BEFORE THE KARNATAKA ELECTRICITY REGULATORY COMMISSION,

No.16, C-1, Millers Tank Bed Area, Vasanth Nagar, Bengaluru-560 052.

Dated: 17th January, 2022

Present:

Shri H.M. Manjunatha	:	**Chairman**
Shri M.D. Ravi	:	**Member**

In the Matter of Determination of Tariff in respect of 2X800 MW Yeramarus Thermal Power Stations (YTPS)

BETWEEN:

Raichur Power Corporation Ltd
(A JV Company of KPCL, BHEL and IFCIL)
Racecourse Road,
Bengaluru … Applicant

AND:

Bangalore Electricity Supply Company Limited Bengaluru
Mangalore Electricity Supply Company Limited Mangaluru
Chamundeshwari Electricity Supply Corporation Limited; Mysuru
Hubli Electricity Supply Company Limited; Hubballi
Gulbarga Electricity Supply Company Limited, Kalburgi ….Respondents

O R D E R

1. Preamble:

i. The Raichur Power Corporation Ltd (RPCL) (herein after referred to as the 'RPCL'), is a Joint Venture Company formed by Karnataka Power Corporation Ltd (KPCL), Bharat Heavy Electricals Limited (BHEL) and Industrial Finance Corporation of India Limited (IFCI) registered under Companies Act,1956 and Certificate of Incorporation has been issued on 15.04.2009.

ii. The Joint Venture Agreement between KPCL and BHEL was executed on 12.01.2009. As per the agreed terms, the equity investment by KPCL is 50% and 26% from BHEL of the total equity investment for the 2 X 800 MW Yeramarus Thermal Power Station (YTPS).

iii. The shareholding Agreement and other related documents between RPCL and IFCI was executed on 09.11.2011for the equity investment in RPCL to an extent of 24% of the total equity investment of the 2 X 800 MW Yeramarus Thermal Power Station (YTPS).

iv. The RPCL has filed an application on 14th November, 2016, before this Commission, for approval of the Power Purchase Agreement (PPA) and determination of tariff in respect of 2 X 800 MW Yeramarus Thermal Power Station (YTPS) for a period of 25 years from the Commercial Operation Date (COD) i.e. from 07.03.2017 of Unit 1 and 06.04.2017 of Unit 2, under Section 61 read with Section 62 of the Electricity Act, 2003.

v. The Commission, during May, 2017, had made several observations on the tariff application to be complied with by the RPCL. Since the RPCL did not submit compliance to the observation, the Commission has issued remainders during July, 2017 and February, 2018. The RPCL submitted compliance to the observations during February, 2019. Thereafter the said application filed by the RPCL for determination of Tariff has been treated as a petition on 10.06.2019, as per KERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014.

2. Tariff Application filed by the RPCL:

The RPCL, has filed its tariff application along with an affidavit giving the details of the project and has requested the Commission for determination of tariff in respect of YTPS unit-1 and Unit-2 and approval of the PPA. It has submitted the detailed sequence of events as follows:

a) Approval /Statutory Clearance:

i. Government of Karnataka vide Order No. EN90 PPC 2008 Bangalore dated 03.01.2009 has approved the implementation of the Yeramarus

Thermal Power Station project through a Joint Venture Company formed with BHEL as the JV Partner.

ii. The following Statutory clearances are obtained from the different Govt. departments:

a) Clearance from Fisheries Department;
b) Clearance from Health and Family Welfare Services Dept., Ananda Rao Circle, Bangalore-560 009;
c) Clearances from Archaeological Survey of India, Koramangala, Bangalore;
d) Clearance from Airport Authority of India, New Delhi;
e) The water allotment from water Resources Department;
f) Clearance certificate issued by the Karnataka State Pollution Control Board for the project;
g) MOEF clearance from Ministry of Environment & Forests.

iii. Water allocation from the water Resources Department, GOK has been received for the project, vide Government Order No. WRD 28 WBM 2006, Bangalore dated 18.07.2007.

iv. The Ministry of Coal, GOI vide Notification dated 06.09.2013 addressed to the Chief Secretary, GOK, has informed that the Deocha-Pachami coal blocks have been allotted to six states, out of which 382 MT is allotted to RPCL for Yeramarus TPS, (1600 MW0, BTPS Unit 3 (700 MW); and Edlapur TPS (800 MW). For operational purposes, all the Companies who are Jointly allocated the coal blocks, have formed a Joint Venture Company and the JV agreement has been executed on 07.05.2015. Since the supply from the captive coal block would take 5 to 6 years and in order to meet the immediate requirements of coal for generation, Ministry of Coal, GOI, during the special meeting of the Standing Linkage Committee (Long Term) held on 18.03.2016 has allotted 'Bridge Linkage' of Coal for the project for a period of three years from the date of allotment of coal mine/block as per the terms and conditions of OM No 23021/3/2015-CPD dated 08.02.2016. the source of coal is from SCCL.

v. The GOK, vide GO No. EN 90 PPC 2008 Bangalore dated 03.01.2009 has approved for the following;

i. To develop the Yermarus TPS & Edlapur TPS as a Joint Venture project between Raichur Power Corporation Ltd. (RPCL) and Bharath Heavy Electricals Ltd (BHEL)

ii. The Karnataka Power Corporation Ltd. (KPCL) shall execute the MOU and JV Agreement with BHEL;

iii. Boiler, Turbine &Generator (BTG) which may be supplied by M/s BHEL shall be benchmarked against International Competitive Price;

b) The status of commercial operation of the project is as follows:

Unit-1: Commercial Operation Declaration (C.O.D) was completed on 07.03.2017 at 22:56:38 Hrs.

Unit-2: Commercial Operation Declaration (C.O.D) was completed on 06.04.2017 at 23:00:00 Hrs.

c) RPCL has requested the Commission for determination of tariff in respect of YTPS generating station having Unit-1 and Unit-2 and approval of the PPA

3. Notification to the stakeholders/Public:

After the Tariff application was filed, the Commission, treated the application as a petition and directed the RPCL to publish a notice in the newspapers having State-wide circulation in the State, giving an abridged version of their application for determination of tariff. Accordingly, RPCL has published the abridged version of the tariff application in Kannada and English newspaper on 04.07.2019 seeking objections/comments/suggestions thereon to be furnished with 30 days from the date of paper notifications.

In response to the above, BESCOM has submitted its objections/ comments/ suggestions on 04.09.2019, as hereunder.

BESCOM submitted objections on the delay in achieving Commercial Operation of the Project, Capital Cost, Interest during Construction (IDC), Incidental Expenditure during Construction (IEDC), Sale of infirm Power, Contingency, Debt Equity Ratio, Tariff Components.

RPCL, in its letter dated 04.10.2019 has submitted replies to the objections raised by BESCOM. The point-wise objections raised by BESCOM and replies of RPCL are discussed in the later portion of this Order. The Commission has not received comments/ objections from other stakeholders/Public, in response to the Notice.

4. Public hearing process:

i. As required under Regulation-6 of the KERC (Terms & Conditions for Determination of Generation Tariff), 2014, the Commission has published Notices of Public Hearing to be held on 09.10.2019, in the following English and Kannada newspapers:

Deccan Herald	dated 25.09.2019,
Times of India	dated 25.09.2019,
Hosadiganta	dated 25.09.2019,
Vijay Karnataka	dated 25.09.2019,

ii. The Commission held a public hearing on 09.10.2019 and the gist of the submissions made by the RPCL and the Respondents is as under:

a. The RPCL made the following submissions in respect of the tariff petition in respect of 2X800 MW Yermarus Thermal Power Station (YTPS), filed by the Raichur Power Corporation Limited.

1. Raichur Power Corporation Limited was incorporated on 15/04/2009 as a Joint Venture Special Purpose (SPV) between Karnataka Power Corporation Limited and Bharat Heavy Electricals Limited(BHEL) for setting up the 2X800 MW Yermarus Thermal Power Station Project (YTPS) in Raichur District Karnataka with Supercritical thermal technology.

2. The YTPS Unit-1 was commissioned on 7th March, 2017 and Unit-2 was commissioned on 6th April 2017.

3. The Capital cost as per Original Investment approval is Rs.8,806.24 Crores. Subsequently the actual Capital expenditure incurred as on the date of COD is Rs.12,832.89 Crores with a further provision of Rs.910 Crore for Flue Gas Desulphurization and other related works. The total projects completion cost is estimated at Rs.13742.89 Crore towards the end of the project.

4. In relation to the "Mega Power Status", there are three requirements for the same. The first being the project must exceed 1000 MW which was fulfilled. The second was that there must be international competitive bidding which was not fulfilled as the GoK took a policy decision to appoint BHEL on a nomination basis by granting exemption under Section 4 (g) of the KTPP Act. The third was that the power had to be sold in at least two states. However, the GoK took a policy decision that the power must only be sold in Karnataka. The non-grant of Mega Power Status is not attributable to RPCL in view of the above. Therefore, the DPR was prepared considering: with and without Mega Power Status.

5. The reason for delay in achieving Commercial operations as per schedule is due to delay in receiving the following mandatary approvals from:
   (i) The Department of National Highways and
   (ii) The Railway Department for the execution of works relating to Railway siding and Marshalling Yard
   (iii) Shortage of water in Krishna River, which are beyond the control of the promoters.

6. The delay of three years in commissioning of Unit-1 and Two and half years in commissioning of Unit-2 is due to:
   i. Delay in the acquisition of land
   ii. Alignment of Coal handling plant
   iii. Delay in approval of DPR by Railways
   iv. Conversion of State Highway to National Highway

b. The M.D. KPCL, explained that the above reason which have resulted in increase in the IDC, are uncontrollable factors and fall under force majeure conditions.

c. Fixation of Liquidated damages (LD) is under process and appropriate credit for the same shall be considered at the stage of truing up of capital expenditure.

d. The RPCL, during October, 2019 has also submitted to the Commission, replies to the comments/Objections raised by BESCOM on the Tariff application on the following issues:

I. Commercial operation of the Project.
II. Capital Cost.
III. Interest during constructions.
IV. Incidental expenditure during construction.
V. Sale of infirm power.
VI. Initial spares.
VII. Provision for Contingency.
VIII. Debt equity ratio.
IX. BESCOM's computation of cost-overrun of Rs.823 Crores by assuming the status mega power plant is without any merit.
X. Justified the tariff components such as interest on loan, depreciation, O&M expenses, return on equity, interest on working capital, energy charge rate components, auxiliary consumption, Coal stock & GCV of Coal.
XI. Sale of power to third parties as proposed by BESCOM is being looked into in terms of the Power Purchase Agreement.

e. On an enquiry by the Commission about the implementation of Flue Gas Desulphurization (FGD), the RPCL informed the Commission that, in the tariff application, the provision of Rs.910 Crores towards FGD and other related works, is not included in the DPR.

f. GESCOM submitted to the Commission that they will file their objections within a weeks' time.

iii. The Commission, in the public hearing directed RPCL to furnish the following reports:

1. Comptroller and Auditor General's (C & AG) Audit Observations on the project and the replies thereon furnished by RPCL to the C & AG.
2. Detailed report on Coal stock for quantifying the cost/amount.
3. Revenue report on disposal of Fly Ash from YTPS.
4. Detailed computations of Liquidated Damages to be levied on BHEL.

iv. The RPCL has furnished the above details on 23.10.2019.

5. Applicable Regulations:

The Commission has issued KERC (Terms and Conditions of Generation Tariff) Regulations 2014 (Reguations-2014) under the provisions of the Electricity Act, 2003. These Regulations are applicable to the generating stations which achieve the Commercial Operation Date (CoD) during the period from 01.04.2014 to 31.03.2019. The YTPS unit-1 and Unit-2 have achieved CoD on 07.03.2017 and 06.04.2017 respectively. Hence RPCL's application has been 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.

6. Date of effect of this Order:

The RPCL has requested for determination of tariff for a period of 25 years from the Commercial Operation Date (COD) i.e. from 07.03.2017 and 06.04.2017 in respect of Unit-1 and Unit-2 of the YTPS respectively. The request being in order, the tariff determined in this Order would be effective from 07.03.2017 for Unit-1 and 06.04.2017 for Unit-2.

7. Commission's Analysis & decisions on the various aspects of Tariff determination:

As per KERC (Terms & Conditions of Determination of Generation Tariff) Regulations 2014, the tariff of a generation company consists of two components namely, Annual Fixed Charge (AFC) / Capacity Charge and Energy Charges / Variable Cost. The AFC/ Capacity Charge is computed on the basis of Capital Cost and Capital Structure.

As per Regulation 15, the following are the various components to be considered for determination of tariff:

A. Capacity Charges / Fixed charges:

The element of fixed cost consists of the following components:

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

(e) O&M expenses.

B. **Energy Charges / Variable charges:**

As per Regulation 21 of the KERC (Terms & Conditions of determination of generation Tariff) Regulations 2014, the elements to be considered for allowing the Variable charge are as under:

The Energy Charges shall be derived on the basis of the landed fuel cost (LFC) of a generating station (excluding hydro) and shall consist of the following cost:

a) Landed Fuel Cost of Primary Fuel; and
b) Landed Cost of secondary Fuel.

Provided that any refund of taxes and duties along with any amount received on account of penalties from fuel supplier shall have to be adjusted in fuel cost.

After considering the contentions of the RPCL and the objectors, the Commission would now proceed to determine the tariff by examining each of the components of tariff as discussed below:

As per Regulation-7 the provision for determination of tariff is based on the capital cost arrived at after the prudence check. The extract the relevant Regulation is reproduced below:

"7. Computation of Capital Cost and Capital Structure of application as under:

7.1 The Capital cost as determined by the Commission after prudence check in accordance with these Regulations shall form the basis of determination of tariff for existing and new projects.

7.1.1 (1) In case of new projects, the generating company may be allowed tariff by the Commission based on the projected capital expenditure, from the anticipated COD in accordance with Regulation 4 of these Regulations Provided that,

(i) if the date of commercial operation is delayed beyond 180 days from the date of issue of tariff order in terms of Regulation 5.1 of these Regulations, the tariff so granted shall be deemed to have been withdrawn and the generating company shall be required to file a fresh application for determination of tariff after the date of commercial operation of the project;

(ii) where the capital cost considered in the tariff by the Commission on the basis of projected capital cost as on COD or the projected additional capital expenditure, exceeds the actual capital cost incurred on year to year basis by more than 5%, the generating company shall refund to the beneficiaries, the excess tariff recovered corresponding to such excess capital cost, as approved by the Commission along with interest at 1.20 times of the bank rate as prevalent on 1st day of April of the relevant year; and where the capital cost considered in the tariff by the Commission on the basis of projected capital cost as on COD or the projected additional capital expenditure, falls short of the actual capital cost

incurred on year to year basis by more than 5%, the generating company shall be entitled to recover from the beneficiaries, the shortfall in the tariff corresponding to the shortfall in capital cost, as approved by the Commission along with interest at 0.80 times of bank rate as prevalent on 1st day of April of relevant year.

7.1.1(2) The Capital Cost of a new project shall include the following:

(a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
(b) interest during construction and financing charges, on the loans, (i) being equal to 70% of the funds deployed, where the actual equity is 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 where the actual equity is less than 30% of the funds deployed;
(c) increase in cost in contract packages as approved by the Commission;
(d) interest during construction and incidental expenditure during construction as computed in accordance with Regulation 8.2;
(e) capitalised initial spares subject to the ceiling rates specified in Regulation- 9;
(f) expenditure on account of additional capitalization and de-capitalization determined in accordance with Regulation 10;
(g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 12.1.

Analysis of Capital Expenditure:

The Commission has not fixed tariff based on the estimated Capital Expenditure in terms of Regulation 7.1.1 (1), in view of the fact that RPCL has filed the tariff application only after completion/ commissioning of the project.

As per Regulations 7.1.1(2) and 7.1.6, the Commission has conducted the prudence check of Capital Expenditure during the period from October 2019 to July 2020, through a third party namely M/s TERI and based on their report on the prudence of capital expenditure, the Commission has considered fixation of tariff. The same is discussed in the relevant portion of this Order.

On the operational parameters, the submissions made by the RPCL, the norms as per Regulations and the Commission’s decisions thereon, are discussed in the relevant paragraphs. Before considering 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. Computation of Capital Cost:

a. **RPCL's filing**:

A summary of the capital cost of the project as filed by the RPCL as per Form-5B is shown below:

SL. No.	Particulars	Amount as per filing (in Rs Lakhs)	
		As per Original Estimate as per investment approval by KPCL Board	Actual expenditure as on COD
1	Cost of Land & Site Development	3700	10032
2	Plant & Equipment:		
2.1	Steam generator Island	200000	460441
2.2	Turbine generator Island	137800	227510
2.3	BOP Mechanical	42200	265140
	Total BOP Mechanical	380000	953091
2.4	BOP Electrical	45750	100830
2.5	C & I Package	7500	25618
	Total Plant & Equipment	433250	1079539
2.6	Taxes & Duties	72531	
	Total Plant & Equipment	505781	1079539
3	Initial Spares	11270	
4	Civil Works	107400	193248
5	Construction & Pre-Commissioning expenses	46992	470
6	Overheads	49055	
7	Capital Cost excluding IDC & FC	724198	1283289
8	IDC, FC,FERV & Hedging Cost	156426	
	Total Capital cost	880624	1283289

The Capital Cost as per Original Investment approval is Rs.8806.24 Crores Subsequently the capital expenditure incurred on the date of CoD is Rs.12,832.89 Crores with a further provision of Rs.910 Crores for Flue Gas Desulphurization and other related works. The Total project completion cost is estimated at Rs.13742.89 Crores towards the end of the project.

The Summary of the Capital Cost of the project is as under:

(Amount in Rs. Lakhs)

SL. No.	Particulars	As on Schedule COD Unit 1: 08.4.2014 Unit 2 : 08.10.2014	As on Actual COD Unit 1: 07.03.2017 Unit 2 : 06.04.2017
1	Land Cost	3,807	10,004
2	BTG and Associated Works	5,54,297	10,881
3	BOP and Others	55,538	8,98,941**
4	Other Costs	1,06,519	3,63,463
	Total	7,20,161	12,83,289

** *Additional Projected expenditure of Rs. 800 crores for Flue gas desulphurization and Rs 110 Crores for Railway siding and Marshalling Yard and other allied civil works.*

*** Capitalized/Capitalizable Spares at Rs 180 Crores included in above table.*

The RPCL has provided Auditor's report dated 21.08.2017 from M/s Manian & Rao Chartered Accountants, in support of the actual capital expenditure incurred. The auditor's scope of work covers the review of accounting policy of the Company relating to capitalisation, compliance with accounting standards, verification of bills and other claims with respect to the EPC 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.

Based on the auditor's report, the actual expenditure capitalised and the allocation of expenses among the Units, is as follows:

Description	Unit 1 (Rs. In Crores)	Unit 2 (Rs. In Crores)	Common Asset (Rs. In Crores)
Boiler, Turbine and Generator	4076.17	4090.93	
Auxillary Assets to BTG	347.93	347.55	2018.39
Cooling Tower and Chimney			595.28
Roads			24.05
Buildings			0.31
Others	358.08	357.72	354.05
Work in Progress-RSMY			113.77
Total Cost	4782.18	4796.20	3105.85
Projected Cost to be capitalized Excluding WIP of Rs. 113.77 Crores.	4782.18	4796.20	2992.08
Total Capital Expenditure Capitalised			12684.23

Project Assets to be Capitalized	(Rs. In Crores)
Project Assets Already Capitalized	12684.23
Land (Lease hold)	100.03
Building	34.49
Compound wall	5.21
Roads	6.01
Transformers	3.02
Other Assets	9.03
Total	157.79
Total Project Cost	12842.02

Note: An amount of Rs.113.77 Crores has been included in the total towards Railways Sliding and marshalling Yard (RSMY), which was considered as work in progress as on as on the date of audit certification i.e. 21.08.2017.

b. **Respondent Objections on the Capital Expenditure**:

BESCOM, in its objection has stated that in the DPR the cost breakup details estimated by RPCL as detailed below:

SL. No.	Description	Without mega power status Amount Rs. Crore	With mega power status Amount Rs. Crore
1.	Land & Site Development	37.00	37.00
2.	Plant & Equipment		
	Steam Generator Island	2000.00	2000.00
	Turbine Generator Island	1320.00	1320.00
	Balance of plant – Mechanical	422.00	422.00
	Balance of Plant – Electrical	457.50	457.50
	Balance of plant – C&I	75.00	75.00
	External Transportation System	58.00	58.00
3.	Initial Spares	112.70	112.70
4.	Civil Works	1074.00	1074.00
5.	Erection, Testing & Commissioning	347.40	347.40
6.	Physical Contingency	203.99	184.91
7.	Taxes & Duties	725.30	89.10
8.	Freight & Insurance	122.51	122.51
9.	Overhead Construction Charges	203.99	181.73
10.	Pre-operative Expenses	82.55	82.55
11.	Finance Charges	35.22	31.92
12.	IDC	1529.00	1385.97
	Total Capital Cost	8806.23	7982.32

The difference between with mega power status and without mega power status is only Rs.823.91 Crore. Due to delay in commissioning the project the capital cost has increased to Rs.12,770 Crore as detailed below:

Rs. in Crore

Cost of Land	104.00
Plant and equipment BOP Mechanical and BOP Electrical, including Taxes and duties	9110.33
Initial Spares	25.00
Construction and pre-commissioning expenses including start up fuel	593.49
Contingency	197.47
Interest During Construction (IDC)	2514.71
Total	12770.00

Due to delay in commissioning the project, the capital cost has increased by Rs.3963.77 Crore over and above the project cost of Rs.8,806.23 Crore. But the difference in capital cost between mega power status and without mega power status is only Rs.823 Crores. It is mentioned in the application that RPCL was not able to obtain "Mega Power" Status and hence capital cost increased. But Rs.823 Crores alone is towards custom duty & other, apart from that RPCL had incurred an additional capital cost of Rs.3140.77 Crore due to delay in commissioning of the project.

As per the report of the Charted Accountant report (Manian and Rao), it is stated that land acquisition is done through KIADB. Land cost includes acquisition cost, registration charges and betterment charges. The total amount booked in Accounts for purchase of land Rs.100,04,45,563. Further it is mentioned that lease rent of Rs.1000/- per acre at the end of each year is to be paid to KIADB. Whether the land cost included in capital cost is wholly purchased cost or obtained on lease rent, is not clarified.

Further, BESCOM has contended that if RPCL had obtained any grants / subsidy from GOK, the details are not furnished. If any grants / funds are obtained from GOK, then it should be reduced from capital cost.

c. RPCL's reply on the objection raised by the BESCOM on the Capital Expenditure:

I. The Total project cost as on COD

Rs. In Crores

Sl. No.	Particular	Amount as per DPR	Amount as on COD	Difference
1	Hard Cost	7277	9629	2415
2	Soft Cost	1529	3141	1612
	Total	8806	12833	4027

II. It stated by RPCL that the contentions of BESCOM on the additional cost of Rs.3140.77 Crores is incorrect as it has presumed the Project cost as Rs.12770 Crores, whereas the actual cost as on COD is Rs.12832.89 Crores. Therefore, the additional cost of around Rs.133 Crores over and above Rs.12832.89 Crores has to be considered. Actually the tendered cost has increased by Rs.2415 Crores in respect of BTG and BOP, which also includes the increase in land cost. The balance amount of Rs.1612 Crores was due to the increase in the cost of IDC, as mentioned above. The IDC of Rs.3140.77 Crores incurred towards funding for increase in project cost has been done duly following the Accounting Principles envisaged in Accounting Standard No.AS-16. The borrowing cost, in the pre-implementation period of Indian Accounting Standard (IND-AS), is as per new accounting standard IND AS-23, upto the COD of 07.03.2017 for Unit-1 and upto 06.04.2017 for Unit-II.

III. On the contention that there is a delay of three years in Commissioning of Unit-1 and two and half years' delay in commissioning of Unit-2, RPCL has stated that the delay in commissioning was due to reasons entirely beyond the control of RPCL. The reasons are explained hereunder:

I. **Delay in the acquisition of land**:

The acquisition of land was done by KIADB on behalf of RPCL duly following the internal procedures and processes. The acquisition was done in three stages. The Phase-I possession was handed over on 18.01.2010, phase-II possession was handed over on 27.12.2014 and phase- III possession was handed over on 03.11.2015. There were large scale protests during the acquisition of land. During the process of land acquisition, the affected families raised additional demands. They were seeking 2 jobs to be given per family and demanding higher compensation. The GoK has its land acquisition and rehabilitation policy which governs the process of rehabilitation. RPCL being a State run PSU cannot deviate from the norms. After consulting all the stakeholders and comparing with the rehabilitation polices of other States etc. the decision was taken. This process took considerable time. The reasons for delay are therefore not attributable to RPCL. The DPR cost was Rs.37 Crores while the actual cost was Rs.100 Crores. The Cost overrun of Rs.63 Crores was on account of additional compensation. The cost overrun on account of delay in acquisition of land is also not attributable to RPCL.

II. **Alignment of coal handling plant**:

The initial alignment of coal handling plant was passing through M/s Surana Power Plant which would have resulted in significant savings of cost to RPCL. However, Surana Power Plant dilly-dallied on giving the consent for the alignment and finally RPCL had to seek realignment of the Coal Handling Plant (CHP) tracks by an alternative route which required fresh planning, obtaining cost estimates, contract negotiation/tender process and additional land acquisition (Phase III) etc. This process also took considerable time. The initial planning was based on informal understanding with M/s Surana Power Plant and it was not expected that the said Power Plant would refuse consent to give land for the CHP. Subsequently, the land was acquired by RPCL through KIADB on 08.10.2015.

III. **Delay in approval of DPR by Railways**:

There was a delay of five years in the approval of the DPR by the Railways. The details of the same are tabulated for reference here in below:

Sl. No.	Particulars	Date
1	In principle approval for conceptual plan by Railways	08.04.2011
2	Draft DPR submitted to Railway through Consultants	20.08.2011
3	Approval to ESP drawing & DPR by Railways	22.09.2015
4	Land Lease Agreement with Railways	04.04.2016
5	Removal/ Rerouting of Optical Fibre cables, S&T cables in the alignment completed by Railways.	24.06.2016

IV. **Conversion of state Highway as National Highway**:

RPCL had requested the Chief Engineer, State Highways, vide its letter dated 18.11.2011 for clearance to construct bridge across SH-13. Even though several correspondences were made with the Chief Engineer, state highways, a reply was received on 18.02.2014, stating that SH-13 has been upgraded to NH-167. On 21st March 2017, National Highway authorities approved the General Arrangement Drawing of Road under Bridge. Thereafter, the same was submitted to South Central Railways for approval and Railways gave its approval during June 2017.

For the above reasons, it was submitted that, the time and cost overruns are not attributable to RPCL and hence must be granted in accordance with KERC norms.

V. In relation to the "Mega Power Status", there are three requirements to be fulfilled. The first being the project must exceed 1000 MW which was fulfilled. The second was that the developers should be selected through international competitive bidding, which was not fulfilled since the GoK took a policy decision to appoint BHEL on a nomination basis by granting exemption under section 4(g) of the KTPP Act. The third was that the power had to be sold in at least two states. However, GoK took a policy decision that the power must be sold only in Karnataka State. The non-grant of Mega-Power Status is not attributable to RPCL in view of the above. Therefore, the DPR was prepared by considering benefits with and without Mega-Power Status. The assumption of BESCOM calculating the cost overrun on the basis that RPCL could not obtain Mega Power Status and therefore the cost of Rs.823 Crores must be disregarded, is therefore without merit.

VI. As the land has been acquired and stands in the name of RPCL, the question of considering the same as leased land does not arise. The amount of Rs.1000/- per acre to be paid to KIADB is towards service charges and not lease rent. Hence, the objection in that regard has to be rejected.

VII. There is no grant or any capital subsidy from the Government of Karnataka towards capital cost.

VIII. RPCL in its letter No. A1F3B2 dated 22nd September 2016 addressed to the RBI, had sought the deferment of the Date of Commencement of Commercial operations date. The extract of which reads as under, highlighting the unforeseen Statutory delays which the Project had to face:

> *"The project could not be declared for Commercial Operations as per Schedule due to delay in receiving the necessary approvals from(i) Department of National Highways and (ii) the Railway Department for the execution of works relating to Railway Department for the execution of works relating to Railway siding and Marshalling Yard and (iii) shortage of water in Krishna River, which are beyond the Control of the Promoters.*
>
> For the above reasons, RPCL has requested the RBI to permit additional time of six months beyond the period of normal delay of two years, i.e.to achieve the CoD on or before 31.03.2017.

IX. The calendar of events with regard to obtaining clearance from Railway are as detailed below:

Sl. No.	Particulars	Date
1	In principle approval for conceptual plan by Railways	08.04.2011
2	Draft DPR submitted to Railways through Consultants	20.08.2011
3	Approval to ESP drawing & DPR by Railways	22.09.2015
4	Land Lease agreement with Railways	04.04.2016
5	Removal/Rerouting of Optical Fibre cables, S&T cables in the alignment completed by Railways	24.06.2016

As could be seen from the above table, the entire process for obtaining the clearance from Railways has taken more than five years.

d. **Commission's Analysis on capital expenditure**:

1. The Commission, while examining the reasonableness of the Capital cost incurred by RPCL vis-à-vis the objection raised by BESCOM, notes that:

i. On the mega power plant status, the GoK has decided to award the work to M/s BHEL which is Government undertaking relaxing the provisions of KTPP Act and therefore RPCL has no say in the matter. The objection of

BESCOM that not obtaining the Mega Power Plant Status has resulted in increase in the capital cost by Rs.823 Crores, is not therefore sustainable

ii. As regards the delay in commissioning of the project, RPCL has explained the delay in land acquisition, obtaining clearances from Suvarana Power Plant and National Highways Authority for getting approval from Railways of DPR for laying of Railway lines. Thus, the delay in obtaining the above clearances is not attributable to RPCL.

iii. As regards time and cost overrun due to delay in commissioning of the project, the same has been dealt with in subsequent paras of this Order.

Prudence Check of Capital Expenditure:

As per Regulation 7.1.6 the Prudence check of Capital cost has to be carried out before determination of tariff for the Thermal Generating Station. The Commission, therefore, engaged the services of M/s TERI during March, 2020, for conducting the prudence check of Capital expenditure. In view of the total lockdown due to COVID Pandemic from March, 2020 to June, 2020, the submission of Report on Prudence check was delayed. The Commission received/ accepted the Report on Prudence check during August 2020.

The summary of Capital Expenditure as per DPR and as per the actual cost incurred is as detailed below:

Sl. No.	Project Component	DRP cost, Rs. Crs	Actual cost, Rs Crs	Difference in Rs. Crores	Increase in Percentage (%)
1	Land cost	37.00	100.32	63.32	171.135
2	Plant Equipment (BTG, AHP,CHP and BOP Packages)	7204.98	9591.84	2386.86	33.128
3	IDC Cost (including financial charges FC)	1564.26	3140.73	1576.47	100.78
	Total	**8806.24**	**12832.89**	**4026.65**	**45.72**

The following Table shows the breakup for the above summary:

SL. No.	Project Component	DRP cost. Rs. Crores	Final cost. Rs Crores
1	Land & Site Development	37.00	100.32
2	Plant Equipment		
2.1	Steam Generator Island	2000.00	4604.41
2.2	Turbine Generator Island	1378.00	2275.10
2.3	Balance of Plant (BOP) – Mechanical	422.00	2651.39
2.4	Balance of plant (BOP) - Electrical	457.50	1008.29
2.5	Control & Instrumentation (C& I) Package	75.00	256.18
2.6	Taxes and Duties	725.31	
3	Initial spares	112.70	
4	Civil Works	1074.00	1932.49
5	Construction and pre-commissioning Expenses	469.92	4.70
6	Overheads	490.55	
7	IDC, FC, & Hedging cost	1564.23	
	Total	8806.24	12832.89

The benchmark norms specified by the CERC (in order dated 4.06.2012) in respect of thermal generating stations of Green field category is Rs.4.96 crores per MW.

As per DPR, the project cost envisaged is Rs.8806.24 Crores (including IDC) the cost per MW works out to Rs.5.50 Crores.

After analysis of bench mark cost with reference to the actual costs, Rs.8.02 Crores per MW including the IDC and finance charges of Rs.3140.73 Crores as claimed by the RPCL, it is found that the actual cost is found to be higher than the benchmark cost by 61.69%.

As per Annual Accounts submitted by the RPCL for the year FY16 to FY18 the value of gross block of assets as on 31.03.2018 is Rs.12740.16 Crores as against Rs.12,832.89 Crores claimed by the RPCL. The difference of Rs.92.73 Crores not included in the value in the Gross block assets, as per the audited accounts. Hence, the difference of value of assets between the final capital cost as per the tariff application and as per the audited accounts is Rs.92.73 Crores which has been deducted in the final abstract of capital cost considered for computation of tariff in this Order.

8. Time Overrun:

RPCL's filing:

As per the Petition, the Scheduled Commercial Operation Date(SCOD) and the actual date of Commissioning is as under:

	Zero date	Scheduled date of completion	Actual COD	Delay in achieving COD
Unit 1	09.04.2010	08.04.2014	07.03.2017	1125 days
Unit 2	09.04.2010	08.10.2014	06.04.2017	910 days

It is seen from the above Table that the Schedule date of Commercial Operation was 08.04.2014 for Unit-1 and 08.10.2014 for Unit-2 from the zero date i.e. 09.04.2010. However, the project was declared for commercial operation on 07.03.2017 for Unit-1and 06.04.2017 for Unit-2. Hence, there is a delay in achieving CoD of 3 years 29 days for Unit-1 and 2 years 5 months 28 days for Unit-2.

RPCL has earlier explained the reason for time over run and as a result there is substantial cost overrun which is not attributable to RPCL.

Objection of the Respondent- BESCOM:

The delay in Commissioning of the project had resulted in substantial time over run and cost overrun. The delay is not properly substantiated by the RPCL as per the documents submitted.

Commission Analysis on time and Cost overrun:

Regulation 8.2(c) with reference to time over run reads as under:

> " The additional cost due the time over-run beyond the SCOD, is not admissible. The increase in capital cost on account of cost variation corresponding to the period of time over run may be excluded from capitalization irrespective of

price variation provisions in the contracts with supplier or contractor of the generating company".

Since there is a time over run of 1125 days for unit-1 and 910 days for unit-2 Liquidated damages have to be levied and recovered from the BHEL and deducted from the capital cost of the project, after prudence check. The RPCL, in its application had not furnished the amount of LD to be deducted in the capital cost and had stated that the same is under process. However, during the public hearing the Commission directed the RPCL to furnish the detailed computations of LD to be levied on the BHEL.

Thereafter, the RPCL in its letter dated 23.10.2019, submitted the detailed computation of liquidated damages to the Commission. As per the Letter of Award consisting of Scope of contract in respect of Mechanical, Electrical and Civil and the agreement copy along with the terms and conditions, signed by the KPCL and BHEL on 28.01.2011, the agreement, clause No. 13.0 pertaining to "Liquidated Damages" reads as follows;

> "Any delay in commissioning of the equipment (trial operation of unit) beyond the contractual commissioning schedule, due to delays solely attributable to BHEL, shall be subject to levy of liquidated damages @ 5% of the contract price on the delay per week, subject to maximum ceiling of 10% of the contract price of each unit".

RPCL has also stated that M/s BHEL has delayed the commissioning of the units by two and a half to three years. Considering this M/s RPCL has right to levy LD at a maximum of 10% on M/s BHEL. The value of contract awarded to M/s BHEL and calculation of LD as computed by RPCL are given as under:

Completed cost of Capital after Prudence Check

Rs. in Crores

SL. No	Particulars	Total Fixed Components (Rs Crores)
1	BTG Supply/Service	6242.31
2	AHP/CHP Supply/Services	826.28
3	400KV ADD SWITCH YARD/CWP	66.55
4	Mandatory Spares	110.10
5	AUX Boiler	13.35

6	AAQMS	1.40
7	SCADA	2.35
8	Ozonisation	17.47
A	TOTAL OF BASIC VALUES	7279.84
	BREAK FOR TAXES	
1	Excise Duty	449.12
2	CESS on ED	12.10
3	CST	80.02
4	Service Tax	104.18
5	Customs Duty	239.51
6	Exit Tax	0.11
7	VAT	44.35
8	FREIGHT	103.69
9	Service Tax on Freight	1.52
B	Taxes and Duties	1034.61
	Grand Total (A)+(B)	8314.45

As per the computations submitted by RPCL, an amount of Rs.831.45 crore (being 10% of Rs.8314.5 Crores) is required to be recovered from BHEL.

As per report on prudence check, the RPCL/BHEL has not conducted the Performance Guarantee (PG) test within 12 months of the first synchronization and all the guarantees related to performance of the units, after full loading of unit and stabilization. Even after completion of over 2 years from SCoD, it appears that the BHEL has not shown any interest in carrying out PG test. Hence, the Commission decides to provisionally levy Rs.415.72 Crores as Performance Based LD, which is 5% of the total project cost Rs.8314.45 Crores (awarded to BHEL). RPCL is directed to indicate the actual amount of LD deducted from BHEL claims towards LD for the delay, while submitting the truing up application, before the Commission.

9. Infirm Power:

RPCL's filing:

RPCL, in its filing has submitted that, the sale of infirm power has also been fully adjusted in the capital cost. The RPCL has submitted the Charted Accountant report which states the treatment on income from sale of energy before the date of commercial operation as sale of infirm power of Rs.42.08 Crores. An amount of Rs.39.15 crores (i.e. sale of power upto 7th March, 2017 for Unit 1 and up to 31st March, 2017 for Unit-2) have been appropriated to various asset components of the units on the basis of cumulative works cost till the date of capitalization in respect of Unit-1 and Unit-2 and the remaining amount of Rs.2.93 Crores has been transferred to P & L account.

Comments from Respondent:

BESCOM in its comments has stated that, an amount of Rs.59.33 Crore is paid towards infirm power cost by ESCOMs which needs/requires to be deducted from capital cost as per KERC Tariff Regulation 2014.

Commission Analysis:

As per Regulation 12.1 - Sale of infirm power, the revenue earned by the generating company from supply of infirm power after accounting for the fuel expenses shall be applied in adjusting the capital cost. As per audited accounts the revenue from the sale of energy is Rs.59.33 Crores (till SCOD -FY18) and as per financial statement, the revenue from the sale of energy has been adjusted in the capital cost.

10. Initial Spares:

RPCL's filing:

RPCL has indicated in the Form - 17 an amount of Rs.180 Crores, as the initial spares, which is less than the 4% of the actual cost of the Plant and Equipment cost.

Comments from Respondents:

The Commercial operation date of RPCL is 06.03.2017 for unit-1 & 07.04.2017 for unit-2. The cut-off date would be 06.03.2019 and 07.04.2019 and cost of initial spares as on this cut-off date has to be capitalized. But RPCL has shown an amount of Rs.250 Crores without any details, towards initial spares.

Commission Analysis:

As per Regulation- 9, the cost of initial spares shall be capitalised as a percentage of cost of the Plant & Machinery upto cut-off date, subject to the ceiling norms of 4% for the coal based/lignite fired thermal generating stations provided that:

(i) Where the bench mark norms for initial spares have been published as part of the benchmark norms for capital cost by the CERC, such norms shall apply to the exclusion of the norms specified above, and

(ii) Where the generating station has any transmission equipment forming part of the generation project, the ceiling norms of initial spares for such equipment shall be as per the ceiling norms specified for transmission system by the CERC.

The Commission notes that, as per the CERC Order dated 4th June, 2012, only benchmark costs have been notified without indicating any benchmark costs for initial spares. It also does not indicate any benchmark cost of initial spares for transmission equipment. Hence the Commission has considered the cost of initial spares as per the filing.

The cost of equipment on plant & machinery as per the filing is Rs.10,795.39 Crores. As per the ceiling norms, the cost of the initial spares works out to Rs.431.82 Crores. The RPCL has claimed an amount of Rs.180 Crores towards cost of initial spares on plant & machinery. Hence, an amount of Rs.180 Crores is considered as cost of initial spares.

11. Interest during constructions (IDC):

RPCL's filing:

As per the tariff application, the RPCL has claimed IDC as detailed below:

Rs. in Crore

Year	Interest During Construction
FY14	422.61
FY15	696.77
Fy16	856.68
FY17	983.85
FY18	10.01

Comments from Respondents:

It is submitted that as per Regulations, IDC shall be computed corresponding to the loan from the date of infusion of debt fund and after taking into account the prudent phasing of funds up to SCOD. In case of additional costs on account of

IDC due to delay in achieving SCOD, the generating company shall be required to furnish the detailed justification with supporting documents for such delay including prudent phasing of funds.

a. Variations in capital expenditure on account of time and / or cost overruns on account of land acquisition issues.
b. Efficiency in the implementation of the project not involving approved change in scope of such project change in statutory levis or force majeure events and
c. Delay in execution of the project on account of contractor, supplier or agency of the generating company.

The "uncontrollable factors" shall include but shall not be limited to the following:

1. Force Majeure Events and
2. Change in Law.

The IDC up to SCOD claimed, in original Scope of the work as in DPR is Rs.1529.03 Crore. The IDC, as on the date of COD including period of delay as claimed by RPCL is Rs.2515 Crore, resulting in increase in IDC of Rs.985.68 Crores, which shall not be allowed in the capital cost, since the reasons furnished for delay are controllable factors and doesn't come under force majeure or change in Law as per Tariff Regulation 2014.

Commission Analysis:

As per Regulations 8.1 of the 2014 Regulations, the IDC shall be computed corresponding to the loan from the date of infusion of debt fund and after taking into account the prudent phasing of funds up to SCOD. In case of additional costs on account of IDC due to delay in achieving SCOD, the generating company shall be required to furnish the detailed justification with supporting documents for such delay including prudent phasing of funds.

Provided that if the delay is not attributable to the generating company and is due to uncontrollable factors as specified in Regulation 8.3 of these regulations, IDC may be allowed after due prudence check.

Provided further that only IDC on actual loan may be allowed beyond the SCOD to the extent, the delay is found beyond the control of generating company after due prudence and taking into account prudent phasing of funds.

As per audited accounts the year on year interest and finance charges on the capital loan charged to P& L account during the construction period is as under:

Year	Interest & FC Rs. Crs.
31.03.2013	171.26
31.03.2014	422.76
31.03.2015	696.79
31.03.2016	856.68
31.03.2017	983.85

As seen from the above Table RPCL has been incurring interest on loans from the year of inception i.e. from 2013 till the year of completion – 2017 without considering the IDC up to the date of commissioning of the Unit-2 (06.04.2017) for FY18.

As per the Form-13 of the tariff application RPCL has claimed an amount of Rs.2969.92 Crores towards IDC. The year-wise break up is as under:

Year	IDC Claimed Rs. Crs.
31.03.2013	-
31.03.2014	422.61
31.03.2015	696.77
31.03.2016	856.68
31.03.2017	983.85
31.03.2018	10.01
Total	2969.92

The RPCL has explained the reasons for delay in completion of the project as discussed in earlier paras of this Order. Since the delay in land acquisition was due to reasons like delay in getting approval from National Highways, Railways, shortage of water in Krishna River etc. which are not attributable to RPCL. Hence, the Commission decides to consider IDC of Rs.2969.92 Crores for the purpose of tariff determination.

12. Incidental Expenditure during Construction: (IEDC):

RPCL's filing:

As per Form 5-A, RPCL has claimed an amount of Rs.3634.63 Crores towards IDC, IEDC, Finance Charges, and Hedging costs. After deducting IDC of Rs.2969.92 Crores, the IEDC, Finance Charges, and Hedging costs claimed by RPCL is Rs.664.71 Crores.

Comments from Respondents:

BESCOM has submitted that an amount of Rs.16.42 Crores being the revenue earned during the construction period up to SCOD (FY10 to FY18) may be deducted from IEDC.

Commission's analysis:

The Commission notes that as per audited accounts, an amount of Rs.16.42 Crores towards interest on FDs has been accounted under other income. As per the reply furnished by the RPCL, the said amount has been deducted from the capital cost. Hence, the Commission decides to consider Rs.664.71 Crores towards IEDC for the purpose of tariff determination.

13. Additional Capitalization:

The RPCL has not claimed any additional capitalization after the cut-off date. However, RPCL has proposed an amount of Rs.800 Crores towards implementation of Flue Gas Desulphurisation(FGD), which is yet to incurred.

Since the amount is yet to be incurred, the Commission would consider the same for tariff determination after the RPCL actually incurs the expenditure. Hence, RPCL is directed to file separate application for revision of tariff after incurring the actual expenditure on FGD.

14. Capitalization of Asset:

The Commission notes that, though the generating units have achieved the CoD, the following works have not been completed and put to use, as has been found during the prudence check of the capital works:

SL. No	Type of Work/Status	Cost of Work, Rs. Crores
1	Railway Sliding and Marshalling Yard (RSMY)	113.77
2	Ozonisation system (90% erection works completed)	24.50
3	ODPH –oil decanting process house (Fuel handing system)	26.80
	Total	165.07

The cost of the above assets has been included in the total capital cost of the generating units. Since these assets have not been commissioned and put to use, the same has to be excluded from the cost of capitalised assets.

RPCL is directed to include the cost of the above assets once they are completed and put to use, in their truing up application.

15. Contingency Amount included in the DPR:

RPCL's filing:

As per the DPR RPCL has indicated an amount of Rs.197.70 Crores towards contingent expenditure.

Comments from Respondents:

BESCOM, in its objections has stated that the amount of Rs.197.70 Crores towards contingent expenses, as indicated in the DPR has not shown in the tariff application. Hence the same has to be deducted from the capital cost.

Commission's analysis:

RPCL, in its replies have stated that the contingent expenditure as shown in the DPR has not been actually incurred and not included in the cost of completed assets. Therefore, the question of deducting the same does not arise.

The Commission notes that the cost of actual capital expenses does not include the cost of contingent expenses and hence the question of deducting the same does not arise.

16. Abstract of Capital Expenditure:

The capital cost of both the units, as claimed by the RPCL, for the purpose of tariff determination is as under:

Particulars	Amount as claimed Rs. Crores
Capital Cost as per filing as per Form 5-B excluding IDC & IEDC	9198.26
Interest During Construction (IDC) & IEDC	3634.63
Total capital Cost claimed	12,832.89

Based on the discussions in the earlier paras, the Commission has determined the capital as follows:

Particulars	Amount as allowed Rs. Crores
Capital Cost as claimed by the RPCL	12,832.89
Less: LD charges towards not conducting PG test by BHEL	-415.72
Less: Amount towards non-completion of works relating to Railway Sliding and Marshalling Yard (RSMY)	-165.07
Less: Difference of amount in Capital cost as per audited accounts	-92.73
Total Capital Cost allowed	12,159.37

Hence, the Commission hereby allows, capital cost of Rs.12,159.37 Crores for determination of Tariff.

17. Parameters for determination of Tariff:

a) **Annual Fixed Cost/ Capacity Charges**:

i. Debt Equity Ratio/ Return on Equity(RoE):

RPCL's filing;

As per the tariff application RPCL has considered equity amount of Rs.2155.34 Crores which is less than 30% of the capital cost. Hence, the equity as claimed by the RPCL has been considered for computation of Return on Equity.

The RPCL has claimed RoE of 15.5%, and MAT of 21.3416% on Equity as follows:

Rs. in Crores

Year	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
	467.76	467.76	467.76	467.76	467.76	467.76	467.76	467.76

Comments from Respondents:

BESCOM in its objection has stated that RPCL has considered the Debt equity ratio as 80:20, the Debt works out to Rs.9411.90 Crores and Equity works out to Rs.2091.53 Crores.

Commission's Analysis:

As per Regulation 13 of the Tariff Regulations, 2014, the Debt Equity Ratio as on the date of CoD to be considered is 70:30. If the equity deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

Based on the admitted capital cost of Rs.12159.37 Crores the amount of Debt and Equity are computed as under:

Debt: 70% of Rs.12159.37 Crores works out to Rs.8511.56 Crores
Equity: 30% of Rs.12159.37 Crores works out to Rs.3647.81 Crores

As per Regulation 16.1.2 of the Tariff Regulations, RoE shall be computed at the base rate of 15.50% for thermal stations and for the projects commissioned on or after 1st of April, 2014, an additional return of 0.5% shall be allowed, if such projects are completed within the timeline specified in Appendix-II i.e. within 52 months from the date investment approval by the Board or the CCEA clearance up to the date of commercial operation of the units. In the instant case the date of date of approval of investment by the Board is 15.04.2009 and the first unit of the YTPS has been commissioned on 07.03.2017 (1st Unit) and 06.04.217 (2nd Unit). Since both the units are not commissioned within 52 months of the approval. Hence the project is not entitled to the additional RoE of 0.50%.

Accordingly, RoE of 15.5% on the actual equity of Rs.2155.34 Crores as at the end of 31.03.2017 on works out to Rs.334.08 and corresponding percentage of MAT of 21.3416% for FY17 & FY18 and 21.5488%,17.472%,17.94%, and 17.472% for FY19 to FY22 are allowed duly considering the MAT rates with surcharge and education Cess as per the rates applicable for the respective financial years and for the remaining financial years, the applicable rates for FY22 has been considered. Accordingly, the year on year amount of RoE grossed up with MAT has been worked out and shown in the tariff computation sheet enclosed to this order.

Further, RPCL is directed to provide the actual tax credit availed during the post-tax holiday period and if there are any corrections required to be made, the same may be proposed at the time of filing true up application duly complying with the provisions as per Regulation 16.1.5.

ii. Interest on Loans

RPCL's filing:

The RPCL in the form 13 submitted the calculation of weighted average rate interest on actual loans as detailed below:

Particulars	2013-14	2014-15	20165-16	2016-17	2017-18
Weighted Average Rate of Interest(%)	11.02	11.45	11.05	11.18	11.17

Comments from Respondents:

BESCOM in its objection has submitted the details of the weighted average interest on loan as detailed below:

(Rs. in Lakhs)

Average Net loan from 2013-14 to 2016-17	3680681.01
Interest on loan	411434
Weighted average rate of interest	11.17%

BESCOM has requested to consider the interest on loan at 11.17%.

Commission's Analysis:

As per the approved capital cost of Rs.12,159.37 Crores, an amount of Rs.2155.34 Crores, (as per audited accounts) is considered as equity. Hence the remaining amount of Rs.10004.03 Crores is considered as capital loan.

As per audited accounts, RPCL has indicated the details of loans borrowed, repayment, closing balances and interest paid year on year by it, as follows:

Details of Loans drawn, Repayments & closing Balance					
Particulars	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**
Opening balance of Loans (Rs. in Crores)	2582.68	5087.88	7079.22	8422.37	9933.86
Loans drawn during the year (Rs. in Crores)	2505.19	1991.39	1343.14	1511.48	2085.28
Repayment in the year (Rs. in Crores)	0.04	0	0	0	2034.81
Closing Balance of Loans (Rs. in Crores)	5087.83	7079.22	8422.37	9933.86	9984.33
Average Loan (Rs. in Crores)	3835.26	6083.55	7750.80	9178.12	9959.10
Interest paid for the year (Rs. in Crores)	422.61	696.77	856.68	1025.81	1112.47
Weighted Average Rate of Interest(%)	11.02	11.45	11.05	11.18	11.17

From the above details, it is found that the weighted average rate of interest incurred by RPCL for FY14 to FY18 is ranging between 11.02% to 11.18%.

A per Form-6, the total term loan including outstanding liabilities and inter corporate loans admitted by RPCL as on CoD is Rs.10,677.55 Crores which is more than the normative allowable debt of Rs.10004.03 Crores, allowed for the purpose of tariff computations. Hence, considering the fact that drawal of actual loans has been completed during FY17-18, the Commission has allowed the interest rate of 11.16% being the weighted average rate of interest for the purpose of determination of tariff.

The tenure of the term loan is ranging between 10 to 15 years as per the details submitted by RPCL. In terms of Regulation 17.4 the repayment of loan shall be equal to the depreciation allowed for the year or part of the year. As per Regulation 18.5, the depreciation computed based on Straight Line Method (SLM), shall be allowed for the first twelve years and remaining balance of depreciation shall be spread over the balance useful life of the asset. In view of this provision, the normative debt repayment period has been reckoned as 12 years.

The computation of interest year on year is indicated in the tariff computation sheets enclosed to this Order.

iii. Depreciation:

RPCL's filing:

The RPCL, in Form 11 of the tariff application has claimed weighted average rate of depreciation @5.97% taking into account, the gross block as on 31.03.2014 or as on CoD, whichever is later and subsequently for each year thereafter up to 31.03.2019 and depreciation amount charged for each year up to 31.03.2019.

BESCOM's objections:

BESCOM, in its objections has submitted that the depreciation to be considered shall be at 5.28% on the capital cost of Rs.10,457.17 Crores and has requested the Commission to allow depreciation of Rs.491.98 Crores.

Commissions' Analysis:

As per Regulations 18.1 of the Tariff Regulations, 2014, Depreciation shall be computed from the date of commercial operation of a generating station or a unit thereof. The base value of assets shall be the capital cost of the asset admitted by the Commission.

As per Regulations 18.3 the salvage value of the asset shall be considered as 10% and depreciation shall be allowed upto maximum of 90% of the capital cost of the asset. The cost of the land shall be excluded from the capital cost while computing depreciable value of the asset and the depreciation shall be calculated annually based on straight line method.

As per Regulations 18.5, Deprecation shall be calculated annually based on Straight Line Method at the rates specified in Appendix-III, to these Regulations for the assets of the generating station.

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

In terms of the above Regulations, the capital cost as admitted by the Commission has been considered and depreciation has been worked out on 90% of the admitted capital cost, after deducting the cost of the land. Since the amount of loan repayment is linked to the annual depreciation charged, a period of 12 years has been considered for repayment of loan and the rate of depreciation thereon works out to 6.8562 %. Accordingly, the balance of depreciation at the end of 12 years has been spread over the remaining 13 years of useful life of the asset. The details of the computations of depreciation is indicated in the tariff computation sheet enclosed to this order.

iv. O & M Expenses:

RPCL's filing:

As per submissions made by RPCL in the tariff application, O & M expenses of Rs.276.80 Crores for the year FY18 and Rs.294.08 Crores have been claimed with an escalation of 6.24%. This is stated to have been claimed as per CERC Tariff Regulation.

Comments from Respondents:

BESCOM in its objections has submitted that as per Regulations O & M expenses shall be considered at Rs.17.30 Lakhs per MW.

Commission's Analysis:

As per Regulation- 20, the normative O & M expenses of coal based thermal stations is Rs.17.30 lakhs per MW for 2017-18 and Rs.18.38 for the year 2018-19. Hence the Commission hereby allows the O & M expenses for FY18 and FY19 at the above rates and for the reaming years O & M expenses as above with an annual escalation of 6.24%. The year on year computation of O & M expenses has been indicated in the Tariff Computation sheet enclosed to this Order.

v. Interest on working capital:

RPCL's filing:

The RPCL has claimed an amount of Rs.64.97 Crores for the year 2017-18 and Rs.101.51 Crores for FY18-19 towards interest on working Capital at a rate of 12.80% p.a.

Comments from Respondents:

BESCOM has submitted that the as per Regulation the allowable interest on working capital shall at the SBI rate of 9.10% as on 01.04.2017.

Commission's Analysis:

As per Regulation-19.1 and 19.3, the following are the components of the working capital;

Item No.	Particulars	As per Regulation considered for calculation
a	Cost of Coal	30 days
b	Cost of Main Secondary fuel oil	2 months
c	Fuel Cost	30 days
d	O & M Expenses	1 month
e	Maintenance Spares	20% of O&M
f	Receivables	2 months
g	Interest on Working Capital	SBI MCLR Rate as on 1st of April of the respective year Plus 350 Basis Point (8+3.50=11.50%)

Accordingly, the amount of WC interest to be allowed has been considered in the computation of Capacity charges enclosed to this Order.

Details of Capacity Charges allowed are as under:

Capacity Charges - Rs crores	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Return on Equity with MAT	424.72	424.72	425.84	404.81	407.11	404.81	404.81
Interest on Loan	1069.45	976.46	883.46	790.46	697.47	604.47	511.48
Depreciation	833.67	833.67	833.67	833.67	833.67	833.67	833.67
Interest on Working Capital	225.87	226.56	227.45	228.04	229.31	230.67	232.30
O & M Expenses	260.32	276.80	294.08	312.43	331.93	352.64	374.64
Total Capacity charges	2814.03	2738.21	2664.50	2569.41	2499.49	2426.26	2356.89

Note: 1. *Detailed calculation sheet is enclosed with this Order.*

2. The Capacity Charges in respect of Unit-1(for 25 days in FY17 and 5days in FY18) Commissioned on 07.03.2017, may be claimed at half the FC approved on pro-rata basis.

3. From 06.04.2017, the capacity charges as approved will be applicable to both the units.

b) Computation of Variable Cost:

Operational Parameters:

The RPCL has submitted the following operational norms for consideration, in approving the variable cost by the Commission.

Operational Norms proposed for Computation of Variable Cost by the RPCL in its petition

SL No	Parameter	As considered by the RPCL in its petition
1	Plant availability factor	85%
2	Guaranteed design heat rate	2049kcal/kw-hr
3	Gross station heat rate	2140.16 kcal/kw-hr
4	Auxiliary consumption	5.75%
5	Gross calorific value of design fuel	4700 kcal/kg
6	Specific fuel oil consumption	0.5 ml/kwh

The Commission has compared the SHR/parameters as per the filing with the norms as provided for in the Generation Regulations- 2014, and noted that the values are within the norms. The Commission has considered the Heat Rate and other parameters as per the Generation Regulations as follows:

Approved Parameters as per Norms

SL No	Parameter	Approved parameters as per norms
1	Plant availability factor	85%
2	Guaranteed design heat rate within the limit as per Regulations	2049kcal/ kw-hr
3	Gross station heat rate	2141.21 kcal/kw-hr
4	Auxiliary consumption with induced draft cooling type.	5.75% (5.25%+0.50%)
5	Gross calorific value of design fuel as provided by the Generating Company	4200 kcal/kg
6	Specific fuel oil consumption	0.5 ml/kwh

18. Energy charges:

RPCL's filing:

The RPCL, in its tariff application has claimed the energy charges as follows, based on the formula specified in the Regulations:

(Rs/unit)

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Energy Charges Rate Ex-bus-per kWh, without considering the escalation	2.926	2.926	2.926	2.926	2.926

Comments from Respondents:

BESCOM, in its objections, has submitted that the RPCL has considered the maximum turbine heat rate of 1813 Kcal/kwhr for the purpose of computing the energy charges, for which the turbine manufacturer's certificate has not been furnished.

RPCL, in its replies, has furnished the BHEL specification for maximum turbine heat rate.

Commission's Analysis:

The Energy Charges Rate (ECR) have been computed based on the Regulations as per the following formula:

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 + SFC x LPSFi+ LC x LPL} x 100 / (100 – AUX)

Where:

AUX =Normative auxiliary energy consumption in percentage.

CVPF=

a) Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.

b) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to the blending ratio.

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."

LPSFi = Weighted Average Landed Price of Secondary Fuel in Rs. / ml during the month.

Provided that energy charges rate for a gas/liquid fuel based station shall be adjusted for open cycle operation based on certification of the Member Secretary of the respective Regional Power Committee for the open cycle operation during the month.

Accordingly, the RPCL is allowed to claim energy charges on a monthly basis, based on the above provisions of Regulations-2014, as per the actual energy generated during the month.

19. Truing Up application:

An application shall be filed by the RPCL before the Commission, for truing up of the actual costs incurred, at the end of each tariff period as per Regulations, for truing up of capital cost, based on the tariff determined by the Commission in this order. Hence, the Commission directs RPCL to file necessary application for truing up for the tariff, within the next 6 months from the date of this Order.

20. PPA status

The Commission directs the RPCL to resubmit the 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.

21. There has been delay in processing the Tariff application and issuing the Tariff Orders due to: (a) Considerable time taken by RPCL in furnishing replies / compliance to the Commission's observations (b) Entrusting the work of prudence check of capital expenditure by selection of a third party through competitive bidding and time taken by the third party in conducting the work of prudence check and submission of report thereon due to spread of Covid Pandemic during 2020 (c) Administrative reasons for processing the tariff application by the Commission due to total lock down declared by the Government during the year 2020 and 2021.

This Order is signed and issued by Karnataka Electricity Regulatory Commission at Bengaluru this day, the 17th day of January, 2022.

Sd/-	**Sd/-**
(**H.M. MANJUNATHA)**	**(M.D.RAVI)**
CHAIRMAN	**MEMBER**

Determination of Tariff for 2X800 MW YTPS

Financial Parameters

Cost/MW- Rs. Cr	12159.37
Debt: Equity	82.274:17.725
Debt in Rs Cr	10004.03
Interest charges on Debt-%	11.16%
Debt Repayment in Yrs.	12.00
Tax	21.3416%
PLF in %	85.00%
Equity- Rs. Cr	2155.34
ROE-%	15.50%
Auxiliary	5.75%
O & M expenses in Rs.Lakhs/MW	16.27
O & M Escalation p.a.	6.24%
% Interest on Working capital	11.50%
Depreciation % p.a. for first 12years	6.8562%

MAT					
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
21.3416%	21.3416%	21.5488%	17.4720%	17.9400%	17.4720%

Depreciation	
12059.05	
10853.15	
	10004.03
	849.12
	65.3165385

Tariff Calculations (All amounts in Rs. Cr)

Particulars	1	2	3	4	5	6	7	8	9	10	11	12
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Outstanding Debt	10004.03	9170.36	8336.69	7503.02	6669.35	5835.68	5002.02	4168.35	3334.68	2501.01	1667.34	833.67
Loan Repayment	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67
Outstanding Loan at the end	9170.36	8336.69	7503.02	6669.35	5835.68	5002.02	4168.35	3334.68	2501.01	1667.34	833.67	0.00
Average loan	9587.20	8753.53	7919.86	7086.19	6252.52	5418.85	4585.18	3751.51	2917.84	2084.17	1250.50	416.83
Equity	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34
Interest charges on debt	1069.45	976.46	883.46	790.46	697.47	604.47	511.48	418.48	325.49	232.49	139.49	46.50
O& M Cost	260.32	276.80	294.08	312.43	331.93	352.64	374.64	398.02	422.86	449.24	477.28	507.06
Depreciation	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67	833.67
ROE+MAT on RoE	424.72	424.72	425.84	404.81	407.11	404.81	404.81	404.81	404.81	404.81	404.81	404.81
Interest on WC	225.87	226.56	227.45	228.04	229.31	230.67	232.30	234.14	236.22	238.55	241.15	244.03
Total Fixed cost	**2814.03**	**2738.21**	**2664.50**	**2569.41**	**2499.49**	**2426.26**	**2356.89**	**2289.12**	**2223.04**	**2158.76**	**2096.39**	**2036.06**

Particulars	13	14	15	16	17	18	19	20	21	22	23	24	25
	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41
Outstanding Debt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan Repayment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Outstanding Loan at the end	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34	2155.34
Interest charges on debt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O& M Cost	538.70	572.31	608.03	645.97	686.28	729.10	774.59	822.93	874.28	928.84	986.79	1048.37	1113.79
Depreciation	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32	65.32
ROE+MAT on RoE	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81	404.81
Interest on WC	232.22	237.65	243.42	249.54	256.05	262.97	270.32	278.12	286.41	295.22	304.58	205.29	208.16
Total Fixed cost	**1241.04**	**1280.09**	**1321.57**	**1365.63**	**1412.45**	**1462.19**	**1515.03**	**1571.17**	**1630.81**	**1694.18**	**1761.50**	**1723.78**	**1792.07**

Sd/-
(H.M. MANJUNATH)
CHAIRMAN

Sd/-
(M.D.RAVI)
MEMBER