Before the Karnataka Electricity Regulatory Commission,

Bangalore

Order Dated 25th February, 2015.

Present:

1. **Sri M.R. Sreenivasa Murthy – Chairman**
2. **Sri H.D. Arun Kumar – Member**
3. **Sri D.B. Manival Raju – Member**

Petition No. OP 34/2014

In the matter of Approval of tariff in respect of 250 MW Raichur Thermal Power Station Unit-8 (RTPS Unit-8)

Karnataka Power Corporation Limited (KPCL)
Shakti Bhavan,
Racecourse Road,
Bangalore ...**Petitioner**

Vs

Bangalore Electricity Supply Company Limited, Bangalore

Mangalore Electricity Supply Company Limited, Mangalore

Chamundeswari Electricity Supply Corporation Limited, Mysore

Hubli Electricity Supply Company Limited, Hubli

Gulbarga Electricity Supply Company Limited, Gulbarga …**Respondents**

O R D E R

1. Preamble:

i. The Karnataka Power Corporation Ltd (herein after referred to as the 'Petitioner'), is a Government of Karnataka undertaking registered under the Companies Act, 1956, (on 20.07.1970 with fresh Certificate of Incorporation issued consequent to change of name on 01.10.1980). The Petitioner is supplying power to all the ESCOMs (herein after referred to as 'Respondents'), in the State of Karnataka.

ii. The Petitioner has filed an application on 30th December, 2013, before this Commission, for approval of the Power Purchase Agreement (PPA) and determination of tariff in respect of the 250 MW Raichur Thermal Power Station Unit-8 (RTPS Unit-8) for a period of 25 years from the Commercial Operation Date (COD) i.e. from 11-12-2010, under Section 61 read with Section 62 of the Electricity Act 2003.

2. Petitioner's submissions:

The Petitioner, in its application for approval of the PPA and for determination of tariff in respect of RTPS unit-8, has made the following submissions:

i. Government of Karnataka vide G.O. Number DE 84 PPC 2002, dated 1-02-2003 has allotted the Power Project to the Petitioner for construction and operation of 250 MW thermal power plant to be established at Raichur.

ii. Further, the following clearances for the project have been obtained from

a. Ministry of Culture and Tourism, Archaeological Survey of India
b. Health and Family welfare services
c. Airport Authority of India
d. Karnataka State Pollution Control Board
e. Department of Fisheries
f. Ministry of Environment & Forests

iii. Ministry of Coal, Government of India, has allocated coal linkage of 1.011 mtpa from MCL/Talcher/IB with the capacity of 210 MW. The Petitioner has requested the Ministry of Coal, GOI for allocation of coal linkage for the additional capacity of 40 MW (i.e. for the change in capacity from 210 MW to 250 MW)

iv. The Petitioner had executed the Contract Agreement with M/S BHEL for the BTG package on 28-03-07 with 30 month implementation period, with zero date commencing on 30-03-07.

v. Further, 42 major contract agreements, were executed with various agencies/contractors for undertaking the balance of plant (BOP) packages for the project.

vi. Central Power Research Institute, Bangalore, submitted a report during July 2010, on the "witnessing of initial capacity test", which leads to the conclusion that the capacity of the unit is 250 MW. This test was also witnessed by KPTCL representatives.

vii. Further operations for stabilisation were conducted by BHEL continuously from Oct 12 to Oct 22, 2010 as per the protocol certificate issued.

viii. The unit was commissioned on 11-12-2010 after successfully completing the trial operation of 72 hours at 100% TGMCR. A copy of the protocol dated 15-12-2010 confirming the successful completion of the trial operation is also provided.

3. Notification to the Stake holders:

After the application was filed by the Petitioner, the Commission invited comments from the beneficiaries (ESCOMs) and the Power Company of Karnataka Limited (PCKL) which coordinates the Power Purchase matters on behalf of ESCOMs. PCKL has in turn sought certain clarifications from the Petitioner on the tariff application and the Petitioner has furnished the details during December 2014.

4. Public hearing process:

i. The Petitioner, as per the directions of the Commission, has published Notices of Public Hearing to be held on 23rd January, 2015, in the following English and Kannada newspapers:

Deccan Herald dated 17.01.2015,
Times of India dated 17.01.2015,
Samyuktha Karnataka dated 17.01.2015,
Vijay Karnataka, dated 17.01.2015,
Vijayavani, dated 17.01.2015

ii. The Commission held a public hearing on 23rd January, 2015 and the gist of the submissions made by the Petitioner and the Respondents is as under:

a. The Petitioner has made submissions on the capital cost, loans, interest, IDC, liquidated damages, operational norms, infirm power etc. It was submitted by the Petitioner that, the main plant was executed by BHEL and the balance of plant works were actually executed by the Petitioner itself.
The Petitioner has clarified that, the capital cost is arrived at after considering the deductions towards infirm power. Liquidated damages are in the process of finalisation and will be quantified within the next couple of months by an internal Committee. Initial estimates show that this could be in the range of Rs 50 cores.

b. The Petitioner has informed that, if depreciation is calculated as per Regulations at 5.28%, they would be unable to repay the Loans and requested the Commission to consider depreciation over a period of 10 years so as to enable it to repay the loans. On being enquired about provision for Advance against Depreciation, the Petitioner has informed that, the same is not provided for in the Regulations. The Petitioner requested the Commission to allow depreciation at appropriate rates to enable it to repay its loans within 10 years.

c. The Petitioner has brought to the notice of the Commission about swapping of costlier term loans and the effective interest rates of these loans. The Commission observed that, the benefits obtained on account of swapping shall be shared with the beneficiaries and such sharing will be reflected in the tariff order.

d. Further, the Petitioner has made submissions on SHR, GCV of fuel, average landed cost of coal, sharing of the benefit on reduction of interest etc., and outlined the justification for the tariff proposed for the initial few years as well as the terminal year.

e. Objections received from the Stakeholders and PCKL are as summarized below:

(i) PCKL & BESCOM have submitted that the PAF should be fixed at the normative level. It was also pointed out that lower fixed charges should be recovered if the PAF is lower than the normative level.

(ii) They also raised issues on the Auxiliary consumption, allowability of costs due to time over run, reasons for delay, infirm power calculations as per CERC announced rate for UI in southern region, station heat rate, secondary fuel oil cost, depreciation, excess claim of O&M expenses and pre commissioning expenses documentation.

(iii) GESCOM has made oral submission that, the PLF of the plant is only 36% and that the tariff is being computed at normative parameters as per the Regulations due to which beneficiaries are incurring high cost.

(iv) Further it was contended that, ESCOMs should not be made to pay interest arising on account of the tariff difference (i.e. provisional tariff vs actual tariff) and that the tariff should be determined for a block period of 5 years.

The Petitioner agreed to review all the issues once again in the light of the objections and submit detailed reply/clarifications/workings to the Commission within 27th January 2015 positively.

5. Applicable Regulations:

The Commission has issued KERC (Terms and Conditions of Generation Tariff) Regulations 2009 (Reguations-2009) under the provisions of the Electricity Act, 2003. The generating stations which achieve CoD during the tariff period from 01.4.2009 to 31.03.2014 are governed by these Regulations. The RTPS Unit-8 has achieved CoD on 11.12.2010 and hence this application is being considered in terms of the said Regulations for determination of tariff. As regards the approval of the Power Purchase Agreement (PPA), the same will be considered separately after the determination of the tariff by the Commission.

After the review of the application and after hearing all the parties, the Commission proceeds to give its decisions on the following issues:

6. Date of effect of this Order:

The Petitioner has requested for determination of tariff for a period of 25 years from the Commercial Operation Date (CoD) i.e., from 11-12-2010. The request being in order, the tariff determined in this Order would be effective from 11.12.2010 for twenty five years.

7. Tariff determination:

As per Clause 14 of the Regulations-2009, the following are the various components to be considered for determination of tariff:

(i) Capacity Charges / Fixed charges

(a) Return on Equity
(b) Interest on Loan capital
(c) Depreciation

(d) Interest on Working capital

(e) O&M expenses

(f) Cost of Secondary fuel oil

(ii) Energy Charges / Variable charge

On the operational parameters, the submissions made by the Petitioner, the norms as per Regulations and the Commission's decisions thereon, are discussed in the relevant paras.

Prior to detailing the individual components of tariff, the overall capital cost of the project and the means of financing the same by loan capital ('Debt') and Equity are discussed below.

A. Capital cost:

A summary of the capital cost of the project as filed by the Petitioner is shown below;

Table: 1

Summary of capital cost as per filings

Rs in Crores

SL No	Particulars	Amount
1	**Gross block as on 31-03-2011**	1006.52
2	**Additional capitalisation in FY 12**	38.05
3	**Additional capitalisation in FY 13**	6.92
4	**Gross block as on the cut-off date i.e. 31-03-2013**	1051.49
5	**Expenditure incurred after the cut-off date**	50.44
	Total capital expenditure	**1101.93**

Table: 2

Asset wise capital cost, upto CoD as per filings

Sl No.	Particulars	Actual Capital expenditure
		Rs Crores
1.0	**Cost of Land & Site Development**	
	Total Land & site Development	
2.0	**Plant & Equipment**	
2.1	**Steam generator Island**	355.83

2.2	**Turbine generator Island**	
2.3	**BOP Mechanical**	
2.3.7	Ash handling system	25.87
2.3.8	Coal Handling Plant	19.91
2.3.11	Air Compressor System	1.14
2.3.12	Air Condition & Ventilation System	3.42
2.3.13	Fire fighting System	3.45
2.3.14	HP/LP piping	6.56
2.3.15	Bowl Mills & Auxiliaries	23.79
	Total BOP Mechanical	439.97
2.4	**BOP Electrical**	
2.4.1	Switch yard Package	5.00
2.4.2	Transformers package	34.71
2.4.3	Switch Gear Package	9.26
2.4.4	Cables,Cable facilities & grounding	21.85
2.4.5	Lighting	3.30
2.4.6	Emergency D.G.Set	0.48
2.4.7	Elevators	0.25
2.4.8	EOT & HOT Cranes	0.43
2.4.9	Batteries, Battery chargers	1.74
2.4.10	Bus ducts	3.01
2.4.11	Butterfly valves & Valves HPBP	12.44
2.4.12	Generators & Auxiliaries	32.31
2.4.13	Hydrogen cylinders	0.09
2.4.14	Misc Pumps, Sump pumps and Pumps for Turbine	19.07
2.4.15	Plant type Heat exchanger	0.93
2.4.16	HT Motors (Boiler & Turbine)	8.91
2.4.17	Others	26.82
	Total BOP Electrical	180.59
2.5	**C & I Package**	29.53
	Total Plant & Equipment excluding taxes & duties	650.09
2.6	**Taxes & Duties**	
2.6.1	Custom Duty	Included in above
2.6.2	Other taxes & duties	
	Total Taxes & Duties	
	Total Plant & Equipment	650.09
3.0	**Initial Spares**	
4.0	**Civil Works**	
4.1	Main Plant/Adm.Building	92.56
4.2	CW System	24.88
4.3	Cooling Towers	30.68
4.4	DM water Plant	
4.5	Clarification Plant	23.63
4.6	Chlorination Plant	1.06
4.15	Road & Drainage	1.13
4.16	RCC Chimney works	24.61
	Total Civil Works	198.57

5.0	**Construction & Pre-Commissioning expenses**	
5.1	Erection, Testing & commissioning	Included in above
5.2	Site Supervision	
5.3	Operators Training	
5.4	Construction Insurance	
5.5	Tools & Plant	
5.6	Start Up Fuel	12.62
	Total Construction & Pre-commissioning expenses	12.62
6.0	**Overheads**	
6.1	Establishment	37.13
	Total Overheads	37.13
7.0	**Capital Cost excluding IDC & FC**	
8.0	**IDC, FC,FERV & Hedging Cost**	
8.1	Interest during Construction (IDC)	146.16
	Total of IDC,FC,FERV & Hedging cost	146.16
9.0	**Total Capital Cost**	**1044.57**

As submitted by the Petitioner, the completion cost as on CoD i.e. 11-12-2010, is Rs1044.57 Crores. However, considering the balance works executed during the financial years FY12 and FY 13, the completed cost works out to Rs. 1101.93 crores as against the estimated project cost of Rs 1046.00 Crs. As per the norms stipulated in KERC 2009 Regulations, the cut-off date for the project is 31-03-2013.

Based on the estimated cost of the project of Rs 1046 Crs, D:E ratio considered for the project is 80:20. The debt portion of the capital cost is Rs. 837 crores and the balance is considered as Equity. Financial closure of the project (for the loan component of Rs 837 crores) was achieved on 20-07-2009 by the execution of loan documents with 8 participating lenders.

The BTG package was awarded to M/S BHEL on MOU basis after negotiations and comparing the prices (benchmark costs) of other similar sizedprojects implemented during the same period. This was discussed and finalised in the 183rd meeting of the technical committee held on 13-07-2006. However, on further negotiations, with M/S BHEL, the lump sum price for the BTG package was reduced to Rs. 505 crores from the agreed priced of Rs. 510 crores.At this price, cost per MW is Rs 2.02 crores which compares favourably with the work executed by BHEL for the Chabra TPS (210 MW) at Rs 2.27 crores per MW.

Other packages of BOP (balance of Plant) were awarded duly inviting tenders as per the provisions of the KTPP Act.

The Petitioner has submitted that the common infrastructure cost of the station is not included in the capital cost of RPTS unit-8.

The Petitionerhas provided independent Auditor's report on certifying the above capital cost to the extent of Rs 1044.57 crores. The Auditor's scope of work covered review of the accounting policy of the company relating to capitalisation, compliance with accounting standards, verification of bills and other claims with respect to BTG contract, allocation of CWIP to various categories of assets, verification of penalty and liquidated damages with reference to contract and certification of capitalisation with a detailed report.

The Auditors had arrived at the total capital cost of the project as Rs 1044.57 crores as on COD i.e. 11.12.2010 duly considering the works cost, borrowing cost, establishment and general expenses, pre commissioning cost (net of revenue from sale of infirm power),other indirect expenses, capital receipts including liquidated damages (to the extentfinalised and levied on contractors excluding BTG contractor) and receipts during construction period. It is also stated in the report that certain works relating to the project were yet to be completed as on CoD. The value of such works which were paid/provided in the accounts and in progress as on that date, as certified by the management,works out toRs, 38.05 Crores.

Time over run:

The scheduled date of commercial operation was 30 months from the "Zero" date i.e.30-03-2007. However, the project was declared for commercial operation on 11-12-2010, with a time overrun of ~15 months. In the Auditor's report, it is mentioned that, the Liquidated damages of Rs. 74.87 Crores, are the maximum leviable under the contract, on the BTG contractor as per the agreement for non-completion of the work within the agreed period 30 months. It is informed by the Petitioner, that they are in the process of ascertaining whether the reasons for delay in handing over the BTG package are entirely attributable to the contractor or not, before finalising the quantum of liquidated damages. As per the Petitioner, the current estimate is in the range of ~Rs 50 crores.

Infirm power:

The trial run income up to the commercial operation date has been worked out based on the UI rates obtained from SRPC and an amount of Rs 35.91 Crores has been reduced from the Capital cost as indicated in the following table:

Table: 3

Infirm Power and its costs as per filings

Month	Gross Generation KWh	Net Generation Kwh	Monthly Average UI rate (Rs/Kwh)	Amount
Jun'10	1,50,98,000	1,35,07,200	3.565	4,81,53,168
Jul'10	24,96,000	22,26,200	3.410	75,91,342
Aug'10	0	0	0	0
Sep'10	1,65,58,000	1,48,10,200	2.79	4,13,20,458
Oct'10	6,39,98,000	5,76,13,700	2.945	16,96,72,347
Nov'10	30,92,000	27,66,500	2.170	60,03,305
Dec'10(Upto 10.12.10)	4,10,94,000	3,71,48,900	2.325	8,63,71,193
	14,23,36,000	**12,80,72,700**		**35,91,11,813**

Additional capitalisation:

It is submitted by the Petitioner, that the additional capital expenditure incurred on the project in FY 12 is Rs.57.36 crores including Rs 50.10 crores towards initial spares and balance for other assets/ supporting infrastructure.

Expenses incurred after COD

There is no expenditure after the CoD date. The purchase order for the initial spares was issuedon January 30, 2012, which is well within the cut-off date.

Interest During Construction (IDC):

As per the information provided by the Petitioner (annexure 9 of the filings which allocates all the costs asset-wise),capital cost includes IDC of Rs. 146.16 crores.

Table: 4

Year wise interest during construction

Year	Rs
2007-08	1,07,87,671
2008-09	28,31,43,489
2009-10	62,37,77,744
2010-11	54,39,03,903
Total	**1,46,16,12,808**

The company has borrowed short term loans (at rates ranging from ~8% to 9.5%) to meet the fund requirements while the unit was under construction up to the date of financial closure. The Long term loan drawals were also deferred, wherever possible, and substituted with lower interest bearing short term loans so that the interest burden is minimised. The interest rates for short term loans were favourable as compared to the Long term loans.The total short term interest out of capitalised IDC works out to Rs 44.29crores.

Undischarged liabilities as on COD

As per the filing, there are no undischarged liabilities.

Commission's observations and analysis

On examination of the Auditor's report, and the information provided by the Petitioner, the Commission has reworked the capital expenditure of the project based on the following observations:

- The initial spares value included in the capital cost is higher than the norms as provided in the Regulations. Hence, the same is restricted to Rs 24.36 crores, being 2.5% of the revised project cost.
- The revenue from infirm power has been reworked based on the data collected from SLDC and the appropriate UI rate at that relevant time block. Hence the revenue is calculated at Rs 38.29 crores instead of Rs 35.91 crores, as filed by the Petitioner. Thus, the capital cost would stand reduced by Rs 2.38 crores.

Table: 5

Revised working of revenue from Infirm power

Sl No	Month	Energy in MU	Revenue in Rs Cr
1	Jun-10	13.20	5.19
2	Jul-10	2.53	0.97
3	Aug-10	-	-
4	Sep-10	16.45	4.65
5	Oct-10	63.16	20.12
6	Nov-10	3.06	0.99
7	Upto 10 Dec '10	40.58	6.38
	Total	**138.97**	**38.29**

- The Commission accepts the additional capitalisation, subject to the Petitioner submitting an Auditor's certification (to be provided within 6 months from the date of this order), to the extent of Rs 7.25 crores (Rs 6.92 + 0.33 crores) post CoD, before cut-off date.

On time over run, the Commission has considered the penalty to be levied & to be recovered by the Petitioner, from the BTG contractor. This has been considered by the Commission, at the value as mentioned in the Auditor's report at Rs 74.87 crores. The Petitioner is hereby directed to submit proof of the actual levy and recovery from BTG contractor and present it in the true-up application.

The liquidated damages,set off against the capital expenditure provides relief to the beneficiaries on such over run. The Commission notes that the company has already recovered Rs 0.91 lakhs from other contractors as liquidated damages and has set off the same against the total capital cost.

Further, the Petitioner has also considered the lower interest to be capitalised, as repayments of loan started earlier than the completion of the project. As per Regulations, loan repayments prior to CoD are not to be considered. This would have resulted in higher normative interest capitalisation and hence higher capital cost. Since this benefit is passed on to the beneficiaries, the Commission is of the opinion that no further penalty on time overrun need be levied on the Petitioner.

Capital Cost Benchmark:

Currently there is no benchmark for 250 MW series given by CERC. Therefore, he Commission has considered the validated cost of capital and the same works out to Rs 3.99 Crores per MW and the same appears to be reasonable.

Based on the above, the Commission has revised the Capital cost from Rs 1101.93 Crores to Rs 998.59 Crores and approves the same for the purpose of determination of Tariff.

B. Loan Capital (Debt);

The details of the loans borrowed as furnished by the Petitioner are as under:

Loans:

Based on the financial closure achieved on 20.07.2009, a consortium of 8 banks sanctioned a rupee term loan of Rs 837 Crores. Till the CoD, Rs. 837 Crores of loans have been drawn from various banks. The details of the loans drawn are as follows:

Table: 6
Details of Borrowed Fund

Rs. in Crores

Bank/date of drawal	Canara Bank	Andhra Bank	Corporation Bank	Dena Bank	Indian Bank	Punjab & Sind Bank	State Bank of Mysore	Syndicate Bank	Total
17-Nov-08	100								100
15-Dec-08	50								50
5-Feb-09	15								15
30-Jul-09		5	6	6	6	4	6	7	40
8-Aug-09		4	6	5	5	3	5	7	35
17-Aug-09		7	7	6	7	4	6	8	45
28-Aug-09		6	7	6	7	4	6	9	45
15-Sep-09		6	8	7	8	5	7	9	50
25-Sep-09	20	7	9	8	8	5	8	10	75
16-Oct-09		5	6	6	6	4	6	7	40
30-Oct-09	15	5	6	5	6	3	5	7	52
19-Nov-09	5	3	3	3	3	2	3	4	26
24-Dec-09	9	2	3	2	2	2	2	3	25
30-Dec-09	29	7	8	7	8	4	7	10	80
22-Jan-10	2	0	1	1	1	0	1	1	7
23-Feb-10	11	3	3	3	3	2	3	4	32
29-Mar-10	1	1	1	1	1	1	1	1	8
30-Apr-10	19	4	5	4	5	3	4	6	50
20-May-10	2	1	1	1	1	1	1	1	9
2-Sep-10	4								4
23-Sep-10	18	4	5	4	5	3	4	6	49
Total	**300**	**70**	**85**	**75**	**82**	**50**	**75**	**100**	**837**

The interest rates at the time of sanction of Long term loanswere 10.25% (based on the PLR of the banks). These rates increased to 11.25% to 13% by CoD.

Loan repayment:

The original terms and conditions of loans were a) moratorium period of 6 months and b) loans to be repaid in 40 quarterly instalments commencing from 15.04.2010. Accordingly, the Petitionerhas repaid 3 instalments prior to CoD and the closing balance of long term loans as of March 11 was Rs 757.17 crores.

Weighted average rate of Interest:

The weighted average rate of interest for the first year of the full operations viz. FY 12 would be ~ 12.79% pre re-negotiations. As per the details provided by the Petitioner, post negotiations, the weighted average rate of interest on the loan capital works out to 10.18% in FY 15.

Reduction of interest rates:

The Petitionerhas taken steps to re-negotiate the interest rate of existing loans. A reduction of 2.05% to 3.25% in interest rates has been achieved for all the loans, except that of Andhra bank, wherein the reduction is to the extent of 0.5%. This net savings in the interest outgo will be shared with the beneficiaries in the ratio of 2:1.

Commission's observations and analysis

The Auditor's report states that Rs 837 crores was the loan obtained for financing for the capital expenditure as on CoD. On reviewing the statements filed by the Petitioner, it is found that Rs 837 crores were the loans drawn till CoD. The Commission accepts the actual loan drawn statement filed by the Petitioner as this forms the basis for the loan repayments and interest calculations provided elsewhere in the order.

Thus, the total loan of Rs 837 Crores for the project is allowed for determination of Tariff of 250 MW RTPS unit-8.

C. Debt Equity ratio

The Regulations- 2009 provide for a Debt Equity ratio of 70:30. The Equity contribution shall be at the actual amount or 30% of the capital cost whichever is lower. If it exceeds 30%, the excess over and above 30 % shall be treated as loan for which interest is to be allowed.

The Commission had sought information from the Petitioner to demonstrate that the equity contribution can be traced logically in their company's overall balance sheet. This was to ensure that the equity deployed is not a mere inference from overall capital cost and debt drawn. The equity should also be demonstrated as accrued in the company's consolidated balance sheet.

The following data is provided by the company to demonstrate accrual of equity. The capital expenditure during the periods from FY 08 to FY 13 covers BTPS-2 and RTPS -8 amongst others.

Table: 7

Extract of Balance sheet of the Petitioner

Rs in Crores

Year	Capex	Loan	Equity released by GOK	Change in Reserves and Surplus	Total	Equity investment made by the Petitioner
1	2	3	4	5	6=(4+5)	7=(2-3)
2007-08	716.84	314.00	0.00	188.61	188.61	402.84
2008-09	1238.05	948.00	500.00	259.90	759.90	290.05
2009-10	1001.56	738.00	500.00	407.16	907.16	263.56
2010-11	1453.00	393.00	500.00	484.31	984.31	1060.30
2011-12	1106.37	623.89	625.00	88.20	713.20	482.48
2012-13	2363.17	1741.27	400.00	-34.24	365.76	621.90
Total	**7,880.99**	**4,761.16**	**2,529.00**	**1,398.94**	**3,918.94**	**3,121.13**

As per the Auditor's report, the equity for the project was Rs 207.57 crores (Capital cost of Rs. 1044.57 Crores minus Loan capital of Rs 837 Crores). Further, there is an additional capital expenditure (including spares) amounting to Rs 31.28 (Rs 6.92 + 24.36 crores) Crores between the COD and the cut-off date. Further, the incremental revenue from sale of infirm power that needs to be reduced from the capital cost is Rs 2.38 crores. The liquidated damages, as considered by the Commission are Rs 74.87 crores.

Thus, total capital cost for the project is Rs 998.59 (Rs 1044.57+31.28-2.38-74.87 crores) Crores. The Debt component of this capital cost is Rs 837 Crores and Equity component is Rs 161.59 Crores.

Based on the above, the Commission considered the equity component at Rs 161.59 crores i.e.Capital cost of Rs. 998.59 Crores minus Loan capital of Rs 837 Crores)

Table:8

Debt and Equity allowed by the Commission

		Rs in Crores	%
1	**Debt**	837.00	83.82%
2	**Equity**	161.59	16.18%

This level of equity works out to 16.18% of the capital cost of the project, which is less than the 30% allowable under the regulations.

Thus, the Commission allows a debt equity ratio of 83.82:16.18 in approving the tariff of 250 MW RTPS unit-8.

The following paragraphs discuss the components of tariff under each individual head and the relevant details are drawn from the capital cost and sources of funding.

General

There are only 110 days of commercial operation in FY 11 in the first year of operations. Hence, the Commission allows the annual expenditure in the first year viz. FY 11 for only 110 days. Similarly, in the last year of the life of the Plant, i.e. in the final tariff period viz. FY 36, the expenses are restricted to 255 days.

Capacity Charges/Fixed Charges:

(i) Return on Equity:

The Petitioner has claimed RoE at 15.5% of the Equity as follows:

Table: 9
Return on Equity claimed by the Petitioner

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Return on Equity	13.97	40.36	41.96	51.78	51.78	51.78	51.78	51.78	51.78

Commission's Analysis & Decisions:

Regulation 16, under sub-clauses (3) and (4) of Regulations- 2009, provides for computation of Return on Equity as under;

"(3) The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate for the year 2008-09 applicable to the concerned generating company.

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

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

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

Where

t is the applicable tax rate in accordance with clause (3) of this regulation".

Accordingly the return on equity is determined by the Commission as discussed below:

The Petitioner has proposed the following in the filing: Currently, the unit enjoys tax holiday up to FY20. However, the Petitioner is required to pay a minimum MAT @ 19.9305%, during such exemption period.

From FY21 onwards, the Petitioner has considered a tax rate of 33.99%. Hence the rate of return (grossed up), to be considered for these two periods, as per the Petitioner is:

1. 15.5%/(1-.199305) = ~19.358%
2. 15.5%(1-.3399) = ~23.481%

As the Petitioner is eligible for tax holiday and is required to pay the Minimum Alternative Tax (MAT), for the first ten years from CoD, Minimum Alternative Tax (MAT) @ 20.0775% is allowed for the period from FY 11 to FY 20. In the block of the next ten years from FY 21 to FY 30, total MAT paid is assumed to be set off, to the extent permissible under the relevant tax laws. This would reduce the tax rate from normal rate of taxation i.e. 33.99%. The set off from normal tax rate is only up to the level of MAT, as the Company tax rate cannot fall below the MAT rate. These rates are in conformity with the Regulations-2009. From FY 31 onwards , the normal tax rate would be @ 33.99%. With these rates (for different periods) and the equity as discussed in the preceeding paragraphs under the heading 'Debt Equity Ratio', the year wise Return on Equity is worked out and allowed as under:

Table: 10
Return on Equity allowed by the Commission

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Return on Equity	9.43	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28

The Petitioner is directed to provide the actual tax credit availed during the post-tax holiday period. If there be any correction, the same is required to be filed by the Petitioner for truing up in the appropriate tariff period.

Note:

a) The commission has discussed the individual components of the capital cost and the borrowed funds in the paragraphs under the head "A. Capital Cost", "B. Loan Capital (Debt)" and "C. Debt Equity Ratio" respectively. The allowed total capital cost is Rs 998.59 Crores and the loan capital is Rs 837 Crores.

b) The Petitioner's Auditor's Report data, demonstration of equity were discussed in the paragraphs under the head Debt Equity ratio.

(ii) Interest on Loan Capital

The interest on loan is based on the following parameters viz. opening balance of loan as on CoD and repayment during the tariff periods from FY 11.

The repayment schedule of loans, as per filings, shows values higher than the depreciation allowable in respective years.

The Petitioner has filed the actual loan repayment schedule based on the individual bank's terms and conditions – pre and post negotiations. Thus the opening balance, drawls, repayments, closing balance and interest payable for each bank loan has been presented. These were aggregated and the weighted average rate of interest has been worked out.

The interest on loans as per the Petitioner is as follows;-

Table: 11

Interest on Loan capital claimed by the Petitioner

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Interest on Loan (Rs -Crs)	27.04	91.45	80.72	55.67	47.31	38.71	30.11	21.50	12.90

Commission's observations and analysis:

Regulation 17 of Regulations, 2009, provides that,

"... 17. ***Interest on loan capital.***

(1) The loans arrived at in the manner indicated in Clause 13 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, 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 does not have actual loan, then the weighted average rate of interest of the generating company 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 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 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 KERC (General and Conduct of Proceedings) Regulations, 2000, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiary shall not withhold any payment on account of the interest claimed by the generating company during the pendency of any dispute arising out of re-financing of loan…."

Thus, the following points have been considered in allowing the expenditure under this head:

(1) Repayment of loans prior to CoD not to be considered. Hence, the loans are stated at the gross opening level of total drawal as on CoD viz. Rs 837 crores.

(2) The weighted average rate of interest is to be based on the loan capital outstanding at the beginning of each year

(3) Loan repayments in any year are to be restricted to the depreciation allowed in that year.

Since, the Petitioner has negotiated interest rates for a portion of the loans in FY 14, the revised loan repayment schedule and interest outflow were sought from the Petitioner. The savings on the interest are to be proportionately shared in the ratio of 2:1 between the beneficiary and the Petitioner, as per the above provisions of the Regulations. Details of the sharing of the benefits allowed between the Petitioner and the Beneficiaries are as under:

Table: 12
Sharing of the benefits between the Petitioner and Beneficiaries

Rs in Crores

Particulars	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20
Interest pre-refinancing	83.59	91.45	80.72	70.19	59.39	48.59	37.79	27.00	16.20	5.40
Interest post refinancing	83.59	91.45	80.72	55.67	47.10	38.54	29.97	21.41	12.85	4.28
Savings	-	-	-	14.52	12.29	10.06	7.82	5.59	3.35	1.12
Share of beneficiaries 67%	-	-	-	9.68	8.19	6.70	5.21	3.72	2.23	0.74
Share of Petitioner33%	-	-	-	3.23	2.73	2.23	1.74	1.24	0.74	0.25
Net interest to be considered	83.59	91.45	80.72	58.89	49.83	40.77	31.71	22.65	13.59	4.53

The loan repayment schedule as filed by the Petitioner for the period from FY 11 to FY 20 is shown in the following table.

Table 13
Loan repayment schedule as per the filings of the Petitioner and adjusted for re-negotiation of interest

Particulars	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Opening balance	725.00	757.17	673.04	588.91	504.78	420.65	336.52	252.39	168.26
Additions	112.00	-	-	-	-	-	-	-	-
Repayments	79.83	84.13	84.13	84.13	84.13	84.13	84.13	84.13	84.13
Closing balance	757.17	673.04	588.91	504.78	420.65	336.52	252.39	168.26	84.13
Average Loan balance	741.09	715.11	630.98	546.85	462.72	378.59	294.46	210.33	126.20
Interest	27.04	91.45	80.72	58.89	49.83	40.77	31.71	22.65	13.59
Interest Rate	11.28%	12.79%	12.79%	10.77%	10.77%	10.77%	10.77%	10.77%	10.77%

The loan schedule worked out as per KERC Regulations- 2009 is shown in the following table 14.

In this table, the loan opening balance as on CoD is taken at the normative level, repayment restricted to depreciation and the weighted interest taken for interest calculation is for the actual loan portfolio at the beginning of the year.

Table 14
Loan repayment schedule as considered by the Commission

Rs. in Crores

Particulars	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Opening balance	837	837.00	783.50	730.00	676.14	622.27	568.41	514.96	462.44
Additions				-	-	-	-	-	-
Repayments		53.50	53.50	53.86	53.86	53.86	53.46	52.51	52.51
Closing balance	837	783.50	730.00	676.14	622.27	568.41	514.96	462.44	409.93
Average Loan balance	837.00	810.25	756.75	703.07	649.21	595.34	541.68	488.70	436.19
Interest	28.45	103.61	96.81	75.72	69.92	64.12	58.34	52.63	46.98
Interest Rate	11.28%	12.79%	12.79%	10.77%	10.77%	10.77%	10.77%	10.77%	10.77%

The difference in opening loan outstanding between the two tables (between filing and Commission's workings) is due to the actual repayment of the loan prior to CoD.

As per regulations, depreciation of 90% of the value of various fixed assets is to be recovered in 25 years. The depreciation required to repay the actual loan outstanding of Rs 757.17 Crores would require ~14.5 years of depreciation allowance and for Rs 837 Crores would be ~15.5 years.

Thus, interest calculations are impacted by the manner in which the loan repayment schedule is structured. The impact between the actual repayment and the normative repayment as per the Regulations is presented in the table below:

Table: 15:
Details of Total outflows

Without time value of money		**Rs crores**
	As per the Petitioner	**As allowed by the Commission**
Loan Repayment	673.04	782.08
Interest	302.70	629.42
Depreciation	830.05	830.05
With time value of money - Discount @ 11%		
Loan Repayment	432.94	381.55
Interest	189.79	386.54
Depreciation	391.49	391.49

Note: The Petitioner has not considered the loan repayment of Rs80crores repaid prior to CoD. This has impact on the interest as well.

Therefore, considering the Regulations in force and the overall time value of money, the Commission allows interest on loans as per the above computation.

(iii) Depreciation

The depreciation has been worked out by the Petitioner based on the rates specified in the Electricity Supply Act, 1948 and wherever rates are not specified, rates as per the Companies Act, 1956 are considered. Depreciation has been worked out up-to a maximum of 90% of the Capital cost. This was changed to reflect the rates as specified in the Regulations post public hearing. Depreciation worked is shown in the following table;

Table: 16
Depreciation as per the Petitioner

Year	**FY 11**	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**
Depreciation Rs. in Crores	26.87	82.66	82.99	60.28	60.28	60.28	60.28	60.28	60.28

Commission's observations and analysis

The Commission has reviewed the Depreciation rates of various fixed assets, head-wise, grouped by the Petitioner and found that, the amount and the rate charged for the coal handling plant (gross book value amounting Rs 23.3 Crores) @ 9.5% is not consistent with the depreciation schedule annexed to KERC generation Tariff Regulations, 2009. **Considering the components of this block of asset, the Commission corrects this rate to 6.39% (as 26% of the gross block constitute self-propelled vehicles which is to be depreciated at 9.5% and for the assets not covered in the depreciation schedule annexed to Regulations, 2009, the depreciation considered is at the rate of 5.28 %. Thus, the weighted average rate works out to 6.39%).**

The depreciation for the first 12 years is allowed based on straight line method as per the Regulations, 2009. For the subsequent period of the useful life of assets, the balance depreciation is distributed over the remaining life of the assets.

For the first two tariff periods, the Commission allows the depreciation as indicated below:

Table: 17
Depreciation allowed by the Commission

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Depreciation Rs crores	15.13	53.50	53.50	53.86	53.86	53.86	53.46	52.51	52.51

(iv) Interest on working capital

The component of working capital, as per KERC regulations cover;

a. Cost of coal for two months

b. Cost of secondary fuel oil for two months

c. Maintenance spares at 20% of O&M

d. Receivables at two months considering the normative plant availability factor with tariff considering fixed cost and variable charges per kWh; and

e. O&M expenses for one month

The rate of interest for arriving at the working capital requirement shall be the short term prime lending rate of State Bank of India as on 1st April of the year. In this order, it has been assumed at 11.75%. This shall be trued up for actuals at the end of each tariff period.

The Petitioner has followed the norms in projecting the working capital, and year wise working capital proposed by the Petitioner is shown below:

Table: 18

Year wise working capital proposed by the Petitioner

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Cost of Coal	54.40	67.19	79.59	81.58	83.62	85.71	87.85	90.04	92.30
Cost of Main Secondary fuel oil	1.01	1.31	1.51	1.55	1.59	1.63	1.67	1.71	1.75
Fuel Cost	-	-	-	-	-	-	-	-	-
Liquid fuel stock	-	-	-	-	-	-	-	-	-
O & M Expenses	1.15	4.24	4.48	4.74	5.01	5.29	5.60	5.92	6.26
Maintenance Spares	2.93	10.17	10.76	11.37	12.02	12.71	13.43	14.20	15.02
Receivables	96.49	112.93	129.99	132.47	131.63	130.78	129.97	129.21	128.49
Total working Capital	155.98	195.83	226.33	231.70	233.86	236.12	238.52	241.08	243.80
Rate of Interest	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
Interest on Working Capital	5.57	23.01	26.59	27.23	27.48	27.74	28.03	28.33	28.65

Commission's observations and analysis

The Petitioner has claimed fuel component in working capital based on the actual landed price of the fuel. The fuel component in working capital as claimed by the Petitioner is as indicated in table-18.

The Petitioner has filed for energy charges as per the formula stipulated in the Regulations.

It is submitted by the petitioner that the Ministry of Coal, Government of India, has allocated coal linkage of 1.011 mtpa from MCL/Talcher/IB with the capacity of 210 MW. The Petitioner has requested the Ministry of Coal, GOI for allocation of coal linkage for the additional capacity of 40 MW (i.e. for the change in capacity from 210 MW from 250 MW)

Regarding the fuel component, Clause (7) and (8) of KERC Generation Tariff Regulation 2009, provides for computation of Energy charges for Thermal Generating stations as under;

"(7) The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal dispatched by the coal supply company during the month as given below:

Pithead generating stations	*:*	*0.2%*
Non-pithead generating stations	*:*	*0.8%*

(8) The landed price of limestone shall be taken based on procurement price of limestone for the generating station, inclusive of royalty, taxes and duties as applicable and transportation cost for the month."

The Commission has worked out the interest on working capital based on the operating norms specified in the KERC Generation Tariff Regulations, 2009.

Thus, the Commission allows the fuel component and the interest on working capital as shown below:

Table: 19
Year wise working capital allowed by the Commission

Rs in Crores

Particulars	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Coal	15.33	50.88	50.88	50.88	50.88	50.88	50.88	50.88	50.88
Secondary fuel	0.29	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Maintenance spares - as % of O&M	2.90	10.17	10.75	11.37	12.02	12.70	13.43	14.20	15.01
Receivables	27.86	94.87	94.22	91.24	90.82	90.44	90.03	89.57	89.32
O&M	4.01	4.24	4.48	4.74	5.01	5.29	5.60	5.92	6.25
Total Working capital	50.39	161.11	161.29	159.18	159.68	160.27	160.89	161.52	162.42
Interest rate for WC	5.92	8.93	18.95	18.70	18.76	18.83	18.90	18.98	19.08

(v) O&M expenses

The Petitioner has worked out O&M expenses based on the KERC Regulations of 2009 up to FY 2011. For future years, escalation at the rate of 5.72% per annum has been considered over the previous year, as provided in the Regulations.

Table: 20
O&M expenses as filed by the Petitioner

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
O & M Expenses	13.84	50.85	53.78	56.85	60.10	63.54	67.17	71.02	75.08

Commission's observations and analysis

The Commission allows O&M expenditure as indicated in table 20, as per the norms stipulated in the Regulations mentioned above.

Table: 21
O&M expenses allowed by the Commission

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
O & M Expenses	14.50	50.85	53.76	56.84	60.09	63.52	67.16	71.00	75.06

(vi) Cost of secondary fuel oil

The Petitioner has filed for this cost as per the formula stipulated in the KERC (Terms and Conditions of Generation Tariff) Regulation 2009.

Table: 22
Cost of secondary fuel oil as per the Petitioner;

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Secondary fuel oil cost	1.84	7.84	9.06	9.28	9.52	9.76	10.00	10.25	10.51

Commission's observations and analysis;

The Commission has reviewed the computations on the cost of secondary fuel oil and, allows the cost of secondary fuel oil while approving the Tariff of BTPS unit-2, as indicated in Table-23:

Table: 23
Cost of secondary fuel oil allowed by the Commission

Rs in Crores

Year	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Secondary fuel oil cost	1.73	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75

Components of Capacity Charges

As per the Petitioner, the annual capacity charges / fixed charges are summarized as under;

Table: 24

Components of capacity charges as per the petition

Sl No	Particulars	Rs in crores								
		FY 11	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**
1	2	3	4	5	6	7	8	9	10	11
1	Depreciation	26.87	82.66	82.99	60.28	60.28	60.28	60.28	60.28	60.28
2	Interest on Loan	27.04	91.45	80.72	55.67	47.31	38.71	30.11	21.50	12.90
3	Return on Equity	13.97	40.36	41.96	51.78	51.78	51.78	51.78	51.78	51.78
4	Interest on Working Capital	5.57	23.01	26.59	27.23	27.48	27.74	28.03	28.33	28.65
5	O & M Expenses	13.84	50.85	53.78	56.85	60.10	63.54	67.17	71.02	75.08
6	Secondary fuel oil cost	1.84	7.84	9.06	9.28	9.52	9.76	10.00	10.25	10.51
7	Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Special Allowance(if applicable)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (Rs crs.)	89.12	296.17	295.10	261.09	256.47	251.81	247.37	243.16	239.20

Based on the computation of tariff discussed above, the annual capacity charges / fixed charges allowed for the Generating station for the period FY11 to FY14 and for the period from FY15 to FY19 are summarized as under;

Table: 25

Components of Capacity charges allowed by the Commission

Rs. in Crores

CapacityCharges	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Return on Equity	9.43	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28
Interest on Loan capital	28.45	103.61	96.81	75.72	69.92	64.12	58.34	52.63	46.98
Depreciation	15.13	53.50	53.50	53.86	53.86	53.86	53.46	52.51	52.51
Interest on working capital	5.92	18.93	18.95	18.70	18.76	18.83	18.90	18.98	19.08
O&M expenses	14.50	50.85	53.76	56.84	60.09	63.52	67.16	71.00	75.06
Cost of secondary fuel oil	1.73	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Total capacity charges	**75.16**	**263.92**	**260.05**	**242.15**	**239.66**	**237.36**	**234.88**	**232.15**	**230.66**

Operation norms considered in the petition

The Petitioner has submitted the following operational norms for considering the same in approving the tariff by the Commission.

Table: 26

Operational Norms proposed by the Petitioner in its petition

Sl.No	Parameter	As considered by KPCL in the petition
1	Plant availability factor	85%
2	Declared capacity	250 MW
3	Gross calorific value of design fuel	3,500 kcal/kg
4	Guaranteed design heat rate	2,253 kcal/kw-hr
5	Gross station heat rate	2,399 kcal/kw-hr
6	Auxiliary consumption	8.50%
7	Specific fuel consumption	1.00 ml/kwh
8	Energy at 85% PAF for full year i.e. 24x365 or 8760 hours	1,862 Million units

The Commissionhas compared the SHR with the values provided in the Regulations- 2009, and noted that the values are within the norms provided and hence, the Commission allows the operating norms, as under;

Table: 27

Operational Norms allowed by the Commission.

Sl.No	Parameter	As considered by KPCL in the petition
1	Plant availability factor	85%
2	Declared capacity	250 MW
3	Gross calorific value of design fuel	3,500 kcal/kg
4	Guaranteed design heat rate	2,253 kcal/kw-hr
5	Gross station heat rate	2,399 kcal/kw-hr
6	Auxiliary consumption	8.50%
7	Specific fuel consumption	1.00 ml/kwh
8	Energy at 85% PAF for full year i.e. 24x365 or 8760 hours	1,862 Million units

Clauses (1), (2), (3) and (4) of Regulation 22 of KERC Regulations, 2009 provides for computation and payment of capacity charges / fixed charges for thermal generating stations as under.

"22. Computation and Payment of Capacity Charge and Energy Charge for Thermal Generating Stations;

(1) The fixed cost of a thermal generating station shall be computed on annual basis, based on norms specified under these regulations, and recovered on monthly basis under capacity charge. The total capacity charge payable for a generating station shall be shared by its beneficiaries as per their respective percentage share / allocation in the capacity of the generating station.

(2) The capacity charge (inclusive of incentive) payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae:

(a) Generating stations in commercial operation for less than ten (10) years on 1st April of the financial year:

AFC x (NDM / NDY) x (0.5 + 0.5 x PAFM / NAPAF) (in Rupees);

Provided that in case the plant availability factor achieved during a financial year (PAFY) is less than 70%, the total capacity charge for the year shall be restricted to

AFC x (0.5 + 35 /NAPAF) x (PAFY / 70) (in Rupees)

(b) For generating stations in commercial operation for ten (10) years or more on 1st April of the year:

AFC x (NDM / NDY) x (PAFM / NAPAF) (in Rupees)

Where,

AFC = Annual fixed cost specified for the year, in Rupees.

NAPAF = Normative annual plant availability factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

PAFM = Plant availability factor achieved during the month, in percent:

PAFY = Plant availability factor achieved during the year, in percent

(3) The PAFM and PAFY shall be computed in accordance with the following formula:

$$PAFM \text{ or } PAFY = 10000 \times \sum_{i=1}^{N} DCi \,/\, \{ N \times IC \times (100 - AUX) \} \,\%$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

DCi = Average declared capacity (in ex-bus MW), subject to clause (4) below, for the ith day of the period i.e. the month or the year as the case may be, as certified by the concerned load dispatch centre after the day is over.

IC = Installed Capacity (in MW) of the generating unit or station

N = Number of days during the period i.e. the month or the year as the case may be.

Note: *DCi and IC shall exclude the capacity of generating units not declared under commercial operation. In case of a change in IC during the concerned period, its average value shall be taken.*

(4) In case of fuel shortage in a thermal generating station, the generating company may propose to deliver a higher MW during peak-load hours by saving fuel during off-peak hours. The concerned Load Despatch Centre may then specify a pragmatic day-ahead schedule for the generating station to optimally utilize its MW and energy capability, in consultation with the beneficiaries. DCi in such an event shall be taken to be equal to the maximum peak-hour ex-power plant MW schedule specified by the concerned Load Despatch Centre for that day.

Commission noted that, the provision for computation of capacity charges / fixed charges as provided in the draft PPA submitted by the Petitioner is in line with the provisions specified under KERC, Generation Tariff Regulation 2009."

Accordingly, the Petitioner is allowed to claim on a monthly basis the capacity charges / Fixed charges based on the above provisions of the Regulations, 2009 applying the actuals achieved during the month, cumulative of which for the year shall not exceed the figures in table 25 above.

(vii) Energy charges

The Petitioner has filed for energy charges as per the formula specified in the Regulations and the energy charges (ECR) claimed by the Petitioner are as follows:

Table 28
Energy charge rate (ECR) claimed by the Petitioner

Rs in Crores

Year	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19
Energy Charges	91.95	349.68	443.46	466.19	466.19	466.19	466.19	466.19	466.19

Clause (5) and (6) of Regulation- 2009, provides for computation of Energy charges 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 Rs./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 places in accordance with the following formulae:

(a) For coal based stations

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

(b) For gas and liquid fuel based stations

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

CVSF = Calorific value of secondary fuel, in kCal per ml.

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

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

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."

Accordingly, the Petitioner is allowed to claim on a monthly basis energy charges based on the above provisions of Regulations- 2009 based on the actuals achieved during the month.

8. Truing up

Based on the tariff determined by the Commission in this order, the Petitioner shall file an application, before the Commission, for truing up of the actual costs incurred, at the end of each tariff period. Further, the Commission directs the Petitioner to file an application for truing up for the tariff period FY09 -14 within the next 6 months.

9. PPA status

The Petitioner in its application has submitted that the PPA between the Petitioner and ESCOMs was initialled on 18-12-2010, which was submitted by BESCOM on 4-01-2011 and CESC on 01-01-2011. Further, in response to the Commission's letter dated 1-03-2011, the Petitioner vide its letter dated 29-12-2011, submitted the tariff information for the project duly furnishing the information in the prescribed formats in accordance with KERC 2009 Regulations. It is also stated by the Petitionerthatin response to letters dated 27-01-2012 and 11-06-2012 of the Commission, it has submitted modified PPA to the Commission on 29-06-2012. Further based on the suggestions made by the Commission vide its letter dated 25-09-2013, the Petitioner has filed additional documents on 31-10-2013 for consideration.

The Commission directs the Petitioner to resubmit the initialled PPA duly incorporating the decisions of the Commission, as approved in this Order. The approval of the PPA would be taken up by the Commission separately.

10. This Order is signed on 25th day of February, 2015.

Sd/-	Sd/-	Sd/-
(M.R. Sreenivasa Murthy) **CHAIRMAN**	**(H.D. Arun Kumar)** **MEMBER**	**(D.B. Manival Raju)** **MEMBER**