a project cost of ₹3086.779 crore at the price level of 1<sup>st</sup> quarter 2009 pending environment clearance of Ministry of Environment & Forests (MOEF). The MOEF clearance was accorded vide letter dated 3.6.2009.

9. As per Investment Approval, the commercial operation of Unit-I of the generating station was scheduled to be within 42 months from date of award of the Main plant and Unit-II was scheduled to be declared under COD within six months thereafter i.e. 48 months. The details of the actual COD as against the schedule COD as per Investment Approval is as under:



Unit No.	Date of LOA	Schedule COD	Actual COD	Time Overrun (in months)
I	13.8.2007	10.2.2011	29.11.2012	21.63
II		10.8.2011	25.8.2013	24.53

10. Thus, there is significant time overrun in the declaration of commercial operation of Units-I & II of the generating station as against the scheduled COD of the said units. Considering the actual COD of Units I & II, the time overrun involved in Unit-I is 21.63 months and Unit-II is 24.53 months.

### **Admissibility of Additional Return on Equity**

11. In terms of the provisions of the 2009 Tariff Regulations, the timeline specified for the completion of a green field coal based project of 500 MW unit size from the date of investment approval is 44 months for the first Unit with subsequent units at an interval of 6 months each. The respondent, TANGEDCO in its reply affidavit dated 5.9.2012 has stated that NTECL in their petition has stated that the Unit-II of VTPP is targeted to put on commercial operation on 31.12.2012, which is after a delay of 15 months considering the CERC norms. Hence, the claim of NTECL for 0.5% additional return on equity for commissioning of the project within the due dates is not justifiable. The matter has been examined. The actual COD of Unit-I is 29.11.2012 and of Unit-II is 25.8.2013. The time taken for COD of Units-I & II is 64.60 months and 67.45 months respectively from the date of investment approval on 14.7.2007 which is beyond the timeline specified under the 2009 Tariff Regulations. Accordingly, the generating station is not entitled to additional Return on Equity of 0.5% for timely completion of the project in terms of the 2009 Tariff Regulations.

### **Time Overrun**

12. As stated above, the time overrun in case of Unit-I of the generating station is 21.63 months and for Unit-II is 24.53 months as against the scheduled COD as against the Letter of Award for the main plant. The petitioner vide affidavit dated 11.8.2012 has furnished the reasons for time overrun in compliance with the directions of the Commission, as detailed under:



### **“Reasons for Time Overrun**

*It is submitted that initially Vallur Project was conceived with a capacity of 1000 MW ( 2 x 500 MW) and accordingly investment approval was accorded only for Phase-I units i.e Units-1 and 2 in July, 2007. Accordingly, engineering and project management of all packages were planned.*

*Later it was decided to add one more unit as phase-II. Based on this, investment approval was accorded for Phase-II Unit-3 in May, 2009. It was felt that award of works for three units of 500 MW would be much cost effective as compared to awarding the contracts separately for phase-I (2 x 500 MW) and phase-II (1 X 500 MW). Accordingly, in order to get economical and competitive rates and to carry out the job with single agency for better project management and execution, re-engineering of the common works packages including the following major works packages was carried out covering the scope of all the three units. Due to this, the awarding of contract for the following major common packages got deferred.*

Sl No.	Name of Package	Original schedule date of order For Unit 1 & 2	Actual date of award including Unit-3	Delay in award for Units-1&2 considering Unit-3
1	Circulating water system Civil and equipments	January, 2008	August, 2009	19 months
2	Coal Handling Plant (internal and external)	June, 2008	March, 2010	21 months
3	Ash dyke	July, 2008	February, 2010	19 months

*Also, the CHP packages award recommendations annulment was done due to objections raised by public representatives in September, 2009. CHP packages were re-tendered and finally could be awarded in March, 2010. Similarly, Ash Dyke package was re-tendered in July, 2009 as some bidders were not meeting the required qualifying requirements and others quoted higher rates. Accordingly, ash dyke package could be awarded in February, 2010.*

*Thus, the delay mentioned above besides due to re-engineering of package is 5 months in case of CHP package and 7 months in case of ash dyke package due to annulment and award after re-tendering. This delay is due to reasons beyond the control of NTECL*

*This has finally resulted in shifting of anticipated COD of all the three units.*

13. However, the Commission by letter dated 6.8.2013 directed the petitioner to furnish additional information on the following:

*“Detailed explanation/justification for time overrun in COD of all units by submitting the PERT chart. Cost overrun due to time overrun quantified with detailed computations, giving breakup of increase due to escalation in prices in different contract packages, increase in IDC & FC, increase due to change of scope and increase in IEDC etc.”*

14. In response, the petitioner vide affidavit dated 21.9.2013 has furnished the reasons for time overrun in the COD of the units as summarized under:

*“Reasons for time overrun:*

*a. Initially, the project was envisaged as 2X500 MW and the Main Plant was awarded on 13.08.2007. Later, it was decided to add one more 500 MW unit in the same area. To get the benefit of economies of scale, it was decided to include Unit-3 requirement also in BOP package. Accordingly, the Quantity and specifications of BOP packages were changed which resulted in delay in tendering and consequential delay in award of packages. Delay in award of site leveling package (3 months) & Main Plant Civil Package for St-I, Ph-I (7months).*



b. Four no. of packages viz CW Equipment, Implant CHP, External CHP and Ash Dyke were to be re-tendered due to issues in tendering beyond control of NTECL which led to a delay up to 21 months in awarding these packages. This has affected the progress of Phase I units severely.

c. Unprecedented rains in 2010 and 2011 with monthly maximum rainfall of 397 mm & 367mm respectively against the maximum monthly recorded rainfall of 269 mm for years from 2001 to 2009. Being low lying field area, even very small amount of rainfall affects the work excessively.

d. Delay in site leveling due to non-availability of gravel, earth and ash resulting in consequential delay in civil & structural works and erection of Main Plant. Initially allotted Quarry was banned by Mining Authority. Another Quarry 19KM away from the original Quarry got approved after 8 months only. Available ash quantity from NCTPS and ETPS was limited.

e. Two cyclones (JAL in November, 2010 and Thane in December, 2011) also affected the work adversely.

f. Open foundation from (-) 9.0m was envisaged in the CW civil package due to low bearing capacity of soil (1 ton per sq. against the requirement of 7 ton per sq. m). During execution, frequent soil collapses were experienced, despite sheet piling. This resulted in the delay of civil foundations.

g. Boiler Light up of Unit#1 was delayed by 13 months (Sch-Jul.'10, Act.- Aug.'11) as startup power by M/s. PGCIL could be made available in Jul.'11 (Sch.-May'10) only. This is due to ROW issues and court cases with M/s. PGCIL.

h. External CHP comprises of piped conveyers, being executed first time in the NTPC/ NTPC JV Company. Project faced many problems in pulling of long length piped conveyers.

i. Delays due to local disturbances in External CHP and Inplant CHP after the synchronization of unit#1:

It is submitted that coal from Ennore port is transported through external Coal Handling Plant (CHP) to Vallur TPP. Part of external CHP related to Vallur TPP falls in North Chennai Thermal Power Station (NCTPS) area of TANGEDCO. External CHP work is being carried out by M/s. FL Smith Minerals Private Limited for Vallur TPP and also in NCTPS area.

Due to reasons and circumstances beyond the control of executing agencies, there have been delays. These delays have been caused mainly on account of disturbance by the local people for the works carried out by M/s. FL Smith Minerals Private Limited mainly at NCTPS area including theft of fabricated material from time to time. BHEL has also faced similar problems in NCTPS area.

On 09/04/2012, an incident took place in which one worker under M/s. TRF (sub-agency of M/s. BHEL) was murdered and on account of that the total work on the stacker reclaimer (Internal CHP inside Vallur TPP) got stopped. This has resulted in de-mobilization of workers as they had gone back to their home towns immediately after the incident.

After ensuring adequate protection and again mobilizing the people the work on stacker reclaimer could start on 07/05/2012. This has interrupted stacker reclaimer works totally for almost one month.

It is further submitted that over and above the detailed explanation/ justifications were submitted to Hon'ble CERC on 11<sup>TH</sup> August 2012 in reply to Hon'ble Commission's letter dated 26.06.2012.

As seen above the delays were mainly due to the reasons beyond the control of NTECL. This has resulted in cumulative delay of mile stones of all units."



15. The petitioner vide affidavit dated 20.6.2014 has reiterated the reasons for time overrun in the COD of the units, as elaborated by affidavits dated 11.8.2012 and 21.9.2013 (as above). In compliance with the directions of the Commission vide RoP of the hearing dated 13.10.2014, the petitioner vide affidavit dated 12.11.2014 has furnished additional information with regard to the delay in COD of the Units of the generating station as under:

**(A) Delay in handing over of land to M/s NTECL by Ministry of Commerce & Industry (4 months)**

- a) *After completion of site specific studies, feasibility study for setting up of (2 X 500 MW) was carried out & the report was approved on 07 Aug 2006. The project was planned within 1184 acres of land out of which 1102 acres of land are salt pan land under the Ministry of Commerce & Industry, Govt. of India.*
- b) *NTECL has taken all out efforts for the allotment of land to commence the works immediately. NTECL has requested the Secretary, MOC&I vide letter dated 21.08.2006 for early possession of land and permission for commencement of site preparatory activities immediately since considerable ground improvement work needs to be done.*
- c) *Ministry of Commerce & Industry vide their letter dated 9th March 2007 had communicated approval for transfer of about 1002 acres of land to NTECL.*
- d) *NTECL has desired for early physical possession of land as various studies like soil investigation can be carried without acquisition of land. However, in spite of several requests of NTECL for permission to carry out the site works, soil investigation work could not be carried out as it was stopped by Dy. Salt Commissioner, Chennai. NTECL has requested vide letter dated 04.04.2007 (attached in the annexure 1(c)) for physical hand over of site to commence the works.*
- e) *Finally, the land was handed over to NTECL in the following proportion.*

26.07.2007	476.97 Acres
07.08.2007	13.36 Acres
29.01.2008	101.08 Acres
01.01.2009	410.76 Acres

- f) *476.9 acres of land required for main plant area was handed over only in July '07. The allotted land is a salt pan land located in a low lying area. Site filling was required up to a height of 2.5m. Site levelling package which was scheduled to be awarded in May '07 could be awarded only in Aug '07 due to delay in handing over of land to NTECL.*
- g) *It was envisaged in the site levelling contract that 06 months (Schedule for implementation during post bid discussion is attached in the annexure 1(e)) would be required for filling of ash in main plant & associated areas. As site levelling contract was awarded only in Aug-2007 after possession of land, main plant & offsite civil package could be awarded only in Feb'2008.*

Handing over of land to NTECL	26.07.2007
Award of Site levelling Package	Aug' 07 (due to delay in handling over of land to M/s NTECL)
Award of Main Plant & offsite Civil package	Feb '08 (After 6 months from site levelling package) (Schedule: Oct' 07) Delay of 4 months in award of civil package due to delay in handing over of land





h) In view of above, it is evident that the delay in award of civil work to the extent of 04 months was due to delay in handing over of land by Ministry of Commerce & Industry. This delay is beyond the control of NTECL since despite best efforts of NTECL, the physical possession of land could be taken only after handing over of land by MOC & I. Delay in Award of Main plant Civil Package has practically shifted the zero date of the project by 04 months (Though the main plant package (SG & TG) was awarded in Aug' 07, the actual zero date of the project was shifted by 04 months from execution point of view. Since bids were placed and offer validity would expire in the event of delay, the main plant order was not deferred.

**(B) Delay in Approval of coal linkage by SLC & subsequent delay in clearance from MOEF (Coal linkage was mandatory for obtaining clearance from MOEF) has led to deferment of Investment approval of Phase II causing delay in award of BOP common packages**

- a) It is submitted that initially Vallur TPP was envisaged for a capacity of 1000 MW (2 X 500 MW) and accordingly investment approval was accorded only for Phase-I Units (Unit 1 & 2) in July 2007. Accordingly, engineering and project management of all packages were planned.
- b) Later, it was decided in Sept '07 that an additional unit of 500 MW could be accommodated within the premises of the plant area with certain modifications in the existing layout/Systems in furtherance of the desire of the company to reduce the completed cost of the project which could be achieved by adding one more unit & sharing the common facilities. It was decided that a combined common BOP packages shall be envisaged for all three units instead of awarding the BOP packages for Phase II units separately to get the benefit of economic of scale and capacity of land.
- c) Accordingly, feasibility report for Phase 2, Unit 3 (1 x 500 MW) was carried out & approved on 24.11.2007 (Attached in the annexure 1(0)). In order to get economical and competitive rates and to carry out the job with single agency for better project management and execution, re-engineering of the common works packages which was earlier engineered for Unit 1 & 2 alone, were carried out covering the scope for all the three units. In view of this, while approving the proposal for additional 3rd unit, it was decided that NITs for various critical BOP packages are to be considered after incorporating Unit 3 requirements.
- d) On behalf of NTECL, Director (Operations), NTPC vide letter dated 12.10.2007 has requested the Additional Secretary to the Govt, of India & the Chairman, SLC, Ministry of coal to accord long term linkage of 2.5 MTPA of coal for the phase II (1x500 MW). However, coal linkage for NTECL Phase II was approved only on May '09 in spite of follow ups by NTECL (attached in the annexure I(i)) and MOEF Clearance could only be obtained in June '09 (attached in the annexure I(j)) based on SLC linkage.
- e) After confirmation of approval of MOEF clearance, the investment approval of Phase II was done in May 2009. BOP Packages were awarded after the investment approval of Phase II. This has led to a delay of up to 21 months in awarding the BOP packages (CHP). However during the declaration of third unit, it was envisaged that addition of 3rd unit would bring down to the Cost/MW from 6.1 to 5.95. The decision to add one more Unit was taken up by management in a view to accomplish overall cost reduction which will be beneficial to both the petitioner and beneficiaries of the generating station.
- f) As it can be seen, despite efforts of NTECL to accord investment approval for phase II (1x500 MW) on schedule award of BOP packages got delayed due to non-availability of coal linkage. Hence, this delay is beyond the control of NTECL.

**Schedule of Award of Common BOP Packages**

S.No.	Description	Scheduled (for 2 x 500 MW)	Actual (for 3 x 500 MW)	Delay from original schedule
1	CW system (Civil)	Jan '08	Aug' 09	19 months
2	CW System (Mechanical)	Feb ' 08	Aug' 09	18 months



3	Coal Handling Plant (Internal & External)	June '08	Mar '10	21 months
4	Ash Dyke	July '08	Feb '10	19 months

**(C) Delay due to Cyclones (JAL in Nov '10 & THANE in Dec '11 and Unprecedented Rainfall in 2010 & 2011.**

- a) *Two Cyclones (JAL in November 2010 and Thane in December 2011) caused devastation and huge rainfall. This affected the work progress of the project adversely.*
- b) *The project is situated in close proximity to sea and hence aftermaths of cyclones are hugely felt in the project premises. During the construction period, there were temporary roads and drains built around the site. The Cyclones have caused severe flooding, damage to roads, submergence of Cranes, Bulldozers, construction equipment etc. This has also led to damages to the temporary sheds of contractors, labour colony, construction supply within the premises & the fabrication yards of agencies. Due to cyclone, labours being accommodated in labour colony were to be de-mobilized to other safe locations and some of them left to their home towns. It took considerable time to mobilize the labours, setting right the construction equipment etc. The newspaper clippings showing the damage caused by the cyclones in the city of Chennai is attached in the annexure 1(K).*
- c) *Project works were adversely affected due to unprecedented rains in 2010 & 2011 with monthly maximum rainfall of 397mm & 637mm respectively against the maximum monthly recorded rainfall of 269 mm for years from 2001 to 2002, the project is located in low lying area which is subjected to heavy water logging & flooding during periods of heavy rainfall. The approach roads to the project, being in a bad shape already become completely flooded & non-approachable during heavy rainfall. This resulted difficulty in the movement of heavy vehicles required for construction activities within the premises as well as to the premises from outside.*
- d) *The photograph showing the crane completely submerged in the water after the rainfall is attached herewith l(m). The photographs showing the devastation caused to the project works by the rain is attached in the annexure 1 (n).*
- e) *The delay due to cyclones and unprecedented rainfall in 2010 & 2011 is completely beyond the control of NTECL.*

**(D) Delay in Start Up power availability (by Powergrid) - 6 months delay in Boiler Lightup**

- a) *Start up power in NTECL Vallur was envisaged through 400 KV systems which is the only source from which unit start up can be done. In general, start up power required for commissioning of auxiliary equipment are taken from separate HV distribution supply (132/220K.V) which will be used for construction supply also and ATS is separate. In NTECL, start up power was envisaged through the same 400 KV system of M/s PGC1L which shall be used after unit synchronisation, since 33 KV source from TNEB being used for construction power was not suitable to cater to the load requirements of boiler light up/Unit start up.*
- b) *M/s PGCIL could not complete the 400 KV system as scheduled due to ROW issues at 3 places. In this regard, writ petition was filed by the land owners in Hon'ble high court of Chennai for barring the Power grid from erecting Towers in their lands. Since the case was held for hearing in Hon'ble High Court, M/s PGCIL had to stop the works. The Hon'ble High Court has directed the collectorate to consider petitioner objections and pass orders. On behalf of NTECL, CMD, TANGEDCO Ltd, vide letter dated 27.01.2011 has requested the District Collector, Thiruvallur district for his early intervention to pass orders to resume the work since the laying of Towers are essential for getting start up power for the project for testing & commissioning of auxiliary equipments.*
- c) *During the discussions held on 27.01.2011 at Director level between NTECL and Powergrid, NTECL also insisted that the boiler light up has been targeted in Feb 2011 and the start up*



power through 400 KV system is the source from which Boiler Light Up can be done. Powergrid assured to complete the works and make start up power available by Mar'2011. However, the start-up power was made available only in Jul'2011. Commissioning of plant auxiliary equipments were delayed due to non availability of start-up power to an extent of 06 months. (Relevant pages of the record notes of discussion is attached in the annexure I(p)).

- d) This delay due to non-availability of start-up power by M/s PGCIL due to court case issues is beyond the control of NTECL

**(E) Delay in Award of CHP Package due to Objections by Public Representatives (6 months)**

- a) After the investment approval of Phase II, NIT's were floated for CHP (Internal & External). However, the Package could not be awarded due to objections raised by Public Representatives in 2009. In this regard, MP (Lok Sabha) has raised objection to re-tender the CHP (Internal & External Packages) with an allegation that favouritism is shown to one party. NTECL has given detailed explanation/comments to the allegations of MP.
- b) However, since objections were raised by a Public representative, it was decided to annul the tender for CHP packages to avoid any perception of irregularity or favouritism and to re-tender the packages again. After re-tendering, the CHP Package could finally be awarded in March 2010 only. The process of annulment, re-tendering & award of contract has led to a delay of 6 months (excluding the delay due to deferment of investment approval & re-engineering of package).
- c) The delay in tendering due to issues raised by the public representatives in unforeseen & beyond the control of NTECL.

**(F) Delay due to re-routing of transportation of Generator Stator from M/s BHEL (2 months)**

- a) Generator Stator is the heaviest equipment in a thermal power plant weighing about 360 MT. The transportation of stator requires a special trailer designed to bear the load of the stator. The route for transportation from M/s BHEL, Haridwar to Vallur Power Plant, being long distance is completely planned, based on the condition of roads and bridges coming on the way. Stator of Unit II of NTECL was following behind the generator stator for NCTPS (North Chennai Thermal Power Station) located near our project site.
- b) The trailer truck carrying the Generator Stator for Unit I of 2 X 600 MW of NCTPS (North Chennai Thermal Power Station) fell into the Kaula River near Binapur village, Madhya Pradesh owing to sudden collapse of the bridge. Since the generator stator of NTECL was following the NCTPS stator, the trailer was stopped at that place and could not proceed further due to the collapse of bridge. Newspaper clipping is attached.
- c) Later, it was decided to divert the stator in a safe route travelling extra 700 Kms. This has led to a delay of two months in receipt of stator at site. (Record notes of discussion between NTPC and BHEL held on 29.10. 2011 in the chamber of Chief Secretary to Govt, of Tamil Nadu is attached in the annexure I(s)).
- d) This delay is unforeseen and completely beyond the control of NTECL.

**(G) Delay due to local disturbances in External CHP and Internal CHP after the synchronization of Unit-1.(2 Months)**

- a) Coal from Ennore port is transported through external Coal Handling Plant (CHP) to Vallur TPP. Part of external CHP related to Vallur TPP falls in North Chennai Thermal Power Station (NCTPS) area of TANGEDCO. There have been delays due to reasons and circumstances beyond the control of executing agencies. These delays have been caused mainly on account



of disturbances by the local people for the works carried out by M/s FL Smith Mineral Pvt. Ltd mainly at NCTPS area including theft of fabricated material from time to time.

- b) On 09/04/2012, an incident took place in which one worker of sub-agency of M/s BHEL was murdered and on account of that, the total work on the stacker reclaimer (Internal CHP inside Vallur Premises) got stopped. This has resulted in demobilization of workers as they had gone back to their home towns immediately after the incident. After ensuring adequate protection and again mobilizing the people, the work on stacker reclaimer could start on 07/05/2012. This has interrupted stacker reclaimer works totally for almost one month.
- c) The delay in execution of CHP works due to local disturbances is beyond the control of NTECL.

### **Submissions of respondent, Kerala State Electricity Board**

16. The respondent, KSEB vide affidavit dated 24.11.2014 has mainly submitted as under:

*“(a) The reasoning provided by the petitioner in para 8(a) and (b) that there was a delay in tendering process and consequential delay in award of packages due to inclusion of unit-3 requirement also in Balance of Plant packages. Further, the petitioner has stated that there has been delay in award of site levelling package and main plant civil package for stage-1 and retendering issues connected with Cooling Water equipment and Coal Handling Plant. In this regard, KSEB has submitted that the reasoning provided by the petitioner for time delay is purely attributable to the petitioner only and hence the delay due to awarding contracts may not be admitted and the IDC due to this delay may be disallowed from the capital cost.*

*(b) The reasoning provided by the petitioner in paragraph 8 (c), that the work has been affected adversely due to unprecedented rains in 2010 and 2011 is not justifiable and may not be admitted.*

*(c)The reasoning provided by the petitioner in paragraph 8 (d) are delays attributed only to the petitioner and petitioner ought to have carried out necessary follow ups for speedy execution of the work. Hence the delay due to this may not be allowed.*

*(d)The reasoning provided by the petitioner in paragraph 8 (f) is also purely attributable to the petitioner only as the petitioner before preparation of the original scope of work ought to have done necessary earth work study, pre-commissioning survey including soil investigation at the planning stage itself before preparation of scope of work. Hence the delay due to this may not be allowed.*

*(e)The petitioner vide paragraph 8(g) has stated that the boiler light up of unit 1 was delayed by 13 months due to delay in getting start up power as PGCIL could not make available start up power due to RoW issues and court cases. However, the petitioner has not provided the supporting details for the same. Hence KSEBL request has delay due to non availability of start-up power may be admitted only after the petitioner submit the supporting documents for the same.*

*(f)Further, the petitioner has submitted that local disturbances in External CHP and in-plant CHP have delayed the executing of the project. The petitioner has stated that the local disturbances were concentrated in NCTPS area of TANGEDCO. Since the petitioner, NTPC Tamilnadu Energy Company Ltd. is a joint venture of NTPC TNEB, erstwhile TANGEDCO, proper care and attention could have been taken by the petitioner to prevent theft of fabricated material. Further, the petitioner ought to have taken timely initiatives to stop the local disturbances with the help of local administration. Hence the reasoning provided by the petitioner do not substantiate the delay and may be disallowed.*

*Considering all the above, it is humbly requested that the interest During Construction (IDC) due to time overrun and cost overrun may be disallowed from capital cost.”*



17. The respondent, TANGEDCO vide reply affidavits dated 5.9.2012 and 24.4.2015 has mainly submitted as under:

*“(a)..NTECL has stated that the first unit of VTPP will be declared under commercial operation w.e.f. 31.8.2012 which is a delay of 17 months considering the norms, and hence there is time over run of the project. This respondent requested the Hon’ble Commission that the IDC claimed by the petitioner shall be restricted upto 42 months from the date of investment approval of the project.*

*(b)The investment approval for Stage-I Phase-I (2x500 MW) of the project was accorded by the NTECL Board Meeting held at 14.7.2007 at a project cost of Rs. 5552.778 Crs. As per CERC Regulations, the timeline for completion of Projects consisting of unit size of 500 MW is 42 months from the date of investment approval, and hence the Unit-1 of stage-I should have been commissioned on or before 01.03.2011. Whereas, the NTECL has stated that the first unit of VTPP will be declared for commercial operation w.e.f. 31.08.2012 which is a delay of 17 months considering the norms, and hence there is a time over run of the project. This respondent requested the Commission that the IDC claimed by the petitioner shall be restricted up to 42 months from the date of investment approval of the project.*

*(c)There is a huge time gap of 22 months existed between the 20th and 35th Board meeting in which the investment approvals were accorded for the projects Stage-I Phase-I (Unit-I & II 2x500 MW) and Stage-I Phase-II (Unit-III 1x500 MW). The petitioner has stated that in order to get the benefit of economies of scale the requirements of Unit-3 were included in the quantity and specifications.*

*(d)The reason submitted by the petitioner is not reasonable and requests the Commission to direct the petitioner to enclose the details of the consent obtained from respective beneficiaries for including the requirements of Unit-3 in the tender for BOP package along with details of benefit arising on economies of scale in the procurement of BOP packages. Hence, IDC/IEDC should be restricted only upto the scheduled DOCO as per norms specified in the 2009 Tariff Regulations.*

*(e)The petitioner has not furnished the exact reasons which lead to retendering of the packages. Also, it is an agreement between the buyer and supplier in which provision for damages are included. The beneficiaries should not be burdened to bear the cost of delay in the procurement process. It is the duty of the procurer to undertake all possible measures to identify the supplier for the packages tendered for.*

*(f) There is huge time gap of 3 years between the date of investment approval (14.7.2007) and the period of rain (2010-11) in the project area specified by the petitioner. The petitioner himself has stated that they had planned to achieve economies of scale and hence the petitioner should have taken all possible measures from the initial stage of identification of project land, soil type etc., The petitioner should have atleast taken steps to award the civil works during the time gap between the Board approval*

*(g)The petitioner has not furnished the details of awarding civil works. The reasons furnished by the petitioner are the responsibilities of the tenderer. If the tenderer fails to supply as per tender then that delay should not be taken into account for calculation of IDC/IEDC for the period of delay.*

*(h)The petitioner in order to avail the benefits of IEDC/IDC for the delayed period is trying to divert from the issue of abnormal delay caused by the petitioner in executing the project by citing the reasons which are not project specific and hence requests this Commission to negate the claim since the reasons furnished are attributable to the petitioner.*

## **Analysis**

18. We have examined the submissions of the parties and the documents available on record.

The Appellate Tribunal for Electricity (the Tribunal) in its judgment dated 27.4.2011 in Appeal No. 72



of 2010 has laid down the following principle for prudence check of time overrun and cost overrun of a project as under:

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

*Due to factors entirely attributable to the generating company, e.g.,*

*i. imprudence in selecting the contractors/suppliers 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.*

*iii. 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/suppliers 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.”*

19. The factors responsible for the delay in the commissioning of the Units I & II of the generating station summarized by the petitioner are as under:

Sl.no.	Particulars	Months
1.	Delay in handling over of land to NTECL by MOC&I has resulted in delay of award of site leveling package (subsequently main plant & offsite civil works package)	4
2.	Delay in award of CHP(Internal & External Packages) due to deferment in investment approval of Phase-II, Unit-III(Delay in approval of coal linkage was mandatory for obtaining clearance from MOEF), has led to deferment of phase-II, causing delay in award of BOP common packages & deferment in tendering due to objection raised by Public representatives)	15 (due to deferment of investment approval of Unit-3); and 6 (due to annulment & retendering on account of objection raised by public representative)
3.	Delay due to cyclone (Jal in November, 2010 & Thane in December, 2011, followed by unprecedented & heavy rainfall during the period in November, 2010 & December, 2011)	4
4.	Delay in BLU, due to non availability of Start up by M/s PGCIL (Sch. May’10, Act. Jul’11) (w.r.t. original schedule, delay was 11 months)	6



5.	Delay due to re-routing of Unit-II Generator Stator subsequent to collapse of bridge during transportation of Stator for NCTPS	2
6.	Delay due to local disturbances during execution of CHP packages.	2

20. Considering the actual COD of Units I & II, the time overrun involved in Unit-I is 21.63 months and Unit-II is 24.53 months. The bar chart showing delay analysis of Unit-I & Unit-II has been attached by the petitioner in the Annexures-2 (a) and (b) of the affidavit dated 12.11.2014.

**(A) Delay in handing over of land to M/s NTECL by Ministry of Commerce & Industry for Unit-I & Unit-II (4 months)**

21. The petitioner has submitted that Ministry of Commerce & Industry, GOI vide letter dated 9.3.2007 had communicated the approval of transfer of about 1002 acres of land to the petitioner. Finally land was handed over to the petitioner in the following proportion.

26.07.2007	476.97 Acres
07.08.2007	13.36 Acres
29.01.2008	101.08 Acres
01.01.2009	410.76 Acres

22. The petitioner has stated that in spite of several requests for permission to carry out the site works, soil investigation work could not be carried out as it was stopped by the Dy. Salt Commissioner, Chennai. The petitioner has stated that 476.9 acre of land for main plant area was handed over in July, 2007 and the allotted land is a salt pan land located in a low lying area and site filling was required up to a height of 2.5 m. It has also submitted that site levelling package, which was scheduled to be awarded in May, 2007 could be awarded only in August, 2007 due to the delay in handing over the land to the petitioner. It was envisaged in the site levelling contract that 06 months would be required for filling of ash in main plant & associated areas. The petitioner has also stated that as site levelling contract was awarded in August, 2007, after possession of land, main plant & offsite civil package could be awarded only in February, 2008. The schedule award date of civil work was in October, 2007 which finally awarded in February, 2008. The delay of 4 months (October, 2007 to January, 2008) in award of civil work had shifted the zero date by 4 months. The respondent, TANGEDCO has submitted that the petitioner should have taken all possible measures from the stage of identification of project land, soil type etc., and the beneficiaries should not be burdened for reasons attributable to the petitioner. The



respondent KSEB has stated that the reasons stated by the petitioner for delay in COD are attributable to the petitioner. From the execution point of view, it is observed that the petitioner had requested the Ministry of Commerce & Industries on 21.8.2006 for early possession of land and finally, 476.9 acres of land required for main plant area was handed over to the petitioner on 26.7.2007. The site levelling work was awarded in August, 2007 after possession of land on 26.7.2007. As per agreed schedule, the site levelling work civil packages was awarded in February, 2008, as against October, 2007 and thus there was delay of 4 months in awarding civil packages was awarded in February, 2008 as against October, 2007 and thus there was delay of 4 months in awarding civil package which was shifted the actual zero date of the project by 4 months. Since bids were placed by the petitioner and the validity of the offer was would expire in the event of delay, the award of the main plant package was not deferred. The petitioner has also submitted that due to the delay in civil work package (civil works was awarded on 18.2.2008) owing to delay in site levelling there was a delay in readiness of boiler foundation. The boiler foundation work was started on 13.8.2007 as per schedule but the boiler foundation were completed on 5.1.2009 and 18.7.2009 for respective units i.e. delay of around 7 & 8 months for Units-I & II respectively. It is apparent from the above discussions that the delay due to delay in handing over of land to the petitioner by MOC & I, there has been delay of 4 months in the COD of the said units which in our view were beyond the control of petitioner. Hence, we are inclined to condone the delay of 4 months in the COD of Units I & II of the generating station. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 4 months is condoned and the generating company is given the benefit of the 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.

**(B) Delay in approval of coal linkage by SLC & subsequent delay in clearance from MOEF (Coal linkage was mandatory for obtaining clearance from MOEF) has led to deferment of Investment approval of Phase II causing delay in award of BOP common packages (21 months)**

23. There has been a delay of 15 months due to deferment of investment approval of Unit-III and 6 months on account of annulment & retendering on account of objection raised by public representative under this head which are examined under:





**(i) Delay in investment of Unit-III and consequent delay in award of BOP package (15 months)**

24. It is observed that the decision for addition of the third unit was taken by the petitioner in September, 2007 purely on the consideration that the addition of the third unit will bring down the cost of the project due to economies of scale. This decision according to us, prima facie appears to be bonafide and in good faith. However, in actual, this decision had proved detrimental to the execution of Phase-I in time. The respondent, TANGEDCO has submitted that the petitioner having planned to achieve economies of scale, should have taken all possible measures from the initial stage and the respondents should not be burdened. The petitioner in its own wisdom had decided to combine the BOP packages of Phase-I and Phase-II to achieve the economies of scale do not appear to be a prudent decision and instead these packages should have been delinked. Moreover, due to delay in getting the coal linkage and the consequent delay in getting the MOEF, GOI clearance, the investment approval of Phase-II had got delayed. It is not clear as to why the petitioner continued with the combined BOP package for Phase-I & Phase-II even when the delay in getting coal linkage was for Phase-II (Unit-III) evident to them. There was coal linkage approval and MOEF, GOI clearance in 2007 for two units (Phase-I). Had there been no addition of the third unit, the contract for BOP (CHP, Ash handling, CW works etc.) of Phase-I (Unit I & II) could have been placed along with main plant contract placed in August, 2007. In that event, no delay could have occurred in the placement of BOP contract due to delay for additional coal linkage required for Phase-II i.e. Unit-III by MOC & I, GOI and MOEF, GOI. In the light of above discussions, we are of the view that the delay of 15 months is attributable to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (i))], the delay of 15 months cannot be said to be beyond the control of petitioner and hence cannot be condoned. Therefore, the increase in cost on account of the said delay has to be borne by the petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.



**(ii) Delay due to Retendering of CHP due to objection raised by Public representative.**

25. The investment approval for Unit-III was accorded on 19.5.2009 and pursuant to this, the NIT for CHP was floated. However, it is observed from the submission of the petitioner that the CH package could not be awarded in 2009 since Member of Parliament, (Lok Sabha) had raised objection of favouritism shown to one party. Hence, the petitioner decided to re-tender the CHP (Internal & External Packages to avoid any perception of irregularity or favouritism and after re-tendering, the CHP Package was finally awarded in March, 2010. Accordingly, the process of annulment, re-tendering and award of contract had led to a delay of 6 months. It is noticed that the petitioner has not furnished any documentary evidence in support of the above submissions. Also, the reasons for re-tendering cited by the petitioner cannot be acceptable since in terms of the tender document & contract manual, unless and until there is a deviation in tendering and awarding process, there cannot be retendering. Mere objection of a public representative as to the tendering process cannot be a ground for cancellation and retendering. In our view, the petitioner has not furnished the real reason for retendering. According to us, it is the responsibility of the petitioner to maintain utmost transparency in the bidding and avoid such objections in the award of the contract. Having failed to do so, the delay on account of the process of cancellation and re-tendering the contract related to CHP package squarely lies with the petitioner. Hence, the delay of 6 months due to retendering is attributable to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (i))], the delay of 15 months cannot be said to be beyond the control of petitioner and hence cannot be condoned. Therefore, the increase in cost on account of the said delay has to be borne by the petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.

**(C) Delay due to Cyclones (JAL in November, 2010 & THANE in December, 2011 and unprecedented rainfall in 2010 and 2011 (for Units-I & II)**

26. The petitioner has submitted that the unprecedented rains during the years 2010 and 2011 have hampered the progress of work of CHP by 4 months. The respondent, TANGEDCO has submitted that there is no report of lying of rain water in the project area during the period 2007-



10 which is the period of scheduled COD as per the 2009 Tariff Regulations. The respondent KSEB has stated that the submissions of the petitioner that work has been affected adversely due to unprecedented rains in 2010 and 2011 is not justifiable and may not be admitted. It is observed that various activities like civil works at Project including activities of Turbine erection and TG Box up were delayed due to unprecedented rains in 2010 and 2011 with a maximum monthly rainfall of 397 mm 637 mm respectively, against the maximum monthly recorded rainfall of 269 mm. Inplant and external CHP work was scheduled on June, 2008, but was awarded on March, 2010. The work for inplant and external CHP was started on 29.3.2010 and 30.3.2010 respectively. Also, from the rainfall data and the schedule of CHP work it is evident that the unprecedented rains during 2010 and 2011 had hampered the progress of work of CHP. The delay in start of CHP work coincided with the Cyclone JAL in 2010 and THANE in 2011. The petitioner in its submissions vide affidavit dated 12.11.2014 has submitted that the CHP work is still in process. Thus, the delay due to cyclones and unprecedented rainfall in November, 2010 and December, 2011 in our view cannot be attributable to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 4 months is condoned and the generating company is given the benefit of the 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.

**(D) Delay in Start-up power availability (by Powergrid)-6 months delay in Boiler Light up**

27. As per record note of discussion between NTPC and Power grid on 27.1.2011 it is noticed that ROW of the line, the court case which was pending before the High Court of Chennai with regard to 4 critical foundations have been resolved and court has given directions to District Authorities for finalisation of compensation. NTPC had reiterated that the boiler light up has been targeted in February, 2011 and the start up power through 400 kV system is the only source from which boiler light up can be done. Accordingly, NTPC had requested PGCIL to complete the line by February, 2011 and PGCIL informed that as per programme the line is anticipated to be completed by March, 2011 and assured to put best efforts to complete line at the earliest. However, the Start up power was made available only in July, 2011. The Power Grid in 2011 filed



Petition No. 73/TT/2011 seeking approval of tariff by the Commission for the LILO of Alamathy-Sriperumbudur 400 kV D/C line at North Chennai TPS Switchyard under transmission system associated with the generating station of the petitioner. There was a time overrun of 13 months in the commissioning of the lines on 1.8.2011. The Power Grid was convinced that the time overrun in the commissioning the line was due to court cases, ROW problem etc. and had condoned the delay of 13 months. In view of the above, the delay in making start-up power was neither attributable to Power Grid nor the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 4 months is condoned and the generating company is given the benefit of the 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.

**E) Delay due to re-routing of transportation of Generator Stator of Unit-II from M/s BHEL (2 months)**

28. With reference to the BAR chart, the actual TG erection of Unit-II was from 29.3.2011 to 30.6.2012. It is noticed that in September, 2011, the trailer truck carrying the Generator Stator of North Chennai Thermal Power Station (NCTPS) fell into the Kaula River near Binapur village, Madhya Pradesh owing to sudden collapse of the bridge. Since the generator stator of the petitioner was following the NCTPS stator, the trailer was stopped at that place and could not proceed further due to the collapse of bridge. The petitioner has submitted the record notes of discussion between NTPC & BHEL held on 29.10.2011. As per the record notes, Unit-II generator stator was diverted in a safe route and had to travel an extra 700 Km in the revised route leading to a delay of two months. Further, the trailer truck carrying the Generator Transformer for Unit-II during transportation from Bhopal had toppled and got damaged and had to cover a further distance of 1500 km approx from Madhya Pradesh to the project site of the petitioner. In the background of the above, we are of the view that the justification of the petitioner as regards delay on this count appears reasonable. In view of above, we are inclined to condone the delay of 2 months for Unit-II as the same is not attributable to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 4 months is condoned and the generating company is given the benefit of the 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.

**Delay due to local disturbances in External CHP and Internal CHP after the synchronization of Unit-I (2 months)**

29. The petitioner has furnished copies of letter from the agency M/s FL Smidth Private Limited towards the forcible stoppage of work due to disturbance by local people. The petitioner has also submitted that on 9.4.2012, one worker was murdered and the total work on the stacker re-claimer got stopped and could be restarted only 7.5.2012. However, as per letter of M/s FL Smidth Private Limited dated 20.4.2012 addressed to the petitioner, it has been indicated that they were forced to suspend all their activities from 23.4.2012. The petitioner has also indicated that the delay of 2 months is on account of local disturbances. The respondent, KSEB has submitted that the petitioner should have taken timely initiatives to stop the local disturbances with the help of local administration. It is evident from the letters exchanged by the parties (M/s FL Smidth Private Limited and the petitioner) that the work had stopped from March, 2012 and had restarted only on May, 2012. Thus, on the basis of the documents on record it is evident that the delay due to local disturbance was beyond the control of the petitioner and contractor and the same cannot be attributed to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 4 months is condoned and the generating company is given the benefit of the 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.

30. In the light of above, out of the total time overrun of 21.63 and 24.5 months for Unit-I and Unit-II respectively, the delay of 16 months for Unit-I and 18 months for Unit-II, is found to be beyond the control of the petitioner and has been condoned. However, the delay of 5.63 months for Unit-I and 6.5 months for Unit-II, which includes the delay in activities due to deferment of investment approval of Unit-III, annulment & retendering on account of objection raised by public representative are delays which have been found attributable to the petitioner on account of



imprudence in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts etc.,

31. Based on the above discussions, the time overrun allowed (against the actual time overrun) for Unit-I and Unit-II and the schedule COD (reset) for the purpose of computation IDC is summarized as under:

Units	Schedule COD as per LOA	SCOD shifted to	Actual COD	Time overrun (months)
I	10.2.2011	<b>10.6.2012</b>	29.11.2012	<b>5.63</b>
II	10.8.2011	<b>10.2.2013</b>	25.8.2013	<b>6.5</b>

### Capital Cost

32. 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 funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, 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

33. The Investment approval of project, Phase-I of (Units-I & II) was accorded by the Board of the Petitioner Company on 14.7.2007 at a cost of ₹5552.78 crore, including IDC & FC of ₹497.01 crore and Working Capital Margin (WCM) of ₹129.225 crore at Price level of 2<sup>nd</sup> Quarter of 2007. Subsequently, the investment approval of the Phase-II (Unit-III) was accorded by the Board of the Petitioner Company on 19.5.2009 at a cost of ₹3086.779 crore, including IDC & FC of ₹334.65 crore and Working Capital Margin (WCM) of ₹66.74 crore at price level of 1<sup>st</sup> Quarter of 2009. Thus, the total project cost as approved by the Board for the three units (Phase-I & Phase-II) is



₹8639.557 crore. The total cost of the project (Phase-I & Phase-II) excluding WCM, works out to ₹8443.592 crore i.e ₹5.63 crore/MW.

### Actual Capital Cost as on COD

34. The petitioner vide its affidavit dated 12.11.2014 has furnished the gross block of ₹3645.79 Cr duly certified by Auditor, which includes IDC, FC, FERV, IEDC & hedging cost and un-discharged liability of ₹263.01 crore as on COD of Unit-I (29.11.2012) and ₹6035.65 crore including IDC, FC, FERV, IEDC & hedging cost and un-discharged liability of ₹412.45 crore, as on COD of Unit-II (25.8.2013). The actual capital expenditure incurred as on COD of Unit-I and COD of Units-I & II (combined) as certified by auditor is as under:

	(₹ in crore)	
	Actual capital expenditure as on COD of Unit-I as on 29.11.2012	Actual capital expenditure as on COD of Unit-II as on 25.8.2013
Gross Block (including IDC, FC, FERV, IEDC & hedging cost ) (A)	3645.7958	6035.6492
Un-discharged liability (B)	263.0129	412.4561
<b>Capital cost (C)= (A-B)</b>	<b>3382.7829</b>	<b>5623.1930</b>
IDC & FC, FERV & Hedging cost	515.8432	980.3980
IEDC (excluding IDC & FC, FERV & Hedging cost)	92.8652	255.18

35. The respondent, KSEB has submitted that the capital cost claimed by the petitioner for 2013-14 as on 24.08.2013 is ₹5682.59 crore and whereas in Annexure-V of the petition, the petitioner has shown the capital cost as ₹5623.19 crore as on 24.8.2013. Accordingly, the respondent has submitted that the difference in capital cost may be verified and the actual capital cost as on 24.8.2013 may only be allowed. It has also submitted that a considerable portion of the additional capitalization expenditure incurred by the petitioner for 2013-14 (1.4.2013 to 24.8.2013) is on account of IDC of ₹464.55 crore claimed by the petitioner for the said period. The respondent, TANGEDCO has submitted that the per MW capital cost for Thermal Power Station with coal as fuel, as per Bench mark norms specified by Commission in order dated 4.6.2012, shall be ₹4.48 crore (3 x 500 MW Plant) and accordingly the Commission may limit the capital cost of the project/station as per the bench mark cost.



### **Initial Spares**

36. The petitioner has submitted that the cost of initial spares capitalised as on the actual date of COD of Unit-I is ₹1190.00 lakh and COD of Unit-II is ₹982.00 lakh. Thus, the total initial spares capitalised as on COD of Units-I&II (combined) is ₹2172.00 lakh which works out to 0.39 % of the project cost. This is within the ceiling limit of 2.5% of the project cost as specified under the 2009 Tariff Regulations and hence, the same is allowed.

### **Sale of infirm power**

37. The petitioner has submitted that the revenue earned from sale of infirm power is ₹36.17 crore as on COD of Units-I &II (combined). Though the petitioner has submitted that the infirm power has been capitalised with the respective units, the same is not clear from the documents submitted by the petitioner. Hence, the revenue earned from sale of infirm power has been deducted from the capital cost claimed by the petitioner. However, the petitioner is granted liberty to submit the details of infirm power and its adjustment in the capital cost as on COD of Unit-I and Unit-II at the time of revision of tariff of the generating station based on truing-up exercise in terms of Regulation 6 (1) of the 2009 Tariff Regulations.

38. As per the information furnished by petitioner vide its affidavits dated 20.6.2014 and 12.11.2014, there is cost overrun due to time overrun. On account of the delay in the declaration of commercial operation of the units, the Overhead expenses in Establishments under IEDC, such as salary, transportation, Office expenditure etc. have increased. This requires a pro-rata disallowance of overhead expenses for the period of 5.63 months as on COD of Unit-I and 6.5 months as on COD of Unit-II. The petitioner vide affidavit dated 12.11.2014 has submitted that there has not been any increase in prices in contract packages due to time overrun from scheduled COD to actual COD. It has also submitted that there is increase in works cost (contract price) from original estimate to actual award since estimate was done in November, 2007 and major packages could be awarded only after investment approval of Phase-II and due to this package cost has increased by the time they were actually awarded. However, the petitioner has stated that there has not been any increase in contract price from awarded value





due to time overrun from scheduled COD to actual COD as of now (Form 5D). The activities in which there is cost overrun due to time overrun are as stated below:

(₹ in crore)			
Activity	Award value	Actual Capital expenditure till the completion or COD whichever is earlier	Difference between Actual Expenditure & award value
Main plant & offsite civil works	286	488.28	202.26
Chimney & chimney elevator	23	41.86	18.86
C.W. system & makeup water system civil	57	98.93	41.93
<b>TOTAL</b>	<b>366</b>	<b>629.07</b>	<b>263.05</b>

39. The *pro rata* reduction of cost overrun due to time overrun of the activities is computed as under:

Total exceeded Capital expenditure till the completion or COD whichever is earlier (₹ in crore)	Total period taken from zero date to actual COD (months)		Time overrun disallowed (months)		Time overrun disallowed for Unit-I (₹ in crore)	Time overrun disallowed for Unit-II (₹ in crore)
	Unit-I	Unit-II	Unit-I	Unit-II		
(1)	(2)	(3)	(4)	(5)	(6)=[((1)x(4))/(2)]/2	(7) ((1)x(5))/(3)
263.05	63.60	72.5	5.63	6.5	11.64	23.58

40. The petitioner vide its affidavit dated 12.11.2014 has submitted the break-up of the increase in IDC & IEDC from the scheduled COD to the actual COD as under:

(₹ in crore)			
	Based on Investment approval	As on 24.8.2013 (actual COD of Unit-II)	Escalation
IDC	559.15	980.39	421.24
IEDC	237.04	255.18	18.14

41. It is observed that the Overhead expenses under IEDC have increased. This requires *pro rata* disallowance of Overhead expenses for the period of 6.5 months as on COD of Unit- II (25.8.2013). The IEDC as on COD of Unit-II is ₹255.18 crore. Thus, the *pro rata* deduction in Overhead expenses due to the delay of 6.5 months in the COD of Unit-II is worked out as under:



(₹ in crore)				
	Total period taken from zero date to actual COD (months)	Time overrun disallowed (months)	Overhead Expenses under IEDC (₹ in crore)	Pro-rata reduction = (col.4x col.3)/col.2 (₹ in crore)
(1)	(2)	(3)	(4)	(5)
As on COD of Unit-I (29.11.2012)	63.6	5.63	92.8682	8.22
As on COD of Unit-II (25.8.2013)	72.5	6.5	255.18	22.8782

42. After adjustment of the excess charges due to the activities where there is cost overrun and pro rata reduction of establishment cost due to IEDC as on COD of Unit-II, the capital cost of Units-I and II (combined) is worked out as under :

(₹ in lakh)		
	As on COD of Unit-I	As on COD of Unit-II
Capital cost including IDC, FC & FERV etc. after un-discharged Liabilities	338278.29	562319.30
IDC, FC & FERV etc.	51584.32	98039.80
Capital cost excluding IDC, FC & FERV etc.	286693.97	464279.50
Pro rata reduction and adjustment due to IEDC as on COD of Unit-II	822.00	2288.00
Capital cost excluding IDC after pro rata reduction in IEDC	285871.97	461991.50
Adjustment due to infirm power	2908.00	709.00
Pro rata reduction on account of cost overrun due to time overrun of activities	1164.00	2358.00
<b>Capital cost excluding IDC, FC &amp; FERV etc. allowed</b>	<b>281799.97</b>	<b>458924.50</b>

43. As per investment approval, the estimated IDC & FC approved for the project is ₹559.15 crore. The petitioner in Form 9A vide affidavit dated 20.6.2014 has submitted that IDC of ₹980.39 crore has been considered as on COD of Unit-II is 25.8.2013.

#### **Comparison of actual capital cost with Bench mark capital cost**

44. The hard cost of the Phase-I of (Units-I & II) of the generating station as on COD of Unit-II is ₹4589.26 crore (₹4.59 crore/MW) and the same is lower than the bench mark capital cost of ₹4.71 crore/MW specified by the Commission. The comparison of the said capital cost with the benchmark capital cost specified by the Commission is as under:

(₹ in crore)	
	Units I & II (1000 MW)
Capital cost without IDC, FC, FERV & Hedging charges	<b>4589.26</b>
Capital cost (₹/MW)	4.59
Benchmark capital cost (December' 2011)	4.71



45. Thus, the hard cost of Unit-I & Unit-II (combined) as on 25.8.2013 (COD of Unit-II) is ₹4589.26 crore (₹4.59 crore/MW) and is lower than the benchmark cost of ₹4.71 crore/MW (at 2011 December price level) as specified by Commission on 4.6.2012 with regard to the benchmark capital cost for thermal power stations with coal as fuel. The total capital cost of the Unit-I & Unit-II (combined) as on 25.8.2013 including IDC & FC works out as ₹5623.20 crore (₹5.62 crore/MW) which is higher than the approved capital cost for Phase-I (i.e. ₹5552.78 crore, including IDC & FC of ₹497.01 crore and Working Capital Margin (WCM) of ₹129.225 crore at price level of 2<sup>nd</sup> quarter of 2007). The increase in IDC is due to substantial time overrun in case of both the units. The increase in the total project cost is on account of IDC for ₹980.39 crore, as against the estimated IDC of ₹559.15 crore. Some of the main reasons submitted by the petitioner for higher capital cost of generating station are due to special features viz. (a) Cross country conveyor system (b) Grab unloader and (c) Desalination Plant included in generating station. However, even with the inclusion of cost of on account of the above special features, the hard cost of Stage-I (Unit- I & Unit-II) of the project is lower than the benchmark cost as specified in the Commission's Order dated 4.6.2012. In view of this, the capital cost of the project is found reasonable

### **Interest During Construction/Financing Charges**

46. The loan agreement dated 6.3.2010 between REC and the petitioner provides as under:

2.2.1(b) .....The interest for the above loan facility shall be payable quarterly. There is no moratorium for interest payments. The interest shall be paid on the last day of March, June, September and December in each year directly to REC's Corporate Office at New Delhi under intimation to the Chennai Project Office.

47. As per agreement with REC, the petitioner was required to pay the interest quarterly. It is also evident from the submissions of the petitioner that the drawl of fresh loan has been made to meet the repayment obligation as well, which in our opinion becomes part of loan capital, borrowed for the project. Hence the same is allowed to be capitalized.

48. Though the petitioner was directed by letter dated 13.10.2014 to submit the details of unit-wise apportionment of IDC, the same has not been furnished by the petitioner. Therefore, the IDC amount as worked out has been allocated to the various units in same proportion (gross IDC to IDC allocated to a particular unit) as done by the petitioner. However, the petitioner is granted



liberty to submit details of unit-wise allocation of IDC along with requisite details duly certified by the auditor at the time of revision of tariff based on truing-up in terms of Regulation 6 of the 2009 Tariff Regulations. In consideration of the above, the unit-wise IDC is worked out and allowed for Units I & II as under:

<i>(₹ in lakh)</i>		
<b>Unit</b>	<b>IDC allowed up to</b>	<b>IDC</b>
Unit-I	10.6.2012	38660.53
Unit-II	10.2.2013	34478.79
<b>Total</b>		<b>73139.32</b>

49. The petitioner has considered financial charges amounting to ₹213.29 lakh and ₹116.59 lakh for Units I & II respectively as per the Loan Agreement dated 6.3.2010. This has been considered.

#### **Notional IDC**

50. Regulation 16(5) of the 2009 Tariff Regulations provides as under:

*"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. "*

51. The petitioner has claimed the notional IDC for the period from 2003-04 to 2007-08 by considering the rate of interest @ 10.75% p.a. applicable to the first drawl of loan. But, there was no actual loan for the station as well as the petitioner company as a whole before 26.6.2008. Hence, there was no weighted average rate of interest available to work out the notional IDC before the actual drawl of the loan (26.6.2008). Therefore, no IDC has been allowed before the actual drawl of the loan.

52. Further, Notional IDC has also been allowed up to the date of scheduled COD only. The apportionment of Notional IDC has been made as per apportionment of IDC. Accordingly, the total notional IDC of ₹1533.54 lakh has been allowed in the capital cost for the purpose of tariff.



53. Interest on normative loan is to be treated as income in the Financial Statement i.e. Profit & Loss A/c and Balance sheet by the petitioner as it form part of capital cost for the purpose of allowing tariff.

### **Additional Capital Expenditure**

54. The petitioner has claimed additional capital expenditure after COD of Unit-I (i.e. 29.11.2012) for the period 2012-14 and from COD of Unit-II (i.e. 25.8.2013) for the period 2013-14 as under:

	Unit-I		Unit- I & II
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Additions during the period	28.00	479.00	2921.00

55. The petitioner has claimed additional capital expenditure under Regulation 9 (1) (ii) of the 2009 Tariff Regulations, the petitioner in justification has submitted that the additional capital expenditure claimed are projected expenditure on works within the original scope of work after COD of Unit-I to 31.3.2014. Accordingly, the claim of the petitioner is allowed.

### **Un-discharged Liabilities/ Discharge of liabilities**

56. The petitioner vide affidavit dated 12.11.2014 has submitted there is un-discharged liabilities of ₹26301.30 lakh and ₹23679.89 lakh as on COD of Units-I & II and Unit-II respectively. Out of above, the unit-wise discharges of liabilities are as follows:

	(₹ in lakh)	
	Unit-I	Unit-II
From 29.11.2012 to 31.3.2013	6446.56	-
From 1.4.2013 to 24.8.2013	2289.01	-
From 25.8.2013 to 31.3.2014	2379.46	9696.90

57. There are un-discharged liabilities amounting to ₹4819.09 lakh in respect of Unit-II for the period from 25.8.2013 to 31.3.2014.

### **Capital cost**

58. The capital cost as on COD of the generating station, including IDC, normative IDC considered for the purpose of tariff is as under:



(₹ In lakh)

	Unit-I (29.11.2012)	Unit-II (25.8.2013)	Total
Capital Cost excluding IDC, FC & FERV	281799.97	177124.53	458924.50
Add: IDC	38660.53	34478.79	73139.32
Add: Financial Charges	213.29	116.59	329.88
Add: Normative IDC	879.35	654.19	1533.54
Opening Capital Cost including IDC, FC & FERV	321553.14	212374.09	533927.24
Add: Discharge of Liabilities	6446.56	0.00	6446.56
Add: Additional capital expenditure	28.00	0.00	28.00
Capital cost as on 31.3.2013	328027.70	0.00	540401.79
Add: Discharge of Liabilities	2289.01	0.00	2289.01
Add: Additional capital expenditure	479.00	0.00	479.00
Capital cost as on 24.8.2013	330795.71	212374.09	543169.80
Add: Additional capital expenditure			2921.00
Less: Un-discharged Liabilities		(-) 4819.09	(-)4819.09
Add: Discharge of Liabilities	2379.46	9696.90	12076.36
<b>Capital cost as on 31.3.2014</b>			<b>553348.08</b>

## Debt Equity Ratio

59. Regulation 12 of the 2009 Tariff 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”*

60. The petitioner has claimed debt-equity ratio as on COD based on the funds deployed for the entire project as follows:



	(₹ in lakh)	
	COD-1	COD-2
Funding :		
Actual Debt (balance sheet)	408257.60	457557.60
Actual Equity (Share Capital)	189532.34	223070.18
Total fund deployed	597789.94	680627.78
<b>Capital Expenditure (9A + 9B)</b>	<b>674344.49</b>	<b>775325.86</b>

61. It is evident from above that there is a gap between the total fund deployed by the petitioner and the actual capital expenditure. Further, as per balance sheet, the reserve and surplus are negative and it is observed that the petitioner has deployed additional fund in the form of the share application money, interest on interest to bridge the gap of the capital requirements as under:

	(₹ in lakh)	
	COD of Unit I	COD of Unit II
Share Application Money	19921.22	13500.00

62. The petitioner has considered the share application money as a part of equity for the purpose of claiming return on equity. Since this amount is not a part of share holder's fund, but at the same time used for the project expenses, the question as to whether the Share Application Money used for the project expenses as part of equity for the purpose of tariff is to be allowed as part of equity is required to be considered. This issue came up for consideration before the Commission in the tariff Petition No.199/GT/2013 (ONGC-Tripura Power Company Ltd v APDCL &ors) and the Commission by order dated 31.8.2015 rejected the prayer of the petitioner for considering the funds availed as part of equity and held as under:

*“66. The petitioner has availed the fund as advance against equity and has utilized the same for the project. The petitioner has also considered the same as part of equity for the purpose of claiming return on equity (ROE). Since the petitioner has not converted this amount into equity, and has utilized the same for the project, the question as to whether the advance against equity used towards expenses of the project could be considered as part of equity for the purpose of tariff is required to be examined. We proceed to do so.*

*67. It is evident that the amount of ₹29296.10 lakh has been availed by the petitioner as advance from the shareholders. Since the amount is not converted into equity prior to its utilization, this advance amount could either be transferred to share capital or could be revoked/ rejected. It can be inferred that the advance against equity, pending allotment of shares can be refunded to the shareholders if they have not been allotted shares of the company. In this background, it could not be prudent for us to consider it as equity for the purpose of ROE.*

*68. Admittedly, the petitioner has utilized the advance against equity amount for the project. The funds deployed in the project are to be serviced either in the form of ROE or interest on loan and every fund deployed for the project has to be serviced. As stated above, the amount of advance against equity has not been allowed for the purpose of ROE. In order to safeguard the interest of consumers and to allow the recovery of reasonable cost to the petitioner as envisaged under Section 61 (d) of the Electricity Act,*



2003 we follow a balanced approach. Accordingly, as the fund is deployed in the project by the petitioner, we consider the said amount of advance against equity as loan for the purpose of determination of tariff of the generating station.”

63. In line with the above decision, the prayer of the petitioner is rejected and the debt-equity ratio allowed as on the respective COD of the units has been arrived at based on the actual capital expenditure incurred, the actual debt incurred and the actual equity deployed in the following manner. However, the petitioner is granted liberty to approach the Commission with all details in this regard along with supporting documents at the time of revision of tariff based on true-up exercise in terms of Regulation 6(1) of the 2009 Tariff Regulations.

	<i>(₹ in lakh)</i>	
	<b>As on COD of Unit I</b>	<b>As on COD of Unit II</b>
Capital Expenditure (Form 14A)	697090.00	785116.00
Actual Equity (Share Capital)	189532.34	223070.18
Debt (Balancing Fig.)	507557.66	562045.82
Equity (in Percentage)	27.19%	28.41%
<b>Debt (in Percentage)</b>	<b>72.81%</b>	<b>71.59%</b>

### **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:*

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

*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. It has been observed from the Annual reports of the petitioner company that no tax has been paid for the years 2012-13 and 2013-14. As such, the Return on Equity has not been allowed to be grossed up with the Corporate Tax rate as considered by the petitioner. Return on Equity has not been grossed up as no tax has been paid against the same. Accordingly, Return on Equity has been computed as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	<b>1 Unit</b>	<b>1 Unit</b>	<b>2 Units</b>
Gross Notional Equity	87427.33	89187.70	154327.50
Addition due to Additional Capitalisation	1760.37	752.60	2767.38
Closing Equity	89187.70	89940.30	157094.88
Average Equity	88307.52	89564.00	155711.19
Return on Equity (Base Rate )	15.50%	15.50%	15.50%
Tax rate	0.00%	0.00%	0.00%
Rate of Return on Equity (Pre Tax )	15.50%	15.50%	15.50%
<b>Return on Equity (Pre Tax)</b>	<b>4599.95</b>	<b>5552.97</b>	<b>14481.14</b>

### 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 weighted average rate of interest has been worked out on the basis of the actual loan portfolio of respective year applicable to the project.

(ii) The repayment for the year of the tariff period 2009-14 has been considered equal to the depreciation allowed for that year.

(iii) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest. The calculations of weighted average rate of interest on loan are enclosed as Annexure-I to this order.

68. Interest on loan is worked out as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	1 Unit	1 Unit	2 Units
Gross Notional loan	234125.81	238839.99	388842.30
Cumulative Repayment of loan upto previous year	0.00	5416.94	12021.78
Net Opening loan	234125.81	233423.05	376820.53
Addition due to additional capitalization	4714.18	2015.42	7410.89
Repayment of Loan during the period	5416.94	6604.84	16359.61
Net Closing loan	233423.05	228833.63	367871.82
Average loan	233774.43	231128.34	372346.17
Weighted Average Rate of Interest on loan	11.357%	11.333%	11.375%
<b>Interest on loan</b>	<b>8922.31</b>	<b>10477.63</b>	<b>25412.39</b>

## Depreciation

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. Accordingly, depreciation has been worked out as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	1 Unit	1 Unit	2 Units
Opening Gross Block	321553.14	328027.70	543169.80
Additional capital expenditure	28.00	479.00	2921.00
Discharge/ Un-discharge of liabilities	6446.56	2289.01	7257.27
Closing Gross Block	328027.70	330795.71	553348.08
Average Gross Block	324790.42	329411.70	548258.94
Rate of Depreciation	4.963%	5.013%	4.973%
Depreciable Value	292311.38	291053.59	481411.27
<b>Depreciation</b>	<b>5416.94</b>	<b>6604.84</b>	<b>16359.61</b>

## Operation & Maintenance Expenses

71. The O&M expense norms specified under Regulation 19 (a) of the 2009 Tariff Regulations for 500 MW coal based generating station for the period 2012-14 is as under:

(₹ in lakh/MW/year)	
2012-13	2013-14
15.36	16.24



72. The petitioner, in addition to the claim for O&M expenses as per norms has also claimed additional O&M expenses for Unit-I and Unit-II towards desalination plant. The O&M expenses claimed by the petitioner in Form -3A are as under:

	(₹in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Admissible O&M Expenses as per norms	7680.00	8120.00	16240.00
Additional O&M expenses towards desalination plant	441.00	466.00	466.00
<b>Total O&amp;M expenses claimed</b>	<b>8121.00</b>	<b>8586.00</b>	<b>16706.00</b>
O&M expenses norm considered by the petitioner (Rs in lakh/MW)	16.24	17.17	16.71

73. The annualized O&M expenses claimed for ₹7680.00 lakh in 2012-13 and ₹1624.00 lakh in 2013-14 are as per the norms specified under the 2009 Tariff Regulations and hence allowed. The additional O&M expenses for desalination plant claimed is ₹441.00 in 2012-13 with yearly escalation of 5.72% and the O&M claimed for desalination plant is ₹466.00 lakh in 2013-14. The petitioner has submitted that the cost of chemicals for producing the RO water is expected to be ₹114.00 lakh per year and the replacement cost of filters and membranes of RO plant is expected to be ₹327.00 lakh per year. Accordingly, the additional cost of ₹441.00 lakh in 2012-13 has been claimed by the petitioner as additional O&M expenses on account of the desalination plant.

74. The respondent, KSEB vide its reply affidavit dated 24.11.2014 has submitted that the 2009 Tariff Regulations which allow O&M expenses on normative basis include Repair and Maintenance expenses, Employee cost, Administrative and General Expenses etc. It has also submitted that the normative O&M expenses as per 2009 Tariff Regulations are ₹15.36 lakh/MW for 2012-13 and ₹16.24 lakh/MW for the year 2013-14, but the petitioner has claimed O&M expenses of ₹16.24 lakh/MW, ₹17.17 lakh/MW and ₹16.71 lakh/MW for the years 2012-13 to 2013-14 by including the cost of desalination plant. The respondent has stated that the O&M expenses allowed by the Commission as per the norms have provision for meeting the O&M expenses for desalination plant also and hence the additional claim O&M expenses claim for the desalination plant may not be allowed.



75. The respondent, TANGEDCO vide its reply affidavit dated 14.9.2012 has submitted that the additional O&M expenditure of ₹441 lakh claimed by the petitioner need not be taken into account for the purpose of calculation of O&M expenses since the provision for O&M expenses in the Regulation covers these expenses and the same need not be considered once again for inclusion as additional O&M expenses. The respondent vide affidavit dated 24.4.2015 has pointed out that the petitioner has made an excess claim of ₹5092 lakh for the period from 29.11.2012 to 31.3.2013, ₹4872 lakh for the period from 1.4.2013 to 24.8.2013 and ₹6496 lakh for the period 25.8.2013 to 31.3.2014 and has submitted that the claim of the petitioner towards O&M expenses is not in line with Regulation 19(a) of the 2009 Tariff Regulations and the excess claim of the petitioner may be disallowed.

76. The matter has been examined. The petitioner has claimed additional expenditure for consumables (i.e chemicals, filters, membranes) towards the desalination plant. It is observed that the generating station is located near the sea coast and the petitioner will not pay any water charges as the water will be made available to the plant from the sea. We are of the considered view that the normative O&M allowed for 500 MW units include the water charges and thus the additional cost, incurred by the petitioner towards the consumables (chemical, filter, membrane etc.) of the desalination plant, could be met from the water charges included in the normative O&M expenses allowed under the 2009 Tariff Regulations. In this background, we find no justification in allowing the claim of the petitioner for additional O&M cost for desalination plant. Accordingly, the claim of the petitioner for additional O&M expenses is rejected and the O&M Expenses for Units I & II of the generating station are worked out and allowed for the period 2012-14 in accordance with the clause (a) of Regulation 19 of the 2009 Tariff Regulations as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
O&M expenses norms for 500 MW units (₹ lakh / MW)	15.36	16.24	16.24
Admissible O&M expenses (₹ in lakh)	7680.00	8120.00	16240.00



## Operational Norms

77. The petitioner vide affidavit dated 20.6.2014 has considered operational norms for the purpose of tariff are as under:

Normative Annual Plant Availability Factor (%)	85
Gross Station Heat Rate (kcal/kWh)	2421
Auxiliary Power Consumption (%)	7.44%
Specific Oil Consumption (ml/kwh)	1.0

78. In terms of provisions of the 2009 Tariff Regulations, the above operational norms are in order, except for the Auxiliary Energy Consumption (AEC). We now consider the operational norms as under:

### Gross Station Heat Rate

79. The petitioner has furnished the design turbine cycle heat rate and boiler efficiency as 1932 kcal/kWh and 85 % respectively. Accordingly, the unit Design Heat Rate worked out from the data submitted by petitioner is 2272.94kcal/kWh (1932/0.85). As per Regulation 26 (ii) B of the 2009 Tariff Regulations, for the New coal based and lignite based thermal generating stations achieving COD on or after 1.4.2009 the Gross Station Heat Rate = 2421 kcal/kWh (1.065 x 2272.94) i.e 1.065 x Design Heat Rate (kCal/kWh), provided that the Design Heat Rate shall not exceed the maximum design unit heat rates as specified in Regulation 26 (ii) (B) (a) of the 2009 Tariff Regulations depending upon the pressure and temperature ratings of the units as specified by the Commission. The maximum design unit heat rate for plants as specified in Regulation 26 (ii) (B) (a) of the 2009 Tariff Regulations having temperature and pressure rating (nearer to this plant of the petitioner) using sub bituminous coal is 2276 kcal/kwh. Thus, considering the multiplying factor of 1.065, the Gross Station Heat Rate for this generating station works out to 2423.94 kcal/kWh (1.065 x 2276) which is higher than the Gross Station Heat Rate of 2421 kCal/kWh is derived on the basis of the design heat rate of the generating station. Accordingly, the Gross Station Heat Rate considered by the petitioner as 2421 kCal/kWh for this generating station is in order and allowed.



## **Auxiliary Energy Consumption**

80. The petitioner has considered the Auxiliary Power Consumption (APC) of 7.44% in relaxation of the APC norm of 6.5% specified under the 2009 Tariff Regulations. The petitioner has submitted that the said project is having additional distinct features to meet the operation and has requested for APC of 7.44% for additional load of 14.09 MW considered an account of the following loads:

- a. Cross country conveyor system. (6.0 MW)
- b. Grab un-loader. (2.842 MW)
- c. Desalination plant. (5.25 MW)

81. The respondent, KSEB vide its reply affidavit dated 24.11.2014 has submitted that the claim of the petitioner is not in line with Regulation 26(iv) of the 2009 Tariff Regulations, which stipulates the Auxiliary consumption norms for coal based generating stations (500 MW and above) with induced draft cooling towers as 6.50%. Accordingly, the respondent has prayed that the claim of the petitioner for higher APC over and above 6.50% may be rejected. The respondent TNAGEDCO vide its reply affidavit dated 14.9.2012 has submitted that the petitioner should take into account only the conveyor in which the coal is transported from Ennore port and up to the site. It has also pointed out that the power consumed by Feed pump which is utilized in the desalination plant needs to be taken into account instead of all the pumps kept in the plant. The respondent has stated that the reasonableness of the claim made by the petitioner is not justified and has requested that the Commission may restrict the same as per norms after prudence check.

82. The matter has been examined. It is noticed that the petitioner has considered APC of 7.44% as against the norm of 6.50% specified under the 2009 Tariff Regulations for 500 MW units with induced draft cooling. The APC of 7.44% considered by the petitioner include the consumption for additional systems like Coal transportation from mine to the sea port by rail and by sea to the nearest port of Ennore. It is observed that Special type cross country pipe conveyor system has been installed for transporting coal from Ennore port to the said generating station and different drives which consume about 6.0 MW electrical powers are required for the operation



of this cross country pipe conveyor system. In addition, it is observed that 2 nos. of electrically operated grab un-loader is installed for unloading of coal from the ship, which consumes about 2.842 MW electrical power. As there is no water source near this power plant, the project is designed to use sea water which is converted as potable water for drinking, service water for different purposes and DM water for process make-up & equipment cooling make up through RO conversion. The electrical equipment installed for desalination of sea water through RO system also consumes about 5.25 MW. In this background, an additional load of 14.09 MW has been considered for calculating APC for the generating station by the petitioner. (i.e an additional 0.94% of Auxiliary Power Consumption for 3 x 500 MW unit). Considering the fact that the increase in APC of 0.94% (approx) is on account of the additional facilities as discussed above, we are inclined to consider the claim of the petitioner for APC of 7.44% in relaxation of the norms specified under the 2009 Tariff Regulations for the generating station. The relaxation allowed in this case is based on the facts and circumstances mentioned herein and cannot be considered as a precedent in future.

83. Based on the above discussions, the operational norms allowed to this generating station are summarized as under:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Gross Station Heat Rate (GSHR) (kcal/kWh)	2421
Auxiliary Power Consumption (APC) (%)	7.44
Specific Fuel Oil Consumption (ml/kWh)	1.0

### **Interest on Working Capital**

84. Regulations 18(1)(a) of the 2009 Regulations provides for the computation of the interest on working capital as under:

*“18(1)(a) Coal-based/lignite-fired thermal generating stations:*

*(i) Cost of coal or lignite and limestone, if applicable, for 1½ months for pit- head generating stations and two months for non-pit-head 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 secondary 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;

(v) Operation and maintenance expenses for one month.”

85. Clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended on 2.6.2011 provides as under:

*" Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or 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."*

86. In accordance with the above provisions, interest on working capital has been worked out as under:

### **Fuel Component and Energy charges**

87. 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 for Unit-I (December,2012 to February, 2013 and for Unit-II (December,2013 to February, 2014) as under:

	<i>(₹ in lakh)</i>		
	<b>2012-13</b>	<b>2013-14</b>	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Cost of Coal for 2 months	8379	8379	28187
Cost of Secondary Fuel Oil for 2 months	380	380	587

88. The cost of oil for 2 months for the period 29.11.2012 to 31.03.2013 and 1.4.2013 to 24.8.2013 considered by the petitioner is ₹380.00 lakh. The petitioner has used LDO as well as HFO during the preceding three months from the respective date of COD of the units. Since, the main secondary oil will be HFO during normal operation of the units after COD, HFO has been considered as the main secondary fuel oil for allowing secondary fuel cost in the working capital.

89. Based on 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 has been worked out and allowed as under:



	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Cost of Coal for 2 months (annualized)	8379	8379	28188
Cost of Secondary Fuel Oil for 2 months (annualized)	306.90	306.90	587.23

### Maintenance Spares

90. The petitioner has claimed the following maintenance spares in the working capital:

(₹ in lakh)		
2012-13	2013-14	
29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
1624	1717	3341

91. The 2009 Tariff Regulations provide for Maintenance spares @ 20% of the operation and maintenance expenses as specified in Regulation 19. Accordingly, Maintenance spares @ 20% is worked out as and allowed (on annualized basis) as under:

(₹ in lakh)		
2012-13	2013-14	
29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
1536	1624	3248

### O&M expenses for 1 month

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

(₹ in lakh)		
2012-13	2013-14	
29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
<b>676.75</b>	<b>715.5</b>	<b>1392.17</b>

93. The petitioner has claimed additional O&M expense for the consumables (i.e chemicals, filters, membranes) used for the additional desalination plant which has not been allowed as above by this order. Hence, for the purpose of computation of interest on working loan, the O&M expenses for one month have been considered as per regulations and allowed (on annualized basis) as under:

(₹ in lakh)		
2012-13	2013-14	
29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
640.00	676.67	1353.34



## Receivables

94. Receivables equivalent to two months of capacity charge and energy charge for sale of electricity has been calculated on normative plant availability factor. Accordingly, receivables (pro rata) have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) as shown below:

(₹ in lakh)

	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Fixed Charges	3925.97	4713.47	12446.08
Variable Charges	2918.88	3474.18	17264.62

95. Necessary computations in support of calculation of interest on working capital are as under:

(₹ in lakh)

	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	1 Unit	1 Unit	2 Units
O&M expense	215.08	270.67	812.00
Receivables (Fixed Charges)	3925.97	4713.47	12446.08
Receivables (Variable Charges)	2918.88	3474.18	17264.62
Maintenance Spare	516.20	649.60	1948.80
Secondary Fuel oil cost	103.14	122.76	352.34
Fuel Stock	2815.74	3351.42	16912.29
<b>Total Working Capital</b>	<b>10495.01</b>	<b>12582.10</b>	<b>49736.10</b>
Rate of Interest	13.50%	13.20%	13.20%
<b>Interest on Working Capital</b>	<b>1416.83</b>	<b>1660.84</b>	<b>6565.17</b>

## Annual Fixed Charges

96. Accordingly, the annual fixed charges allowed from the COD of the units of the generating station till 31.3.2014 is summarized as under:

(₹ in lakh)

	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	1 Unit	1 Unit	2 Units
Return on Equity	4599.95	5552.97	14481.14
Interest on Loan	8922.31	10477.63	25412.39
Depreciation	5416.94	6604.84	16359.61
Interest on Working Capital	1416.83	1660.84	6565.17
O&M Expenses	2580.98	3248.00	9744.00
Secondary fuel oil cost	618.83	736.56	2114.02
<b>Total annual fixed charges</b>	<b>23555.85</b>	<b>28280.84</b>	<b>74676.33</b>



## Energy Charge Rate (ECR)

97. Clauses 5 and 6 of Regulation 21 of the 2009 Tariff Regulations provides for computation of Energy Charge for thermal generating stations as under:

"5. The Energy Charge shall cover the primary fuel cost and limestone consumption cost (where applicable), and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on ex-power plant basis, at the energy charge rate of the month (with fuel and limestone price adjustment). Total Energy charge payable to the generating company for a month shall be:

(Energy charge rate in ` / kWh) x {Scheduled energy (ex-bus) for the month in kWh.}

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

(a) for coal based and lignite fired stations

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

### **Where,**

AUX = Normative auxiliary energy consumption in percentage.

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

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

GHR = Gross station heat rate, in kCal per kWh.

LC = Normative limestone consumption in kg per kWh

LPL = Weighted average landed price of limestone in Rupees per kg.

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

SFC = Specific fuel oil consumption, in ml per kWh.

98. The petitioner has claimed Energy Charge Rate (ECR) of 100.54 paisa/kWh and 155.04 paisa/kWh respectively for Unit-I and Unit-I & II (combined) 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 for Unit-I (December, 2012 to February, 2013) and for Unit-II (December, 2013 to February, 2014) and operational norms based on the 2009 Tariff Regulations. Hence, ECR as computed in the table below is considered for the purpose of tariff.

Description	Unit	2012-13	2013-14	
		29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Capacity	MW	500	500	1000
Specific Fuel Oil Consumption	ml/kWh	1	1	1
Gross Station Heat Rate	kcal/kWh	2421	2421	2421
Auxiliary Energy Consumption	%	7.44	7.44	7.44
Weighted Average GCV of coal	kcal/kg	3880	3880	3908.34
Weighted Average price of coal	Rs/MT	2173.25	2173.25	3682.33
Weighted Average GCV of oil	kcal/lit	9950	9950	9950



Weighted Average price of oil	Rs/kl	49460.10	49460.10	47319.00
Rate of Energy charge ex-bus	Paise/kWh	<b>145.902</b>	<b>145.902</b>	<b>245.422</b>

99. 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**

100. The petitioner has prayed for the reimbursement of tariff filing fees towards filing of the petition for the period 2012-14 and the publication fees towards the publication of notice in newspapers as per Regulation 3(8) of the CERC (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004. In terms of Regulation 42 of the 2009 Tariff Regulations and based on our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application for the period considered in this order and the expenses incurred on publication of notices shall be directly recovered from the beneficiaries, on *pro rata* basis on production of documentary proof. The excess filing fees, if any, shall be adjusted against the tariff petition filing fees for the next tariff period.

101. The petitioner is already billing the respondents on provisional basis in accordance with the provisional tariff granted vide orders dated 24.12.2012 /20.11.2013. The provisional billing of tariff shall be adjusted in terms of proviso to Regulation 5(3) of the 2009 Tariff Regulations as amended on 21.6.2011.

102. Petition No. 198/GT/2013 is disposed of in terms of the above.

**Sd/-**  
**(A. S. Bakshi)**  
**Member**

**Sd/-**  
**(A. K. Singhal)**  
**Member**

**Sd/-**  
**(Gireesh B. Pradhan)**  
**Chairperson**



**Calculation of Weighted Average Rate of Interest on Loan**

	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	123	146	219
<b>Phase-I</b>			
Gross loan - Opening	3,05,582.60	3,05,582.60	3,05,582.60
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	3,05,582.60	3,05,582.60	3,05,582.60
Add: Drawal(s) during the Year			
Less: Repayment (s) of Loans during the year			
Net loan - Closing	3,05,582.60	3,05,582.60	3,05,582.60
Average Net Loan	3,05,582.60	3,05,582.60	3,05,582.60
Rate of Interest on Loan	10.93%	10.93%	10.93%
Interest on loan	11,255.40	13,360.07	20,040.11
<b>Phase-II Drawl-1</b>			
Gross loan - Opening	1,000.00	1,000.00	1,000.00
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	1,000.00	1,000.00	1,000.00
Add: Drawal(s) during the Year			
Less: Repayment (s) of Loans during the year			
Net loan - Closing	1,000.00	1,000.00	1,000.00
Average Net Loan	1,000.00	1,000.00	1,000.00
Rate of Interest on Loan	11.25%	11.25%	11.25%
Interest on loan	37.91	45.00	67.50
<b>Phase-II Drawl-2</b>			
Gross loan - Opening	150.00	150.00	150.00
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	150.00	150.00	150.00
Add: Drawal(s) during the Year			
Less: Repayment (s) of Loans during the year			
Net loan - Closing	150.00	150.00	150.00
Average Net Loan	150.00	150.00	150.00
Rate of Interest on Loan	11.50%	11.50%	11.50%
Interest on loan	5.81	6.90	10.35
<b>Phase-II Drawl-3</b>			
Gross loan - Opening	2,775.00	2,775.00	2,775.00
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	2,775.00	2,775.00	2,775.00
Add: Drawal(s) during the Year			
Less: Repayment (s) of Loans during the year			



Net loan - Closing	2,775.00	2,775.00	2,775.00
Average Net Loan	2,775.00	2,775.00	2,775.00
Rate of Interest on Loan	12.00%	12.00%	12.00%
Interest on loan	112.22	133.20	199.80
<b>Phase-II Drawl-4</b>			
Gross loan - Opening	1,400.00	21,900.00	36,400.00
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	1,400.00	21,900.00	36,400.00
Add: Drawal(s) during the Year	20,500.00	14,500.00	13,000.00
Less: Repayment (s) of Loans during the year			
Net loan - Closing	21,900.00	36,400.00	49,400.00
Average Net Loan	11,650.00	29,150.00	42,900.00
Rate of Interest on Loan	12.25%	12.25%	12.25%
Interest on loan	480.92	1,428.35	3,153.15
<b>Phase-II Drawl-5</b>			
Gross loan - Opening	96,350.00	1,10,650.00	1,11,650.00
Cumulative repayments of Loans upto previous year		-	-
Net loan - Opening	96,350.00	1,10,650.00	1,11,650.00
Add: Drawal(s) during the Year	14,300.00	1,000.00	11,000.00
Less: Repayment (s) of Loans during the year			
Net loan - Closing	1,10,650.00	1,11,650.00	1,22,650.00
Average Net Loan	1,03,500.00	1,11,150.00	1,17,150.00
Rate of Interest on Loan	12.50%	12.50%	12.50%
Interest on loan	4,359.76	5,557.50	8,786.25
<b>TOTAL LOANS</b>			
Gross loan - Opening	4,07,257.60	4,42,057.60	4,57,557.60
Cumulative repayments of Loans upto previous year	-	-	-
Net loan - Opening	4,07,257.60	4,42,057.60	4,57,557.60
Add: Drawal (s) during the Year	34,800.00	15,500.00	24,000.00
Less: Repayment (s) of Loans during the year	-	-	-
Net loan - Closing	4,42,057.60	4,57,557.60	4,81,557.60
Average Net Loan	4,24,657.60	4,49,807.60	4,69,557.60
Interest on loan	16,252.02	20,531.02	32,257.16
<b>Weighted average Rate of Interest on loan</b>	<b>11.36%</b>	<b>11.33%</b>	<b>11.37%</b>

