

**ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
PLOT NO. 4, CHUNUKOLI, SHAILASHREE VIHAR,
BHUBANESWAR-751021**

Present : **Shri U. N. Behera, Chairperson**
Shri A. K. Das, Member
Shri S. K. Parhi, Member

CASE NO. 69 of 2018

DATE OF HEARING : 04.02.2019

DATE OF ORDER : 28.03.2019

IN THE MATTER OF : **An application for approval of Aggregate Revenue Requirement (ARR) and Generation Tariff of OHPC Stations for the FY 2019-20 under Sections 61, 62, 64 & 86 of the Electricity Act, 2003 read with related provisions of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and OERC (Conduct of Business) Regulations, 2004.**

ORDER

The Odisha Hydro Power Corporation (OHPC) Ltd. has filed an application before the Commission for determination of Aggregate Revenue Requirement (ARR) and fixation of Generation Tariff for its different power stations for the financial year 2019-20.

PROCEDURAL HISTORY (Para 1 to 5)

1. The OHPC is a “Generating Company” under the meaning of Section 2 (28) of the Electricity Act, 2003 (herein after referred as ‘the Act’). After the unbundling of the Odisha State Electricity Board (OSEB) in the year 1996, the assets, liability and personnel of the Board were transferred to this generating company to carry out the business of generation of hydro-electricity. The entire power produced by OHPC through its various generating stations is fully dedicated to the State of Odisha. Thus, OHPC is supplying its entire power to GRIDCO Ltd., who in turn is supplying the same to the Distribution Utilities of the State. After the Electricity Act, 2003 came into force and promulgation of the Government of Odisha Transfer Scheme, 2005, GRIDCO Ltd. as the deemed trading licensee was entrusted with the bulk supply business and the existing Bulk Supply Agreements and Power Purchase Agreements

(PPAs) have been assigned to it. Under the existing legal set up, GRIDCO Ltd. is evacuating the powers from the generating stations of OHPC and delivering it to the Distribution Licensees.

2. As per Regulation 61(2) of the OERC (Conduct of Business) Regulations, 2004, a generating company is required to file an application by 30th November of each year to the Commission for determination of tariff for any of its generating stations, for sale of energy in the State of Odisha giving details of costs associated with the generation and sale of energy from the generating stations. Accordingly, on 29.11.2018 OHPC Ltd., as a generating company, had filed the Aggregate Revenue Requirement (ARR) and fixation of generation tariff i.e. Capacity and Energy Charge application in respect of each of its generating stations separately before the Commission for the FY 2019-20. The said application is as per the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 which had been notified in the Odisha Gazette on 10.10.2014. OHPC has filed its reply to the query of the Commission on its application on 08.01.2019.
3. After due scrutiny and admission of the aforesaid application, the Commission has directed OHPC Ltd. to publish its application in the approved format. In compliance to the same public notice was given in leading and widely circulated newspaper and was also posted in the Commission's website, in order to invite objections/suggestions from the general public. The applicant was also directed to file its rejoinder to the objections/suggestions filed by the objectors. In response to the aforesaid public notice the Commission has received 5 number of objections from the following persons /organizations :

(1) Shri Ananda Kumar Mohapatra, Power Analyst, S/o-Jachindranath Mohapatra, Plot No. 639/1021, Laxmi Vihar, Basuaghai, Badagada, Takapani Road, P.S: Badagada, Bhubaneswar, Dist-Khurda-751002, (2) M/s. GRIDCO Limited, Janapath, Bhubaneswar-751022, (3) Shri Ramesh Ch. Satpathy, Secretary, National Institute of Indian Labour & President, Upobhokta Mahasangha, Plot No.302(B), Beherasahi, Nayapalli, Bhubaneswar-751012,(4) Shri Alekh Chandra Mallick,S/O: Shri Harekrushna Mallick, Plot No.335, City Garden, Raghunathpur, Bhubaneswar-754005, (5) Shri R. P. Mahapatra, Retd. Chief Engineer & Member (Gen.), Plot No-775 (P), Lane-3, Jayadev Vihar, Bhubaneswar-751013 were filed their suggestions/objections.

The Commission has implead the Principal Secretary to Govt. Water Resources Department, Govt. of Odisha, Bhubaneswar and the Principal Secretary to Govt. Department of Energy, Govt. of Odisha, Bhubaneswar as parties to the above proceeding to put forth their views for fixation of tariff of OHPC Ltd. by OERC.

The date of hearing was fixed as 04.02.2019 at 11.00 AM and was duly notified in the leading and widely circulated newspaper mentioning the list of objectors. All the above named objectors along with the representative of Department of Energy, Government of Odisha and Shri Pravakar Mohanty, Director (Finance), OHPC Ltd., Shri R. R. Dhal, Chief Engineer, Water Services, DoWR, GoO and the authorized representative of CMD, GRIDCO Ltd. were present during tariff hearing and their written submissions filed before the Commission were taken on record and also considered by the Commission. The applicant submitted its reply to issues raised by the various objectors.

4. In exercise of the power under Section 94(3) of the Electricity Act, 2003 and to protect the interest of the consumers, the Commission appointed World Institute of Sustainable Energy (WISE), Pune as Consumer Counsel for objective analysis of the applicant's Aggregate Revenue Requirement and determination of generation tariff proposal for its individual power stations for the financial year 2019-20. The Consumer Counsel presented views on the matter during the hearing.
5. The Commission convened the State Advisory Committee (SAC) meeting on 20.02.2019 at 3.00 PM to discuss about the Aggregate Revenue Requirement (ARR) application and generation tariff proposal of the generating company for FY 2019-20. The Members of SAC presented their valuable suggestions and views on the matter for consideration of the Commission.

ARR PROPOSAL OF OHPC FOR FY 2018-19 (Para 6 to 28)

Installed Capacity

6. The installed capacity of various Hydro Stations owned by the Orissa Hydro Power Corporation (OHPC) for FY 2019-20 including Odisha's share of Machhkund are given in the table below:

Table – 1
Installed capacity of OHPC stations for PAFM calculation

Sl. No.	Name of the Power Station	Installed Capacity Approved for FY 2018-19	Installed Capacity for FY 2019-20
1	Rengali (RHEP)	250.00MW	250.00MW
2	Upper Kolab(UKHEP)	320.00MW	320.00MW
3	Balimela(BHEP)	390.0MW (for R&M of Unit 1&2)	<ul style="list-style-type: none"> • 330MW from 01.04.2019 to 20.05.2019 (as approved period of R&M of Unit-1 will be completed on 05.02.2019 & Unit-2 will be completed on 20.05.2019) • 390MW from 21.05.2019 to 31.03.2020 (Approved date of synchronization of Unit-1 & 2 are 05.02.2019 & 21.05.2019 respectively) (As zero date for R&M of Unit - 3 to 4 starts on 01.04.2019).
4	Burla (HHEP)	238.00MW (from 16.02.2018 onwards as per the approved period of S/D of Unit-6)	275.50MW
		275.50MW (from 24.04.2018 onwards as per the approved period of S/D of Unit-5)	
5	Chiplima (CHEP)	72.00MW (from 16.06.2017 onwards as per the approved period of shut-down of Unit- 3)	72.00 MW
6	Upper Indravati (UIHEP)	600.00MW	600.00MW
7	Machhakund (30% Orissa share)	36.00MW	36.00MW

Design Energy

7. The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of tariff. The existing design energy of OHPC power stations is given in table below.

Table -2
Design energy for FY 2019-20 (in MU)

Sl. No.	Name of the Power Station	Design Energy approved for FY2018-19	Design Energy for sale for FY 2018-19	Design Energy proposed for FY 2019-20	Design Energy for sale for FY 2019-20
1	RHEP	525.00	519.75	525.00	514.5

2	UKHEP	832.00	823.68	832.00	815.36
3	BHEP	1183.00	1171.17	1183.00	1159.34
4	HHEP	684.00	677.16	684.00	653.67
5	CHEP	490.00	485.10	490.00	480.20
Sub Total of Old Power Stations		3714.00	3676.86	3714.00	3623.07
6	UIHEP	1962.00	1942.38	1962.00	1922.76
Total		5676.00	5619.24	5676.00	5545.83

Reservoir Level and Anticipated Generation

8. The reservoir level of Power Stations reported by OHPC as on 31.10.2018 vis-à-vis on 31.10.2017 is given in table – 3 below

Table – 3
Reservoir level of power stations

Sl. No.	Reservoirs	As on 31.10.2017	As on 31.10.2018
1.	Rengali	123.26 mtr	118.75 mtr.
2.	Kolab	854.06 mtr.	855.96 mtr.
3.	Balimela	1486.60 ft.	1511.70 ft.
4.	Hirakud	629.29 ft.	627.17 ft.
5.	Indravati	636.44 mtr.	639.46 mtr.

The actual generation of different Power Stations under OHPC from 01.04.2018 up to 31.10.2018 and anticipated generation up to 31.03.2019 for the FY 2018-19 prepared on the basis of the availability of water, irrigation requirement and peak load requirement of power in co-ordination with DoE, DoWR, GRIDCO and SLDC is furnished below.

Table – 4
Actual /Anticipated Energy Generation

Sl. No.	Name of the power stations	Actual generation from 01.04.18 up to 31.10.18 (in MU)	Anticipated generation from 01.11.18 to 31.03.19 based on DoWR& DoE Schedule (in MU)	Total Anticipated generation for the FY 2018-19 based on DoWR& DoE Schedule (in MU)
1.	RHEP	658.18	130.08	788.26
2.	UKHEP	611.02	348.00	959.02
3.	BHEP	1197.26	685.20	1882.46
4.	HHEP	301.67	90.84	392.51
5.	CHEP	109.81	54.60	164.41
6.	UIHEP	1422.75	708.72	2131.47
Total		4300.69	2017.44	6318.13

Project Cost

9. The revalued cost of old power stations of OHPC was Rs.1196.80 cr. as on 01.04.1996 as per the Notification No. 5207 dtd.01.04.1996 of Department of Energy, Government of Odisha. However, the Tariff of Old power stations have been determined on the historical cost of old power station of OHPC for Rs.479.80 Crores as per the Notification No. 1068 Dtd. 29.01.2003 of DoE, GoO.

OHPC has considered additional capitalization as per Clause No. 3.4 of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and extra additional capitalization on account of amended Companies (Ind AS) Rules. Considering the above factors, the total additional capitalization for an amount of Rs.87.77 Cr. has been considered for FY 2017-18 as per the audited account for FY 2017-18.

The adjustment of cost of assets during the period from FY 2011-12 to FY 2015-16 on account of de-capitalization of asset for an amount of Rs.9.38 Cr has been approved by the Commission in the earlier tariff order of OHPC.

The total de-capitalisation of Power Stations during the FY 2011-12 to FY 2017-18 comes to Rs.18.51 Cr which has been deducted from the original Historic Cost as on 01.04.1996. With the above Capitalization and De Capitalization, the project cost of OHPC power stations proposed for computation of ARR & tariff for the FY 2019-20 comes out to be Rs.2310.60 Cr as given in the table below

**Table-5
Project Cost for tariff Calculation for FY 2019-20**

(Rs. Cr.)						
Name of the power stations	Historic Cost as on 01.04.1996	Asset reduction during FY 2011-12 to FY 2017-18	Approved New additions up to 31.03.2017	New additions proposed in Tariff calculation FY 2019-20 (Unapproved Cap. Of 2016-17 + Cap. Of 2017-18)	Total New Addition upto 2017-18	Project Cost considered Tariff calculation based on Historic Cost
1	2	3	4	5	6=4+5	7=2+6-3
RHEP	91.09	0.08	57.81	1.25	59.06	150.07
UKHEP	108.31	0.46	19.28	1.13	20.41	128.26
BHEP	115.42	0.33	215.86	5.12	220.98	336.07
HHEP	72.75	11.50	220.12	42.18	262.30	323.55
CHEP	92.23	1.27	48.12	2.07	50.19	141.15

Name of the power stations	Historic Cost as on 01.04.1996	Asset reduction during FY 2011-12 to FY 2017-18	Approved New additions up to 31.03.2017	New additions proposed in Tariff calculation FY 2019-20 (Unapproved Cap. Of 2016-17 + Cap. Of 2017-18)	Total New Addition upto 2017-18	Project Cost considered Tariff calculation based on Historic Cost
Sub Total	479.80	13.64	561.19	51.75	612.94	1079.10
UIHEP	1194.79	4.868	5.56	36.02	41.58	1231.50
Total	1674.59	18.51	566.75	87.77	654.52	2310.60

Tariff for Energy Billing to CSPDCL

10. The Chhattisgarh State Power Distribution Company Limited (CSPDCL) is taking a plea to pay the energy charges to OHPC at the tariff of HHEP, Burla, determined by the Commission which is actually applicable for the consumers of Odisha. However, OHPC has computed the tariff for billing of energy to CSPDCL as per CERC (Terms and Conditions of Tariff) Regulations, 2014 and prays to approve the tariff for energy billing to CSPDCL @ 229.73 paisa/unit for the FY 2019-20.

Determination of Annual Fixed Cost for FY 2019-20

11. OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 specifies methodology for computation of tariff for supply of electricity from hydro generating stations. The tariff shall comprise of capacity charge and energy charge to be shared on 50:50 basis for recovery of annual fixed cost.

The Annual Fixed Cost of a hydro generating station shall consist of the following components:

- a) Return on equity (ROE)
- b) Interest on loan
- c) Depreciation
- d) Operation and Maintenance expenses
- e) Interest on working capital
- a) **Return on Equity**

OHPC has considered 25% of approved project cost of UIHEP and 30% of additional capitalization in UIHEP as equity base. In case of other power

stations OHPC has considered equity base as 30% of the re-valued cost of old power stations as on 01.04.1996 along with 30% net additional capitalization from 1996-97 to 2017-18.

Table – 6
Computation of RoE for different power stations of OHPC for FY 2019-20

Name of the Power Station	Historical cost plus Capital Addition after 01.04.1996 up to 31.03.2017 approved (in Crs)	Capital Addition for the FY 2017-18 audited (in Crs)	Capital Addition considered for RoE for FY 2019-20 (in Crs)	Share of Equity (%)	Value of Equity capital (in Crs)	ROE @16% Proposed for 2019-20 (in Crs)	RoE approved by OERC for 2018-19 (in Crs)
1	2	3	4=2+3	5	6=4*5	7=16% of 6	8
RHEP	57.81	1.25	59.06	30	17.72	2.84	2.78
UKHEP	19.28	1.13	20.41	30	6.12	0.98	0.93
BHEP	215.86	5.12	220.98	30	66.29	10.61	10.36
HHEP	220.12	42.18	262.30	30	78.69	12.59	10.57
CHEP	48.12	2.07	50.19	30	15.06	2.41	2.31
UIHEP	1196.94	36.02	1231.50	25&30	309.96	49.59	47.92
Total	1756.67	87.77	1844.44		493.84	79.01	74.86

OHPC has claimed Income tax paid for FY 2017-18 as reimbursement from GRIDCO.

b) Interest on Loan:

The loan liability of OHPC consists of State Government loan, PFC loans and Normative Loans.

Table – 7
Present Status of UIHEP Govt. Loan based on the approvals of OERC (Rs. Cr)

Original Approved Project Cost	1195.42
Project cost after deducting the infirm power cost	1194.79
Equity @25%	298.70
Govt. Loan of UIHEP	497.86
Depreciation allowed from 2010-11 to 2018-19 @ Rs30.23 Crore	272.07
Loan Repayment made till FY 2017 -18 & to be paid for FY2018-19	272.07
Balance Outstanding Loan as on 01.04.2019	225.79 Crore (Considering Depreciation allowed)
Cumulative interest on UIHEP Govt. Loan from FY 2006-07 to FY 2018-19 @ 7%	367.35 Crore (Govt. proposed to consider as regulatory asset)
Cumulative interest on normative loan from FY 2001-02 to FY 2018-19@ 7%	107.36 Crore (Not paid)

Table- 8
Statement of Outstanding Loans of OHPC and Interest there on)

Sl. No.	Source of Loan	Loan Outstanding as on 01.04.19	(Rs. Cr.)
			Interest on Average Net Loan for the FY 2019-20
1.	State Govt. Loan of UIHEP @7%	225.79	14.75
2.	Normative loan for Addl. Capitalization FY 2013-14 to FY 2017-18 of CHEP, Chiplima @ 9.8%	2.27	0.19
3.	Normative loan for Addl. Capitalization FY 2013-14 to FY 2017-18 of Upper Kolab @ 9.8%	1.50	0.12
4.	Normative loan for Addl. Capitalization FY 2013-14 to 2017-18 of HHEP @ 8.75%	35.78	2.78
5.	Normative loan for Addl. Capitalization FY 2013-14 to FY 2017-18 of Balimela @ 9.6%	4.64	0.39
6.	Normative loan for Unit -1, R&M, Rengali @ 9.8%	7.10	0.61
7.	Normative loan for Unit -2, R&M, Rengali @ 9.8%	8.19	0.72
7.	Normative loan for Addl. Capitalization FY 2013-14 to 2017-18 of RHEP, Rengali @ 9.8%	1.50	0.12
8.	Normative loan for Addl. Capitalization FY 2013-14 and FY 2017-18 of UIHEP, Mukhiguda @ 7%	26.78	1.67
10.	Normative loan of UIHEP, Mukhiguda for Rs 78.74Cr @ 7%	78.74	5.51
	Total	392.28	26.85

The Power Station wise interest on loan and guarantee commission as described above is given below:

Table-9
Interest on loan of different power house of OHPC

Sl. No.	Source of loan	Interest on loan for FY 2019-20						(Rs. Cr.)
		RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	TOTAL
1.	Normative loan	1.455	0.115	0.388	2.779	0.188	7.182	12.108
2.	Govt. Loan	-	-	-	-	-	14.747	14.747
	Total	1.455	0.115	0.388	2.779	0.188	21.930	26.855

c) Depreciation:

OHPC has computed depreciation for the FY 2019-20 @ 2.57% on the Historic project cost as on 01.04.1996 (excluding de-capitalization) plus additional capitalization w.e.f. 01.04.1996 up to FY 2017-18. The Unit wise depreciation so calculated is compared with the Loan repayment and the amount whichever is higher is considered as depreciation for Tariff

computation. The comparative statement for actual repayment of loans and depreciation @2.57% for the FY 2018-19 is shown in the Table below to arrive at the depreciation amount which is claimed in the ARR & Tariff application of OHPC for the FY 2019-20.

Table – 10
Depreciation Claim for the FY 2019-20 (Rs. Cr.)

Sl. No.	Power Stations	Project Cost	Loan Repayment Amount	Depreciation @ 2.57%	Depreciation Claimed	Remark
1.	RHEP	150.07	3.90	3.86	3.90	Equal to loan Repayment
2.	UKHEP	128.26	0.65	3.30	3.30	Depreciation @ 2.57%
3.	BHEP	336.07	1.20	8.64	8.64	Depreciation @ 2.57%
4.	HHEP	323.55	8.03	8.32	8.32	Depreciation @ 2.57%
5.	CHEP	141.15	0.69	3.63	3.63	Depreciation @ 2.57%
6.	UIHEP	1231.50	36.05	31.65	36.05	Equal to loan Repayment
7.	Total	2310.6	50.52	59.38	63.82	

d) Operation & Maintenance (O&M) Expenses:

As per OERC Tariff Regulations, 2014, approved O&M expenses of FY 2017-18 have been escalated at the rate of 5.72% to arrive at O&M expenses for FY 2018-19. OHPC has deducted Rs. 9.66 cr. from O&M expenses of UIHEP towards dam maintenance expenses receivable from DoWR for FY 2018-19.

OHPC propose to allow 40% of the estimated arrear on account of adoption of 7th Pay Commission's pay structure to employees in O&M component of tariff for FY 2018-19.

Table – 11
Statement of O & M Expenses

(Rs. Cr.)										
Sl. No.	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	CO	Total
1	O & M expenses for FY 2018-19 Approved by OERC.	50.69	38.19	72.66	76.80	17.58	255.92	73.45	24.55	353.92

Sl. No.	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	CO	Total
2	O & M expenses for FY 2019-20 with escalation @ 5.72% over FY 2018-19	53.59	40.37	76.82	81.19	18.59	270.56	77.65	25.95	374.16
3	Corporate Office expenses apportioned to different units under OHPC based on Design Energy	2.40	3.80	5.41	3.13	2.24	16.98	8.97	25.95	
4	Total O & M Expenses for the FY 2019-20	55.99	44.18	82.23	84.32	20.83	287.54	86.62		374.16
Less: Amount Received from DoWR.										
5	Less : Income to be received from DOWR towards dam maintenance of UIHEP							(-) 10.38		(-) 10.38
6	Total O&M Expenses for the FY 2019-20.	55.99	44.18	82.22	84.32	20.83	287.54	76.24		363.78

e) Interest on Working Capital

As per OERC Tariff Regulation 2014, the basis for calculation of working capital shall include the following:

1. Receivables equivalent to two months of fixed cost.
2. Maintenance spares @ 15% of operational and maintenance expenses
3. Operation and maintenance expenses for one month.

The rate of interest on working capital considered is the SBI MCLR @ 8.15 % as on 1st April, 2018 plus 300 basis points which turns out to be 11%. In accordance with OERC guidelines, the interest on working capital shall be payable on normative basis. The station wise interest on working capital as proposed by OHPC is presented in the table below.

Table- 12
Interest on Working Capital

(Rs. Cr.)

Sl. No	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	Receivables equivalent to two months of fixed cost	11.15	8.44	17.66	18.71	4.69	60.65	31.55	92.20
2	Maintenance spares @ 15% of O&M expenses	8.40	6.63	12.33	12.65	3.12	43.13	11.44	54.57
3	O&M expenses for one month	4.67	3.68	6.85	7.03	1.74	23.96	6.35	30.32
4	Total working capital	24.21	18.75	36.85	38.39	9.55	127.74	49.34	177.08
5	Interest on working capital calculated @11.15%	2.669	2.091	4.108	4.280	1.064	14.243	5.502	19.745

Total Annual Fixed Cost

12. Based on the above parameters the station wise ARR and tariff calculated for the FY 2019-20 as proposed by OHPC is summarized below.

Table – 13
ARR and Tariff for the FY 2019-20

Details expenses	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
Existing Saleable Design Energy (MU)	514.50	815.36	1159.34	653.68	480.20	3623.08	1922.76	5545.84
(Rs. in Crs.)								
Return on Equity	2.835	0.980	10.607	12.590	2.409	29.421	49.593	79.014
Interest on Loan	1.455	0.115	0.388	2.779	0.188	4.925	21.930	26.855
Depreciation	3.90	3.30	8.64	8.32	3.63	27.77	36.05	63.82
O&M Expenses	55.99	44.18	82.23	84.32	20.83	287.54	76.24	363.78
Interest on working capital	2.67	2.09	4.11	4.28	1.06	14.24	5.50	19.75
Total ARR	66.88	50.66	105.97	112.29	28.12	363.90	189.31	553.22
Average Tariff (p/u)	129.98	62.13	91.40	171.78	58.55	100.44	98.46	99.75

Application Fee and the Publication Expenses:

13. As per the OERC tariff regulation 2014, the application filing fee and the expenses incurred on publication of notices may be allowed to be recovered by the generating company directly from the beneficiaries. As per the Commission Notification No. 1992 dated 31.08.2009 in the Clause No. 17, the Commission has fixed a fee of Rs.5000/- per MW as application fee for determination of tariff of conventional fuel based plant/ hydel plants, subject to maximum limit of Rs.25,00,000/- (Rupees Twenty five lakhs). Further, the OHPC has incurred Rs. 0.85 lakhs as against approved Rs. 1 lakh for publication expenses in FY 2018-19. Due to implementation of GST, the publication expenses may likely to increase. As per above provision, the application fee and publication expenses proposed by OHPC for FY 2019-20 are given in table below.

Table -14
Application Fees and Publication Expenses

Sl. No.	Application fee	Publication expenses	Total
1	25.00	1.20	26.20

Electricity duty on Auxiliary Consumption:

14. Electricity Duty on auxiliary consumption etc. payable by OHPC to the State Government and other statutory bodies shall be passed on to GRIDCO in the shape of supplementary bill raised by OHPC. The Rate of Electricity Duty / Unit have been revised from 30 paisa per Unit to 55 paisa per Unit with effect from 12th May, 2017 as per the Gazette Notification No. 912 dtd. 12.05.2017.

As per the Odisha Electricity (Duty) Amendment Act, 2016 vide Gazette Notification No. 1981 Dtd. 05.11.2016, the electricity duty (ED) on Auxiliary Energy Consumption shall be paid on auxiliary equipment consumption and the transformer losses within the power stations. During FY 2018-19, OHPC had made an in house study of the higher auxiliary energy consumption of its different Power Stations. The auxiliary equipment consumption of different power station were found to be within 0.5% of gross generation but the transformer losses was found to be of the order of 1.5% of gross generation. So the actual Auxiliary Energy Consumption (AUX) of OHPC Power Stations are remaining at 2% of the gross generation. Hence OHPC prays before the Commission to approve the Auxiliary Energy Consumption (Auxiliary Equipment

Consumption + Transformer Loss) as 2% of the Gross Generation and accordingly allow reimbursement of ED paid on AUX from GRIDCO limiting to 2% at the year end

In view of the above OHPC claims the following as Reimbursement of Electricity Duty for its different power stations for the FY 2019-20 and prays before the Commission for reimbursement of the same from GRIDCO.

Table-15
ED claim for OHPC power station for FY 2019-20

Description	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	Total
ED on Auxiliary Energy Consumption for FY 2019-20	0.578	0.915	1.301	0.752	0.539	2.158	6.244

(Rs. Cr.)

License fee for use of water for generation of Electricity:

15. As per the gazette notification dt.01.10.2010 of Water Resources Department, OHPC has to pay Rs.0.01/kwh as license fee on water used for generation of electricity from all Hydro Electric Projects to the tune of Rs.5.676 Crs. which is to be reimbursed to OHPC by GRIDCO, based on design energy. As per the amendment made in Rule-23-A (2) (f) of the Odisha Irrigation Rule, the license fee for drawl or allocation of water was enhanced @10% per annum w.e.f 1st day of April. Accordingly, OHPC is paying @Rs. 0.011/KWh w.e.f 01.04.2017 as Licence Fee on water used for generation of electricity from all Hydro Electric Project and getting it reimbursed from GRIDCO.

OHPC has requested for approval of total amount of Rs 7.38 Cr reimbursement of Licence fee paid to Government of Odisha from GRIDCO for FY 2019-20.

SLDC charges

16. As per OERC (fees & charges of state load dispatch centre and other related matters) regulations, 2010, SLDC has to levy and collect annual charges from the users towards system operation charges and market operation charges.

The Commission has approved Rs 1.57Cr. for the FY 2018-19 as SLDC charges for OHPC. Since this charge cannot be known in advance OHPC has requested the Commission to allow that charges at the previous year rate of @Rs9432.62 per MW per annum with escalation of @5.72% for the FY 2019-20. Accordingly, OHPC had proposed Rs. 1.6978Crs. as SLDC charges for FY 2019-20.

Tariff for Machhkund H.E. (Jt.) Scheme

17. Machhkund Hydro Electric Project is a joint scheme of Government of Andhra Pradesh and Government of Orissa with 70% and 30% shares respectively, with option of Government of Odisha to draw an additional 20% power (105 MU) at a cost of Rs. 0.08 per unit as per the interstate supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Odisha. The proposed tariff of 51.334 Paise/Unit of Orissa drawl of Machhkund power for FY 2019-20 has been computed on cost reimbursement basis. The tariff proposed by OHPC is based on assumption that GRIDCO will draw power up to 50% of design energy of Machhkund which is equivalent to 262.50 MU.

Table – 16
Projected Tariff of Machhkund H. E. (J) Scheme For FY 2019-20

Installed Capacity (MW)	120.00 MW
Odisha share as per Original Agreement (30%)	36.00 MW
Energy for sharing between Andhra Pradesh & Odisha	525.00 MU
Expected Energy Drawl by Odisha (50%)	262.50 MU
Energy Drawl of 30% of Odisha share	157.50 MU
Purchase of Power up to 20% as per Supplementary Agreement	105.00 MU
O&M Escalation factor @ 6.64% for year for 2 years	1.1372
	(Rs. Cr.)
1. O&M Exp. (Odisha share of O&M Exp. For FY 17-18)	11.1107
2. O&M Exp for FY 2019-20 with escalation of 6.64% for 2017-18 & 2018-19	12.6352
3. Power purchase cost of additional 20% above 30% Orissa Share (105MU x 0.008)	0.84
4. Total Annual Expenditure (2 +3)	13.48
5. Tariff (Paise/Kwh)	51.33
Note: The tariff is calculated on cost reimbursement basis. Any penalty for over drawl of power by M/s GRIDCO above 50% limit shall be paid directly to APGENCO separately by GRIDCO.	

Status of Secondary Energy Fund of OHPC

18. During years of Hydrology failure OHPC sustains substantial loss in Revenue due to shortfall in the recovery of Energy Charges. In response to the OHPC's claim towards Hydrology Failure OERC had observed in the Tariff Order of OHPC for FY 2014-15 as follows:

“The compensation claimed towards hydrology failure is not to be allowed in view of the Commission's earlier orders dt.10.06.2005 & dt.23.03.2006 wherein OHPC was directed to maintain a separate fund to deposit the revenue earnings out of sale of secondary energy which shall be utilized to replenish the shortfall in revenue due to

lesser generation by OHPC in years of hydrology failure to provide necessary comfort to the consumers of the state. {Para 6.5(e) of Order dt.10.06.2005}.”

19. OHPC has calculated the revenue earning out of sale of secondary energy from FY 1996-97 to FY 2017-18. As observed the secondary energy fund has always remained in deficit, which is approximately Rs 262.14 Crs. as on 31.03.2018. The detailed calculation as given below.

**Table -17
Hydrology Fund of OHPC**

Name of the Power Station	RHEP	UKHEP	BHEP	HPS (FY1996 to FY 2009-10)	HHEP (FY 2010-11 to FY 2017-18)	CHEP (FY 2010-11 to FY 2017-18)	UIHEP	OHPC Total
Design Energy of the Plant	519.75	823.68	1171.17	1162.26	677.16	485.1	1942.38	5676.00
Claim of OHPC towards Hydrology Failure.	161.57	-107.19	-73.14	-152.32	-46.63	-46.27	1.83	-262.14

20. Since the secondary energy fund has a negative balance, OHPC pray before the OERC to consider Rs.262.14 Cr. as regulatory asset and approve its return to OHPC in suitable instalments.

Reimbursement of Contribution Made to ERPC

21. OHPC has paid Rs. 15 lakhs towards contribution to ERPC establishment fund and Rs. 1 lakh towards contribution to ERPC fund. Assuming the same claim of ERPC, OHPC has claimed Rs. 16 lakh as a pass through in the tariff for FY 2019-20 to be reimbursed from GRIDCO. OHPC has requested to provide this amount in ARR of GRIDCO

Income Tax

22. OHPC has paid Rs. 29.28 Cr. Towards income tax for FY 2017-18 on operational income of Rs. 543.79 Cr. which is a core business. Thus OHPC prays before the Commission to allow the same to be reimbursed from GRIDCO in the Tariff of OHPC for FY 2019-20 towards income tax as per the audited accounts of FY 2017-18.

Two-Part Tariff

23. As per clause 4.36 to 4.4 of the OERC (Terms and conditions for determination of Generation Tariff) Regulation 2014, the annual fixed cost of a power station shall be recovered on monthly basis through capacity charge (inclusive of incentives) and energy charge to be shared on 50:50 basis.

Accordingly, annual capacity charges, annual energy charges and energy charge rate of different power stations of OHPC for FY 2019-20 is depicted below.

Table-18
Capacity charge and energy charge of OHPC power stations FY 2019-20

Name of the power stations	Annual Fixed Cost (ARR) (Rs. in Crs)	Annual Capacity Charge (ACC) (Rs. in Crs)	Annual Energy Charge (AEC) (Rs. in Crs)	Salable design energy (MU)	Energy Charge Rate (ECR) (in p/u)
RHEP	66.875	33.437	33.437	514.50	64.990
UKHEP	50.661	25.330	25.330	815.36	31.067
BHEP	105.965	52.983	52.983	1159.34	45.701
HHEP	112.286	56.143	56.143	653.68	85.888
CHEP	28.116	14.058	14.058	480.20	29.275
UIHEP	189.314	94.657	94.657	1922.76	49.230

Normative Plant Availability Factor (NAPAF)

24. OHPC submitted that due to aging of HEPs, OHPC power stations are not in a position to recover their ACC (Annual Capacity Charges) at NAPAF target fixed by Commission. It is further submitted that the availability of power stations in the last five years shall be considered as benchmark for OHPC and necessary relaxation may be made in fixing the NAPAF for optimum recovery of Capacity Charges during the FY 2019-20 to FY 2023-24.

Table-19
Normative Plant Availability Factor (NAPAF) for FY 2019-20

Power Stations	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP
NAPAF (%)	70	80	80	65	65	85

Proposal of Capital Maintenance Work to be executed in FY 2019-20

25. OHPC has proposed following Capital maintenance work to be carried out during FY 2019-20 and sought in principle approval of the Commission for the same.

Table – 20
Proposed Capital Maintenance work during FY 2019-20

Sl. No	Name of Power Station	Unit	Estimated Cost	Duration
1	UIHEP	Unit -2	26.82 Cr	6 months
2	RHEP	Unit 4 & 5	16 lakh	46 days
3	UIHEP, Mukhiguda	Unit –IV	50.28 Cr	4 months
4	Construction of 220/33 KV with station Xmer with accessories at UKHEP	-	3.83 Cr	-
5	Implementation of ERP system in OHPC		30 Cr	

Proposal on procurement of generator transformers under capital spares for different power stations of OHPC

26. As per the decision of the 145th BoD of OHPC, OHPC pray before the OERC for in-principle approval for procurement & replacement of minimum of 01 Nos. of Generator Transformer for each power station & to keep the used GT as back-up for any eventuality that may arise, as the present GTs at CHEP, RHEP, UKHEP & HHEP are very old and are of lower efficiency. In view of the above proposals on different Capital Maintenance work along with procurement of Capital spares are submitted in the table below.

Table-21

Capital Maintenance work along with procurement of Capital spare

Generating Unit	Name of the Work/ Critical Spares	Tentative Period of Shut Down	Estimated Cost
UIHEP	Capital Maintenance of Unit-II of UIHEP, Mukhiguda for replacement of underwater parts such as guide vanes along with bushes, facing plates and stationary & rotating labyrinth seal etc.	6 months	Rs.26,81,65,947/-
	Capital Maintenance of Unit-IV of UIHEP, Mukhiguda for Design, Manufacturing and Supply of new stator and replacement of old Stator of Unit No – 4 and & replacement of critical Spare parts along with service.	4 months	Rs 50,28,81,883/-
RHEP	Capital Maintenance of Unit-4 of RHEP, Rengali for installation of new DAVR system.	46 days	Rs1,08,00,000/- each.
	Capital Maintenance of Unit-5 of RHEP, Rengali for installation of new DAVR system.	46 days	
UKHEP	Construction of 220/33 KV Sub-Station with Station Transformer of 7.5 MVA and Control Panel with accessories along with extension of existing 220 KV Bay of UKHEP Bay	-	Rs 3.83Crs.
OHPC	Implementation of ERP System in different Power Houses of OHPC including Corporate Office.	-	Rs.30.00 Cr.
RHEP, CHEP, UKHEP, HHEP	Procurement of One No. of generator transformer under capital	-	• For CHEP:

	spare for each Power Station.		Rs.2,14,76,000/- <ul style="list-style-type: none"> • For UKHEP: Rs.5,44,86,500/- • For RHEP: Rs.4,57,25,000/-
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Proposal for capital civil works for FY 2019-20

27. OHPC submitted that as most of the civil infrastructures are more than 50 to 60 years old, OHPC proposes to take up the capital civil works of different units for providing better office and residential dwelling conditions along with repair of spillway, surplus escape, forebay of CHEP Chiplima.

Table -22
List of Capital Civil works for Financial Year 2019-20

Sl. No.	Name of the work.	Amount (Rs. Cr.)
1.	Construction of 12 nos. of 'D' type qrs., at CHEP, Chiplima	3.59 crores.
2.	Construction of office building, at UIHEP, Mukhiguda	5.45 crores.
3.	Construction of 2-0 nos. of 'D' type qrs., at BHEP, Balimela	5.00 crores.
4.	Construction of Multi storied commercial complex at OHPC Training Centre, Bhubaneswar.	80.00 crores.
5.	Repair of spillway, surplus escape, fore-bay, of CHEP, Chiplima	200.00 crores.
6.	Construction of Shakti Bhawan - (Details of payment to OPTCL not available with Tech. wing.)	80.00 crores.
7.	Construction of multi storied commercial complex on plot no. 324 (Pt.) Khata No.-619 Chandrasekharapur, BBSR.	70.00 crores.
8.	Construction of New Officers' Club at BHEP, Balimela	0.50 crores

Prayer

28. Summary of OHPC's proposal for annual revenue requirement for FY 2019-20 is as follows:-
1. The ARR amounting to Rs 553.22 Crs. of OHPC Power Stations for the FY 2019-20 at an average tariff @ 99.75 p/u.
 2. The miscellaneous reimbursement of Rs45.02 Cr by OHPC from GRIDCO.
 3. The tariff for energy billing to CSPDCL at 229.73 paisa per Kwh considering Up-valued asset of HHEP and the norms of CERC (Terms & Conditions of Tariff) Regulations, 2014.
 4. Recognize the following as Regulatory Asset:

- a) Accumulated interest of UIHEP Govt. Loan from 2006-07 to 2018-19 = Rs.367.35Cr.
 - b) Accumulated interest on Normative Loan of UIHEP from 2001-02 to 2017-18 Rs.107.36Cr.
 - c) Realization of Rs. 262.139 Crs. towards Hydrology Failure (negative fund for Secondary energy) from FY 1996-97 to FY 2017-18.
5. Suitable decision in allowing interest on the above recognized Regulatory Asset.
 6. The average available Installed Capacity as 1800 MW for payment of SLDC charges during the FY 2019-20.
 7. Revision of Saleable Design Energy of different power stations of OHPC considering Auxiliary Energy Consumption (AUX) as 2% of Design Energy.
 8. To approve the Capital Maintenance proposal of different generating units of OHPC.
 9. Principle approval for procurement and replacement of minimum of 01no. of Generator Transformer for CHEP, RHEP, UKHEP & HHEP in the 1st phase of procurement & to keep the used GT as back-up to meet the emergency situations.
 10. To approve the proposals for Capital Civil works along with ERP System of OHPC.
 11. To approve the proposed NAPAF as shown in the Table No 33 above for the different power stations under OHPC for the next block period of FY 2019-20 to FY2023-24.

VIEWS OF THE OBJECTORS (Para 29 to 49)

Design Energy

29. Some objectors submitted that the anticipated generation during FY 2018-19 projected by OHPC 6318.13 MU is greater than the design energy of OHPC hydro power stations which is 5676 MU and therefore there is an urgent need to review the design energy of OHPC.

NAPAF of Hirakud and Chiplima HEP

30. One of the objector submitted that the NAPAF of Hirakud and Chiplima power stations are consistently low compared to the other stations despite capital addition in terms of Renovation and Modernization of plants. He requested the commission to seek action taken report on this issue from OHPC.

Additional Capitalization

31. Some of the objectors have pointed out that OHPC has proposed additional capitalization of Rs 88.00 Cr in instant petition. OHPC has shown total capital addition till 2017-18 up to 654.52 Cr which is 40% of historical cost of OHPC stations. In spite of huge capital addition, the performance of OHPC is not improved. The Commission may carry out cost benefit analysis before approving the Capital addition for FY 2019-20.

Installed Capacity

32. One objector said that OHPC has failed to improve/develop any hydro projects and mini /micro hydro projects and hence its application to reduce installed capacity should not be approved.

Saleable Energy

33. One of the objector submitted that, OHPC in its ARR filing for FY 2019-20 calculated the salable energy by deducting 2% as auxiliary consumption of different power stations of OHPC which is against the OERC Tariff regulations 2014. Tariff regulation is to be followed to determine salable energy. OHPC should challenge the order of Govt. in calculation of Energy Charges.

De-capitalization of OHPC stations.

34. OHPC in its tariff application has shown de-capitalization of different power stations from FY 2011-12 to FY 2016-17 as 16.63 Cr, whereas the Commission in its tariff order for FY 2018-19 has approved 11.97 as asset reduction during FY 2011-12 to 2016-17. The objector requested the Commission to scrutinize the same.

Manpower

35. One objector has said that OHPC should furnish details of manpower planning at all power projects during hearing. The same objector has claimed that OHPC should furnish list of engineers and their profile.

MDDL of Hirakud Project

36. One of the objectors stated that the MDDL of Hirakud power plant considered by OHPC as 595 ft in place of 590 ft may not be allowed. The Commission may add 32.4 MU to the data submitted by OHPC towards generation of HHEP while determining the ARR and Tariff. The same objector has proposed that as the Hirakud reservoir is managed by the Dept of Water Resources, OHPC should not collect the charges for drawl of water by industries.

Repair and Maintenance of Plants

37. One of the objectors requested the Commission to ensure that the Balimela unit #1 and #2 should be in operation before giving permission for R&M of Balimela unit #3 and #4. The objector proposed that the installed capacities of various OHPC station to be taken as Rengali- 250MW, Balimela – 390 MW, Burla-200.5, Chiplima-48 MW, UIHEP -600 MW and UKHEP- 320 MW.

Creation of Regulatory asset on account of Hydrology Failure and interest on normative loan.

38. One of the objector has submitted that the compensation claims of Rs.263.283 Cr towards hydrology failure from 1996-97 to 2016-17 may not be approved as OHPC is recovering annual fixed charges based on availability of machines and generation of energy is at 4th priority as per the state water policy. GRIDCO submitted that creation of Regulatory assets will have considerable impact on the general consumers of the state. The same may not be allowed except in case of urgency as per clause 8.2.2 of Tariff Policy dated 28.01.2016. Hence the same may be disallowed.

Income Tax

39. One of the objector said that Income tax of an amount of Rs.59.07 cr paid for FY 2016-17 may not be approved as the operational income of Rs.117.61 cr is yet to be scrutinized.

Audited Account

40. One objector has observed that OHPC has failed to submit audited accounts for FY 2016-17 and FY 2017-18. In absence of Audited accounts reliability of AFC cannot be ascertained.

Investment made by OHPC

41. OHPC should produce the list of JV companies where it is a promoter. OHPC is investing in equity of two companies namely OTPC and GEDCOL. Any loss incurred in those companies should not be carried to the ARR of OHPC.

Energy Status Report

42. One objector has claimed that OHPC should produce energy status report from the month of April 2016 till date, report of actual O&M expenses for last five years, amount received from different industries availing water and actual generation status since 2009-10.

ARR and Tariff

43. One of the objector submitted that Tariff determination should be necessarily guided by the Electricity Act, 2003 adopting Multi-Year Tariff (MYT) Principles in addition to the other guidelines to give an element of certainty. The same objector has requested the Commission to include OREDA as a party to tariff proceedings so that the status of solar mission of the state of Odisha can be known. The objector submitted to issue directions to the licensee / Govt. of Odisha to functionalize GEDCOL in letter and spirit in the greater interest of state.

Electricity Duty on transformer loss within power station

44. One of the objectors pointed out that OHPC has wrongly interpreted the definition of Auxiliary Consumption. Auxiliary Consumption should not include Generator Transformer loss. ED should only be payable on the auxiliary consumption for operation of on-line Tap changer, mechanized isolator, breaker & switchyard lighting but not on the loss on account of generator transformer.

Another objector pointed out that any Auxiliary Energy Consumption beyond 1.0% is not acceptable and reimbursement of ED on Auxiliary Energy Consumption should be limited up to 1% of gross annual generation of OHPC.

Energy Compensation received from the industries using water from the Reservoirs where OHPC utilize water for Hydro Generation.

45. One of the objector pointed out that around 24 industries are drawing water from the reservoir of OHPC. As per the High Court order DoWR should collect the energy compensation charge from the industries and hand over to OHPC. OHPC is failing in collecting water charges from those industries.
46. Many objectors demanded that the amount of water cess should be computed and OHPC should be made accountable for collection of the same.
47. Another objector pointed out that OHPC is hiding the facts regarding the details of water drawl by the industries from the Hirakud Reservoir along with the status of compensation claim from the user industries towards loss of generation.

Capital Maintenance/ Capital Spares/ Capital Civil works of OHPC

48. Some of the Objectors were of the opinion that those Capital spares which are not useful for enhancing generation shall not be allowed.

One of the objector submitted that OHPC should carry out RLA studies of the Generator Transformer before procuring a spare GT for each power station. However construction of quarters & office buildings may be considered by the Commission.

True up of OHPC audited account

49. One objector submitted that the accounts of OHPC are yet to be trued up. After truing up of accounts only the real financial status of OHPC can be ascertained. The true up of accounts must be filed before the Commission as early as possible through a separate petition.

REJOINDER AND REPLY OF OHPC TO QUERIES RAISED BY OBJECTORS THROUGH WRITTEN SUBMISSION (Para 50 to 68)

The compliance by OHPC to the suggestions/objections raised by the objectors as well as the reply to the queries raised during the hearing is summarized as under:

Design Energy

50. In the recent years, OHPC is constrained to achieve the Design Energy approved by the OERC due to various factors which are beyond the control of OHPC.

It may please be noted that all the high head power stations of OHPC like BHEP, UIHEP & UKHEP are storage type reservoir. The water of these reservoirs have never attained its Minimum Draw Down Level (MDDL) by the end of financial year i.e on 31st of March. The reservoir attains its MDDL by the end of water year i.e towards 15th of June for every year. It is also pertinent to mention here that operation of OHPC machines are regulated by SLDC in coordination with Dept. of Energy & Dept. of WR as per the irrigation, Downstream & Grid requirements. So low generation of OHPC power stations in spite of availability of water in the Reservoir cannot be considered as inefficiency of the OHPC management.

NAPAF of Hirakud and Chiplima HEP

51. OHPC submitted that the Plant Availability Factor (PAF) of the HHEP, Burla & CHEP, Chiplima has reduced due to the non-completion of R&M work. The R&M consultant WAPCOS & OHPC are putting their best effort to bring back the Unit-3 of Chiplima and Unit-5 & 6 of HHEP, Burla within FY2019-20. Due to unprecedented rainfall in the July – August 2018 machines of Power House of Chiplima was submerged which affected the PAF of CHEP. The Executives & Non Executives posted at CHEP, Chiplima worked day & night to restore the Power House back to service almost in 03 months. All the employees of CHEP have put their sincere & dedicated efforts to bring back the generation of power, need appreciation from all corners. Department of Water Resources (DOWR) shall create a corpus as annual maintenance fund, to be utilized for removal of shoals/silt etc. through periodical dredging as directed by Hon'ble High Court of Odisha vide its Order Dtd. 30.03.2012 in WP(C) No. -8409 of 2012 at para 24.

Additional Capitalization

52. The Capitalization of Rs.88.0Cr proposed by OHPC is mainly due to adoption of New IND-AS accounting system from FY2014-15 to FY2017-18. OHPC has already submitted all relevant documents including the audited accounts of FY2016-17 & FY2017-18 in the Tariff Application & in compliance to the Query of the Commission. The Commission after due scrutiny may approve the same.

Regarding “Cost Benefit Analysis” of the approved additional capitalization of Rs.567Cr, this is to stress upon that except UIHEP the Govt. of Odisha transferred the old generation assets to OHPC at 05 Nos of Hydro power stations to run the

generation business for the consumers of the state. It is worth mentioning here that OHPC has taken up timely maintenance of old generating units which had almost completed their useful life and has capitalized the expenditure in phased manner and always maintaining a sustainable tariff for the consumers of Odisha which is lowest in the country. With the help of the above small capital additions OHPC power stations are supplying peak power to the State which would have otherwise cost a lot had it been purchased by GRIDCO from outside. Hence, the Commission has very judiciously allowed OHPC for additional capitalization of Rs567 Crs for optimum availability of machines for generation as and when required.

Further, as per new accounting policy notified by Govt. of India, Minister of Corporate Affairs, OHPC prepare its financial statements under Ind-AS where the capital addition is to made due to 3 reasons. Such as (1) Any new purchase of fixed assets. (2) Any major over hauling expenses and any spares purchased valuing more than Rs.5.00 lakhs and having useful life of more than one year as per Ind-AS-16. There is no such reason to believe that performance of OHPC has not improved as because the turnover of OHPC is increasing every year. Further it is to mention here that the benefit of capital addition may not be reaped in one year.

Installed Capacity

53. OHPC submitted that proposed reduction in the Installed Capacity as per Clause No. 4.1.3 of the agreed PPA between OHPC & GRIDCO which was also duly vetted by OERC, including separate Orders of the Commission for computation of PAFM & recovery of Capacity Charges from GRIDCO. Accordingly OHPC has proposed to reduce the Installed Capacity of different power stations considering the R&M programmes from the zero date till the scheduled (approved) completion period. However the reduction on account of approved Capital Maintenance is considered depending upon the shutdown permission of SLDC.

OHPC has submitted that they are ready to develop large hydro project only after decision on construction of multipurpose dam is taken by DoWR as it involves flood control, irrigation, submergence of villages with R&R, forest and environment issues. It has been further submitted that OHPC is in the process of setting of some feasible Small Hydro Projects through its subsidiary company i.e. Green Energy Development Corporation of Odisha Ltd (GEDCOL). OHPC has submitted the status report on this.

Saleable Energy

54. OHPC submitted that it had made an in house study of the higher auxiliary energy consumption of its different Power Stations. The auxiliary equipment consumption of different power station were found within 0.5% of gross generation but the transformer losses found to be of the order of 1.5% of gross generation. So the actual Auxiliary Energy Consumption (AUX) of OHPC Power Stations are remaining at 2% of the gross generation.

Due to following major constraints the transformation loss of OHPC Power Stations are remaining at around 1.5%.

- Losses in Unit Auxiliary Transformers (UATs) and Station Service Transformers (SSTs).
- Old energy consuming equipments in different Power Stations of OHPC leading to lower operational efficiency of the Auxiliary Equipments in the Power Station resulting high transformation loss .
- Average Excitation Transformer consumption of Generating Units of OHPC are around 0.2%.
- Some unaccounted losses are due to aging of Transformers (GTs, UATs, SSTs etc.) and other Electrical Equipment, and running of generators at reduced load or leading VAR condition etc.

In view of above OHPC prays for consideration of 2% as Auxiliary Energy Consumption and accordingly approve saleable design energy for computation of the Tariff.

De-capitalization of OHPC stations.

55. OHPC pointed out that the OERC had approved Rs9.38Cr as de-capitalization of the asset of different Power Stations of OHPC from FY2011-12 to FY2015-16. But while approving the de-capitalization of FY 2016-17 OERC had inadvertently considered the de-capitalization of HHEP as Rs0.02Cr instead of Rs 4.67Cr as submitted in Tariff application of OHPC for FY2018-19. Thus OHPC has considered the total audited de-capitalization of FY2016-17 as Rs7.25Cr and asset reduction from FY 2011-12 to FY 2017-18 as mentioned in the Table below.

Table - 23
De-capitalization of the Project Cost (in Cr)

SL. No.	Power Stations	Asset reduction during the FY2011-12 to FY2015-16 (Approved)	Asset reduction during the FY 2016-17 (Audited)	Asset reduction during the FY 2017-18 (Audited)	Asset reduction during the FY 2011-12 to FY 2017-18
1	2	3	4	5	6=3+4+5
1	RHEP	0.06	0.02	0.000	0.08
2	UKHEP	0.16	0.30	0.003	0.46
3	BHEP	0.29	0.04	0.000	0.33
4	HHEP	6.77	4.67	0.060	11.50
5	CHEP	0.75	0.15	0.370	1.27
6	Sub Total	8.03	5.18	0.433	13.64
7	UIHEP	1.35	2.07	1.448	4.868
8	Total	9.38	7.25	1.882	18.51

It is further submitted that there is de-capitalization of Rs 0.433 Cr in case of Old power stations of OHPC & Rs1.488Cr in case of UIHEP for FY 2017-18. Thus the balance de-capitalization of Old power stations from FY2011-12 to FY2017-18 is Rs13.64Crs and that of UIHEP as Rs4.868Cr. Hence the total de-capitalisation of Power Stations during the FY 2011-12 to FY 2017-18 comes to Rs 18.51Cr which has been deducted from the original Historic Cost as on 01.04.1996.

Manpower

56. OHPC submitted that detail of Man power planning of all projects under OHPC including its corporate office has been furnished as rejoinder to Tariff application of OHPC for FY2018-19.

MDDL of Hirakud Project

57. OHPC submitted that OERC should suitably compensate HHEP, Burla by 32.4MU as suggested by the Objector towards restriction imposed by the DoWR not to draw water from Hirakud reservoir below 595ft to generate electricity

Repair and Maintenance of Plants

58. OHPC submitted that the Unit-3 of CHEP; Unit-5 & 6 of HHEP, Burla; Unit-1&2 of BHEP, Balimela are under R&M. OHPC has not yet considered any effect of Additional Capitalization on account of Renovation & Modernization work of the said units. Unit-3 of CHEP, Chiplima and Unit-5 & 6 of HHEP, Burla are likely to be commercialized in the FY2019-20. OHPC during its Tariff application for FY2020-21

shall submit the detailed project cost with all relevant documents for scrutiny before the Commission for capitalisation.

Hydrology Failure

59. OHPC has calculated the revenue flow out of sale of secondary energy from FY 1996-97 to FY 2017-18. The detail calculation is enclosed at Annexure-7 of the Original Application of ARR of OHPC for FY2019-20. As observed the secondary energy fund has always remained in deficit. As pointed out by GRIDCO the Accumulated Regulatory Assets (RA) shall have large impact on the Tariff. But in case the Commission acknowledges the Hydrology Failure and pass on the impact of deficit in secondary energy fund to consumer in a phased manner then the impact will be moderate. OHPC prays before OERC to consider Rs.263.14 Crs as deficit in secondary energy fund and pass on the same to consumers in suitable instalments.

Audited Account and Truing Up

60. It has been submitted that OHPC has initiated proper action for truing-up exercise from the beginning and assigned the said work to a consultant M/s Feedback Infra Pvt. Ltd, Mumbai for the FY 1996-97 to 2015-16. The consultant has submitted the draft truing-up application with all enclosures which are under scrutiny by OHPC. After the scrutiny is over, OHPC shall file the truing up application before OERC.

OHPC in the Tariff Submission has submitted the Audited Accounts for FY2016-17 & FY2017-18 in a separate volume named “List of Annexure to Tariff Application of OHPC for FY2019-20.”

Investment made by OHPC

61. OHPC provided details of amount spent by OHPC as on 31.03.2018 in JVs / Subsidiaries / Associate Companies are as follows:

Table-24
Amount invested by OHPC in its JV
(Rupees in Lacs)

Name of JVs / Associates	As Equity	As loan	Total
OTPCL	13420.47	-	13420.47
GEDCOL	5032.00	4550.00	9582.00
OCPL	14700.00	-	14700.00
BWCCL	1000.00	-	1000.00

Energy Status Report

62. The list of industry who consumes water and amount received from them towards compensation for loss of generation has been submitted by OHPC. It has been submitted that during FY 2017-18 OHPC has received Rs.2,94,317/- as water compensation

ARR and Tariff

63. OHPC submitted that OERC may decide about implementation of Multi Year Tariff principle.

Electricity Duty on transformer loss within power station

64. OHPC pointed out the provisions under the CERC Tariff Regulation, 2009 & 2014 and OERC Generation Tariff Regulation, 2014 the definition of Auxiliary Energy Consumption is reproduced below.

“Auxiliary energy consumption’ or ‘AUX’ in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, and transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station”.

65. The Odisha Electricity (Duty) Amendment Act 2016” defines “Auxiliary consumption’ as the consumption of energy by auxiliary equipment of the generating station, which is used for the purpose of operating the plant and machinery including switchyard of the generating station and transformer losses within the generating station.”.
66. Subsequently Odisha Electricity (Duty) Amendment Rules, 2017, OHPC is paying the Electricity Duty in “J” format, where Electricity Duty is payable on total Energy Generated minus total Energy Sold. This implies that the Electricity Duty is payable on the Auxiliary Equipment consumption and Transformer loss within the Power Station.

OHPC also submits that it has made an in house study of the higher auxiliary energy consumption of its different Power Stations. The auxiliary equipment consumption of different power stations were found to be within 0.5% of gross generation whereas transformer loss was of the order of 1.5% of gross generation. So the actual Auxiliary Energy Consumption (AUX) of OHPC Power Stations are remaining at 2% of the gross generation.

Energy Compensation received from the industries using water from the Reservoirs where OHPC utilize water for Hydro Generation.

67. OHPC submitted that Govt. of Odisha, Dept. of Water Resources (DoWR) has issued the executive instruction vide letter no-25983 Dtd. 01.10.13 that the Industrial Units drawing water from different reservoirs in Odisha with Hydro Power Units shall execute a supplementary agreement with OHPC.

OHPC further submitted that in spite of the above executive instructions of the Government in Deptt. Of Water Resources none of the industrial units have signed the supplementary agreement with OHPC till date.

Further OHPC submitted that in spite of any supplementary agreement with the user industries OHPC is regularly serving the required compensation claim bills to the industries drawing water from the reservoirs of UKHEP, HHEP & CHEP. But some of the user industries have filed a Case in the Hon'ble High Court of Odisha challenging the various decisions of the State Govt. in Deptt. of DoWR this regard. Since the Case is sub-judice, except two industries, all other industries are not paying the compensation to OHPC towards the loss of generation.

In view of the above OHPC has requested that amount received towards Energy Compensation from the user industries shall be considered as a part of hydrology fund of OHPC.

Capital Maintenance/ Capital Spares/ Capital Civil works of OHPC

68. OHPC submitted that Most of the Generator Transformers of old power stations have already outlived their lives. Hence OHPC has proposed to replace at least one of old GTs by a new one and repair that old transformer and preserve the same as a spare transformer.

OHPC submitted that the proposed Capital Maintenance & Capital spares are very essential as this will increase the availability of machines, improve the reliability of machines. Therefore OHPC has requested the Commission for providing in-principle approval of the same.

Table -25
List of Capital Civil works for Financial Year 2019-20

Sl. No.	Name of the work.	Amount (Rs. in crs.)
1.	Construction of 12 nos. of 'D' type qrs. at CHEP, Chiplima	3.59 crores.
2.	Construction of office building at UIHEP, Mukhiguda	5.45 crores.
3.	Construction of 20 nos. of 'D' type qrs. at BHEP, Balimela	5.00 crores.
4.	Construction of Multi storied commercial complex at OHPC Training Center, Bhubaneswar.	80.00 crores.
5.	Repair of spillway, surplus escape, forebay of CHEP, Chiplima	200.00 crores.
6.	Construction of Shakti Bhawan	80.00 crores.
7.	Construction of multi storied commercial complex on plot no.324 (Pt.) Khata No.-619 Chandrasekharapur, BBSR.	70.00 crores.
8.	Construction of New Officers' Club at BHEP, Balimela	0.50 crores

OHPC submitted that the in-principle approval of the Board of OHPC along with all relevant documents has already been submitted for scrutiny of the Commission.

VIEWS OF CONSUMER COUNSEL (Para 69)

69. On behalf of World Institute of Sustainable Energy, Pune the Consumer Counsel had made a presentation on the Analysis of ARR and Tariff filing of OHPC for 2019-20. The Consumer counsel's observations /suggestions are elaborated below.

- Comparative analysis of ARR approved by the Commission for FY 2018-19 to that of the proposed ARR for FY 2019-20 reveals that there is 11.17 % increase in proposed ARR for FY 2019-20. Tariff is proposed for a decrease in Machhakund HEP from FY 2018-19 by 46.76%
- The Commission may approve the equity base and return on equity as proposed by OHPC in the ARR for FY 2019-20.
- The Commission may suggest a suitable mechanism of considering the accumulated interest repayment in the ARR of OHPC and allow the same for tariff determination purpose to minimize its impact on tariff. OHPC has claimed interest on normative loan on account of additional capitalization for its different power stations which may be approved.
- OHPC has computed depreciation for FY 2019-20 @ 2.57% of historic project cost as on 01.04.1996 plus additional capitalization from 01.04.1996 to FY

2017-18. The methodology may be approved. However, depreciation may only be approved after due scrutiny of loan repayment of different plants of OHPC.

- OHPC has claimed expenses on O&M following clause no. 4.28 of the OERC (Terms & Conditions for determination of Generation Tariff) Regulation, 2014

OHPC has escalated approved O&M of different power stations for FY 2018-19 @5.72% to arrive at the O&M expenses for FY 2019-20. The same may be allowed as this is in line with the new generation tariff Regulations, 2014.

OHPC has claimed interest on working capital on normative basis as per provision under clause no. 4.24 of the OERC (Terms & Conditions for determination of Generation Tariff) Regulation, 2014. Working capital may be approved basing on approved O&M cost and annual fixed cost.

OBSERVATIONS OF THE STATE ADVISORY COMMITTEE (SAC) (Para 70)

70. The Commission convened the State Advisory Committee (SAC) meeting on 20.02.2019. The Members of SAC deliberated on different issues related to power sector and the Annual Revenue Requirement of various licensees. Regarding OHPC, some members raised their concern over development of small hydro projects. Shri Hemanta Sharma, Commissioner-cum-Secretary, Deptt. of Energy participating in the deliberations, outlined the present status of power sector and effort from the government in order to address the concerns raised by the SAC members. He further stated that Govt. is taking action for development of hydro power in the state.

VIEWS OF GOVERNMENT OF ODISHA (Para 71)

71. Government of Odisha communicated its suggestions/views/comments on various issues involving tariff setting for the year 2019-20 including subsidy / subvention and other important matters having a direct bearing on fixation of tariff for the year 2019-20 vide their letter No.LC-OERC-06/2019-2283 dated 12.03.2019.

“Regarding the issue of up-valuation of assets pertaining to OPTCL, Generators and other licensees the Government for the time being agrees with the views of the Commission to keep in abeyance the up-valuation of assets like previous years. Considering the prevailing situation, the Govt. agrees to extend the status-quo on up-valuation till 2019-20.

**COMMISSION'S OBSERVATIONS AND ANALYSIS OF OHPC'S PROPOSAL
(PARA 72 TO 135)**

72. The Commission has carefully examined and analysed the proposal of OHPC. The written and oral submissions of the objectors have been considered while determining the tariff. The tariff proposal of OHPC contains technical parameters such as type of hydro stations, Normative Annual Plant Availability Factor (NAPAF), potential of energy generation and financial details like loans, capital cost, calculation of depreciation, interest etc. OHPC has furnished the technical and financial details in respect of each of the old power stations as well as of UIHEP. The station-wise apportionment of capital cost, audited figures for additional capitalisation, component wise O&M expenses in respect of all these stations have also been provided along with tariff calculations.
73. During the course of public hearing, the objectors had raised certain issues having direct impact on tariff of OHPC. Point-wise response was submitted by OHPC. Commission's analysis on the issues related to tariff of OHPC are discussed as under:
- Power Procurement from OHPC
 - Project Cost
 - Annual Fixed Cost
 - Two-part Tariff (Capacity Charge & Energy Charge)
 - Tariff for Chhatisgarh State Power Distribution Company Limited (CSPDCL)
 - Issues relating to Machhkund Hydro Electric Project
 - Status of Renovation, Modernisation and Uprating of different generating units of OHPC
 - Augmentation of storage capacity of the Surulikonda Barrage
74. The Annual Revenue Requirement of OHPC power stations for FY 2019-20 has been determined based on OERC (Terms and Conditions of Determination of Generation Tariff) Regulations, 2014.

Power Procurement from OHPC

75. The design energy of OHPC approved by the Commission is 5676.00 MU. Auxiliary energy consumption for surface hydro electric power generating stations with static excitation system is considered at 0.5% of energy generated. Transformation loss from generation to transmission voltage is also to be calculated at 0.5% of energy generated. Accordingly, energy sent out from the generating stations of OHPC to GRIDCO has been determined by deducting 1% on gross generation after deduction of auxiliary consumption which comes to 5619.240 MU.

Machhkund

76. This hydro power station is a joint project of Government of Odisha and Andhra Pradesh with an installed capacity of 120 MW (i.e. 17 MW x 3 = 51 MW and 23 MW x 3 = 69 MW). Therefore, the 30% Odisha share from MHEP amounting to 36 MW has been considered for computation of total Installed Capacity of OHPC with the design energy of 525 MU. Now, the drawl of 262.50 MU (50%) is proposed by GRIDCO based on the supplementary agreement between the concerned States. The Commission, therefore, approves 262.500 MU to be drawn from this station during 2019-20.
77. Accordingly, the Commission's approval of power purchase by GRIDCO from OHPC for FY 2019-20 is given in the table below:

Table - 26
Design Energy approved for OHPC for FY 2019-20

(In MU)

Sl. No.	Name of the Power Station	Anticipated generation for FY 2018-19 as per OHPC taking actual from 01.04.2018 to 31.10.2018 (MU)	Design Energy proposed for FY 2019-20	Energy for Sale proposed by OHPC	Energy for sale approved for FY 2019-20
1	RHEP	788.260	525.000	514.500	519.750
2	UKHEP	959.020	832.000	815.360	823.680
3	BHEP	1882.460	1183.000	1159.340	1171.170
4	HHEP	392.510	684.000	653.676	677.160
5	CHEP	164.410	490.000	480.200	485.100
Sub Total of Old Power Stations		4186.660	3714.000	3623.076	3676.860
6	UIHEP	2131.470	1962.000	1922.760	1942.380

Sl. No.	Name of the Power Station	Anticipated generation for FY 2018-19 as per OHPC taking actual from 01.04.2018 to 31.10.2018 (MU)	Design Energy proposed for FY 2019-20	Energy for Sale proposed by OHPC	Energy for sale approved for FY 2019-20
Total		6318.130	5676.000	5545.836	5619.240
	Machkund			262.500	262.500
OHPC Total				5808.336	5881.740

Thus, the Commission, for tariff purpose, approves the total saleable energy of OHPC power stations (including Machhkund share) at 5881.740 MU.

78. OHPC should study the feasibility of enhancement of design energy in different power stations. For example at Rengali Power Station it can be done by removal of rock barrier in the tail race. This has been recorded in the Minutes of Meeting of the Commission with OHPC on 21.06.2016.

Project Cost

79. The tariff of old power stations have been determined on the historical cost of old power stations of OHPC (except UIHEP) at Rs.479.80 cr. as per the Notification No. 1068 dated 29.01.2003 of Department of Energy, GoO. The Commission in its order dated 20.03.2008 had approved Rs.1194.79 cr. as final capital cost of UIHEP. OHPC has also made additional capitalisation as per clause 3.4 of OERC (Terms and Conditions for Determination of Tariff) Regulations, 2014 for different power stations for various associated works.
80. During 2017-18 de-capitalisation proposed by OHPC was of Rs.5.08 cr. on old power stations and Rs.1.45 cr. in case of UIHEP. After through scrutiny the Commission approves the total de-capitalisation of power stations during FY 2017-18 at Rs.6.53 cr. (5.08+1.45) considering the above which is to be reduced from the project cost.
81. While filing ARR for FY 2018-19 OHPC had applied for the approval of additional project cost basing on New Ind AS but had failed to provide sufficient documentary evidence. Accordingly the Commission had approved only Rs.4.83 Cr then instead of their claim of Rs.59.72 Cr. The Commission has now scrutinized all the claims of OHPC with regard to additional capitalization and allowed Rs.54.89 Cr for the FY 2016-17 towards additional capitalization. Besides, OHPC has submitted additional

capitalization of Rs.32.88 Cr for FY 2017-18 for consideration. After thorough scrutiny the Commission now allow the same towards additional capitalization in the year 2017-18. Thus the total additional capitalization considered during FY 2017-18 is Rs.87.77 Cr (54.89+32.88).

82. The Commission had allowed the net Capital Cost of OHPC as on 31st March 2017 as Rs.2229.36 cr. vide para 75 of tariff order of OHPC for FY 2018-19. Thus the total capital cost approved upto 31st March 2018 is Rs 2310.60 Cr. (Rs 2229.36 Cr. + Rs.87.77-Rs.6.53 Cr). The approved project cost for the tariff calculation of 2018-19 is tabulated below:

Table –27
Capital cost approved for Tariff Determination of FY 2019-20
(Rs. in Cr.)

Name of the Power Stations	Historic cost of assets as on 01.04.96	Assets Reduction already approved by OERC up to 2016-17	New additions approved in Tariff Order Up to 2016-17	Project Cost Approved by OERC as on 31.03.2018 (As per Audited accounts 2016-17)	Net Asset reduction approved by OERC for FY 2017-18	New additions during FY 2017-18 (Audited)	Assets addition un-approved earlier and approved now	New Addition Approved now for FY 2017-18	Project cost considered for Tariff Calculation based on Historic Cost
	1	2	3	4=1+3-2	5	6	7	8=6+7	9=4-5+8
RHEP	91.09	0.08	57.81	148.82	0.00	1.19	0.06	1.26	150.08
UKHEP	108.31	0.46	19.28	127.13	0.00	1.13	0.00	1.13	128.26
BHEP	115.42	0.33	215.86	330.95	0.00	3.95	1.17	5.12	336.07
HHEP	72.75	6.79	220.12	286.08	4.71	20.52	21.66	42.18	323.55
CHEP	92.23	0.90	48.12	139.45	0.37	1.69	0.38	2.07	141.15
Sub Total	479.80	8.56	561.19	1032.43	5.08	28.48	23.27	51.75	1079.10
UIHEP	1194.79	3.42	5.56	1196.93	1.45	4.40	31.62	36.02	1231.50
Total	1674.59	11.98	566.75	2229.36	6.53	32.88	54.89	87.77	2310.60

83. OHPC in the ARR application has not considered the effects of the Notification No. 5843 dated 03.07.2015 issued by the Department of Energy, GoO. The Commission has also not considered the effect of up-valuation of assets in determining the Tariff and ARR for FY 2019-20 in view of the letter No. LC-OERC-06/2019-2283 dated 12.03.2019 of Govt. of Odisha.

Determination of Tariff

Interest on Loan:

84. The loan liabilities of OHPC consist of State Government loan and Normative Loans.

I. State Government Loan (UIHEP)

In case of old stations of OHPC as on date there is no outstanding loan liability. In case of UIHEP there is a component of state government loan and the balance is considered as normative loan provided by OHPC.

Capital cost of UIHEP as approved by the Commission earlier is Rs.1194.79 Cr.

Breakup of UIHEP approved project cost

Govt. loan	:	Rs.497.86 cr.
PFC loan	:	Rs.319.49 cr,
Equity	:	Rs.298.70 cr.
Normative loan(Balancing figure)	:	Rs.78.74 cr.

Total : Rs.1194.79 cr.

85. The detailed breakup of the project cost and the basis of allowing depreciation linked to loan repayment is dealt in para 134 of OHPC tariff order for the FY 2010-11 which is presented below:

- Original cost of the project : Rs.1194.79 cr.
- 90% of the project cost : Rs.1075.31 cr. ...(i)
- Cumulative depreciation allowed in
ARR till 2009-10 (PFC loan repayment) : Rs.319.49 cr. ...(ii)
- Balance depreciation to be recovered(i-ii) : Rs.755.82 cr. ...(iii)
- Balance Life period : 25 years (iv)
- Depreciation calculated by OERC(iii/iv) : **Rs.30.23 cr.**

The present status of State Government loan of UIHEP admitted by the Commission is summarised in the table below:

Table - 28

(Rs. Cr.)

a.	Original Approved Project Cost	1195.42
b.	Project cost deducting the infirm power cost	1194.79
c.	25% Equity on (b)	298.70
d.	PFC loan already repaid	319.49
	Govt Loan at the beginning	497.86
f.	Depreciation allowed from 2010-11 to 2019 -20 @ Rs.30.23 Crore per annum (10Years)	302.30
g.	Balance Outstanding Loan as on 01.04.2019	195.56
h.	Interest claimed by OHPC for the year 2019-20 @ 7% on (g)	14.747
i.	Cumulative Interest payable to OHPC as on 01.04.2019	367.35

86. OHPC has claimed Rs.14.747 Cr. towards interest on Government loan of UIHEP in the Tariff for the FY 2019-20. OHPC has also claimed cumulative interest to be recovered from FY 2006-07 to FY 2018-19 @7% on Rs.497.86 Cr. (as per OHPC's rescheduled statement) to the extent of Rs.367.35 Cr. towards UIHEP Government loan which the Government has proposed to consider as Regulatory Asset. The Commission is not inclined to consider it in view of earlier orders.

II. Normative Loan:

Normative Loans of different Power Stations due to Additional Capitalisation:-

87. The normative loans of CHEP, RHEP & UKHEP is considered @ 9.8% on prevailing interest on Govt loan at that time as per Clause No. 4.13 of OERC (Terms & Conditions for determination of Generation Tariff) Regulation, 2014. The normative loan of BHEP, Balimela is considered @ 9.6 % for FY 2019-20 based on PFC interest rate applicable to BHEP. The normative loan of HHEP, Burla is considered @ 8.75 % for FY 2019-20 based on PFC interest rate applicable to HHEP, Burla. The Normative loan of UIHEP due to the additional capitalization based on audited accounts of FY 2017-18 is considered at the prevailing rate of interest of State Government Loan @7% as per the OERC tariff norms.

Normative Loan of UIHEP:-

88. As far as repayment of normative loan of UIHEP of Rs.78.74 Cr.(OHPC's rescheduled statement) is concerned, the Commission in the Para 131 of Compendium of Tariff Order of OHPC for FY 2013-14 has agreed that "after the total repayment of Government loan as approved above, this loan repayment may start at the same rate of Rs.30.23 Cr. each year beginning with 2028-29. The interest component will be considered after the total repayment of the principal in line with the Government loans".
89. OHPC has prayed before the Commission to designate the accumulated interest amounting to Rs 107.36 Cr. from the FY 2001-02 to FY 2018-19 on Normative Loan of Rs 78.74 Cr. as Regulatory Asset and fix suitable installment as pass through in the tariff for the FY 2019-20 in order to reduce the future tariff burden. Commission is not inclined to accept the proposal in view of its earlier orders.

Summary of Interest on loan:

90. Considering the above facts, OHPC has proposed an amount of Rs 26.86 Cr towards payment of interest on outstanding loans for FY 2019-20. The Government loan of UIHEP as Rs.497.86 Cr. and normative loan of Rs.78.23 Cr. which has already been dealt in Case No.100/2012 vide para 131 of the compendium of tariff orders for FY 2013-14 wherein Commission has directed as follows:

“The Commission has analysed the proposal of OHPC and observes that the principal repayment has already been passed in the tariff of 2010-11, 2011-12 and 2012-13 @ Rs.30.23 Cr. per year. The same amount is allowed in the tariff of 2013-14 towards principal repayment. The total principal repayment will take 17 years i.e. beginning with 2010-11 and will terminate by 2027-28. Thereafter, the interest payment will be taken into consideration. In this circumstance for the year 2013-14 an amount of Rs.30.23 Cr. is allowed as principal repayment under the head Depreciation. No interest component for UIHEP is allowed in the tariff for 2013-14.

As far as repayment of normative loan of Rs.Rs.78.23 Cr. is concerned, the Commission feels that after the total repayment of Govt. loan as approved above, this loan repayment may commence at the same rate of Rs.30.23 Cr. each year i.e. beginning with 2028-29. The interest component will be considered after the total repayment of the principal in line with the Govt. loans. Moreover, OHPC had not mentioned about this loan in any of the filings made in the previous years.

Based on the above observations and the letter dtd.28.12.2012 of the Commission to the Govt., the 7% loan on UIHEP has not been considered in the tariff of FY 2013-14. Therefore, for the purpose of tariff of UIHEP for the FY 2013-14, the Commission approves an amount of Rs.30.23 Cr. in the head Depreciation for the purpose of loan repayment. Thus at the end of the tariff period i.e. by March, 2014, the State Govt. loan is deemed to be repaid by an amount of Rs. 120.92 Cr. leaving an outstanding loan of Rs.376.94 Cr. to be repaid in the subsequent years. No interest on loan for UIHEP was allowed for the purpose of tariff for the FY 2013-14.”

91. The order of the Commission has become final. It is observed that the depreciation has already been allowed in the tariff of 2010-11 to 2018-19 @ Rs.30.23 Cr. per year. The same amount is also allowed in the tariff of 2019-20 towards principal repayment of UIHEP Govt Loan. Commission agrees with the view of the objectors and the Consumer Counsel during hearing not to allow any separate interest on Government loan and normative loan of UIHEP in ARR.
92. Considering the above, Principal repayment of Rs.30.23 Cr. against the depreciation during the FY 2019-20 is allowed and may consider the accumulated interest on above after completion of the Principal repayment as has been decided earlier. In line with the above observations and the Commission’s letter No. DIR(T) 175-12/57 dtd.13.01.2015 to the Government, no interest payment on Government loan and

normative loans for UIHEP is allowed for the purpose of tariff for FY 2019-20. Interest on normative loans for additional capitalisation of Chipilima, Upper Kolab, Balimela, Hirakud, Rengali and UIHEP are allowed by the Commission.

93. The Unit-wise interest on loan as described above and approved by the Commission for the FY 2019-20 is tabulated below:

Table –29
Interest on Loan for the FY 2019-20

(Rs. in Crs.)									
Sl. No.	Source of Loan	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	TOTAL
1	Interest on Govt Loan Proposed by OHPC							14.75	14.75
2	Interest on Normative Loan Proposed by OHPC	1.46	0.12	0.39	2.78	0.19	4.93	7.18	12.11
3	Total Interest Claimed								26.86
	Allowed for FY 2019-20	1.45	0.12	0.39	2.78	0.19	4.93	1.67	6.60

Accordingly, the Commission approved an interest payment of Rs.6.60 cr. for all stations of OHPC for FY 2019-20 against Rs.26.86 cr. proposed by OHPC.

Depreciation:

94. From FY 2003-04 onwards, as per the directions of the Hon'ble High Court of Odisha, depreciation was calculated at pre-1992 norms notified by Government of India on the book value of the assets. Accordingly for the purpose of determination of Annual Fixed Cost, depreciation is computed @ 2.57% of the project cost for FY 2019-20 as per OERC Generation Tariff Regulation, 2014. It was observed that the computed depreciation amount is less than the amount of loan repayment incase of RHEP and UIHEP. In such a situation Commission has decided to stick of to its earlier principle of allowing higher the amount of depreciation to meet the full repayment of principal loan for FY 2019-20 as was done in case of BHEP while approving ARR of BHEP during FY 2017-18 vide para 105 of the order.
95. In case of UIHEP, Commission allowed the recovery of principal loan repayment of Rs 30.23 Cr towards Govt Loan. Besides that an amount of Rs 5.82 Cr has also been paid towards repayment of principal on account of additional capitalization. Thus, the

total repayment of loan allowed in case of Indravati comes out to be Rs.30.23 + Rs.5.82=Rs.36.05 Cr. Accordingly, depreciation claimed by OHPC and approved by the Commission for FY 2019-20 is summarized in the table below:

Table – 30
Depreciation approved for 2019-20

(Rs. In Cr.)

Sl. No.	Name of the Power Station	Project Cost	Depreciation @ 2.57%	Loan Re-payment	Depreciation allowed
1	2	3	4 = 3*2.57%	5	7
1	RHEP	150.08	3.86	3.90	3.90
2	UKHEP	128.26	3.30	0.65	3.30
3	BHEP	336.07	8.64	1.20	8.64
4	HHEP	323.55	8.32	8.03	8.32
5	CHEP	141.15	3.63	0.69	3.63
	Sub Total	1079.10	27.73	14.46	27.77
6	UIHEP	1231.50	31.65	36.05	36.05
	Total	2310.60	59.38	50.52	63.82

The Commission approves a total of Rs.63.82 cr. on account of depreciation for tariff purpose in ARR of FY 2019-20 against Rs.57.54 Cr for FY 2018-19.

Return on Equity (RoE) and Income Tax

96. The equity component of OHPC, was decided in the Commission's tariff order dtd.19th April, 2002 in Case No. 65 of 2001 & Case No. 04 of 2002 vide Para 6.4.17 through Para 6.4.21. Based on the above order and subsequent Government Notification dtd.29.01.2003, the Return on Equity for the year 2004-05 was allowed to OHPC on new investments made after 01.04.1996.
97. The return on equity (ROE) determined on the basis of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 is computed at the rate of 16% of the equity amount as accepted by the Commission.
98. The Commission had decided to allow return on equity at 16% on the new capital addition with a provision to reimburse the actual income tax paid during the FY 2018-19 which is subject to change after the actual tax paid during the FY 2018-19. Since there is possibility of under recovery or over recovery of income tax if it is inbuilt to tariff the Commission feels to pass on the income tax as a reimbursement to be recovered from the beneficiary i.e. GRIDCO. The Commission does not allow the Income Tax on interest income earned by OHPC on account of Non Tariff income during FY 2018-19. Accordingly, the details of RoE of OHPC power stations approved by the Commission for the FY 2019-20 is summarized below:

Table – 31
Return on Equity for FY 2019-20

(Rs. in Cr.)

Sl. No.	Name of the Power Stations	Total Additional Capitalisation from 01.04.1996 to 31.03.2018	Equity Capital rate	Equity Capital	ROE @16% for the FY 2019-20
	1	2	3	4	5
1	RHEP	59.07	30%	17.72	2.84
2	UKHEP	20.41	30%	6.12	0.98
3	BHEP	220.98	30%	66.29	10.61
4	HHEP	262.30	30%	78.69	12.59
5	CHEP	50.19	30%	15.06	2.41
6	UIHEP*	1231.50	25% & 30%*	309.95	49.59
7	Total	1844.44		493.84	79.01

NB: Approved project cost of UIHEP is Rs.1194.79Cr. Decapitalisation for FY 2011-12 to FY 2017-18= Rs.4.89 Cr. Decapitalisation is considered from the approved project cost. New project cost= Rs.1194.79 Cr – Rs.4.89 Cr =Rs.1189.92 Cr. Additional Capitalisation from FY 2013-14 to FY 2017-18=Rs.41.58 Cr. Project Cost for Tariff= Rs.1231.50 Cr.

The Equity Capital of UIHEP has been considered @25% of Rs.1189.92 Cr which is equals to Rs.297.48 Crs. Adding to it the 30% equity towards net additional capitalisation from FY 2013-14 to FY 2017-18 of Rs 41.58Cr =Rs.12.47 Cr.

Return on Equity is @16% of Equity Capital as per norms of OERC with a provision of reimbursement of Income Tax paid for the FY 2017-18

The Commission approves return on equity for all stations of OHPC amounting to Rs.79.01 Cr. for the FY 2019-20 as against the corresponding approved figure of Rs.74.71 cr. for Return on Equity in FY 2018-19.

O&M Expenses

99. OERC (Terms & Conditions for Determination of Generation Tariff) Regulations, 2014 stipulates that O&M norms for the existing plants of OHPC will be as determined by the Commission from time to time. The last control period will be expired on March, 2019. The audited balance sheet of OHPC is available with the Commission up to FY 2017-18. While approving ARR for FY 2014-15 for

determination of base year of O&M, the Commission had approved the average audited expenses of each power station from 2008-09 to 2012-13 as per CERC tariff Regulation, 2009 as proposed by OHPC. Accordingly, ARR of OHPC, Commission had determined a base amount of O & M expenses for that year taking guidance from Clause 19 (f) (ii) of CERC (Terms and Conditions of Tariff) Regulations, 2009-14. Para 4.28 (d) of OERC generation tariff Regulation 2014 stipulates that the principle of O&M cost for OHPC stations will be determined by the Commission from time to time based on the ground realities. Accordingly the Commission has followed the same principle as followed during FY 2014-15 to find a provisional base value of O & M cost after end of five years i.e. 2014-15 to 2018-19. As per the principle provisional base value has been derived from the average of normalized average operation and maintenance expenses escalated at a rate of 5.71% per year for the period 2013-14 to 2017-18 found out from the audited balance sheets, excluding abnormal operation and maintenance expenses and considering 7th Pay Commission impact of employee cost. The final figure derived for FY 2017-18 has been escalated at a rate of 5.17% per year to find out the provisional base O & M expenses for FY 2019-20. The O&M cost arrived at in case of OHPC stations are as given in the table below:

Table -32
O & M cost of OHPC hydro Stations for the new Base year 2019-20 as per Reg 29(2)(b) of CERC Tariff Regulation 2014

	RHEP	UKHEP	HHEP	CHEP	UIHEP	BHEP	C.O	Total OHPC
2013-14	34.63	31.42	58.07	20.09	64.48	63.93	25.47	298.09
2014-15	50.80	51.47	46.25	29.79	72.86	28.56	16.27	295.99
2015-16	44.04	57.29	36.44	21.90	85.43	32.46	21.66	299.21
2016-17	38.07	36.99	41.72	17.54	61.56	28.05	20.72	244.64
2017-18	30.77	33.09	39.35	15.01	46.72	28.02	18.05	211.01
2018-19	47.58	48.82	51.31	24.68	78.28	42.62	24.77	318.06
2019-20	50.31	51.61	54.25	26.09	82.75	45.06	26.19	336.26
CO	4.25	4.36	4.58	2.20	6.99	3.81		
2019-20	54.56	55.97	58.83	28.30	89.74	48.86		336.26
Amount received from DOWR					10.38			10.38
O & M Expenses approved for FY 2019-20	54.56	55.97	58.83	28.30	79.36	48.86		325.88
O&M Expenses proposed by OHPC for the FY 2019-20	55.99	44.18	82.23	84.32	20.83	287.55	76.24	363.79

Thus, the Commission provisionally approves an amount of Rs.325.88 Cr. as O & M expenses for the year 2019-20 against OHPC proposal for approval of 363.79 Cr. However, the Commission shall revisit the O & M expenses for FY 2019-20 while considering the ARR for the ensuing year FY2020-21 after obtaining the balance sheet for FY 2018-19 to access the actual employee cost due to implementation of 7th Pay Commission Recommendation.

Interest on Working Capital

100. As per the OERC (Generation Tariff) Regulations, 2014 the basis for calculation of Working Capital in case of hydro generating stations including pump storage hydro electric generating station shall include the following:

- (i) Receivables equivalent to two months of fixed cost
- (ii) Maintenance spares @15% of Operation and Maintenance expenses specified in Regulation 4.28 and
- (iii) Operation and Maintenance expenses for one month.

OERC Generation Tariff Regulations, 2014 stipulates that the interest on working capital for the existing generation plants of OHPC shall be on normative basis and shall be equal to the SBI Base Rate plus 300 basis points as on 1st April of the year for which the application for determination of tariff is being made. Interest on Working Capital shall be payable on normative basis notwithstanding that the generating company has not taken loan for working capital from any outside agency. The Reserve Bank of India has issued new guidelines for setting Marginal Cost of Funds based Lending Rate (MCLR). This MCLR will replace the prevailing SBI base rate from April, 2016 onwards. The MCLR of SBI as on 1st April, 2018 for one year was 8.15%. OHPC has considered the MCLR rate of SBI as on 01.04.2018 plus 300 basis points for computation of interest on working capital. The Commission has adopted this principle which is equivalent to 11.15 % (considering 8.15% as the MCLR rate plus 300 basis points = 11.15%) for FY 2019-20. The detailed calculation of Working Capital approved by the Commission is presented in the Table below:

Table – 33
Interest on Working Capital for FY 2019-20

(Rs. in Crs.)									
Sl. No.	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	Interest on Loan & GC	1.45	0.12	0.39	2.78	0.19	4.93	1.67	6.60
2	RoE	2.84	0.98	10.61	12.59	2.41	29.42	49.59	79.01
3	O & M Expenses	54.56	55.97	48.86	58.83	28.30	246.51	79.36	325.88
4	Depreciation	3.90	3.30	8.64	8.32	3.63	27.77	36.05	63.82
5	Total	62.74	60.36	68.49	82.51	34.52	308.63	166.68	475.31
6	O & M Expenses for One Month	4.55	4.66	4.07	4.90	2.36	20.54	6.61	27.16
7	Maintenance spares @15% of O & M Expenses	8.18	8.40	7.33	8.82	4.24	36.98	11.90	48.88
8	Receivable equivalent to Two Months of Annual Fixed Cost	10.90	10.50	11.85	14.27	5.99	53.50	28.66	82.16
9	Total Working Capital	23.63	23.56	23.25	28.00	12.59	111.02	47.17	158.20
10	Interest on Working Capital Approved	2.63	2.63	2.59	3.12	1.40	12.38	5.26	17.64
11	Interest on Working Capital proposed by OHPC	2.70	2.09	4.11	4.28	1.06	14.24	5.12	19.36

Thus, the Commission approves an amount of Rs.17.64 Cr. as interest on working capital for the year 2019-20 as against Rs 19.36 proposed by OHPC and Rs 17.96 approved by the Commission for FY 2018-19.

Total Annual Fixed Cost

101. Based on the above parameters the station-wise ARR and tariff calculated and approved for the year 2019-20 is indicated in the table below:

Table – 34
Station wise ARR & Tariff of different power station of OHPC Approved for FY 2019-20

(Rs. Cr.)								
Components	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total FY 2019-20
Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
Return on Equity	2.84	0.98	10.61	12.59	2.41	29.42	49.59	79.01
Interest on Loan	1.45	0.12	0.39	2.78	0.19	4.93	1.67	6.60
Depreciation	3.90	3.30	8.64	8.32	3.63	27.77	36.05	63.82
O & M expenses	54.56	55.97	48.86	58.83	28.30	246.51	79.36	325.88
Interest on Working Capital	2.63	2.63	2.59	3.12	1.40	12.38	5.26	17.64
Total ARR	65.38	62.99	71.09	85.64	35.93	321.01	171.94	492.95

Average Tariff (P/U) for 2019-20	125.78	76.47	60.70	126.46	74.06	87.31	88.52	87.73
Average Tariff for the FY 2018-19 (P/U) (Approved)	122.82	58.32	85.91	151.01	55.19	92.88	80.36	88.55

The Commission approves total ARR of Rs.492.95 crs. at an average price of 87.73 p/u as against proposed ARR of Rs.553.22 cr. @ 99.75 p/u. The corresponding approved figure for FY 2018-19 was Rs.497.60 cr. at an average price of 88.55 p/u.

ARR & Tariff Application Fees and related Publication Expenses

102. Regulation-7.9 of the OERC (Terms & Conditions for determination of Generation Tariff) Regulation, 2014 states the following:

“The application filing fee and the expenses incurred on publication of notices in the application for approval of Tariff, may in discretion of the Commission, be allowed to be recovered by the generating company, directly from the beneficiaries.”

As per the Commission’s Notification No.1992 Dt.31.08.2009 in the Clause No. 17, the Commission has fixed a fee of Rs.5,000/- per MW as application fee for determination of tariff of conventional fuel based plant/Hydel Plants, subject to maximum limit of Rs. 25, 00, 000/- (Rupees Twenty Five Lakhs Only).

In consideration of the above order, OHPC is required to deposit application fee of Rs.25 lakhs for the FY 2019-20. OHPC shall be allowed to recover the same amount from GRIDCO. In addition to the above, OHPC has stated to have incurred expenses Rs.0.85 lakh on publication of tariff related matters in the newspaper for the FY 2018-19 against the approved Publication Expenses of Rs.1.00 Lakh in the FY 2018-19. However OHPC has requested that due to implementation of GST the publication expenses may go up and accordingly prayed the Commission to increase the Publication expense from One Lakh to One Lakh Twenty Thousand for the year 2019-20.

In view of the above, OHPC has claimed Rs.26.20 lakhs towards the Application Fee & Publication Expenses for the FY 2019-20. Commission approves the said amount of Rs.26.20 lakhs as reimbursement towards application fee and publication expenses as pass through in the ARR of GRIDCO for FY 2019-20.

License fee for use of water for generation of Electricity:

103. As per the gazette Notification Dt. 01.10.2010, OHPC was paying @Rs. 0.01/KWh as Licence Fee on water used for generation of electricity from all Hydro Electric Projects and getting the same reimbursed from GRIDCO. The Revenue & Disaster Management Department have amended the Odisha Irrigation (Amendment) Rule, 2016 which was published in Odisha Gazette on 27.09.2016. As per the amendment made in Rule-23-A (2) (f) of the Odisha irrigation Rule the license fee for drawl or allocation of water was enhanced @10% per annum w.e.f. 1st day of April 2017.
104. OHPC was paying water cess @1.1paise/ unit for the FY 2017-18 and @1.2 paise/ unit for the FY2018-19 and got reimbursed from GRIDCO. After enhancement of rate OHPC shall pay Licence Fee on water used for generation of electricity for FY 2019-20 @1.3 paise/ unit.
105. Accordingly Commission has approved the claim of OHPC to reimburse the total license fee on water used for generation of electricity for OHPC power stations for FY 2018-19 @ 1.30 p/Kwh as presented in the table below:

Table 35
Licence Fee on water used for generation of electricity for OHPC Power station for FY 2019-20

Power Stations	Design Energy (in MU)	Licence Fee on water approved @0.013Rs/Kwh of Generation (in Crs)
RHEP	525	0.68
UKHEP	832	1.08
BHEP	1183	1.54
HHEP	684	0.89
CHEP	490	0.64
UIHEP	1962	2.55
Total	5676	7.38

106. The Commission considered the above proposal of OHPC and provisionally approves an amount of Rs.7.38 cr. mentioned in the table above to be reimbursed from GRIDCO in the FY 2019-20 based on the design energy of OHPC power stations @1.3 p/KWh.

Electricity Duty on Auxiliary Consumption

107. As per the agreed PPA, the taxes and duties including ED on auxiliary consumption etc payable by OHPC to the State Government and other statutory bodies shall be

passed on to GRIDCO in the shape of supplementary bill raised by OHPC. GRIDCO will make payment accordingly within 30 days of receipt of bills.

108. OHPC in the present tariff filing has submitted that the State Govt in the Dept. of Energy has revised the rate of ED vide notification No.912 dated the 12.05.2017. Accordingly, the Rate of Electricity Duty / Unit has been revised from 30 paise per Unit to 55 paise per Unit with effect from 12th May 2017. Therefore, OHPC has computed ED @55paise per Unit for all power stations for FY 2019-20 as reimbursement.
109. During this year OHPC had made an in house study of the higher auxiliary energy consumption of its Power Stations. The auxiliary equipment consumption of power stations were found within 0.5% of gross generation but the transformer losses were found to be of the order of 1.5% of gross generation. So the actual Auxillary Energy Consumption (AUX) of OHPC Power Stations are remaining at 2% of the gross generation.
110. Considering the present notification of State Government and considering the ground reality, OHPC has proposed the ED on Auxiliary consumption of all Hydro Electric Projects to the tune of Rs.6.244 cr. for FY 2019-20.
111. The Commission examined the proposal of OHPC and does not accept the proposal to allow the higher transformer loss. The Commission in OERC Generation Regulation 2014 at 1.7(c) has defined the auxiliary consumption (AUX) as under:

“(c) “Auxiliary Energy Consumption” or “AUX” in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, and transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station”
112. Regulation 5.4(b)(i) of OERC (Generation) Regulation, 2004 provides 1% towards Auxiliary consumption for surface hydro generating stations with static excitation system. Further, the Commission approves the ED charges reimbursable to OHPC as follows:

Table – 36
ED for OHPC Power station for FY 2019-20

(Rs. in Crs.)

Power Stations	Design Energy (in MU)	Percentage of Generation approved towards Auxiliary Consumption is one %	Auxiliary Consumption approved (in MU)	ED Rate Applicable (in Rs/Unit)	ED claim to be approved by Commission (Rs in Cr)
1	2		4	5	6
RHEP	519.750		5.198	0.55	0.29
UKHEP	823.680		8.237	0.55	0.45
BHEP	1171.170		11.712	0.55	0.64
HHEP	677.160		6.772	0.55	0.37
CHEP	485.100		4.851	0.55	0.27
UIHEP	1942.380		19.424	0.55	1.07
Total	5619.240		56.192	0.55	3.09

Accordingly an amount of Rs.3.091 Cr. shall be reimbursed by GRIDCO to OHPC on account of ED on auxiliary consumption and transformation loss for the years 2019-20.

SLDC Charges

113. The Commission, while determining the ARR and Fees & Charges of SLDC for the FY 2019-20 in Case No.72/2018, has allowed SLDC to levy and collect Annual Charges from the users towards System Operation Functions and Market Operation Functions in accordance with OERC (Fees and Charges of Regional Load Dispatch Centre and Other Related Matters) Regulations, 2010. Accordingly, the Commission has fixed Rs.9101.21/MW/Annum to be collected from the generators towards annual charges of SLDC. Considering the installed capacity of 1800 MW of OHPC (as submitted by SLDC in its ARR application), the total SLDC charges of OHPC comes to Rs.1.64 crs. for the FY 2019-20, which is to be collected by SLDC from OHPC on monthly basis and OHPC has to get it reimbursed from GRIDCO. Accordingly, the Commission provisionally approves an amount of Rs.1.64 cr. as pass through in the ARR of GRIDCO for the FY 2019-20 towards power purchase related cost of OHPC.

Reimbursement of contribution made to ERPC

114. OHPC is contributing towards ERPC establishment fund & ERPC fund from the FY 2006-07 onwards as per their demand note. OHPC had paid Rs15 Lakh towards contribution to ERPC Establishment Fund & Rs.1 Lakh towards contribution to ERPC Fund. Assuming the same claim of ERPC, OHPC had claimed this amount of Rs 16.0 Lakhs as a pass through in the tariff for FY 2019-20 to be reimbursed from GRIDCO.

Any excess claim (above Rs16.0 Lakhs) made by ERPC for the FY 2019-20 will be claimed as additional reimbursement in the subsequent Tariff year.

115. Accordingly Commission approves a total reimbursement claim for an amount of Rs.0.16 cr. towards ERPC contribution for FY 2019-20 from GRIDCO.

Income Tax

116. *Chapter 4, Clause 4.7 of the Generation Tariff Regulation mandates, “Income tax of the Generating Company shall be recovered from the beneficiaries. This will exclude income tax on other income streams (income from non-generation and non-transmission business.”*

Income Tax paid by OHPC for the FY2017-18 is detailed below:

i)	Total Income	: Rs 630.23Cr.
ii)	Less Interest earned on fixed deposits	: Rs 86.44Cr.
iii)	Income from core business {(i)-(ii)}	: Rs 543.79Cr.
iv)	Total income tax charged to P&L A/c	: Rs 33.93 Crs.

So, Tax on core business (to be reimbursed from GRIDCO) = $\frac{\text{Rs } 33.93\text{Cr}}{\text{Rs } 630.23\text{Cr}} \times \text{Rs } 543.79\text{Cr} = \text{Rs } 29.28\text{Cr}$

Accordingly OHPC has proposed to get reimbursement of Rs 29.28Cr towards income tax for FY 2017-18 on core business amounting to Rs543.79Cr.

117. The Commission has examined the Audited Accounts of OHPC for FY 2017-18. It is revealed from their balance sheet that interest of Rs.86.44 cr. has been earned on fixed deposits and at the applicable tax rate on this amount, the tax comes to Rs.23.00 cr. Thus after excluding Rs.23.00 cr. from the total income tax of Rs.33.93 cr. paid during 2017-18 the balance of Rs.10.93 cr. is the tax paid on core business. Therefore, the Commission approves Rs.10.93 Cr. towards income tax as reimbursement claim from GRIDCO.
118. The details of expenses on account of application fee, and publication expenses, ED on auxiliary consumption, license fee for use of water for generation of electricity, SLDC charges, Income tax and Reimbursement of contribution made to ERPC for FY 2019-20 of OHPC are summarized in the table below:

Table – 37
Details of Reimbursement for FY 2019-20

(Rs. Cr.)

Component of Costs	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	Total
(a) License fee for use of water for generation of electricity for FY 2018-19.	0.68	1.08	1.54	0.89	0.64	2.55	7.38
(b) ED on Auxiliary Consumption for FY2018-19.	0.58	0.92	1.30	0.75	0.54	2.16	6.24
(c) SLDC charges							1.64
(e) Application fees and publication expenses							0.26
(f) ERPC charges							0.16
(g) Income Tax as per Audit Account of FY 2017-18							10.93
Total							26.62

Thus, the Commission approves the miscellaneous reimbursement of Rs.26.62 cr. The above expenditure has been included in GRIDCO's ARR and hence shown as revenue requirement in OHPC filing.

Two-Part Tariff

119. As per Clause 4.37 of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, the tariff for supply of electricity from a hydro generating station shall comprise of capacity charge and energy charge to be derived in the manner as indicated below:

As per OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, the annual fixed cost of a power station shall be recovered through capacity charge (inclusive of incentives) and energy charge to be shared on a 50:50 basis as per the OERC Generation Regulation 2014.

The capacity charge (inclusive of incentive) and energy charges are calculated as per Regulation 4.37 to 4.44 of OERC Generation Regulation, 2014.

120. Accordingly, the Commission approves the rate of energy charge and the capacity charge of OHPC power stations for FY 2018-19 as summarized in the table below:

Table - 38
Energy Charge and Capacity Charge for 2019-20

Name of the Power Stations	ARR Approved	Capacity Charges (Rs in Crs.)	Energy Charges (Rs in Crs.)	Saleable Design Energy (in MU)	Average Tariff for 2019-20	Energy Charge Rate(P/U)
RHEP, Rengali	65.38	32.69	32.69	519.750	125.78	62.89
UKHEP, Baraniput	62.99	31.49	31.49	823.680	76.47	38.23
BHEP, Balimela	71.09	35.54	35.54	1171.170	60.70	30.35
HHEP, Burla	85.64	42.82	42.82	677.160	126.46	63.23
CHEP, Chiplima	35.93	17.96	17.96	485.100	74.06	37.03
UIHEP, Mukhiguda	171.94	85.97	85.97	1942.380	88.52	44.26

The recovery of capacity charge and energy charge for a calendar month shall be as per the OERC Generation Tariff Regulations, 2014.

Normative Annual Plant Availability Factor (NAPAF)

121. As per OERC Tariff regulations, 2014 the 50% of the annual fixed cost of a generating station is to be recovered through capacity charge. The Commission in the order dated 22.03.2014 vide case no. 81/2013 has approved the NAPAF of OHPC Stations for the control period from 01.04.2014 to 31.03.2019 for recovery of Capacity Charges as given in the table below:

Table – 39

Name of Power Stations	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
NAPAF (%)	78	75	83	75	87	88

122. In accordance to Para 5.4 (VII) of OERC (Generation) Regulation 2014 Commission has to determine the NAPAF of OHPC power stations for next block period i.e from 01.04.2019 to 30.03.2024. For determination of NAPAF, OHPC is required to submit the details of renovation works carried out along with their time period of completion so as to find the availability of machines accurately during last five years. Since OHPC has not submitted the detailed machine-wise availability of its plants Commission has decided to fix NAPAF of OHPC plants provisionally as that of last block period. Accordingly, the NAPAF of OHPC stations for the FY 2019-20 are given in the table below.

Table-40
NAPAF proposed and approved by the commission for FY 2019-20

NAME OF POWER STATIONS	NAPAF approved in last block period	NAPAF proposed by OHPC	NAPAF approved by OERC
RHEP	75	70	75
UKHEP	87	80	87
BHEP	83	80	83
HHEP	78	65	78
CHEP	75	65	75
UIHEP	88	85	88

NB: SLDC shall verify the daily declared capacity of the OHPC power stations and certify the monthly plant availability factor of each power station of OHPC as per the prevailing practice.

Tariff for CSPDCL on drawal of power from HHEP, Burla

123. OHPC has submitted that as per the MoM, the long term customer, the erstwhile Chhatisgarh State Electricity Board (CSEB), presently Chhatisgarh State Power Distribution Company Limited (CSPDCL) having 5 MW share from Hirakud generation is pleading for payment of the energy charges to OHPC at the average tariff of HHEP, Burla, as is actually applicable for the consumers of Odisha, and determined by the Commission. This is because the average tariff of HHEP, Burla (which is being fixed by the Commission for the consumers of Odisha, considering the various direct and indirect supports and concessions extended by the Government of Odisha for a sustainable tariff) is less than the cost of generation of HHEP, Burla being the ECR (energy charge rate) at which OHPC bill to CSPDCL for the energy drawl by CSPDCL from Hirakud generation as per the MoM 24.12.2004. OHPC submits that the Commission may fix the tariff for CSPDCL at 226.99 paise p/u without the State Government support and it shall be applicable for billing to CSPDCL. The details for arriving at the average tariff for HHEP is as follows:

Table -41
Tariff for CSPDCL for 2019-20

(Rs. Cr.)

Details of Expenses of HHEP	
Salable Design Energy of HHEP	677.16 MU
Project Cost (Up-valued cost as on 01.04.1996 + Capitalization up to 31.03.2016 - Decapitalization)	380.96
Return on Equity (@ 25.233)	28.84
Interest on Loan	7.25
Depreciation (@ 5.28%)	20.11
O & M expenses (Escalated @ 6.64%)	92.02
Interest on Working Capital (@ 13.5%)	5.49
Total ARR	153.71
Average Tariff (p/u)	226.99

The Commission approves average tariff of 226.99 p/u for HHEP for billing to CSPDCL for FY 2019-20 as against 204.75 p/u approved during FY 2018-19.

Annual Revenue Requirement and Tariff for Machhkund H.E. (Jt.) Scheme

124. Machhkund Hydro Electric Project is a joint scheme of Government of Andhra Pradesh and Government of Odisha with 70% and 30% share with option of Government of Odisha to draw an additional 20% power at a cost of Rs. 0.08 per KWh as per the interstate supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Odisha.
125. The proposed tariff of 51.334 Paise/KWh of Odisha drawl of Machhkund power for FY 2019-20 has been computed on cost reimbursement basis. The O&M Expenses of Rs. 11.11 Crs. for the FY 2017-18 has been escalated @ 6.64% per year to arrive at O & M Expenses of Rs. 12.64 Crs for FY 2019-20. The power purchase cost comes to Rs. 0.84 Crs. for additional 20% share (105 MU) computed @ 8 p/u. The total expected annual expenditure works out to Rs.13.48 Cr for FY 2019-20. The cost per unit is 51.33 Paise considering 50% share of design energy of Machhkund i.e. 262.50 MU.
126. The tariff proposed by OHPC is based on assumption that GRIDCO will draw power up to 50% of D. E. of Machhkund equivalent to 262.50 MU. The projected tariff calculation is given in the table below:

Table - 42
Projected Tariff of Machhkund H. E. (J) Scheme For FY 2019-20

Installed Capacity (MW)	120
Orissa Share as per Original Agreement (30% MW)	36
Net Energy for sharing between Andhra Pradesh & Orissa (MU)-DE	525
Expected Energy drawal by Orisa (50%) (MU)	262.50
Energy Drawal against O&M Exp. (30%) (MU)	157.50
Purchase of Power upto 20% as per Supplementary Agreement(MU)	105
O&M Escalation factor @ 6.64% for two years.	1.137
	(Rs. in Crs.)
1. O&M exp (Orissa share of Actual O&M Exp for 17-18)	11.11
2. O&M exp for FY 2019-20 with escalation factor	12.64
3. Purchase Power Cost (105 MUx0.08)	0.84
Total Annual Expenditure (2 + 3)	13.48
Tariff (Paise/Kwh)	51.33
Note: The tariff is calculated on cost reimbursement basis. Any penalty for over drawal of power by M/s GRIDCO above 50% limit shall be paid directly to APGENCO separately by GRIDCO.	

127. The Commission approves the above rate of 51.33 Paise per Unit for FY 2019-20 as proposed by OHPC for sale of power from Machhkund Hydro Electric Station.

ARR and Approval of Tariff

128. To sum up, the Commission hereby approves the ARR and generation tariff of OHPC for FY 2019-20 as follows:

TABLE -43
Summary of ARR Approved for OHPC for FY 2019-20

	Year	RHEP, Rengali	UKHEP, Baraniput	BHEP, Balimela	HHEP, Burla	CHEP, Chiplima	OHPC Old Stations	UIHEP, Mukhiguda	OHPC Total
ARR (Rs Cr)	2018-19 Approved	63.84	48.04	100.62	102.26	26.78	341.52	156.08	497.60
	2019-20 Proposed	66.87	50.66	105.97	112.29	28.12	363.91	189.31	553.22
	2019-20 approved	65.38	62.99	71.09	85.64	35.926	321.011	171.94	492.949
Saleable Design Energy (in MU)	2018-19 Approved	519.750	823.680	1171.170	677.160	485.100	3676.860	1942.380	5619.240
	2019-20 Proposed	514.5	815.36	1159.34	653.676	480.200	3623.076	1922.76	5545.836
	2019-20 approved	519.750	823.680	1171.170	677.160	485.100	3676.860	1942.380	5619.240
Capacity Charges (Rs in Crs.)	2018-19 Approved	31.92	24.02	50.31	51.13	13.39	170.76	78.04	248.80
	2019-20 Proposed	33.44	25.33	52.99	56.15	14.06	181.96	94.66	276.61
	2019-20 approved	32.69	31.49	35.54	42.82	17.96	160.51	85.97	246.47

	Year	RHEP, Rengali	UKHEP, Baraniput	BHEP, Balimela	HHEP, Burla	CHEP, Chiplima	OHPC Old Stations	UIHEP, Mukhiguda	OHPC Total
Average Tariff	2018-19 Approved	122.82	58.32	85.91	151.01	55.19	92.88	80.36	88.55
	2019-20 Proposed	129.98	62.13	91.40	171.78	58.55	99.75	98.46	99.75
	2019-20 approved	125.78	76.47	60.70	126.46	74.06	87.31	88.52	87.73
Energy Charge Rate(P/U)	2018-19 Approved	61.41	29.16	42.96	75.50	27.60	46.44	40.18	44.28
	2019-20 Proposed	64.99	31.07	45.70	85.89	29.28	50.22	49.23	49.88
	2019-20 approved	62.89	38.23	30.35	63.23	37.03	43.65	44.26	43.86

The unit cost of energy from Machhkund is approved at 51.33 p/u for 2019-20 as against 75.34 p/u approved for 2018-19.

129. The tariff now approved shall be effective from 01.04.2019 and shall be in force until further orders.

Proposal of Capital Maintenance Work to be executed in FY 2019-20

130. OHPC has proposed following Capital maintenance work to be carried out during FY 2019-20 and sought in principle approval of the Commission for the same.

Table – 44
Proposed Capital Maintenance work during FY 2019-20

Sl. No	Name of Power Station	Unit	Estimated Cost	Duration
1	UIHEP	Unit -2	26.82 Cr	6 months
2	RHEP	Unit 4 & 5	16 lakh	46 days
3	UIHEP, Mukhiguda	Unit –IV	50.28 Cr	4 months
4	Construction of 220/33 KV with station Xmer with accessories at UKHEP	-	3.83 Cr	-
5	Implementation of ERP system in OHPC		30 Cr	

Proposal on procurement of generator transformers under capital spares for different power stations of OHPC

131. As per the decision of the 145th BoD of OHPC, OHPC pray before the OERC for in-principle approval for procurement & replacement of minimum of 01 Nos. of Generator Transformer for each power station & to keep the used GT as back-up for any eventuality that may arise, as the present GTs at CHEP, RHEP, UKHEP & HHEP are very old and are of lower efficiency. In view of the above proposals on different

Capital Maintenance work along with procurement of Capital spares are submitted in the table below.

Table-45

Capital Maintenance work along with procurement of Capital spare

Generating Unit	Name of the Work/ Critical Spares	Tentative Period of Shut Down	Estimated Cost
UIHEP	Capital Maintenance of Unit-II of UIHEP, Mukhiguda for replacement of underwater parts such as guide vanes along with bushes, facing plates and stationary & rotating labyrinth seal etc.	6 months	Rs.26,81,65,947/-
	Capital Maintenance of Unit-IV of UIHEP, Mukhiguda for Design, Manufacturing and Supply of new stator and replacement of old Stator of Unit No – 4 and & replacement of critical Spare parts along with service.	4 months	Rs 50,28,81,883/-
RHEP	Capital Maintenance of Unit-4 of RHEP, Rengali for installation of new DAVR system.	46 days	Rs1,08,00,000/- each.
	Capital Maintenance of Unit-5 of RHEP, Rengali for installation of new DAVR system.	46 days	
UKHEP	Construction of 220/33 KV Sub-Station with Station Transformer of 7.5 MVA and Control Panel with accessories along with extension of existing 220 KV Bay of UKHEP Bay	-	Rs 3.83Cr.
OHPC	Implementation of ERP System in different Power Houses of OHPC including Corporate Office.	-	Rs.30.00 Cr.
RHEP, CHEP, UKHEP, HHEP	Procurement of One No. of generator transformer under capital spare for each Power Station.	-	<ul style="list-style-type: none"> • For CHEP: Rs.2,14,76,000/- • For UKHEP: Rs.5,44,86,500/- • For RHEP: Rs.4,57,25,000/-

Proposal for capital civil works for FY 2019-20

132. OHPC submitted that as most of the civil infrastructures are more than 50 to 60 years old, it is proposed to take up the capital civil works of different units for providing better office and residential dwelling conditions along with repair of spillway, surplus escape, forebay of CHEP Chiplima.

Table -46
List of Capital Civil works for Financial Year 2019-20

Sl. No.	Name of the work.	Amount (in Rs.)
1.	Construction of 12 nos. of 'D' type qrs., at CHEP, Chiplima	3.59 crores.
2.	Construction of office building, at UIHEP, Mukhiguda	5.45 crores.
3.	Construction of 20 nos. of 'D' type qrs., at BHEP, Balimela	5.00 crores.
4.	Construction of Multi storied commercial complex at OHPC Training Center, Bhubaneswar.	80.00 crores.
5.	Repair of spillway, surplus escape, forebay, of CHEP, Chiplima	200.00 crores.
6.	Construction of Shakti Bhawan - (Details of payment to OPTCL not available with Tech. wing.)	80.00 crores.
7.	Construction of multi storied commercial complex on plot no. 324 (Pt.) Khata no.-619 Chandrasekharapur, BBSR.	70.00 crores.
8.	Construction of New Officers' Club at BHEP, Balimela	0.50 crores

133. The proposals submitted by OHPC at para 130-132 need to be studied in detail and it is directed that OHPC should file a separate petition with justification for approval of those projects.
134. The Tariff now approved shall be effective from 01.04.2019 and shall be in force until further orders.
135. The application of OHPC in Case No.69 of 2018 for approval of its Annual Revenue Requirement and fixation of generation tariff of different stations for the FY 2019-20 is disposed of.

Sd/-
(S. K. PARHI)
MEMBER

Sd/
(U. N. BEHERA)
CHAIRPERSON

Views of Member Shri A K Das

We agree with the above order. However, the observations of the undersigned on capital expenditure by OHPC are as follows:

Proposal of Capital Maintenance Work to be executed in FY 2019-20

1. OHPC has proposed following Capital maintenance work to be carried out during FY 2019-20 and sought in principle approval of the Commission for the same.

Table – 1
Proposed Capital Maintenance work during FY 2019-20

Sl. No	Name of Power Station	Unit	Estimated Cost	Duration
1	UIHEP	Unit -2	26.82 Cr	6 months
2	RHEP	Unit 4 & 5	16 lakh	46 days
3	UIHEP, Mukhiguda	Unit –IV	50.28 Cr	4 months
4	Construction of 220/33 KV with station Xmer with accessories at UKHEP	-	3.83 Cr	-
5	Implementation of ERP system in OHPC		30 Cr	

Proposal on procurement of generator transformers under capital spares for different power stations of OHPC

2. As per the decision of the 145th BoD of OHPC, OHPC pray before the OERC for in-principle approval for procurement & replacement of minimum of 01 Nos. of Generator Transformer for each power station & to keep the used GT as back-up for any eventuality that may arise, as the present GTs at CHEP, RHEP, UKHEP & HHEP are very old and are of lower efficiency. In view of the above proposals on different Capital Maintenance work along with procurement of Capital spares are submitted in the table below.

Table-2
Capital Maintenance work along with procurement of Capital spare

Generating Unit	Name of the Work/ Critical Spares	Tentative Period of Shut Down	Estimated Cost
UIHEP	Capital Maintenance of Unit-II of UIHEP, Mukhiguda for replacement of underwater parts such as guide vanes along with bushes, facing plates and stationary & rotating labyrinth seal etc.	6 months	Rs.26,81,65,947/-
	Capital Maintenance of Unit-IV of	4 months	Rs 50,28,81,883/-

	UIHEP, Mukhiguda for Design, Manufacturing and Supply of new stator and replacement of old Stator of Unit No – 4 and & replacement of critical Spare parts along with service.		
RHEP	Capital Maintenance of Unit-4 of RHEP, Rengali for installation of new DAVR system.	46 days	Rs1,08,00,000/- each.
	Capital Maintenance of Unit-5 of RHEP, Rengali for installation of new DAVR system.	46 days	
UKHEP	Construction of 220/33 KV Sub-Station with Station Transformer of 7.5 MVA and Control Panel with accessories along with extension of existing 220 KV Bay of UKHEP Bay	-	Rs 3.83Cr.
OHPC	Implementation of ERP System in different Power Houses of OHPC including Corporate Office.	-	Rs.30.00 Cr.
RHEP, CHEP, UKHEP, HHEP	Procurement of One No. of generator transformer under capital spare for each Power Station.	-	<ul style="list-style-type: none"> • For CHEP: Rs.2,14,76,000/- • For UKHEP: Rs.5,44,86,500/- • For RHEP: Rs.4,57,25,000/-

The above proposals are to be filed separately with details containing technical report, views of experts, detail plan, estimate, Benefit & Cost analysis & justification in project report.

Proposal for capital civil works for FY 2019-20

3. OHPC submitted that as most of the civil infrastructures are more than 50 to 60 years old, it is proposed to take up the capital civil works of different units for providing better office and residential dwelling conditions along with repair of spillway, surplus escape, forebay of CHEP Chiplima.

Table -3
List of Capital Civil works for Financial Year 2019-20

Sl. No.	Name of the work.	Amount (in Rs.)
1.	Construction of 12 nos. of 'D' type qrs., at CHEP, Chiplima	3.59 crores.
2.	Construction of office building, at UIHEP, Mukhiguda	5.45 crores.
3.	Construction of 20 nos. of 'D' type qrs., at BHEP, Balimela	5.00 crores.
4.	Construction of Multi storied commercial complex at OHPC Training Center, Bhubaneswar.	80.00 crores.

5.	Repair of spillway, surplus escape, forebay, of CHEP, Chiplima	200.00 crores.
6.	Construction of Shakti Bhawan - (Details of payment to OPTCL not available with Tech. wing.)	80.00 crores.
7.	Construction of multi storied commercial complex on plot no. 324 (Pt.) Khata no.-619 Chandrasekharpur, BBSR.	70.00 crores.
8.	Construction of New Officers' Club at BHEP, Balimela	0.50 crores

The following civil works are approved:

1. (Item No.1) Construction of D type Qrs. at Chipilima 12 Nos. Rs.3.59Crs.
2. (Item No.2) Construction of Office Building at UIHEP, Mukhiguda Rs.5.45Crs.
3. (Item No.3) Construction of 20 Nos. D type Qrs. at BHEP, Balimela Rs.5.00Crs.
4. (Item No.8) Construction of new officers club at BHEP, Balimela Rs.0.50Crs.

Regarding item No.4 & 7, it may be mentioned that real estate development is not the objective of OHPC. Moreover, the consumers of electricity are not to be burdened with ROE, Depreciation, Loan etc., for such commercial complex. Funds collected from consumers under Electricity Act 2003 and available with OHPC needs to be utilised for renewable, like solar, wind, integrated solar and battery etc., at OHPC sites with vast open tracts of land, slope of dykes, floating solar, pumped storage schemes canal top solar etc., to supply such power to the state and get appropriate returns from funds. OHPC should go for hydro plants as per guidelines of Govt. of India. OHPC should not venture into real estate business because assured funds are made available by the Commission under electricity Act, 2003 and tariff regulations, such as ROE, interest, depreciation and O&M. It is viewed to be irregular under Electricity Act 2003.

Detail proposal in separate petition with justification may be submitted to the Commission for the project at item No.5 (Repair of spillway etc.) and item No.6 (construction of Shakti Bhawan) with project report, expert views etc.

Sd/-
(A K DAS)
MEMBER