ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

4th Floor, Singareni Bhavan, Red Hills, Hyderabad 500 004

O.P.No. 47 of 2017

&

I.A.No.28 of 2017

Dated. 02-03-2019

Present

Sri Justice G. Bhavani Prasad, Chairman

Sri P.Rama Mohan, Member

In the matter of

Determination of tariff for Sri Damodaram Sanjeevaiah Thermal Power Station (SDSTPS) Stage–I of APPDCL for the period from 05.02.2015 to 31.03.2019

Between:

Andhra Pradesh Power Development Company Limited (APPDCL) ….Petitioner

AND

Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL)

Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL)

..Respondent(s)

The petition has come up for Public hearing lastly on 04-01-2019 in the presence of Sri K. Gopal Choudary, learned counsel for the Petitioner and Sri P. Shivarao, learned standing counsel for the Respondent(s) and Sri M. Venugopala Rao and Sri M. Thimma Reddy, learned objectors. After carefully considering the material available on record and after hearing the arguments of all the parties, the Commission passed the following:

O R D E R

A petition filed under section 62 of the Electricity Act, 2003, to determine the tariff from 05.02.2015 for the rest of the control period of FY2014-2019 for the supply of electricity generated by the applicant from Sri Damodaram Sanjeevaiah Thermal Power Station (SDSTPS) Stage-I (2X800 MW) to the respondent Distribution Licensees at the rates proposed by the applicant and/or as otherwise determined by the Commission in accordance with law and as the Commission considers fit in the facts and circumstances of the case. The important facts of the case according to the petitioner are as hereunder:

a. A Power Purchase Agreement (PPA) dated 22nd November, 2010 was entered between APSPDCL, APEPDCL, APNPDCL and APCPDCL, being the four (4) DISCOMs of the erstwhile Andhra Pradesh State and Andhra Pradesh Power Development Company Limited.

b. The State of Andhra Pradesh was bifurcated into two States viz. Telangana and Andhra Pradesh w.e.f. 2nd June, 2014 as per the Andhra Pradesh State Reorganization Act, 2014.

c. The Andhra Pradesh Electricity Regulatory Commission (APERC) of the erstwhile Andhra Pradesh State, vide its letter dated 23.08.2014, has returned the PPA dated 22nd November, 2010 of 2x800 MW SDSTPS Stage-I, for want of jurisdiction..

d. The Chairman and Managing Director (CMD)/Transmission Corporation of Telangana (TSTRANSCO) vide letter dt.18.04.2015 addressing the Executive Director/Southern Region Load Dispatch Centre (SRLDC) has requested not to schedule power from SDSTPS to TS DISCOMs as power is not required. The Power Systems Operation Corporation Ltd., vide their letter dt.27.04.2015 addressed the Chief Engineer/ State Load Dispatch Centre (SLDC), APTRANSCO informing that, in view of the request made by CMD/TSTRANSCO, the power from SDSTPS, Krishnapatnam will be scheduled as per requirement of APSLDC. Accordingly, APPDCL has to sell its power to DISCOMs located in AP only.

e. APPDCL has sent a proposal for sale of 90% power generation to APDISCOMS. Based on the proposal of APPDCL, APPCC in its meeting dated 22.06.2016 took a decision that APPCC agreed to the proposal of APPDCL to sign the PPA with two DISCOMs i.e. APSPDCL & APEPDCL for 90% of the project capacity since SDSTPS being situated in SPSR Nellore District falls geographically in the State of Andhra Pradesh. APPDCL and APDISCOMS have entered into an amended and restated Power purchase agreement on 24.08.2016.

f. APPDCL claimed the capital cost of Rs.12,630 Cr. as certified by its Auditors and the breakup is as hereunder.

S. No.	Description	Actual Capital Cost (Rs. Cr.)
1	EPC Contracts & Consultancy services	7314
2	ECCS	156
3	Supervision	169
4	Land	140
5	Development charges & others	101
6	Estt. & General charges	50
7	Others: O&M Mobilization, start-up fuel, legal, contingency etc	82
	Sub Total	8012
8	Financing charges & IDC up to scheduled commissioning	2957
	Sub Total	10969
9	SWIO	268
10	Transmission lines	22
11	Township	123
12	Taxes & Duties	407
13	PVC up to scheduled commissioning	338
14	Exchange Rate Variation for KFW loan upto scheduled commissioning	350
15	Water Treatment plant	2
16	INITIAL SPARES at 4% of Major Equipment	35
17	Fish Barrier	45
18	Balance Green belt	5
19	Ash pond Garlanding and surrounding Road	5
20	Groyens extension	40
21	Balance CSR works	4
22	Civil works like Guest house, street lighting, BT road for ash transportation	17
Total		12630

2. Along with capital cost determination, filings were made for determination of tariff for the control period 2014 to 2019. The fixed cost filed for the period from FY2014-15 to FY2018-19 is as follows (Rs. Cr.)

S. No.	Description	FY 2014-15 (Rs.Cr.)	FY 2015-16 (Rs.Cr.)	FY 2016-17 (Rs.Cr.)	FY 2017-18 (Rs.Cr.)	FY 2018-19 (Rs.Cr.)
1	RoCE	155.08	1419.03	1756.97	1536.14	1521.36
2	Depreciation	47.61	289.55	342.05	345.31	348.57
3	Annual O&M expenses	23.04	233.41	314.41	335.29	357.55
4	Total Annual Fixed Charges	225.73	1941.99	2413.43	2216.74	2227.48
5	90% of Total Annual Fixed Charges	203.16	1747.79	2172.09	1995.07	2004.73

a. The rate of interest charged by Power Finance Corporation (PFC) is 12.5% upto 2017 and subsequently the interest rate has come down to 10.2%. Considering the reduction in the interest rate, Return on Capital Employed (RoCE) was filed separately for the first three years and the last two years. RoCE filed for FY2014-15 to FY2016-17 is 13.4% and it is 11.8% for the years FY2017-18 & FY2018-19.

b. As per APERC Regulation 1 of 2008, depreciation has to be charged as per the rates of Ministry of Power notification dated 21.03.1994. To avoid front loading in the tariff, the tenure of the loan is revised for longer tenure and the depreciation as per the Companies Act, 2013. This will ensure benefit to the end consumers.

c. The Operation and Maintenance (O&M) cost is filed as per Central Electricity Regulatory Commission (CERC) Regulations, 2014. In addition to the normative O&M Charges as per CERC regulations, 20% was additionally claimed towards pay revision commitment of 2014 as the employees working in APPDCL are on deputation from APGENCO.

d. SDSTPS is built with super critical technology and the benefits can be realized when units are operated at a capacity of 660MW or above. If the unit is operated below 660MW, the benefits of super critical technology will not be realized. The operating parameters are proposed separately for sub-critical and super-critical.

Parameter	Sub-critical	Super-critical
Station Heat Rate	2450 kCal/Kg	2302 kCal/Kg
Aux. Power Consumption	7.5 %	6.5 %
Sp. Oil Consumption	2.0 ml/kWh	2.0 ml/kWh
Availability	80 %	80%

3. The tariff petition was taken on file of the Commission by assigning O.P.No.47 of 2017 and a Public Notice was issued on 10-10-2017 inviting views / suggestions / objections of interested persons / stakeholders to be sent to the Secretary / APERC on or before 5.00 PM on 31-10-2017 and it was also informed that the matter will be taken up for Public Hearing by the Commission on 04-11-2017 at 11.00 AM in its Court Hall at Hyderabad.

4. The petitioner has also filed an Interlocutory Application in the Commission on 29.11.2017, which was assigned I.A.No.28 of 2017, essentially praying the Commission to direct the respondent distribution licensees to pay an interim tariff of Rs.4.04 per unit for the energy supplied by the petitioner to the respondents during FY2017-18 pending disposal of the main petition and subject to adjustment upon final determination of tariff by the Commission.

5. In response to the main tariff petition, APDISCOMS have filed their counter on 16.02.2018. The submissions of APDISCOMs are as follows:

   a. The capital cost in their calculations is:

S. No.	Description	Actual Capital Cost (Rs. Cr.)
1	Mandatory package as per CERC norm	8048
2	IDC and FC to be allowed	1043
3	Exchange rate Variation	0
4	Land cost	78
5	Taxes and duties	0
6	Transmission lines township etc.	261
	Total	9429

b. The mandatory package is as per CERC benchmarking capital cost ordered on 04.06.2012. According to CERC order, the base year is December, 2011 and cost per MW is Rs.4.79 Cr. per MW and with the annual escalation of 5%, the benchmark cost works out to Rs.5.03 Cr. per MW for the project scheduled to be commissioned by February, 2013. The mandatory package filed by the petitioner is excess by Rs.468 Cr. when compared with mandatory package cost as per CERC order.

c. As per the petitioner, the Interest During Construction (IDC) is Rs.2957Cr. which is higher than the IDC considered in the Power Purchase Agreement (PPA) dated 22.11.2010 i.e. Rs.1043Cr. The increase in IDC is due to the delay in execution of the project by 30 months. The Hon'ble Supreme court in its order dated 22.09.2016 in respect of civil appeal no.1652 of 2015 between Electricity department, Port Blair Vs. Surya Chakra Power Corporation Limited has set aside the judgment of the Appellate Tribunal in allowing increase in IDC for delay in execution of the project. Even as per the judgment of Appellate Tribunal for Electricity in various appeals vide 284 of 2013 & 205 of 2012, the said claims need to be disallowed. Hence, IDC may be limited to Rs.1043 Cr. as per PPA dated 22.11.2010.

d. The petitioner has claimed Foreign Exchange Rate Variation (FERV) of Rs.350 Cr. for determination of capital cost. The Foreign Exchange Rate Variation should not be allowed as per the clause 10.10 of APERC Regulations 1 of 2008. Furthermore, the IDC was computed at higher rate of 12.5% per annum and hence FERV should not be allowed.

e. As per Central Electricity Authority (CEA) guidelines the land requirement is 1072 Acres for 1600 MW. The petitioner acquired total land of 1494 acres which is 39% higher than the requirement and land cost may be limited to Rs.78 Cr. as per PPA dated 22.11.2010.

f. The project was implemented with Mega Power status. There was delay in implementation of the project. Hence, APDISCOMS should not be burdened with taxes and duties incurred by the petitioner after scheduled COD and they may be disallowed.

g. The weighted average interest rate is 9.01% considering the interest rate of 10.2% for PFC, 0.75% for KFW loan-1 and 5.31% for KFW loan-2. The weighted average RoCE works out to 10.96%. Hence, RoCE proposed is 10.96% for the control period.

h. The O&M cost as per CERC Regulations is Rs.14.4 Lakhs/MW during 2014-15 and Rs.18.38 Lakhs/MW during 2018-19.The petitioner claimed higher O&M cost and O&M cost may be regulated as per regulations or actual expenses incurred whichever is less.

6. APPDCL has filed its rejoinder on 04.05.2018 on the counter filed by APDISCOMS. The submissions are as follows:

a. The benchmark capital cost indicated by CERC is not a mandatory fixation. It was stated in the order itself that it is a tool to guide prudence check and without intending to replicate micro detailing. It does not preclude the special or specific facts and circumstances of each project which have to be examined on their own merits. The following special features /facilities are required in this project.

Sea water intake and out fall	Rs. 268 Cr.
External coal conveying system	Rs. 156 Cr.
Startup fuel	Rs. 48 Cr.
Total	**Rs. 472 Cr.**

b. There is no provision either in the PPA dated 22.11.2010 or in the amended PPA dated 24.08.2016 for considering the Scheduled Commercial Operation Date (SCoD) as 22.02.2013.

c. The IDC as per the respondents' counter itself works out to Rs. 1089 Cr. for one year on Rs. 8713 Cr. @ 12.5%. Hence, the contention of the respondents that the IDC should be limited to Rs. 1043 Cr. is without a reasonable base or justification. The IDC works out to Rs. 2183 Cr. even though the project is completed in 5 years. The COD was delayed due to State bifurcation issues and the impact on IDC is Rs. 353 Cr. on account of delay in declaration of CoD. In addition, there are other delays beyond the control of the APPDCL.

d. The taxes and duties comprise of non-exempted sales tax under mega policy and excise duties and sales tax on steel and cement etc.

e. The claim of Rs.350Cr. towards foreign exchange was erroneously made while computing the capital cost originally. On re-examination of the issue by the experts and also analyzing the issue legally, it is found that the cost on this account cannot be termed as Foreign Exchange Variation and it is to be in fact brought under the head, 'EPC contracts and consultancy services'. This is because of the fact that Rs.271 Cr. was the difference between the Indian Rupee Equivalent of the imported equipment as per the first estimate and actual expenditure. The balance of Rs.79 Cr. is by the way of revaluation of the outstanding liability made as per the accounting procedure being followed and the same may not be considered as part of the capital cost.

f. The capital cost break up with the above modifications is as follows.

S. No.	Description	Actual Capital Cost (Rs.Cr.)
1	EPC Contracts & Consultancy services	7585
2	ECCS	156
3	Supervision	169
4	Land	140
5	Development charges & others	101
6	Estt. & General charges	50
7	Others: O&M Mobilisation, start-up fuel, legal, contingency etc.	82
	Sub Total	8183
8	Financing charges &IDC up to scheduled commissioning	2957
	Sub Total	11140
9	SWIO	268
10	Transmission lines	22
11	Township	123
12	Taxes & Duties	407
13	PVC up to scheduled commissioning	338
14	Exchange Rate Variation for KFW loan upto scheduled commissioning	0
15	Water Treatment plant	2
16	INITIAL SPARES at 4% of Major Equipment	35
17	Fish Barrier	45
18	Balance Green belt	5
19	Ash pond Garlanding and surrounding Road	5
20	Groyens extension	40
21	Balance CSR works	4
22	Civil works like Guest house, street lighting, BT road for ash transportation	17
	Total	12551

g. The ROCE is computed based on PFC interest rates. The rates of 0.75% and 5.31% are between GoI & KFW and payable at prevailing exchange rate. APPDCL has to reimburse the actual cost incurred by Govt. of India. The rate of interest is 12.5% for PFC in the first 3 years of the control period and 10.2% in the last 2 years of the control period. As per Regulation, single cost of debt is to be determined considering the generating company's proposal and present cost of debt, market conditions etc. Accordingly APPDCL has proposed cost of debt at 12.5% and 10.2% for the first 3 years and the next two years respectively.

h. O&M costs are taken as per CERC Regulations, 2014 with additional provision towards pay revision of 2014, as the employees of APPDCL are on deputation from APGENCO.

7. The office of the Commission has submitted a report on the issues involved and the responses of APPDCL/APPCC are as hereunder.

i. Mandatory Package:

The difference in mandatory package is Rs.468 Cr. and APPDCL indicated specific costs of Rs.472 Cr. to this project. APPDCL is required to demonstrate the prudency of the said cost with reference to similar projects.

APPDCL Response: Prudency cannot be shown by any reference to similar projects, more particularly when such similar projects cannot be identified having regard to the particular situations and circumstances prevailing at this project site. The prudency of the expenditure is shown by the necessity of the expenditure and the procurement process undertaken in incurring the expenditure. The sea water intake and outfall is an essential part of the project and is marked by the particular and peculiar conditions and circumstances at the project site. As per M/s WAPCOS, consultants, the estimated cost of sea water intake and outfall is Rs.201 Cr. as per 2011 rates. Tenders were invited and finalized to an amount of Rs.268 Cr. Similarly the external coal conveying system is an essential and necessary part of the project and work was awarded duly calling for tenders. The cost of the work is Rs.156 Cr. against an estimated amount of Rs.166 Cr. The amount of Rs.48 Cr. is necessary for startup fuel before commissioning of the project.

ii. Interest during Construction(IDC)

What is the cost towards IDC and finance charges if the project is completed as per Scheduled COD and views of APDISCOMS on the reasons for the delay and consequent increase in IDC on grounds of state bifurcation?

APPCC Response: APPDCL in their letter dated 16.11.2017 indicated the dates of schedule COD of the project as 22.08.2012 for unit-1 and 22.02.2013 for unit-2. The state was bifurcated on 02.06.2014 and the claim of the petitioner that the delay is due to uncertainties on account of State bifurcation is not tenable.

APPDCL Response: There is no agreed SCOD and time taken for the COD of the units in PPA. The reasons for increase in IDC were dealt in the rejoinder.

iii. Taxes and duties

What is the cost due to taxes and duties if the project is completed within the schedule COD and whether Mega Power status has any bearing on the taxes and duties claimed?

APPDCL Response: Under Mega Power policy imported items have been exempted from payment of custom duty and indigenous items except steel and cement are exempted from payment of excise duty. Indigenous items are liable to sales tax. APPDCL has paid excise duty on steel and cement and sales tax on all indigenous items. There is no increase in taxes and no excess amount was paid towards taxes even for the supplies/work done beyond any normative or hypothetical schedule COD. Taxes and duties have been claimed at actuals as per the terms and conditions of relevant purchase orders.

iv. Land cost

Reasons for increase in land cost from Rs.78 Cr. to Rs.140 Cr. and what is the criterion for land allocation between stage-I and stage-II.

APPDCL Response: The advance possession of the entire land required for the project was taken from the State Govt. at the initial stage itself and actual transfer / alienation and payment of land cost was subsequently done from time to time based on compensation orders issued by revenue authorities from time to time. The land cost was Rs.7 lakhs per Acre during 2007 and the same was Rs.40 lakhs per acre during 2018 as fixed by revenue authorities. The infrastructure and facilities are common for stage-I and Stage-II and land to the extent of 51 acres will be for stage-II.

v. **RoCE**

APPDCL and APDISCOMS need to explain the facts and figures to take a decision in the matter.

APPCC Response: APPDCL, in their letter dated 16.11.2017 submitted the rate of interest as 10.2% for PFC loan, 0.75% for KFW portion-1 and 5.31% for portion-2.

APPDCL Response: Clause 12.1 of regulation 1 of 2008 provides for single cost of debt to be determined considering the generating companies proposal, present cost of debt and market conditions. The foreign currency loan agreement is between the KFW and the GOI. The loan from GOI to APPDCL through GoAP and APGENCO is a rupee loan. The debt service in rupees of such rupee loan from GoI is by reimbursement of the debt service cost of the GoI. The APPDCL has proposed rate of interest based on PFC interest rate and RoCE has to be worked out in line with 1 of 2008 regulation.

8. Further, in response to the Public Notice, certain objections have been received in the Commission on various dates and the parties to the petition have also furnished replies. The names of the objectors and the summary of objections and replies are as hereunder:

(i) Sri M. Venugopala Rao, Senior Journalist and Convenor, Centre for Power Studies; Sri B. Tulasidas; Sri Ch. Narasinga Rao, Member Communist Party of India; Sri A. Punna Rao, Vijayawada and Sri P. Madhu, State Secretary, Communist Party of India (Marxist):

(a) Objection: A power purchase agreement (PPA) should be judged fundamentally from three angles: (a) need for purchasing power from the project concerned for the period specified to meet demand growth; (b) cost effectiveness and various options available to get power at the lowest possible or competitive tariff in given circumstances, various options available for selecting generator/supplier of power and the legality and propriety of the procedure adopted for the same and; (c) propriety and legality of provisions in the PPA and their adverse impact on tariff to be paid by the consumers. While public hearing in O.P.No.26 of 2016 relating to PPA between APPDCL and AP Discoms for purchasing 90% of power from the subject project was completed on 20.6.2017 and the same was reserved for orders, the subject petition was filed by APPDCL. It was submitted earlier on 21.6.2017 in O.P.No.26 of 2016, inter-alia, that “in view of availability of surplus power on a large scale and approval of the Commission in the tariff order for 2017-18 for despatch of a partial quantum of power from SDSTPS and some other projects whose PPAs are pending before it for its consideration, we once again request the Commission to exercise its legitimate authority to direct APPDCL to submit application for determination of capital cost and tariff for SDSTPS, take up it along with PPA for consideration, for the reasons explained above and earlier, among others, and issue appropriate orders to ensure orderly development of power sector and reasonable tariff to the consumers of power. It is necessary for the Commission also to take a holistic and comprehensive view of the whole issue for giving its orders." Contrary to the submissions of APPDCL during the public hearings in O.P.No.26 of 2016 that they would submit application for determination of capital cost and tariff within 30 days after the Commission gives its consent to the PPA, the Company has submitted the subject petition even while order on the PPA is yet to be given by the Commission.

Reply of APPCC: This project was conceptualized in 2009 to meet the ensuing demand of the State and considered the same in long term studies. The project is included in resource plan. APPDCL have filed tariff application before APERC for determination of the tariff. Now both the matters (PPA and tariff) are pending before APERC.

Reply of APPDCL: APPDCL & APDISCOMs entered into PPA and same was submitted to the Commission and the orders are reserved. APPDCL has now also filed the petition for determination of tariff under section 62 of Electricity Act, 2003.

(b) Objection: Needless to say, without determining the permissible capital cost of a power project, the tariff to be paid for purchasing power from it in terms of the PPA concerned cannot be determined, when the said project is selected through the route of memorandum of understanding. The subject project falls in this category. In the subject petition, APPDCL claimed a total capital cost of Rs.12,630 Cr. for completion of Stage-I of SDSTPS. Based on that and applying various parameters, APPDCL has claimed annual fixed charges on yearly basis ranging from Rs.203.16 Cr. for 2014-15 to Rs.2004.73 Cr. for 2018-19 plus indicative energy charges. The Commission is requested to consider the following points, among others, for determination of capital cost of the subject project:

i. In both the original PPA signed between the four DISCOMs of the erstwhile AP and APPDCL and the amended and restated PPA signed between the two AP DISCOMs and APPDCL, contrary to applicable regulations and standard practice, Commercial Operation Date (COD) of the units of the subject project to be achieved from the date of investment approval/financial closure is not specifically stated, obviously, with a view to absolving APPDCL of its responsibility to commit and declare COD of the units of the subject project within stipulated periods as per applicable regulations. CoDs of the two units of the subject project need to be considered as per applicable regulations.

ii. In the minutes of the meeting of APPCC held on 22.6.2016, it is incorporated that the financial closure of Sri Damodaram Sanjeevaiah Thermal Power Station 2x800 MW was achieved on 26.2.2007. It is further incorporated that APPDCL declared the project CoD as 24.8.2015 with a delay of 38 months as per the CERC norms.

iii. Based on applicable regulations, delay in declaration of COD of the project should be determined. After financial closure, increase in interest during construction (IDC), financing charges (FC) and increase in other costs like overheads & price escalation after scheduled COD are invariably linked with delay in implementation of the project. As such, they should be disallowed.

iv. The work that was intrinsically inevitable for declaration of CoD of units of the project, if not completed within the scheduled timelines, would lead to delay and escalation of cost. Therefore, for the failure of APPDCL and their contractors in declaring CoDs by applicable scheduled dates, whatever additional expenditure, whether in the form of IDC, FC or price escalation, increase in overheads, increase in cost of BTG contract, increase in remaining cost or in any other form that arises as a result of such failure, claimed to have been incurred by APPDCL for such works after scheduled CoDs, should be disallowed.

v. Terms and conditions for payment of liquidated damages by APPDCL to AP DISCOMs for delay in declaring COD in time need to be taken into account. After determining the period of delay in declaring COD as per standard practices and regulations, the Commission has to determine the amount of liquidated damages and reduce the same from the capital cost of the subject project.

vi. As admitted by APPDCL, it availed customs duty exemption for all the imported items and excise duty exemption for all the indigenous items, except steel and cement, under Mega Power policy of the GoI.

vii. For purchase of equipment and execution of the subject project, orders were given to several companies and services of several companies were engaged for resolving various problems that had cropped up during execution of the project, as explained by APPDCL and documents provided to us. The reasons for delays, who is responsible for such delays, provisions for making insurance claims and seeking liquidated damages or penalties from the companies or contractors concerned who were responsible for such delays as per terms and conditions of contracts concerned need to be examined and determined.

viii. Article 10.8 of Regulation No.1 of 2008 of the Commission says, inter-alia, that "the Capital Cost as determined above, shall also include further capital expenditure incurred, if any, up to the first financial year closing one year after the date of commercial operation of the last unit of the project, its stage or the unit, as the case may be, is admitted by the Commission." In other words, further capital expenditure claimed to have been incurred after one financial year from the applicable COD should not be admitted by the Commission.

ix. CERC, in its tariff regulations of 2014, has made it clear that "in case the time over-run beyond SCOD is not admissible after due prudence, the increase of 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 or the transmission licensee." These guiding principles should be followed as a part and parcel of prudence check.

x. The final capital cost of Rs.7.893 Cr. per MW of the subject project, with its capital cost revised from the originally estimated Rs.8654.15 Cr. to Rs.12630 Cr., is very much on the higher side and unjustifiable.

Reply of APPCC: As per CERC norms, the timeline for completion of the project is 58 months. APDISCOMS have estimated capital cost to the tune of

Rs.9429 Cr. duly considering CERC norms. However APERC will finalize the tariff after prudent check and duly following the Regulations in vogue.

Reply of APPDCL: As per the PPA, the tariff determining authority is the Commission. As per PPA and as per regulations, the capital cost will be determined by the Commission after prudence check. The capital expenditure incurred for the project is Rs.12,630 Cr. as certified by the statutory auditors and C&AG.

APPDCL has provided the reasons in the tariff petition itself as "Factors & circumstances towards the increase of the capital cost of the Project".

The capital cost of the project cannot be comparable with sub-critical technology and capital cost has to be determined duly considering super-critical technology benefits and reasons mentioned in the tariff petition.

(c) Objection: Reducing impermissible components of claimed capital cost of a power project by regulatory bodies is a standard practice. A few examples are given hereunder:

i) In its order dated 6.5.2015, CERC has reduced the capital cost from Rs.7774.88 Cr. claimed by Indira Gandhi Super Thermal Power Project (three units of 500 MW each of Aravali Power Company Pvt. Ltd. at Jhajjar in Haryana) claimed by the Company to Rs.7322 Cr. (Rs.4.88 Cr. per MW). The actual CoDs of the three units of the projects were delayed by a few months.

ii) In its order dated 6.7.2015, CERC has reduced the capital cost from Rs.3852.45 Cr. claimed by Koderma Thermal Power Station (unit-I of 500 MW of Damodar Valley Corporation in Jharkhand) to Rs.2327 Cr. (Rs.4.65 Cr. per MW). CoD of the unit was delayed by 37.5 months.

iii) In its order dated 8.2.2016, CERC has reduced the capital cost from Rs.5623.19 Cr. claimed by Vallur Thermal Power Project (two units of 500 MW each of NTPC Tamil Nadu Energy Company Ltd. at Vallur) to Rs.5533.48 Cr. (Rs.5.53 Cr. per MW). CoDs of the units were delayed by 21.63 months and 24.5 months respectively.

iv) Regarding the capital cost and tariff of 2x600 MW thermal project of Singareni Collieries Company Limited with which TS DISCOMs had entered into a long-term PPA, TSERC approved a capital cost of Rs.7575.26 Cr. against the final capital cost of Rs.8540.22 Cr. claimed by the Company, thereby reducing capital cost to the tune of Rs.964.96 Cr.TSERC, in its order dated 6.12.2016, reduced fixed charges from Rs.2.43 per kWh claimed by SCCL to Rs.1.74 per kWh for the year 2017-18 and from Rs.2.41 to Rs.1.86 per kWh for the year 2018-19.

v) In its order dated 5.6.2017, relating to multi-year tariff for the projects of TS Genco, TSERC has reduced the capital cost from Rs.4645.57 Cr. claimed by the Genco to Rs.3905.03 Cr. for the year 2017-18.

Reply of APPCC: APDISCOMS have estimated the capital cost to the tune of Rs. 9429 Cr. duly considering CERC norms. However, the Commission will finalize the tariff after prudent check and duly following the Regulations in vogue. M/s SCCL filed an appeal before APTEL against TSERC on determination of capital cost of 2x600 MW thermal project

Reply of APPDCL: The Commission will approve the capital cost duly examining the issues referred after prudent check. The various orders of the CERC cited are not relevant for the instant petition.

The capital cost of a project with super-critical technology is not comparable with sub-critical technology and capital cost has to be determined duly considering super critical technology benefits and also the reasons mentioned in the tariff petition.

(ii) Sri M. Thimma Reddy, Convener, People's Monitoring Group on Electricity Regulations, Dt. 04.11.2017.

(a) Objection: The Project CoD of Sri Damodaram Sanjeevaiah Thermal power Station (SDSTPS) was declared on 24th August 2015. The petition for PPA approval was filed before the Commission one year after declaration of CoD. The present application for tariff determination was filed in September 2017 i.e. more than two years after project COD. The CoD of the first unit was declared on 5th February, 2015. The application of approval of PPA as well as capital cost and generation tariff of this plant should have been filed before the Commission much earlier.

When CoDs of the two units were already declared, for unit -1 on 5.2.2015 and for unit-2 on 24.08.2015, there does not seem to be any justification for not submitting the PPA and the capital cost and seeking consent of the Commission to the same in time, i.e., much before the scheduled CoD as agreed in the original PPA.

Reply of APPCC: The delay in execution of the project by APPDCL cannot be attributed to APDISCOMS.

Reply of APPDCL: The original PPA was entered with Four Distribution Companies and consequent to the bifurcation of the State, amended Agreement is entered into with two Distribution Companies of AP. The tariff determination authority is CERC as per original PPA and the same was amended as APERC.

APPDCL & APDISCOMs entered into amended PPA and the same was submitted to the Commission and the orders are reserved. APPDCL has now also filed the petition for determination of tariff under section 62 of Electricity Act-2003.

(b) Objection: According to an earlier PPA signed between APPDCL – developer of the plant and DISCOMs dated 22.11.2010 capital cost of the plant was Rs.8,654.15 Cr. According to the present application for the determination of tariff, capital cost of the plants stands at Rs.12,630 Cr. This means that the capital cost has increased by Rs.3,976 Cr. i e. by 46%. The revised capital cost of the project works out to Rs.7.89 Cr. per MW. It is important to closely scrutinize the capital cost of the plants as claimed by the developers and accepted by the APDISCOMs.

This hike in capital cost of the SDSTPS is abnormal, unjustifiable and detrimental to the interest of electricity consumers in the State. The details and reasons for increase in the capital cost of the projects should have been filed with the Commission for prudence check and considering the same for its determination and of the tariff. As a part and parcel of prudence check, the Commission has to examine all relevant factors relating to capital cost and procedures adopted for the project for bidding process and terms and conditions in giving contracts to the companies who executed the project, reasons for delay, if any, in implementing it and declaring COD as per schedules agreed to in the original PPA, originally agreed dates of financial closure, COD, clauses for penalty for delay, allocation of fuel to the project, permissible tariff, arrangement for evacuation of power from the project etc. The present petition by APPDCL does not provide any meaningful information on different segments of capital cost incurred.

Initially capital cost of the 2x800 MW thermal power plant was pegged at Rs.8,432 Cr. By the time of the 2010 PPA the capital cost climbed to

Rs.8,654.15 Cr. Within no time capital cost increased by Rs. 220 Cr. By 24th August, 2016 when the present PPA was submitted the capital cost shot up to Rs.12,630 Cr. According to section 3.4 of the Amended and Restated PPA "the Capital cost as per PPA dated 22-11-2010 is Rs.8,654.15 Cr. But APPDCL revised the capital cost to the tune of Rs.12,630 Cr". That is, the capital cost of the plant increased by whopping 46%. Such an increase in capital cost raises doubts.

In the present context it will not be out of place to compare SDSTPS with Thermal powertech Corporation (TPCIL). The TPCIL plant is also located in the same geographical area at Krishnapatnam of Nellore district. The execution of TPCIL plant started quite some time after the work on SDSTPS started. TPCIL requested preponement of schedule delivery date from 1.4.2017 to 1.4.2015 due to early commissioning of the units. While TPCIL advanced the COD by two years, SDSTPS delayed COD by three years. For the year 2015-16, while unit cost of TPCIL was Rs.3.58 it was Rs.4.31 in the case of SDSTPS. Power procurement cost from SDSTPS is higher by more than 20% compared to power procured from TPCIL. Financial burden due to delay in commissioning of the plant shall not be shifted on to the consumers but it has to be borne by APPDCL, developer of this power plant, whose inefficiency in executing the project resulted in escalation of project cost.

Reply of APPCC: APDISCOMS have estimated capital cost to the tune of Rs. 9429 Cr. duly considering CERC norms. However, the Commission will finalize the tariff after prudent check and duly following the Regulations in vogue. APDISCOMS rejected the claim of APPDCL towards the increase in IDC.

Reply of APPDCL: As per the PPA, the tariff determining authority is the Commission. As per PPA and as per regulations, the capital cost will be determined by the Commission after prudence check. The capital expenditure incurred for the project is Rs. 12,630 Cr., as certified by the statutory auditors and C&AG.

APPDCL has provided the reasons in the tariff petition itself as "Factors & circumstances toward the increase of the capital cost of the Project".

The capital cost of the project cannot be compared with sub-critical technology and capital cost has to be determined duly considering super-critical technology benefits and reasons mentioned in the tariff petition.

(c) Objection: One of the important reasons for increase in capital cost is the interest during construction (IDC). IDC and related charges have gone up to Rs.2,957 Cr. forming 23.41% of the total projected cost. This is a result of the delay in execution of the project which is an indication of inefficiency of the developers in executing the project in time. Electricity consumers in the State shall not be made to suffer due to inefficiency of the project developers.

IDC for the period beyond scheduled CoD shall not be allowed as part of the capital cost of the plant. According to Clause 40 (5) of CERC Terms and conditions of Tariff Regulations 2004, In case of delay in commissioning as set out in the first approval of the Central Government or the techno–economic clearance of the Authority, as applicable, interest during construction for the period of delay shall not be allowed to be capitalized for determination of tariff.

The financial closure of Sri Damodaram Sanjeevaiah thermal Power station 2x800 MW had been achieved on 26.2.2007. Following prudent project execution norms, the CoD of the first unit should have been declared by 26.10.2010, i.e. 44 months from the date of financial closure and CoD of the second unit and project COD should have been achieved by 26-4-2011, six months from the COD of the first unit. The same was declared on 24.08.2015.There was delay of more than four years in starting power generation from these units.

After financial closure, due to delay in execution of the project by 52 months, Interest during Construction (IDC), financing charges (FC) and increase in other costs like overheads and price escalation after scheduled COD increased and they are invariably linked with delay in implementation of the project. As such, those additional expenditures should be disallowed. The very purpose of agreeing to and incorporating scheduled CODs in a PPA is to ensure that the project is commissioned accordingly so that the benefit of running it by generating and supplying power to the DISCOMS which means their consumers, materializes in time and cost escalation due to delay is avoided. If CODs are delayed, it automatically increases IDC, and Project cannot be commissioned, thereby depriving the procurers of Supply of power with attendant problems like imposing power cuts or purchasing additional power from other sources in the market at higher tariffs. That is the reason why it is generally treated that time is the essence of an agreement. Therefore, the developer is obligated to adhere to agreed CODs and is not entitled to claim IDC, FC and increase in other costs like overheads and price escalation after the Scheduled CoD.

The Commission is requested to allow IDC and related financial charges only up to the scheduled project CoD i.e. 26-4-2011.

Interest during construction shall be calculated according to CoD arrived at on the basis of the date of financial closure achieved i.e. 26.2.2007. As the Project execution starts with the achievement of financial closure, capital cost of the project has to be decided according to this date of financial closure, but not 2016 PPA which was filed before the Commission after CoD of the both the units was declared. Including only prudent costs demands disallowing IDC after project COD as calculated from the date of financial closure. The foundation stone for this power project was laid on July 17, 2008 more than one year after the financial closure. At that time COD of Unit-1 which was scheduled for May, 2010, was changed to July, 2012 and CoD of unit-2 was shifted from November, 2011 to January, 2013.

In the CAG report it is mentioned "The estimated cost (August, 2006) of the project as per the Detailed project Report (DPR) was Rs. 8,432 Cr. As per the DPR, the scheduled Commercial Operation Dates (COD) of the project were August, 2012 for Unit-1 and February, 2013 for Unit-2. According to report in the Hindu dated 10, February, 2012, CoD of unit-1 will be March, 2013 and that of unit,2 will be September, 2013.Total capital cost of the project was reported to be Rs.8,432 Cr.

Tata project Ltd. was awarded BoP packages for this project with 27-02-2009 as the Zero date. All works related to the Unit-1 were scheduled to be completed in 36 months and Unit-2 in 39 months. According to this time-line, plant should have been ready by the year 2012. But the commissioning of the plant was delayed by 3 years.

Turbine and generator works were awarded to L&T. L&T had achieved assembling and successful testing of 800 MW Turbine Generators for the 2x800 MW SDSTPS in June, 2011. It was considered a record achievement in India.

Despite such a record achievement, the developers in agreement with the APDISCOMs declared COD of the first unit on 5th February, 2015 and the COD of the second unit was declared on 24th August, 2015. The PPA for approval was filed one year after declaration of CoD of the second unit, and application for determination of generation tariff was filed two years after declaration of project CoD.

Unit-1 of SDSTPS was synchronized on 31st March, 2014. But the CoD of unit -1 was declared on 5th February, 2015. There is a gap of 10 months between synchronization of the plant and declaration of CoD, which is unusual. The above sequence of events made to demand that the delay in achieving COD must squarely be placed on the developers and higher IDC due to delay in launching the power generation shall not be shifted on the consumers through power tariff.

Given the inordinate delay in declaring CoD due to inefficient execution of the plant, IDC shall be limited to scheduled CoD of the project as calculated from the date of financial closure.

Reply of APPCC: The delay in execution of the project by APPDCL cannot be attributed to APDISCOMS. However, it would be more appropriate for APPDCL to furnish the reply for delay. APDISCOMS rejected the claim of APPDCL towards the increase in IDC.

Reply of APPDCL: The delay in project execution has resulted in increase in project cost due to increase in IDC and foreign exchange variation. The main reasons for the delay are:

SDSTPS is a green field project and being the first project to implement Super Critical technology has to face all the difficulties in transferring the technologies from foreign manufacturers which resulted in delay in commissioning of the Project.

Even though, all statutory clearances were obtained in time & all major contracts were finalized well in advance, certain delays occurred mainly in supply and commissioning of major equipment and finalizing designs of Boiler and related equipment by BHEL i.e. delay in transfer of supercritical technology by SG contractor.

Since all the agencies including APPDCL/APGENCO are new to the super critical technology which is implemented in SDSTPS for the first time in a public sector utility in India, number of engineering issues have cropped up during the execution of project and the same have been resolved effectively by involving engineers from Alstom/USA, Mitsubishi Heavy Industries /Japan, Mitsubishi Electric Company / Japan, Emerson/Singapore & USA, HTC/China, Clyde Union/UK etc., apart from Engineers of BHEL, L&T, TPL and Project Consultants M/s Desein.

Poor soil conditions specific to the site, procedural delays in getting MoEF clearances for revised location of ash pond and delay in exchange of inputs among main contractors have contributed to the Delay.

Apart from the above delays in project completion, declaration of COD has delayed due to State bifurcation issues, power evacuation issues and environment issues. In spite of the above, APPDCL was able to complete the project as the first thermal power project with super critical technology in Public Sector.

The Commission will approve the capital cost duly examining the issues referred after prudent check.

(d) Objection: If the delay in achieving CoD of the plants was because of contractors of BTG and BoP, then liquidated damages have to be recovered from them as should have been provided in contracts with them. If the delay in execution of the project was due to the developer then the burden has to be borne by the developers and the same cannot be shifted on to the consumers.

Though the present PPA has no provision for liquidated damages for delay in declaring CoD, the Commission shall be within its power to order inclusion of a provision even in this late stage to protect consumers' interests.

In the context of liquidated damage CAG in its Report noted, "As there was delay in execution of the works by M/s BHEL, the company recovered (March 2014) Rs.240 Cr. towards LD. Audit observed that Company refunded (July 2014) the LD to M/s BHEL even though M/s BHEL had been slow in execution of works against approved schedules, which consequently affected the schedule of M/s L&T for the erection of TG and M/s TPL (for BOP works)'' and "However, the refund of LD was a violation of terms and condition of the agreement and was not in best financial interest of the Company."

The Commission is requested to recover the liquidated damages from BHEL and adjust it towards the capital cost.

Reply of APPCC: There is no provision for liquidated damages in any of PPAs with Central and State Public sector undertakings. Further, APPDCL should submit liquidated damages levied on the EPC contractor to claim the reduction on capital cost.

Reply of APPDCL: There is no provision for Liquidated Damages in the PPAs of Central and State PSUs.

Major equipment like Boiler, Turbine, Generator and associated control system at all the Thermal Stations of the APGENCO and Turbine & control systems at many Hydel projects of APGENCO were supplied by M/s BHEL. During overhauls of the units and during failure of critical equipment, the OEM spares and Technical services of BHEL are essentially required to bring back the Units into service at the earliest possible time.

M/s BHEL, a PSU company is continuously raising the issue of imposition of levy of LD for the execution of SG contract of SDSTPS Stage-I, stating that even NTPC is not levying any penalty on them.

To maintain cordial relationship with M/s BHEL and keeping in view the future requirement of spares and services from BHEL, APPDCL Board has discussed and reviewed the issue in detail and decided to waive 50% of LD amount imposed on M/s BHEL, in the interest of APPDCL/APGENCO.

(e) Objection: In the project cost, Rs.350 Cr. was allocated towards exchange rate variation for KFW loan. In the PPA, there is no mention about risks related to foreign exchange rate variation. As such, the same shall not be allowed under the project cost.

Also, according to Clause 10.10 of Regulation 1 of 2008, foreign exchange variation (FERV) risk shall not be allowed as a pass through. Following this APPDCL's claim of Rs.350 Cr. towards foreign exchange rate variation shall not be allowed.

Reply of APPCC: APDISCOMS have rejected the claim of FERV in-line with 10.10 of APERC Regulation 1 of 2008.

Reply of APPDCL: The KFW loan is at a lower rate of interest and including foreign exchange variation, it is cheaper option than the domestic loans.

(f) Objection: According to clause 3.13 the PPA, any revenue earned by the generating company from sale of infirm power after accounting for fuel expenses shall be applied for reduction in capital cost. Following this, the revenue realized from sale of power between 31st March, 2014 and 5th February, 2015 shall be used to bring down capital cost of the power plant. In this context, what is the quantum of revenue earned by SDSTPS on sale of infirm power after accounting for the fuel expenses and whether it was used to reduce the projected capital cost of the project?

Reply of APPCC: APPDCL has claimed only Fuel Cost during Infirm Power period.

Reply of APPDCL: APPDCL has claimed only Fuel Cost during Infirm Power period.

(f) Objection: According to the present application to fix generation tariff in the project cost Rs.4 Cr. were allocated towards balance CSR (Corporate social Responsibility) work. Works related to CSR are expected to be taken up with funds out of profit earned by the entities and it cannot be made part of capital cost of plant. As such the same shall not be allowed under the project cost.

The present petition mention balance CSR works. Total CSR expenditure over and above this Rs.4 Cr. also shall not be allowed as part of capital expenditure.

Reply of APPCC: As approved by APERC.

Reply of APPDCL: As per the TOR issued by the MoEF & CC CSR works are to be carried out during Project implementation stage itself to meet the regulations. Hence, CSR is included in the project cost.

(g) Objection: Compared to the 2010 PPA, capital cost of the plant increased by Rs.3,976 Cr.. While IDC and related charges account for Rs.2,957 Cr. and foreign exchange variation account for Rs.350 Cr. the developers have to explain the reasons for additional cost of more than Rs.650 Cr. apart from IDC and related charges and foreign exchange variation.

Factors and circumstances that led to the current capital cost of the project as noted by APPCL at Appendix-1 only goes to show inefficiency of the parties involved in properly designing and executing the project.

It was mentioned that Declaration of COD was delayed due to several unforeseen issues and circumstances arising out of bifurcation. There was no mention of what were these unforeseen issues and circumstances. How bifurcation of the State is related to delay in declaration of CoD is not understood.

Reply of APPCC: As approved by Commission.

Reply of APPDCL: The delay in project execution has resulted in increase in project cost due to increase in IDC and foreign exchange variation. The main reasons for the delay are:

SDSTPS is a green field project and being the first project to implement Super Critical technology has to face all the difficulties in transferring the technologies from foreign manufacturers which resulted in delay in commissioning of the Project.

Even though, all statutory clearances were obtained in time & all major contracts were finalized well in advance, certain delays occurred mainly in supply and commissioning of major equipment and finalizing designs of Boiler and related equipment by BHEL i.e., delay in transfer of supercritical technology by SG contractor.

Since all the agencies including APPDCL/APGENCO are new to the super critical technology which is implemented in SDSTPS for the first time in a public sector utility in India, number of engineering issues have cropped up during the execution of project and the same have been resolved effectively by involving engineers from Alstom/USA, Mitsubishi Heavy Industries /Japan, Mitsubishi Electric Company /Japan, Emerson/Singapore & USA, HTC/China, Clyde Union/UK etc., apart from Engineers of BHEL, L&T, TPL and Project Consultants M/s Desein.

Poor soil conditions specific to the site, procedural delays in getting MoEF clearances for revised location of ash pond and delay in exchange of inputs among main contractors have contributed to the Delay.

Apart from the above delays in project completion, declaration of COD has delayed due to state bifurcation issues, power evacuation issues and environment issues. In spite of the above, APPDCL was able to complete the project as the first thermal power project with super critical technology in Public Sector.

APERC will approve the capital cost duly examining the issues referred after prudent check.

(h) **<u>Objection</u>**: The petition filed by APDISCOMs for approval of PPA mentioned that SDSTPS had got the Mega power Status approved by GOI. As the SDSTPS comes under mega power policy, concessions availed under this facility shall be used to bring down total capital cost of the plant.

APPDCL is reported to have availed customs duty exemption for all the imported items and excise duty exemption for all the indigenous items except steel and cement under mega power policy of Government of India. This should have ensured reduction of capital cost and ensured lesser capital cost of the project.

<u>Reply of APPCC</u>: As approved by Commission.

<u>Reply of APPDCL</u>: APPDCL has availed Customs Duty exemption for all the imported items and Excise Duty exemption for all the indigenous items except steel & cement, under Mega power policy of Govt. of India which is already reflected in the project cost.

The capital cost is subject to approval of Commission.

<u>(i) Objection</u>: According to clause 3.16 of the PPA target PLF for incentive shall be 80%. Form 3 on page 29 of the present petition also mentions target PLF as 80%. This is based on clause 15 of Regulation 1 of 2008 of APERC. In the meantime CERC Revised target PLF for incentive to 85%. During this period technological changes enabled higher efficiency of power plants. Sub-critical power plant technology is being replaced by super-critical technology. SDSTPS is based on super-critical technology. As PPA is going to be in vogue for the next 25 years, it is to be seen that consumers in the State are also benefited from the new technology. While requesting to revise the Regulation in question, the Commission is also requested to include target PLF of 85% in the present PPA itself. The commission is within its powers to include such a provision in the PPA. According to clause 20 of Regulation 1 of 2008, the Commission may at any time add, vary, alter, modify or amend any provision of the Regulation According to clause 21 of the Regulation "Nothing in this Regulation shall be deemed to limit or otherwise affect the powers of the Commission to make such orders as may be necessary to meet the ends of justice as to process of the Commission. Allowing the present target PLF (80%) will be doing grave injustice to electricity consumers in the State.

In the context of target PLF, it is important to take note of clause 10 of Regulation 1 of 2008. According to this Clause, "provided that the norms of operation specified in this Regulation shall not preclude the generating company and the distribution licensee from agreeing upon improved norms of operation and in such a case, such improved norms shall be applicable for determination of tariff". Form-2 page 28 of the petition mentions that the plant is based on super-critical technology.

At para 6.1 of its petition APPDCL has mentioned that there are no norms in APERC Regulation 1 of 2008 for power plants of such high capacity. At para 6.3 of its petition APPDCL, in the context of allowing O&M expenses, it argued, "it is therefore necessary that this Commission may consider and adopt the methodology of the CERC 2014 Regulation. Following this similar treatment shall also be extended to target PLF and 85% shall be considered as target PLF.

Reply of APPCC: As approved by Commission.

Reply of APPDCL: The provisions are as per APERC regulations.

(j) Objection: In the case of depreciation, APPDCL mentioned that, it was taking measures to modify the re-payment schedule for a longer tenure matching life expectancy of the plant. It justified this by saying that this will eliminate frontloading for the purpose of tariff and enure to the benefit of the end consumer. This proposed treatment of depreciation need to be examined in the background of developers' debt repayment obligations.

O&M Charges:

TSERC in its Order dated 19-06-2017 on Determination of capital cost and Generation Tariff for 2x600 MW Thermal power project of SCCL adopted the following O&M charges, following CERC Regulations:

Year	2016-17	2017-18	2018-19
O&M Charges Rs.Lakh/MW	16.27	17.30	18.38

The same or lower per MW O&M charges may be adopted in the case of SDSTPS units.

Incentive shall be paid for Generation beyond target PLF of 85%.

Reply of APPCC: As per CERC Regulations.

Reply of APPDCL: The provisions are as per APERC regulations.

(iii) Sri M. Thimma Reddy, Convener, People's Monitoring Group on Electricity Regulation on 27.01.2018 brought the following issues to the notice of the Commission in response to the replies of APPDCL to the Objections raised earlier.

a. The reply of APPDCL that project cost of Rs.12,630 Cr. as certified by the statutory Auditor and C&AG is misleading. C&AG has reported loss of Rs. 1361.94 Cr. under various heads.

b. The reply of APPDCL stating the reasons for delay in commissioning of projects as being new to super-critical technology and first of its kind in PSU is not justified. Many of the projects like Jhajjar power plant in Haryana, TPCIL in Nellore District have been completed within the schedule time.

c. Liquidated damages from M/s BHEL needs to be recovered as per the provisions of the agreement.

d. APPDCL availed services of M/s Lahmeyer international private limited, Germany for preparation of DPR. The consultancy was given to lenders country. The KFW loan is a burden on account of defective/incomplete report of the consultants.

e. Availment of benefits under mega power policy needs to be verified.

(iv) Sri M. Vedavyas Rao, Secretary General, APSEB Engineers Association and Sri M. Mohan Rao, General Secretary, APGENCO Accounts officers Association:

(a) Objection: The SDSTPS – Stage-I (2X800 MW) is using Super-critical Technology, first of its kind in Public Sector. The Super-critical Technology offers low specific coal consumption, less auxiliary consumption and it is environmental friendly with less emissions.

The advantages of Super-critical Technology can only be achieved when the unit is operated above 660 MW, which reduces the variable cost.

As per the tariff application filed by APPDCL, different variable costs were quoted for Super-critical Technology and Sub-critical Technology. Therefore, it is evident that the variable cost is less when the unit is operated above 660 MW, which benefits the APDISCOMs to avoid outside power purchases at high variable costs. As a result, the end consumer will be benefited. Hence, it is requested to allow SDSTPS units to run above 660 MW duly following the merit order.

Reply of APPCC: The Units operating at full load will always be advantageous to the DISCOMs.

Reply of APPDCL: APPDCL has proposed a lower tariff rate for passing on the benefits of super-critical technology when operating at a load of over 660 MW.

(b) Objection: The Commission is requested to issue instructions to the concerned authorities to make permanent arrangements for coal linkage to SDSTPS to avoid coal diversions from APGENCO Stations to SDSTPS, which will benefit both APGENCO and APPDCL.

Reply of APPCC: APPDCL shall take all necessary steps to meet adequate coal for operating the plant at full load.

Reply of APPDCL: Earlier, APPDCL had coal linkage for the quantity of 3.25 MMTPA upto 30.06.2017 and APPDCL has expedited for the full quantity of Coal linkage for SDSTPS. Accordingly, APPDCL has entered into an MOU for 5.0 MMTPA (Full Coal Linkage) with M/s MCL through washery mode on 19.09.2017 and the balance requirements will be procured through imports.

(v) Sri M. Mohan Rao, General Secretary, APGENCO Accounts officers Association:

(a) Objection: APGENCO Accounts officers also suggest availing of 100% power for APDISCOMS considering future growth in the State.

Reply of APPCC: APDISCOMS entered PPA for 90% of power generated as per the mega power policy guidelines issued by GoI. However, for the balance 10% of power also would be availed by APDISCOMS through a separate MoU.

Reply of APPDCL: The PPA with DISCOMS is for 90% of the capacity of the power plant.

Based on the petition filed by the applicant, counter filed by the respondent, rejoinder filed by the applicant, Report of the office of the Commission, Responses from applicant and respondent on the report submitted by office of the Commission and the views/objections/suggestions of various stakeholders mentioned supra and with due regard to the replies of APPCC & APPDCL, the important issues that have been raised relate to a) Determination of Capital cost; b) Determination of Fixed cost and c) Methodology for determination of variable cost.

9. **Commission Analysis:** Before going into consideration of the above issues identified, it is to point out that certain issues related to the Power Purchase Agreement, per-se, have been raised by various stake holders. On this, it is to state that all such issues have already been addressed by the Commission in the Orders in O.P. No. 21 of 2016 and they need not be dealt with in this Order. The identified issues as above are dealt with as hereunder:

a) Determination of Capital Cost:

i. The petitioner has filed for a total capital cost of Rs.12,630 Cr. in the original petition and the same was revised to Rs.12,551 Cr. in the Rejoinder filed in response to the counter of the Respondent. The reduction of capital cost of Rs.79 Cr.(Rs.12,630 Cr.- Rs.12,551 Cr.) is stated to be due to liability provided in books of accounts on account of foreign exchange variation by way of revaluation of outstanding liability as per accounting procedure and the same may not be considered as part of capital cost. The respondent DISCOMs in their counter indicated Rs.9,430 Cr. towards capital cost with a break up of Rs.8048 Cr. as Mandatory Package, Rs.78 Cr. towards land, Rs.261 Cr. towards other components and Rs.1043 Cr., towards IDC & Financing Charges. For the purpose of analysis, the claims of the petitioner as in the original petition and as modified in the rejoinder and the stand of respondent DISCOMs are compared in the table given below:

S. No.	Description	As filed by APPDCL /Petitioner (Rs.Cr.)	As per rejoinder of APPDCL (Rs.Cr.)	As per Discoms (Rs.Cr.)
1	EPC Contracts & Consultancy services	7314	7585	8048
2	Supervision	169	169	
3	Development charges & others	101	101	
4	Estt. & General charges	50	50	

5	Others: O&M Mobilisation, legal, contingency etc.	82	34	
6	PVC up to scheduled commissioning	338	338	
7	Water Treatment plant	2	2	
8	Initial Spares at 4% of Major Equipment	35	35	
	Sub total	**8043**	**8314**	
9	Sea Water Intake Out fall (SWIO)	268	268	
10	External Coal Conveyor System (ECCS)	156	156	
11	Start-up fuel	0	48	
	Sub total	**8515**	**8786**	**8048**
12	Land	140	140	78
13	Financing charges & IDC up to scheduled commissioning	2957	2957	1043
14	Exchange Rate Variation for KFW loan upto scheduled commissioning	350	0	0
15	Taxes & Duties	407	407	0
16	Transmission lines	22	22	22
17	Township	123	123	123
18	Fish Barrier	45	45	45
19	Balance Green belt	5	5	5
20	Ash pond Garlanding and surrounding Road	5	5	5
21	Groyens extension	40	40	40
22	Balance CSR works	4	4	4
23	Civil works like Guest house, street lighting, BT road for ash transportation	17	17	17
	Total	**12630**	**12551**	**9430**

ii. As can be seen from the table from item 16 to 23 totalling to an amount of Rs.216 Cr., there is no dispute between the parties and as such the same is approved as part of the capital cost except items 18 and need not be dealt with in-detail. As far as item no. 18 i.e. providing an amount of Rs.45 Cr. towards fish barrier is concerned, even though the same is stated to be included in the capital cost proposal in terms of letter dated 03rd September, 2013 of Ministry of Environment and Forest, Government of India, it is found upon an enquiry by the office of the Commission, that the relevant work has not yet been taken up. As such, the same cannot be treated as part of the capital cost. Further, as regards item No.14 i.e. the claim towards FERV amounting to Rs.350Cr., upon re-examination, the petitioner in their rejoinder brought an amount of Rs.271 Cr. out of the said Rs.350 Cr. under the head of EPC contracts and Consultancy services which is one of the heads under the capital cost, and the balance Rs.79 Cr. is reduced from the capital cost. The rationale given by the petitioner for treating the cost towards FERV in their original petition as cost towards EPC contracts and Consultancy services is that the difference between the Indian rupee equivalent of the imported equipment as first estimated in the DPR at the estimated exchange rate at that time and the actual expenditure is not FERV as understood for the purpose of tariff determination. The FERV for tariff determination purposes is the variation in capital cost that has resulted by reason of the difference in exchange rate on the repayment of foreign exchange loan taken to fund the project cost. It was further submitted by the petitioner that the foreign currency loan agreement is between the KFW Germany and Government of India. The loan from Government of India to APPDCL through GoAP and APGENCO is a rupee loan. The debt service in rupees of such rupee loan from Government of India is by reimbursement of the debt service cost of Government of India. Since the petitioner is not claiming any amount against FERV now, the original objection by the respondent that Regulation 1 of 2008 does not permit any FERV has lost its significance now and hence, there is no need to elaborately deal with the issue.

iii. **SCOD and delay in execution of the Project**: As per the tariff petition, the CoD of unit-I is 05.02.2015 and CoD of unit-II is 24.08.2015. As per the counter of respondent DISCOMs, the scheduled CoD of unit-I is 22.08.2012 and CoD of unit-II is 22.02.2013, thus there is a delay of 30 months, as per respondent DISCOMs. The petitioner further stated that there is no scheduled CoD in the PPA. In order to deal with the rival contentions of the parties, Regulation 1 of 2008 needs to be consulted. However, since there is no definition for Schedule Commercial Operation Date or SCoD in the above said regulation, reliance has to be placed on CERC Regulation, 2014. The above position is also justifiable because both the petitioner and respondents have generally relied on the CERC regulation, wherever Regulation 1 of 2008 is silent. The definition provided for Schedule Commercial Operation Date in the CERC Regulation is that, SCoD shall mean the dates of commercial operation of a generating station or Generating unit or Block thereof or transmission system or element thereof as indicated in the investment approval or as agreed in the Power Purchase Agreement or Transmission Service

Agreement as the case may be, whichever is earlier. Coming to the case on hand and based on the available record, nothing by the name of investment approval is submitted in the Commission. Furthermore, the SCoD is not mentioned either in the Power Purchase Agreement originally signed on 22.11.2010 or in the subsequently amended PPA dated 24.08.2016. While the matter stood thus, the Chief General Manager, APPDCL vide letter dated 16.11.2017 addressed to Chief Engineer/IPC & PS/APPCC while providing some clarifications in the context of tariff petition filed by APPDCL for the control period of FY2014-19, unequivocally stated that the scheduled CoD for unit-I & unit-II are 22.08.2012 and 22.02.2013 respectively, and the same was filed by the respondent. In view of the above categorical statement, even though the same was not mentioned in the PPA, Commission is inclined to consider the above dates as SCoD. The following table shows SCoDs, actual CoDs and the delay in months in execution of the project.

Name of the Unit	SCoD	Actual CoD	Delay
Unit-I	22.08.2012	05.02.2015	30 Months
Unit-II	22.02.2013	24.08.2015	30 Months

iv. The next issue that arises for our consideration is the treatment of time over run and consequently cost overrun. Before addressing this issue, the averments of the parties are as hereunder:

(a) The petitioner in the application itself mentioned factors and circumstances affecting the capital cost of the project as follows:

(i) SDSTPS is the first project to implement Super-critical Technology in a public sector utility and several difficulties were faced in transfer of technology as all agencies involved were new to the technology.

(ii) There were considerable delays in transfer of Boiler Design Technology from ALSTHOM, USA to BHEL to whom the steam generator package was awarded.

(iii) The location of ash pond had to be changed due to interference with main plant layout requiring revised approval from MoEF which took additional time.

(iv) The sea water intake and outfall arrangements have to be changed requiring revised MoEF approval which also took additional time.

(v) Poor soil conditions resulted in deeper and additional piling.

(vi) Delayed declaration of CoD due to several unforeseen issues and circumstances arising out of State bifurcation.

(vii) Number of engineering issues have cropped up during the execution of the project and the same have been resolved effectively by involving engineers from ALSTOM/USA, MITSUBISHI heavy industries, Japan MITSUBISHI electric company, Japan, EMERSON, Singapore, China, Clyde Union, UK apart from engineers of BHEL, L&T, TPIL and M/s DESEIN.

(b) The respondent DISCOMs with reference to the reasons stated by the petitioner for delay in execution of the project stated that they are not tenable, as the same are business risk which they should have mitigated by prior anticipation and should have taken corrective steps to avoid such delays in execution of the project. The petitioner has not submitted monthly progress reports to the respondents. Cost increase due to failure in implementation of the project due to non performance of the contractors or a new technology should not be passed on to the respondents, there by burdening the consumers of the State of Andhra Pradesh.

(c) The petitioner in their rejoinder submitted that, there are delays beyond the control and / or the foreseeability of the petitioner and it is not correct to contend that these should have been foreseeable and could have been mitigated. Environmental issues and regulatory issues cannot be foreseen, whether in terms of incidence or of time taken for resolution, and they are entirely beyond the applicant’s control.

(d) In response to the query/tentative suggestion of the office of the Commission requiring the views of APDISCOMs on the reasons for delay and consequent increase in IDC on grounds like State bifurcation etc., the respondent DISCOMs submitted that the State was bifurcated on 02.06.2014, the claim of the petitioner that the delay in achieving CoD was due to the risk of Non-payment of amounts recoverable from Telangana DISCOMs due to uncertainties on account of bifurcation of the State is not correct and not tenable as the bifurcation of the State was subsequent to the scheduled CoD of the Unit-I & II.

(e) While deciding the time overrun and cost overrun, it is apt to extract the relevant provisions of the governing regulations on the subject namely Regulation 1 of 2008 and CERC Regulation 2014 which are as hereunder:

Extracts from APERC Regulation 1 of 2008:

"10.8: Capital Cost: Subject to prudence check by the Commission based on information filed by the generating company, Licensees, evidence from other Commissions, Generating companies, licensees and International experience etc., the Commission shall determine the capital cost of the project. The Capital Cost as determined above, shall also include further capital expenditure incurred if any up to the first financial year closing one year after the date of commercial operation of the last unit of the project, its stage or the unit, as the case may be, is admitted by the Commission."

Extracts from CERC Regulations, 2014

"Prudence Check means scrutiny of reasonableness of capital expenditure incurred or proposed to be incurred, financing plan, use of efficient technology, cost and time over-run and such other factors as may be considered appropriate by the Commission for determination of tariff. While carrying out the prudence check, the Commission shall look into whether the generating company or transmission licensee has been careful in its judgments and decisions for executing the project or has been careful and vigilant in executing the project"

"11.Interest during construction (IDC), Incidental Expenditure during Construction (IEDC)

Interest during Construction (IDC):

Interest during construction 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 upto SCOD.

In case of additional costs on account of IDC due to delay in achieving the SCOD, the generating company or the transmission licensee as the case may be, shall be required to furnish detailed justifications with supporting documents for such delay including prudent phasing of funds:

Provided that if the delay is not attributable to the generating company or the transmission licensee as the case may be, and is due to uncontrollable factors *as specified in Regulation 12 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 or the transmission licensee, as the case may be, after due prudence and taking into account prudent phasing of funds.

Incidental Expenditure during Construction (IEDC):

Incidental expenditure during construction shall be computed from the zero date and after taking into account pre-operative expenses up to SCOD:

Provided that any revenue earned during construction period up to SCOD on account of interest on deposits or advances, or any other receipts may be taken into account for reduction in incidental expenditure during construction.

In case of additional costs on account of IEDC due to delay in achieving the SCOD, the generating company or the transmission licensee as the case may be, shall be required to furnish detailed justification with supporting documents for such delay including the details of incidental expenditure during the period of delay and liquidated damages recovered or recoverable corresponding to the delay:

Provided that if the delay is not attributable to the generating company or the transmission licensee, as the case may be, and is due to uncontrollable factors as specified in regulation 12, IEDC may be allowed after due prudence check:

Provided further that where the delay is attributable to an agency or contractor or supplier engaged by the generating company or the transmission licensee, the liquidated damages recovered from such agency or contractor or supplier shall be taken into account for computation of capital cost.

In case the time over-run beyond SCOD is not admissible after due prudence, the increase of 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 or the transmission licensee.

12. Controllable and Uncontrollable factors: The following shall be considered as controllable and uncontrollable factors leading to cost escalation impacting

Contract Prices, IDC and IEDC of the project:

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

a) Variations in capital expenditure on account of time and/or cost over- runs 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 levies or force majeure events; and

c) Delay in execution of the project on account of contractor, supplier or agency of the generating company or transmission licensee.

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

i. Force Majeure events.; and

ii. Change in law.

Provided that no additional impact of time overrun or cost over-run shall be allowed on account of non-commissioning of the generating station or associated transmission system by SCOD, as the same should be recovered through Implementation Agreement between the generating company and the transmission licensee:

Provided further that if the generating station is not commissioned on the SCOD of the associated transmission system, the generating company shall bear the IDC or transmission charges if the transmission system is declared under commercial operation by the Commission in accordance with second proviso of Clause 3 of Regulation 4 of these regulations till the generating station is commissioned:

Provided also that if the transmission system is not commissioned on SCOD of the generating station, the transmission licensee shall arrange the evacuation from the generating station at its own arrangement and cost till the associated transmission system is commissioned."

(f) As can be seen from the extract of relevant provisions of the above said two regulations, it is clear that time over run and consequent cost overrun can be allowed only if the respective claims are substantiated with facts and figures and furthermore, when it is demonstrated that the claim is due to un-controllable factors. In the instant case, the reasons given by the petitioner for the delay occurred namely the technology being new, involvement of transfer of technology, time required for taking revised approvals from MoEF for ash plant and sea water intake and outfall system and State bifurcation are too generic and vague devoid of any supporting data and not substantiated with facts and figures and hence the delay as projected by the petitioner cannot be accepted as justified. The issue is answered accordingly.

v. Further to the above, the other key issues involved in capital cost determination are as follows:

(i) Cost of mandatory package and Project specific cost

(ii) Consideration of land cost

(iii) Consideration of taxes and duties

(iv) Determination of interest during construction.

(v) Liquidated damages

i. **Cost of Mandatory Package and Project specific cost**

The petitioner claimed an amount of Rs.8043 Cr. [additionally seeking project specific cost of Rs.472 Cr.(Rs.268 Cr. for SWIO + Rs.156 Cr. for ECCS + Rs.48 Cr. for start up fuel)] and transferred an amount of Rs.271 Cr. (out of the earlier claim of Rs.350Cr. towards FERV) under the head of EPC contracts and consultancy services after giving up Rs.79 Cr. being liability provided in books of accounts on account of FERV by way of revaluation of outstanding liability as per accounting procedure. Finally, the total claim of the petitioner is Rs.8786 Cr. (Rs.8043 Cr. + Rs.472 Cr. + Rs.271 Cr.). The claim of the respondent is Rs.8048 Cr. The excess claim by the petitioner over and above the mandatory package which respondent is willing to agree works out to Rs.738 Cr. The break up for Rs.738 Cr. is (i) Rs.268 Cr. towards Sea Water Intake Out fall (SWIO), (ii) Rs.156 Cr. towards External Coal Conveyor System (ECCS), (iii) Rs.48 Cr. towards start-up fuel and (iv) Rs.271 Cr. transferred from FERV. The remaining Rs.5 Cr. (Rs.8048 Cr. – Rs. 8043 Cr.) is towards difference in mandatory package cost between petitioner and respondent. The above cost items from (i) to (iii) are sought to be allowed by the petitioner on the ground that they are specific to this project. Whether these costs can be allowed or not is now to be examined, item wise. Coming to the item (i), i.e. the claim of Rs.268 Cr. towards Sea Water Intake Out fall (SWIO), the CERC order dated 04.06.2012 at Annexure-II providing for a bench mark capital cost of Rs.4.79 Cr. per MW (for 2 x 800 MW Green Field project) with December, 2011 indices as base, clearly states what costs are included in the mandatory package and what costs are excluded from the mandatory package. The cost included are Steam Generator/Boiler Island, Turbine Generator Island, Associated auxiliaries, Transformers, Switch gears, Cables, Cable facilities, Grounding & Lighting Packages, Control & Instrumentation, Initial Spares for BTG, Balance of Plant including cooling Tower, Water System, Coal Handling Plant, Ash handling Plant, Fuel oil unloading and storage, Mechanical miscellaneous Package, Switchyard, Chimney and Emergency DG set. The costs excluded are Merry Go Round (MGR), Railway Siding, unloading equipment at Jetty and Rolling stock, Locomotive and transmission line till tie point. As can be seen at item no. 2.3 in Form-5 B (an annexure to the CERC order dated 4.6.2012), 'Water System' is mentioned under which, 'external water supply system' is included among other things. Whether the water is fetched from the nearby canal / river or from sea is a different aspect. Since the 'external water supply system' is included under 'water system' it can be reasonably presumed that the expenditure incurred towards sea water intake and outfall system is covered under 'external water supply system' and hence it need not be specifically allowed over and above the mandatory package. As regards item (ii), i.e. the claim of Rs.156 Cr. towards External Coal Conveyor System (ECCS), as can be seen from the Benchmark capital cost order dated 04.06.2012 and as extracted supra, the costs towards MGR, Railway Siding, unloading equipment at Jetty, and Rolling stock, Locomotive, transmission line till tie point are excluded from the mandatory package. According to the petitioner the External Coal Conveyor System (ECCS) at a cost of Rs.156 Cr. was necessitated for bringing coal from Krishnapatnam port to the plant. This is akin to costs towards MGR, Railway Siding. That being the case, Commission feels that an amount of Rs.156 Cr. incurred towards ECCS has to be allowed over and above the mandatory package cost. As regards item (iii), i.e. the claim of Rs.48 Cr. towards start-up fuel, the petitioner in the tariff application claimed Rs.82 Cr. towards O&M Mobilisation, start-up fuel, legal, contingency etc. The respondent Discoms have considered the same in the mandatory package. Further, the petitioner in the rejoinder stated that Rs.48 Cr. is incurred during construction and commissioning period of both the units till synchronization with the grid. The matter has been examined and this cost is not one of the costs included in the mandatory package which is detailed supra and as such the same has to be allowed to the extent of Rs.48 Cr. only. The additional costs that need to be added to the mandatory package under the two items discussed above amounts to Rs.204 Cr. Now coming to the examination of mandatory package per-se, the respondent DISCOMs have worked it out to a consolidated amount of Rs.8048 Cr. based on CERC order dated 04.06.2012 on benchmark capital cost (Hard Cost) for thermal power stations with coal as fuel with December, 2011 as base year and duly applying an escalation of 5% per annum, since the project was to be commissioned by February, 2013. The same is in order. As regards item (iv), i.e. the claim of Rs.271 Cr. transferred from FERV and brought under the head of EPC contracts and consultancy services need not be allowed as an individual separate cost item, as the approach of the Commission is by recognizing the cost towards mandatory package and thereafter deciding what additional costs can be given over and above that. Hence, the Commission allows an expenditure of Rs.8048 Cr. only towards mandatory package. Together with the other costs additionally allowed as detailed supra, the total cost works out to Rs.8252 Cr. (Rs.8048 Cr. + Rs.156 Cr. + Rs.48 Cr.)

ii. Consideration of land cost

The petitioner filed for a land cost of Rs.140 Cr. and the respondent in their counter requested to limit it to Rs.78 Cr. based on PPA dated 22.11.2010. The petitioner stated that possession of the entire land was taken at the initial stage itself and the actual transfer/alienation and payment of land cost was subsequently done from time to time based on the compensation orders issued by revenue authorities. The cost of compensation per acre is Rs.7 lakhs in the year 2007, Rs.21 lakhs in the year 2015 and Rs.40 lakhs during the year 2018. The total land cost is as per the actual cost paid as per the G.O.s issued from time to time. The reason stated by the petitioner is justified for the increase in cost. However, the land cost needs to be apportioned between stage-I and stage-II. Hence the land cost is limited proportionately for Stage-I i.e. Rs.93.3 Cr. for this project.

iii. Consideration of taxes and duties

The petitioner filed Rs.407 Cr. towards taxes and duties on actual basis and respondent stated that the taxes and duties beyond Scheduled COD should be disallowed. The office of the Commission in their report sought for cost towards taxes and duties, if project is completed as per scheduled CoD and whether Mega Power status has any bearing on the taxes and duties claimed. In response to the report of the office of the Commission, the petitioner stated that under Mega Power policy, only customs duty on imported equipment and excise duty on indigenous equipment except steel and cement are exempted. Sales tax on indigenous equipment and excise duty and sales tax on steel and cement are not exempted and are payable. The petitioner further submitted that there is no extra cost on account of delay in completion of the project and the claim is based on the actuals. The claim is towards statutory levies and based on actuals. Now it is clear that the Mega Power policy has nothing to do with the taxes and duties claimed by the petitioner. As regards the amount to be allowed towards taxes and duties, the contention of DISCOMs is that the taxes and duties beyond Scheduled COD should be disallowed. Whereas, in response to the query of the office of the Commission as to what is the cost towards taxes and duties if project is completed as per scheduled CoD timelines of the units, considered by APDISCOMs, the petitioner stated that there is no extra cost on account of delay in completion of the project and the claim is based on the actuals. While suggesting the mandatory package cost to be allowed, the respondent DISCOMs indicated an amount of Rs.8048 Cr. with December, 2011 as the base year by duly providing appropriate escalation without regard to when the actual cost that formed part of mandatory package has actually been incurred. Now on the item of taxes & duties, the contention of the respondent DISCOMs that the taxes and duties beyond Scheduled COD should be disallowed is rather out of step with their stand on mandatory package. In view of the matter, it is difficult to take a different stand while allowing the taxes & duties. That apart, the breakup for taxes & duties is also not filed by the petitioner except for indicating the lump sum figure. On the facts and circumstances of the case, the Commission is inclined to allow taxes & duties proportional to the cost it has already allowed supra towards mandatory package (Rs. 8048 Cr.), the additional cost duly allowed supra to the extent of Rs. 204 Cr. and the other costs incurred which were not in dispute and allowed by the Commission to an extent of Rs.216 Cr. duly dis allowing Rs. 45 Cr. towards the fish barrier, totaling to Rs.8468 Cr. The proportional costs towards taxes & duties work out to Rs.380.95 Cr. (8468 x 407 / 9047) as against the claim of Rs.407 Cr.

iv. Determination of Interest During Construction.

The petitioner claimed IDC of Rs.2957 Cr. The respondent DISCOMs in their counter stated that the claim of petitioner Company towards IDC & Financing Charges as Rs. 2,957 Cr. is higher than the IDC and financing charges of Rs.1,043 Cr. considered in the PPA dated 22.11.2010. The IDC and Financing Charges has cost implications due to delay in execution of the project. Further, respondent DISCOMs stated that, the petitioner Company vide letter dated 21.01.2017 has informed that the time lines of the Scheduled Commercial Operation Date (SCoD) for the Unit-I and Unit-II of the Project as 22nd August, 2012 and 22nd February, 2013 respectively. However, the actual CoDs of Unit-I & Unit-II were achieved on 5.02.2015 and 24.08.2015 with a delay of 30 months from SCoD. Further, the respondent DISCOMs stated that, there is Liquidated Damages clause in the PPAs entered by the various Independent Power Producers (IPPs), whereas the same was not envisaged in respect of PSUs/CGS Stations. Owing to this, the Respondents stated that they have liberty not to allow any IDC & Financial charges claimed by the petitioner beyond the agreed amount as in the PPA dated 22.11.2010. The delays in implementation of the project due to reasons mentioned in the tariff application is a business risk, which APPDCL should have mitigated by prior anticipation and LD mechanisms. Cost increase due to failure in implementation of the Project due to non-performance of the contractors or a new technology should not be passed on to the respondents and thereby burdening the consumers of the State of Andhra Pradesh. Therefore, passing on the increased cost due to time overrun owing to non-performance of contractors and introduction of new technology is not acceptable. The reasons outlined above could have been managed by imposing Liquidated Damages on the contractors as per agreements signed with them. Accordingly, such amount of LDs should be offset against the capital cost as may be determined by the Commission. Further, the respondent DISCOMs quoted the Hon'ble Supreme Court order dated 22.09.2016 in respect of Civil Appeal No. 1652 of 2015 between Electricity Department, Port Blair Vs. Suryachakra Power Corporation

Limited wherein the Hon'ble APEX court has set aside the Judgment of the Appellate Tribunal in so far as allowing an increase in Interest during Construction (IDC), Financing Charges (FC) and Incidental Expenses during Construction (IEDC) incurred for the delay in the execution of the project for the reasons beyond the control of the Respondent against the "funds tied up". Even as per the judgments of Appellate Tribunal for Electricity in various Appeals vide 284 of 2013, & 205 of 2012, the said claims need to be disallowed. Considering the above, the respondent DISCOMs concluded that IDC and Financing Charges claimed by the petitioner are in excess of Rs.1,914 Cr. (183.51 %) over and above the IDC & FC claimed in the PPA dated 22.11.2010 due to time overrun beyond SCoD timelines, which deserve to be disallowed. Had the plant been completed in scheduled CoD timelines, the incremental cost added to the Capital Cost of the Project would have been avoided. Hence, such excess amount of Rs.1914 Cr. needs to be disallowed. The respondent DISCOMS in their replies to objectors stated that as per the CERC norms dated 21.02.2014, the timelines for completion of the project is 58 months (52 months i.e. 22.08.2012 + 6 months for 2nd unit i.e. 22.02.2013). The objectors in their objections suggested to allow IDC upto scheduled COD of the project.

The petitioner in their rejoinder further stated that, there is no Scheduled COD in the PPA and the respondent DISCOMs stated that, the petitioner has informed the scheduled dates in their letter dated 16.11.2017 as 22.08.2012 and 22.02.2013 for unit-I and unit-2 respectively. The petitioner stated that the IDC works out to Rs. 2183 Cr., if the project is completed within the scheduled period of 5 years. They further submitted that IDC works out to Rs. 353 Cr. on account of 5 months delay in declaration of COD due to State bifurcation issues.

While resolving the issue on quantifying the amount towards Interest During Construction that can be allowed, it is apt to extract the relevant provisions on IDC from CERC Regulations, 2014 as APERC Regulation 1 of 2008 is silent on this issue except for annexing a form in this regard namely Form-15 (Draw down schedule for calculation of IDC and Financing charges):

CERC Regulation Extract 11(A) 1.

"Interest during Construction (IDC):

a. Interest during construction 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 upto SCOD.*

b. *In case of additional costs on account of IDC due to delay in achieving the SCOD, the generating company or the transmission licensee as the case may be, shall be required to furnish detailed justifications with supporting documents for such delay including prudent phasing of funds:*

Provided that if the delay is not attributable to the generating company or the transmission licensee as the case may be, and is due to uncontrollable factors as specified in Regulation 12 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 or the transmission licensee, as the case may be, after due prudence and taking into account prudent phasing of funds."

As can be seen from Clause 11 (A) (1), Interest During Construction 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 upto SCOD. In order to compute the IDC what is required is loan from the date of infusion of debt fund, and after taking into account the prudent phasing of funds upto SCOD. While SCoD is already decided by this Commission as 22.08.2012 for unit-I and 22.02.2013 for unit-II, no information is filed by the petitioner on date of infusion of debt fund and its prudent phasing and as such and in the circumstances, the way out appears to be working out the IDC on a notional basis. For that purpose, the project cost allowed by this commission is taken as basis i.e. Rs.8942.25 Cr. and the same is apportioned in the debt equity ratio of 70:30 as also provided for in clause 10.13 of Regulation 1 of 2008 which states that, in case of all generating stations, debt equity ratio as on the date of commercial operation shall be taken as 70:30 for determination of tariff irrespective of the actual quantum of debt and equity. Accordingly, the notional debt for the purpose of working out IDC equals to Rs.6259.58 Cr. As regards the interest to be applied on the above said amount and as can be seen from the record, the petitioner availed loan from PFC and KFW/Germany. The rate of interest for PFC loan is 12.5% and the rate of interest for KFW loan-1 is 0.75% and for loan-2 it is 5.31%. The KFW loan interest rates are applicable to

Govt. of India. As the loan agreements are entered at Govt. of India level, APPDCL has to reimburse Govt. of India the actual expenditure incurred through APGENCO and GoAP. The actual interest expenditure incurred is Rs.209.50 Cr. against loan of Rs.1827 Cr. during the construction period as can be seen from the records. The average rate for the scheduled construction period works out to 5% for KFW loan. The weighted average interest considering PFC loan and KFW loan works out to 11.2% and the same was considered for the purpose of IDC. Another issue that needs to be decided in order to work out the IDC is the reasonable period of construction that can be adopted for the purpose of IDC. On this issue, both the petitioner and the respondents stuck to their respective stands but generally referred to 58 months as available in the CERC regulations. That being the case, Commission has no hesitation to adopt the same 58 months prescribed as the reasonable norm as per the CERC Regulations, 2014. On the issue of prudent phasing of funds, the petitioner in their rejoinder worked out as detailed herein after. The loan funds of 70% of the cost are spread over a period of 5 years equally at 20% per annum. The drawls in a year are assumed to be after 6 months and interest was computed for the same 6 months period in that year and full year for the balance period upto 5th year. The approach adopted by the petitioner appears to be broadly in order except for taking 60 months instead of 52 months for unit-I and 58 months for unit-II. When the anomaly is corrected, the Interest During Construction (IDC) is worked out to Rs.1819.15 Cr. as in the table below.

Description	**Unit-1 (Rs. Cr.)**	**Unit -2 (Rs. Cr.)**	**Total (Rs. Cr.)**
Capital cost	4471.13	4471.13	8942.25
Loan(70%)	3129.79	3129.79	6259.58
Equity(30%)	1341.34	1341.34	2682.68

Unit -1 Completion Period Considered - 52 Months

Unit -2 Completion Period Considered - 58 Months

Rate of interest for the loan considered - 11.20%

Description	1st year (Rs.Cr.)	2nd year (Rs.Cr.)	3rd year (Rs.Cr.)	4th year (Rs.Cr.)	5th year (Rs.Cr.)	Total (Rs.Cr.)
Unit- 1:					(4 months)	
Loan Drawl	722.26	722.26	722.26	722.26	240.75	3129.79
Cumulative Drawl	722.26	1484.96	2333.09	3276.21	3843.45	-
Cumulative Interest	40.45	125.87	220.86	326.49	138.99	852.66
Unit -2:					(10 months)	
Loan Drawl	647.54	647.54	647.54	647.54	539.62	3129.79
Cumulative drawl	647.54	1331.35	2091.74	2937.29	3769.62	-
Cumulative Interest	36.26	112.85	198.01	292.71	326.65	966.49

v. Liquidate Damages (LDs):

The respondent DISCOMs in respect of Liquidated damages have stated as follows: There is a clause in the PPAs entered by the various Independent Power Producers (IPPs) whereas the Liquidated Damages clause was not envisaged in respect of PSUs/CGS Stations. The delay in implementation of the project due to reasons stated by the petitioner is a business risk which APPDCL should have mitigated by prior anticipation and LD mechanisms. Cost increase due to failure in implementation of the Project due to non-performance of the contractors or a new technology should not be passed on to the respondents and thereby burdening the consumers of the State of Andhra Pradesh. Therefore, passing on the increased cost due to time overrun owing to non-performance of contractors and introduction of new technology, is not acceptable. The reasons outlined above could have been managed by imposing Liquidated Damages to the contractors as per agreement signed with them. Accordingly, such amount of LDs should be offset against the capital cost as may be determined by the Commission.

The objectors in their objections suggested the following: If the delay in achieving CoD of the plants was because of contractors of BTG and Balance of Plant (BoP) then liquidated damages have to be recovered from them as should have been provided in the contracts with them. If the delay in execution of the project was due to the developer, then the burden has to be borne by the developers and the same cannot be shifted on to the consumers. Though the present PPA has no provision for liquidated damages for delay in declaring CoD, the Commission shall be within its power to order inclusion of a provision even in this late stage to protect consumers' interest. Further, the objectors have stated that in the context of liquidated damages CAG in its report noted, "As there was delay in execution of the works by M/s BHEL, the company recovered (in March 2014) Rs.240 Cr. towards LD. Audit observed that Company refunded (in July 2014) the LD to M/s BHEL even though M/s BHEL had been slow in execution of works against approved schedules, which consequently affected the schedule of M/s L&T for the erection of TG and M/s TPL (for BOP works)'' and "However, the refund of LD was a violation of terms and condition of the agreement and was not in best financial interest of the Company." Stating the above, objectors requested the Commission to recover the liquidated damages from BHEL and adjust it towards the capital cost. In this context, respondent DISCOMs in their replies stated that there is no provision for liquidated damages in any of the PPAs with Central and State Public sector undertakings. Further, respondent DISCOMs stated that, APPDCL should submit liquidated damages levied on the EPC contractor to claim the reduction in capital cost. In this context, the petitioner in its replies has stated that there is no provision for Liquidated Damages in the PPAs of central and state PSUs. Major equipment like Boiler, Turbine, Generator and associated control system at all the Thermal stations of APGENCO and Turbine & control systems at many Hydel projects of APGENCO were supplied by M/s BHEL. During overhauls of the units and during failure of critical equipment, the OEM (Original Equipment Manufacturer) spares and Technical services of BHEL are essentially required to bring back the Units into service at the earliest possible time. M/s BHEL, a PSU company is continuously raising the issue of imposition of levy of LD for the execution of SG contract of SDSTPS Stage-I, stating that even NTPC is not levying any penalty on them. Further, the petitioner stated that to maintain cordial relationship with M/s BHEL and keeping in view the future requirement of spares and services from BHEL, APPDCL Board has discussed and reviewed the issue in detail and decided to waive 50% of LD amount imposed on M/s BHEL, in the interest of APPDCL/APGENCO.

vi. As can be seen from the above, the two issues needing Commission's examination include (i) introducing Liquidated damages clause in the PPA between APPDCL and APDISCOMs and (ii) Levying Liquidated damages on the suppliers/contractors of APPDCL in terms of the agreements/contracts entered by them and thereafter reduce the liquidated damages recovered from the capital cost. As regards item (i) above, the Commission having examined the issue in its order dated 13.07.2018 in O.P. No. 21 of 2016 dealing with consent to the Amended and Restated PPA dated 24.08.2016 decided that, "the suggestion for inclusion of a provision on liquidated damages now on the ground that the present PPA has no provision for liquidated damages for delay in declaring CoD can't be accepted at this stage as the same is not fair and proper". Accordingly, the same holds good even now and there is no need to once again to deal with the said issue in this order. As regards to the issue at (ii) above, since the Commission has not allowed any delay beyond the SCoD and accordingly reduced the capital cost proportionately, there is no need to reduce such capital cost by the amount of liquidated damages received if any, as it would amount to doubly punishing the petitioner herein for the same default. Further, it is brought to our attention that the APPDCL has already recovered an amount of Rs. 240 Cr. from M/s BHEL towards liquidated damages and later released 50% of the said amount by giving them concession. While the capital cost arrived at by the Commission does not undergo any change either due to recovery of Rs.240Cr. from Bharat Heavy Electricals Limited or due to refund of 50% of it to Bharat Heavy Electricals Limited, the advice of the Comptroller and Auditor General that the refund of liquidated damages was a violation of the terms and conditions of the Agreement and was not in the best financial interest of the petitioner may be considered by the petitioner to pursue the required remedial measures to get back the refunded amount from Bharat Heavy Electricals Limited.

vii. Further to foregoing, the approved Capital Cost is as hereunder:

Approved capital cost:

S. No.	Description	Approved (Rs.Cr.)
1	EPC Contracts & Consultancy services	**8048.0**
2	Supervision	
3	Development charges & others	
4	Estt. & General charges	
5	Others: O&M Mobilisation, legal, contingency etc	
6	PVC up to scheduled commissioning	
7	Water Treatment plant	
8	INITIAL SPARES at 4% of Major Equipment	
9	Sea Water Intake Out fall(SWIO)	
	Sub total	**8048.0**
10	External Coal Conveyor System (ECCS)	**156**
11	start-up fuel	**48**
	Sub total	**8252.0**
12	Land	93.3
13	Financing charges &IDC up to scheduled commissioning	1819.15
14	Taxes & Duties	380.95
15	Transmission lines	22
17	Township	123
18	Fish Barrier	0
19	Balance Green belt	5
20	Ash pond Garlanding and surrounding Road	5
21	Groyens extension	40
22	Balance CSR works	4
23	Civil works like Guest house, street lighting, BT road for ash transportation	17
Total		**10761.4**
Capital Cost per MW (Rs. Cr.)		**6.72**

The Cost per MW for this project, which is a super-critical technology based plant, comes to Rs. 6.72 Cr. The consultation paper of the Central Electricity Regulatory Commission on Terms and Conditions of Tariff Regulations for the tariff period 1.04.2019 to 31.03.2024 having, inter-alia, shown the average capital cost in Rs.

Cr./MW for the period from 2008 to 2013 in respect of thermal plants as Rs. 6.65 Cr./MW, stated that over time, the capital cost per MW on account of various factors has gone up and the shift to super critical technology in thermal plants might have resulted in cost increase, but at the same time, it leads to improvement in efficiency in terms of O&M and the primary electricity factor. Hence, the capital cost of Rs. 6.72 Cr./MW appears to be reasonable.

b) Determination of fixed cost

The Fixed cost filed by the petitioner for the period 05.02.2015 to 31.03.2019 is as follows.

S. No.	Description	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	RoCE	155.08	1419.03	1756.97	1536.14	1521.36
2	Depreciation	47.61	289.55	342.05	345.31	348.57
3	Annual O&M expenses	23.04	233.41	314.41	335.29	357.55
4	Total Annual Fixed Charges	225.73	1941.99	2413.43	2216.74	2227.48
5	90% of Total Annual Fixed Charges	203.16	1747.79	2172.09	1995.07	2004.73

The issues involved in determination of fixed cost are

i. Determination of ROCE.

ii. Depreciation

iii. O&M cost to be considered.

The above issues are examined as hereunder:

i. Return on Capital Employed (RoCE):

The petitioner in its tariff filings filed RoCE as stated below:

(Rs. Cr.)

S. No.	Description	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	Original Capital Cost	6315	12152	12151.98	12423	12630
2	Less accumulated Depreciation	0	47.61	337.16	679.21	1024.52
3	Working Capital	629.0321	1272.204	1296.951	1274.343	1287.432
4	*Total*	*6944.032*	*13376.59*	*13111.77*	*13018.13*	*12892.91*
5	Rate of RoCE	13.40%	13.40%	13.40%	11.80%	11.80%
6	*RoCE (Annual Basis)*	*930.5003*	*1792.464*	*1756.977*	*1536.14*	*1521.364*
7	*ROCE Claimed*	*155.083*	*1419.034*	*1756.977*	*1536.14*	*1521.364*
8	**90% of ROCE Claimed**	**139.575**	**1277.130**	**1581.279**	**1382.525**	**1369.227**

a) The petitioner considered Return on debt (Rd) as 12.5% for the first 3 years and 10.2% in the last 2 years based on interest rate charged by Power Finance Corporation (PFC). The petitioner considered Return on equity (Re) as 15.5% for 5 years based on CERC Regulations. The RoCE works out to 13.4% for the first 3 years and 11.8% in last 2 years.

b) The respondent DISCOMs in their counter stated that the Weighted Average Capital Cost (WACC) needs to be determined considering the weighted average cost of debt since the debt has been funded from domestic and foreign funding with different interest rates. The petitioner's claim for considering cost of debt as 12.5% is erroneous since it is based on interest rate of domestic funding only. The Petitioner has taken a debt of Rs. 10,540 Cr. funded from PFC and KfW. Considering the applicable interest rates, weighted average cost of financing works out to be 9.01% as shown below:-

Debt Structuring

S. No.	Description	PFC	KfW - I	KfW – II
1	Debt (Rs. Cr.)	8,713	790	1,037
2	Interest Rate per annum (%)	10.20%	0.75%	5.31%
3	Weighted Average Interest Rate per annum (%)	9.01%		

c) In view of the above, considering weighted average cost of debt from both domestic and foreign sources, the weighted average rate of interest would be 9.01% which is significantly lower than 12.5%. This will eventually result in lowering of RoCE to 10.96% instead of the currently claimed RoCE of 13.4% and 11.8%. Further, the respondent DISCOMs requested to consider RoCE based on weighted average rate of debt rather than the Rate of interest of 12.5% and 10.2% claimed by the petitioner.

d) In this context, the petitioner in their rejoinder stated that the regulation provides for single cost on debt to be determined considering the generating company's proposal, present cost of debt, market conditions and relevant factors applicable to the whole of the normative debt. It does not provide for any weighted average cost of debt as sought to be computed by the respondents or otherwise. It is further reiterated that the amount paid by the applicant to the Government of India as reimbursement through GoAP and APGENCO towards interest paid by GoI is not at any particular interest rate on the amount of loan received in rupees. The rates of 0.75% and 5.31% used in the computations by the respondents are irrelevant and inapplicable in the facts of this case.

e) The office of the Commission raised a query that both the parties need to explain with facts and figures by giving the complete picture to facilitate commission to take a decision in the matter. In response to the query, the petitioner reiterated the earlier stand broadly as stated supra. The respondent DISCOMs stated that the claim made by APPDCL with regard to the incorporation of interest rates of 0.75% and 5.31% used in the computation by the respondents are irrelevant and inapplicable through its rejoinder dated 24.11.2018 is self contradictory and not correct. The APPDCL vide its letter dated 16.11.2017 has submitted the following clarification regarding interest rate for PFC loan Rs. 8717.72 Cr. with rate of interest as 10.2% & KFW Germany 0.75% for portion-I (Rs.790.42 Cr.) and 5.31% for portion-II (Rs.1037.06 Cr.).

f) As per clause 12.1 of APERC Regulation 1 of 2008, Return on capital employed is equal to sum of original capital cost less accumulated depreciation and working capital approved.

g) The rate of RoCE is weighted average cost of capital of debt and equity determined. The cost of debt shall be determined based on generating company's proposal, present cost of debt and market conditions. Return on equity shall be determined based on CERC norms, generating company's proposal, market conditions etc.

h) The rate of debt (Rd) works out to 11.2% for first 3 years considering PFC interest rate of 12.5%, 5% interest rate for KFW loan as worked out supra. In the last two years the Rd has come down to 9.3% due to reduction of interest rates of PFC from 12.5% to 10.2% as filed by the petitioner. As regards the Return on equity (Re) both the petitioner and the respondent DISCOMs have indicated CERC rate of 15.5% and the same is accepted being inline with regulations. Consequently, the RoCE works out to 12.5% in the first 3 years and 11.2% in the last two years and 11.9% for the control period.

i) The capital cost of the project was determined as Rs 10761.40 Cr. The working capital for the control period works out as follows inline with APERC Regulations

S. No.	Description	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	Cost of Coal stock for 1 month	111.39	222.78	222.78	222.78	222.78
2	Cost of Oil for 1 month	2.62	5.24	5.24	5.24	5.24
3	O&M Expenses for 1 month	11.52	24.49	26.04	27.68	29.43
4	Maintenance spares-(1% of the Historical cost)	53.81	107.61	111.92	116.40	121.05
5	Sales receivables 2 months	393.81	790.14	788.62	786.11	783.81
6	Total Working Capital	573.15	1150.27	1154.60	1158.21	1162.32
7	**90% of Total Working Capital**	**515.84**	**1035.24**	**1039.14**	**1042.39**	**1046.09**

j) The capital employed and Return on capital employed for the period 05.02.2015 to 31.03.2019 are as follows:

S. No.	Description	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	Original Capital Cost	5380.7	10761.4	10761.4	10761.4	10761.4
2	Less accumulated Depreciation	0	23.92	260.67	556.61	852.55
3	Working Capital	573.15	1150.27	1154.60	1158.21	1162.32
4	Total	5953.85	11887.75	11655.33	11363.00	11071.17
5	Rate of RoCE	11.90%	11.90%	11.90%	11.90%	11.90%
6	RoCE (Annual Basis)	708.51	1414.64	1386.98	1352.20	1317.47
7	ROCE Allowed*	114.53	1131.71	1386.98	1352.20	1317.47
8	90% of ROCE Allowed	103.07	1018.54	1248.29	1216.98	1185.72

* - ROCE allowed proportionately for unit availability i.e. 59 days in FY2014-15 and 219 days for unit-2 in FY2015-16.

ii. Depreciation to be allowed:

a) The petitioner in their application stated that, the rates of depreciation as per the Companies Act, 2013 (Being considered for accounting purpose by APPDCL) are lower than the depreciation as per the MoP Notification dated 21.03.1994. The petitioner also stated to be taking measures to modify the repayment schedule for a longer tenure, matching the life expectancy of the plant. Therefore, depreciation rates are considered as per Companies Act, 2013, which will eliminate front-loading for the purpose of tariff and to ensure benefit to the end consumers. The depreciation as filed by the petitioner for the control period FY 2014-19 is as follows:

S. No.	Particulars	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	Depreciation	47.61	289.55	342.05	345.31	348.57
2	**90% of Depreciation Claimed**	**42.84**	**260.59**	**307.84**	**310.77**	**313.71**

b) The respondent DISCOMs didn't offer any specific comments on this issue.

c) The matter is examined. As per clause 12.2 of Regulation 1 of 2008, depreciation has to be allowed as per the rates prescribed in the Ministry of power notification dated 21.03.1994 till repayment of loan and remaining depreciation value shall be spread over the balance useful life of the plant. As per MoP 1994 notification, the rate of depreciation is around 7.84%. CERC in its regulation for the control period for FY2014-2019 provided a depreciation of around 5.28%. The depreciation rate, when worked out based on the data filed by the petitioner comes to 2.75% and frontloading of tariff is avoided and the consumers are benefited and accordingly, the same is accepted by the Commission for the purpose of computing the tariff on approved capital cost.

d) The depreciation approved for the period 05.02.2015 to 31.03.2019 is as follows:

S. No.	Particulars	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	Depreciation	23.92	236.75	295.94	295.94	295.94
2	90% of Depreciation Claimed	21.53	213.08	266.35	266.35	266.35

iii. O&M cost to be considered:

a) The petitioner filed O&M cost as per CERC regulations, 2014 and included Pay Revision Commitment of 2014 additionally. The O&M expenses are escalated at the rate of 6.64% on year to year basis in line with CERC regulations. It was further mentioned that there are no norms in APERC Regulations 1 of 2008 for higher capacities over and above 500 MW.

b) The respondent DISCOMs and objectors have suggested to limit O&M cost as per CERC Regulations, 2014.

c) The matter has been examined. This Commission has been consistently in 1st, 2nd and 3rd control periods for FY2006-09, FY 2009-14 & FY2014-19 has been allowing the impact of pay revisions while issuing the APGENCO Tariff orders, as can be seen from the order dated 26.03.2016 in the matter of determination of Tariff of APGENCO generating stations for the control period from 01.04.2014 to 31.03.2019 in O.P. No. 03 of 2016. In the same order, it is also stated that even the present Commission allowed the impact of pay revisions in the orders for true-up of transmission and distribution tariffs for the 2nd control period i.e. FY 2009-2014 as periodic pay revisions and / or statutory wage increases are unavoidable to the extent they are prudent. Vide the same order, it is also reported that CERC is also allowing the impact of pay revisions in its tariff orders whenever such revision takes place. That being the case, a different treatment can't be meted out to APPDCL which is promoted by APGENCO, DISCOMs & GoAP. Accordingly, the proposal of the petitioner as extracted supra is approved. The O&M cost for the period 05.02.2015 to 31.03.2019 is as follows:

<table>
<tr><th>S. No.</th><th>Description</th><th>FY 2014-15</th><th>FY 2015-16</th><th>FY 2016-17</th><th>FY 2017-18</th><th>FY 2018-19</th></tr>
<tr><td>1</td><td>Capacity (MW)</td><td>800</td><td>1600</td><td>1600</td><td>1600</td><td>1600</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Period</td><td rowspan="2">59 days</td><td>U#1: 365days</td><td rowspan="2" colspan="3">Both Units: 12 Months / Year</td></tr>
<tr><td>U#2: 219 days</td></tr>
<tr><td>3</td><td>O&M Charges /MW (Rs. Lakhs)</td><td>17.28</td><td>18.37</td><td>19.53</td><td>20.76</td><td>22.07</td></tr>
<tr><td>4</td><td>Total O&M Charges (Rs.Cr.)</td><td>22.35</td><td>235.14</td><td>312.47</td><td>332.19</td><td>353.15</td></tr>
<tr><td>5</td><td>90% of Total O&M Charges (Rs.Cr.)</td><td>20.11</td><td>211.63</td><td>281.23</td><td>298.97</td><td>317.84</td></tr>
</table>

d) Consequently, the fixed cost for the control period from 05.02.2015 to 31.03.2019 approved by the Commission is as follows:

S. No.	Description	2014-15 (Rs.Cr.)	2015-16 (Rs.Cr.)	2016-17 (Rs.Cr.)	2017-18 (Rs.Cr.)	2018-19 (Rs.Cr.)
1	RoCE	114.53	1131.71	1386.98	1352.20	1317.47
2	Depreciation	23.92	236.75	295.94	295.94	295.94
3	Annual O&M expenses	22.35	235.14	312.47	332.19	353.15
4	Total Annual Fixed Charges	160.79	1603.61	1995.40	1980.33	1966.56
5	90% of Total Annual Fixed Charges	144.71	1443.25	1795.86	1782.29	1769.90

e) The fixed charges filed and fixed charges approved for the period 05.02.2015 to 31.03.2019 are as follows

FY	Filed (Rs. Cr.)	Approved (Rs. Cr.)	Difference (Rs. Cr.)
2014-15	203.16	144.71	58.45
2015-16	1747.79	1443.25	304.54
2016-17	2172.09	1795.86	376.23
2017-18	1995.07	1782.29	212.78
2018-19	2004.73	1769.90	234.83
Total	8122.84	6936.01	1186.83

c) Methodology for determination of Variable Cost:

a) The petitioner filed variable cost as per clause 13.1 of regulation 1 of 2008. The petitioner stated that the benefits of super critical technology are realized, when a unit of a power station operates at the capacity of 660 MW or above. If the unit operates below 660 MW, due to non dispatch under backing down, the benefits of super critical technology will not be realized. Hence, the petitioner proposed operating parameters separately for super-critical and sub-critical as follows:

Parameter	Sub-critical	Super-critical
Station Heat Rate	2450 Kcal/Kg	2302 Kcal/Kg
Aux. Power Consumption	7.5 %	6.5 %
Sp. Oil Consumption	2.0 ml/kWh	2.0 ml/kWh

b) In this context, the APSEB Engineers Association & APGENCO Accounts Officers' Association in their objections stated that the SDSTPS – Stage-I (2X800 MW) using Super Critical Technology being the first of its kind in Public Sector offering low specific coal consumption, less auxiliary consumption besides being environmental friendly, with less emissions. The advantages of Super Critical Technology can only be achieved when the unit is operated above 660 MW, which also reduces the variable cost. As per the tariff application filed by APPDCL, it is noticed that different variable costs were quoted for Super Critical Technology and Sub Critical Technology. Therefore, it is evident that the variable cost is less when the unit is operated above 660 MW, which benefits the APDISCOMs to avoid outside power purchases at high variable costs. As a result, the end consumer will be benefited. Hence, it is requested to allow SDSTPS units to run above 660 MW duly following the merit order.

c) The respondent DISCOMs in their replies stated that the units operating at full load will always be advantageous to the DISCOMs.

d) The petitioner in their replies stated that they proposed a lower tariff rate for passing on the benefits of super critical technology, when operating at a load of above 660MW.

e) The matter has been examined. The respondents and objectors did not raise any objection on variable cost parameters and the proposed parameters for operating in super critical mode are in line with the PPA approved by the Commission.

f) As regards the operating parameters applicable when units are operated under sub-critical technology, Regulation 1 of 2008 as well as CERC Regulation are silent. However, the petitioner has requested for certain parameters applicable for sub-critical operation as mentioned supra. The CERC notification L-1/18/2010-CERC dated 6th April, 2016 provides for compensation in case of operating units below normative levels. However, the same is not reflected in the PPA. As such, the parties may negotiate between themselves, if they so desire and the agreed position may be incorporated as an amendment to the PPA. Notwithstanding the above, the petitioner and respondents are advised to operate the plant in supercritical mode in order to improve the efficiency and reduce the cost, however, keeping in view merit order considerations.

g) The petitioner in their application stated that the incentive for generation beyond the target of 80% Plant Load Factor shall be claimed annually at the rates specified in the Regulation. Further, the petitioner stated that, the Commission may also consider a higher incentive at Rs.0.50 per unit. The respondent DISCOMs didn't offer their comments on this. The issue relating to payment of fixed charges on normative availability of power of 85% of the capacity and the incentive also to commence from above 85% is under discussion between APDISCOMs and APPDCL, pursuant to Commission's orders dated 13.07.2018 in O.P. 21 of 2016. Accordingly, no decision can be given in this order and the matter will be decided pursuant to the compliance of the above said directions of the Commission. As regards, giving higher incentive at Rs.0.50 per unit as against the incentive rate of Rs.0.25 per unit provided in Regulation 1 of 2008, the same cannot be changed now until the regulation is amended.

10. Apart from the desirability of the parties coming to an understanding on the operating parameters applicable during operations under sub-critical mode or supercritical mode, one factor that needs to be referred to herein is the order of the Commission in O.P.No.21 of 2016 dated 13-07-2018, whereby the amended and restated Power Purchase Agreement dated 24-08-2016 between the parties was approved in-principle subject to the settlement of the factors specified by the Commission therein. Para 12 of the said order stipulates as follows:

"12. The decision of the Commission on the following issues needs to be given effect to by way of discussion by the parties and submitting suitable amendments duly executed to the amended PPA and submitted in the Commission for consent within 60 days from the date of this order:

a. At paras 10 (d) relating to payment of fixed charges on normative availability of power of 85% of the capacity and the incentive also to commence from above 85%.

b. At paras 10 (f) (iii) relating to non-payment of fixed charges for backing down & third party sales by APPDCL in such an eventuality and

c. At paras 10 (f) (v) relating to deletion of stipulation to claim fixed charges during force majeure".

However, the Southern Power Distribution Company of Andhra Pradesh Limited, the 1st respondent herein has intimated through a Letter No.CGM/IPC/APSPDCL/CGM/IPC /GM/IPC/DE1/F.SDSTPS/D.No.137 dated 22-02-2019 that both parties had several detailed deliberations, but failed to reach a consensus on the issues of (i) normative availability of power being enhanced from 80% to 85%, (ii) nonpayment of fixed charges for backing down and third party sales and (iii) claim of fixed charges during *force majeure* periods. Therefore, the Southern Power Distribution Company of Andhra Pradesh Limited desired that the Commission itself may decide on the three issues, as it has the power to adjudicate and approve in such matters as held by the Hon'ble Supreme Court in Tata Power Company Limited Vs Reliance Energy Limited and others (CA3510-3511 of 2008, decided on 06-05-2009). The jurisdiction of the Commission to adjudicate and approve any aspects of Power Purchase Agreements in case of disputes / differences between the parties is beyond any dispute, but it would be more appropriate for the parties to approach the Commission with an appropriate petition in this regard, if they so desire, rather than the Commission itself attempting to invoke its jurisdiction *suo-motu* without initiation of any proceedings by the parties. Therefore, these four questions in issue need to be relegated to an appropriate petition, which the parties may choose to file before this Commission and the questions need no further probe in this order.

11. In the result:

a. The Commission approves Rs.10761.40Cr. (Rupees Ten Thousand Seven Hundred and Sixty-one Crores and Forty Lakhs) against the petitioner's claim of Rs.12630Cr. in the original petition and the revised claim of Rs.12551Cr.

b. The Commission approves Rs.6936.01Cr. against the petitioner's claim of Rs.8122.84 Cr. towards fixed cost for the period from 05.02.2015 for the rest of the control period of 2014-2019. The year wise fixed cost approved against the petitioner's claim is as hereunder:

FY	Filed by the Petitioner (Rs. Cr.)	Approved by the Commission (Rs. Cr.)
2014-15	203.16	144.71
2015-16	1747.79	1443.25
2016-17	2172.09	1795.86
2017-18	1995.07	1782.29
2018-19	2004.73	1769.90
Total	8122.84	6936.01

c. The advice of the Comptroller and Auditor General that the refund of liquidated damages was a violation of the terms and conditions of the Agreement and was not in the best financial interest of the petitioner may be considered by the petitioner to pursue the required remedial measures to get back the refunded amount from Bharat Heavy Electricals Limited. If the petitioner secures any such refund from Bharat heavy Electricals Limited, the same should be immediately reported to the Commission for considering any factoring of the same into the capital cost.

d. The fixed charges are determined duly considering the applicable normative availability of the plant. The same are adjustable to actual availability.

e. Variable charges, Income tax shall be paid as per the terms and conditions of the PPA consented by the Commission.

f. The parties (either or both of them) are at liberty to approach the Commission with an appropriate petition for adjudication and determination of any of the disputes / differences between them relating to the issues specified in para 12 of the order of this Commission in O.P.No.21 of 2016 between the parties decided on 13-07-2018 and about the operating parameters applicable during the operation of the units under sub-critical mode or supercritical mode.

12. The petition is disposed of with the above directions and the Interlocutory Application is closed as unnecessary.

This order is corrected and signed on this 2nd Day of March, 2019.

Sd/-	Sd/-
(P.Rama Mohan)	(Justice G. Bhavani Prasad)
Member	Chairman

List of Objectors

S. No.	Objector	Address
1	Sri M. Venugopala Rao	Senior Journalist and Convenor, Centre for Power Studies, H.No.7-1-408 to 413, F-203, Sri sai Darshan Residency, Balkampet Road, Ameerpet, Hyderabad – 500016.
2	Sri B. Tulasidas	S-4,Devi towers, Samba Murthy Road, Vijayawada-500003
3	Sri Ch. Narsing Rao	Member, Communist Party of India, NPR Bhavan, H,No.28-6-8, Yellamma thota, Visakapatnam- 530020.
4	Sri A. Punna Rao	H.No 59-2-1,1st lane, Ashok Nagar, Vijayawada -520010.
5	Sri P. Madhu	State Secretary, Communist Party of India (Marxist), H.No.27-30-3, CPI (M) State committee office, Akulavari street, Governorpet, Vijayawada.
6	Sri M. Vedavyas Rao	Secretary General, APSEB Engineers' Association.
7	Sri M. Thimma Reddy	People's Monitoring Group on Electricity Regulations, 139, Kakateeya Nagar, Hyderabad-500008.
8	Sri M. Mohan Rao	AP Genco Accounts officers' Association.