

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

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

Case No.68 /2019

Date of hearing : **03.02.2020**

Date of Order : **22.04.2020**

IN THE MATTER OF : **An application for approval of Aggregate Revenue Requirement (ARR) and Generation Tariff of OHPC Stations for the FY 2020-21 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.**

O R D E R

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 2020-21.

PROCEDURAL HISTORY (Para 1 to 7)

1. The OHPC is a “Generating Company” under the meaning of Sec.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 28.11.2019 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 2020-21. 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 24.12.2019
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 3 number of objections from the following persons /organizations :

(1) Shri R.P.Mahapatra, Retd. Chief Engineer & Member (Gen.), Plot No-775 (P), Lane-3, Jayadev Vihar, Bhubaneswar-751013,(2) Shri Ramesh Ch. Satpathy, Secretary, National Institute of Indian Labour & President, Upobhokta Mahasangha, Plot No.302(B), Beherasahi, Nayapalli, Bhubaneswar-751012, (3) M/s. GRIDCO Limited, Janapath, Bhubaneswar-751022,(5) were filed their suggestions/ objections.

The Commission has impleaded the Principal Secretary to Government, Department of Energy, Government 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 03.02.2020 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 Sri S.S.Nayak, CGM.,GRIDCO Ltd., 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 u/S. 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 2020-21. The Consumer Counsel presented views on the matter during the hearing.
5. The Commission convened the State Advisory Committee (SAC) meeting on 26.02.2020` at 10.30 AM to discuss about the Aggregate Revenue Requirement (ARR) application and generation tariff proposal of the generating company for FY 2020-219. The Members of SAC presented their valuable suggestions and views on the matter for consideration of the Commission.

ARR PROPOSAL OF OHPC FOR FY 2020-21 (Para 6 to 28)

Installed Capacity

6. The installed capacity of various Hydro Stations owned by Odisha Hydro Power Corporation (OHPC) was 2063.50 (2027.50+ 36) MW including Odisha share of Machhkund Hydro Electric Project (MHEP). The Installed Capacity of MHEP is 120MW (i.e. 17MW x 3 = 51MW and 23MW x 3 = 69MW). So the 30% Odisha Share from MHEP being 36 MW, has been considered for computation of total Installed Capacity of OHPC.

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 -1**Design energy for FY 2020-21 (in MU)**

Sl. No.	Name of the Power Station	Design Energy approved for FY2019-20	Saleable Design Energy approved for FY 2019-20	Design Energy proposed for FY 2020-21	Saleable Design Energy proposed for FY 2020-21
1	RHEP	525.00	519.75	525.00	519.75
2	UKHEP	832.00	823.68	832.00	823.68
3	BHEP	1183.00	1171.17	1183.00	1171.17
4	HHEP	684.00	677.16	684.00	660.516
5	CHEP	490.00	485.10	490.00	485.10
Sub Total of Old Power Stations		3714.00	3676.86	3714.00	3660.216
6	UIHEP	1962.00	1942.38	1962.00	1942.38
Total		5676.00	5619.24	5676.00	5602.596

Reservoir Level and Anticipated Generation

8. The reservoir level of Power Stations reported by OHPC as on 20.11.2019 vis-à-vis on 20.11.2018 is given in table – 2 below

**Table – 2
Reservoir level of power stations**

Sl. No.	Reservoirs	As on 20.11.2018	As on 20.11.2019
1.	Rengali	118.41mtr.	123.71mtr.
2.	Kolab	855.54mtr.	857.15mtr.
3.	Balimela	1510.40ft.	1512.90ft.
4.	Hirakud	626.10ft.	629.93ft.
5.	Indravati	638.86mtr.	640.79mtr.

The actual generation of different Power Stations under OHPC from 01.04.2019 up to 20.11.2019 and anticipated generation up to 31.03.2020 for the FY 2019-20 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 – 3
Actual /Anticipated Energy Generation

Sl. No.	Name of the power stations	Actual generation from 01.04.19 up to 20.11.19 (in MU)	Anticipated generation from 21.11.19 to 31.03.20 based on DoWR& DoE Schedule (in MU)	Total Anticipated generation for the FY 2019-20 based on DoWR& DoE Schedule (in MU)
1.	RHEP	484.21	160.67	644.88
2.	UKHEP	533.98	220.33	754.31
3.	BHEP	1127.66	314.00	1441.66
4.	HHEP	419.08	135.33	554.41
5.	CHEP	169.42	75.33	244.76
6.	UIHEP	1632.66	516.00	2148.66
Total		4367.01	1421.67	5788.68

Project Cost

9. The revalued cost of old power stations under OHPC is Rs.1196.80 Crs as on 01.04.1996 as per the notification vide S.R.O No. 254/96 dtd. 01.04.1996 of Department of Energy, Government of Orissa. The Commission in its Order dated 23.03.2006 at clause no. 5.4 (C) had approved the same. Further, the Commission in the order dated 20.03.2008 has approved Rs.1195.42 Crs. as final capital cost of UIHEP for the purpose of determination of tariff. However, the Tariff of Old power stations was determined on the historical cost of old power station of OHPC for Rs.479.80 Crs. as per the Notification No. 1068 Dtd. 29.01.2003 of DoE, Govt. of Odisha. 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 to be considered under OERC norms. Considering the above factors, the total additional capitalization for an amount of Rs.5.278 Crs upto FY 2018-19 details of which is furnished in the Table-6. There is de-capitalization of Rs.0.024 in case of old power stations of OHPC and de-capitalization of Rs.0.008 Cr of UIHEP for FY 2018-19. The historic cost after de-capitalization as on 31.03.2019 is shown in table 6 below. Hence the total de-capitalization of OHPC power stations during FY 2011-12 to FY 2018-19 comes to Rs.18.55 Cr which has been deducted from original historical cost as on 01.04.1996. The project Cost considered for computation of ARR and Tariff for FY2020-21 is furnished in the Table below:

Table-4
Project Cost for tariff Calculation for FY 2020-21

(Rs. Cr.)

Name of the power stations	Historic Cost as on 01.04.1996	Asset reduction during FY 2011-12 to FY 2018-19	New additions proposed in Tariff calculation FY 2020-21	Project Cost considered Tariff calculation based on Historic Cost
1	2	3	4	5=2+4-3
RHEP	91.09	0.08	59.33	150.34
UKHEP	108.31	0.48	21.54	129.37
BHEP	115.42	0.33	222.14	337.23
HHEP	72.75	11.50	342.88	404.13
CHEP	92.23	1.27	116.14	207.09
Sub Total	479.80	13.67	762.03	1228.16
UIHEP	1194.79 (approved project cost)	4.88	42.83	1232.75
Total	1674.59	18.55	804.86	2460.91

Tariff for Energy Billing to CSPDCL

10. Further 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, which is actually applicable for the consumers of Odisha, and which is determined by the Commission, considering the supportive measures extended by the Government 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 @ 200.92paise/unit for the FY 2020-21.

Determination of Annual Fixed Cost for FY 2020-21

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 30% of additional capitalization in UIHEP as equity base. Further OHPC has considered equity base as 30% of the revalued cost of old power stations as on 01.04.1996 along with additional capitalization from 1996-97 to 2017-18 and audited cost for capitalization and de-capitalization for FY 2018-19 . 30% of this additional capitalization is considered as equity base.

Table – 5
Computation of RoE for different power stations of OHPC for FY 2020-21

Name of the Power Station	Capital Addition considered for RoE for FY 2020-21 (in Crs)	Share of Equity (%)	Value of Equity capital (in Crs)	ROE @16% Proposed for 2020-21 (in Crs)	RoE approved by OERC for 2019-20 (in Crs)
1	2	3	4=2*3	5=16% of 4	6
RHEP	59.33	30	17.799	2.848	2.835
UKHEP	21.54	30	6.462	1.034	0.980
BHEP	222.14	30	66.643	10.663	10.607
HHEP	342.88	30	102.864	16.458	12.590
CHEP	116.14	30	34.841	5.575	2.409
UIHEP	1232.75	25&30	310.328	49.653	49.593
Total	1994.78		515.121	86.230	79.014

OHPC has claimed Income tax paid for FY 2018-19 as reimbursement from GRIDCO.

b) Interest on Loan:

The loan liabilities of OHPC consist of State Government loan, PFC loans and Normative Loans.

Table – 6
Present Status of UIHEP Govt. Loan based on the approvals of OERC (in 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 @ Rs.30.23 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 Cr. (Govt. proposed to consider as regulatory asset)
Cumulative interest on normative loan from FY 2001-02 to FY 2018-19 @ 7%	107.36 Cr. (Not paid)

PFC loan of Rs.319.49 cr. has already been repaid in full by FY 2009-10. OHPC has so far paid Rs.272.07 Cr to Govt. by March 2019. The depreciation approved for FY 2019-20 for Rs.30.23 Cr shall be paid by the end of this Financial Year 2019-20. Interest on UIHEP Loan has been provided by OHPC in its books of account every year as per the direction of the Commission in the tariff order of OHPC for FY2015-16. So, the cumulative interest of UIHEP, Govt. Loan up to FY 2019-20 stands at Rs.382.10Cr.

Status of UIHEP Loan liability as on 31.03.2019

- i) PFC loan of Rs.319.49 Crs will stand repaid.
- ii) Rs.302.23 Crs @ Rs.30.23 Crs approved and repaid to Govt.
- iii) Interest on Govt Loan of UIHEP not approved by the Commission
- iv) Principal and Interest on Normative loan not approved by the Commission.

The Commission in the Para 131 of Compendium of Tariff Order of OHPC for FY 2013-14 has observed that this loan repayment may start after *the total repayment of Govt. loan as approved above, at the same rate of Rs.30.23 Cr. each year i.e. beginning with 2026-27. The interest component will be considered after the total repayment of the principal in line with the Govt. loans.*

Status of UIHEP Loan liability as on 31.03.2036

- i) PFC loan of Rs.319.49 Crs repaid.
- ii) Govt. Loan of Rs.497.86 Cr. shall stand repaid, Normative Loan of Rs.78.74 Cr. shall stand repaid.
- iii) Cumulative depreciation passed in the Tariff up to FY 2028-29 shall be Rs.319.49 Cr +Rs.497.86 Cr + Rs.78.74 Cr = Rs.896.09 Cr.(stands repaid)
- iv) Balance Depreciation to be recovered within the balance useful life i.e. up to FY 2035-36 = Rs.1075.311 Crs (90% of project cost) – Rs.896.09 Cr.(Cumm. Dep. Recovered) = Rs.179.22 Cr. (not recovered) ----- (a)
- v) Cumulative Interest on Govt. Loan of UIHEP starting from FY 2029-30 to FY 2035-36 @ Rs.30.23 Cr will be partly paid and balance unpaid amount not approved by Commission shall stand at Rs.215.03 Cr .(not recovered) ----- (b)
- vi) Cumulative Interest on normative loan not approved by the Commission shall stand at Rs.155.36 Cr. (not recovered) ----- (c)

Total liability of UIHEP Loan as on 31.03.2036 will be Rs.549.59 Cr (a+b+c above) will remain unpaid even after useful life of the project.

Normative Loans

The normative loans of CHEP, RHEP & UKHEP is considered @ 9.8% 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 2020-21 based on PFC interest rate applicable to BHEP. Similarly, the normative loan of HHEP, Burla is considered @ 8.75 % for FY 2020-21 based on PFC interest rate applicable to HHEP, Burla is considered @ 8.75 % for FY 2020-21 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 2018-19 is considered @7% being the prevailing rate of interest for State Govt. Loan as per the OERC tariff norms.

The Commission has never allowed interest and/or principal of the Normative Loan of Rs.78.74Cr in previous Tariff approvals of OHPC. The accumulated interest calculated up to 31.03.2020 will be Rs.112.87Crore at the prevailing rate of interest of State Govt. Loan @7%.Hence, based on the earlier directions of the Commission, OHPC has not considered the impact of interest on Govt Loan & Normative Loan of UIHEP in the Tariff Calculation of OHPC for the FY2020-21. Similarly, OHPC has not claimed the accumulated interest on Govt Loan & Normative Loan of UIHEP as regulatory asset in view of the directives of the Commission

Table-7
Statement of Outstanding Loan & Interest thereon for the FY2020-21

(Rs in Cr)

Sl. No.	Source of Loan	Loan O/S as on 01.04.2020	Interest on Loan for the FY 2020-21
1	State Govt. Loan of UIHEP @7%*	195.56	0.00
2	Normative Loan of Rs78.74Cr for UIHEP, Mukhiguda @ 7%	78.74	0.00
3	Normative Loan for Add. Cap. FY2014-15 to FY 2018-19 Chiplima @ 9.80%	1.77	0.14
4	Normative Loan for Add. Cap. FY2014-15 to FY 2018-19 UKHEP@ 9.80%	1.65	0.14
5	Normative Loan for Add. Cap. FY2014-15 to FY 2018-19 HHEP@ 8.75%	28.59	2.15

6	Normative Loan for Add. Cap. FY2014-15 to FY2018-19 BHEP@ 9.6%	4.26	0.35
7	Normative Loan for Add. Cap. FY 2014-15 to FY 2018-19 RHEP@ 9.80%	1.19	0.10
8	Normative Loan for Add. Cap. FY 2014-15 to FY 2018-19 UIHEP@ 7.0%	21.83	1.33
9	Normative Loan for R&M of Unit #1, Rengali @ 9.80%	5.33	0.43
10	Normative Loan for R&M of Unit #2, Rengali @ 9.80%	6.55	0.56
11	Normative Loan for R&M of Unit #3, CHEP @ 9.80%	45.97	4.28
12	Normative Loan for R&M of Unit #6, HHEP @ 8.75%	55.57	4.62
Total		447.00	14.11

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

Table-8
Interest on loan of different power house of OHPC

(Rs. in Cr)

Sl. No.	Source of loan	Interest on loan for FY 2020-21						(Rs. in Crs)
		RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	TOTAL
1.	Normative loan	1.094	0.141	0.351	6.772	4.423	1.331	14.112
2.	Govt. Loan	-	-	-	-	-	-	-
Total		1.094	0.141	0.351	6.772	4.423	1.331	14.112

OHPC prays before the Commission to approve Rs.14.112 Crs. in the tariff of OHPC for the FY 2020-21 for payment of Interest towards Normative Loans of the different Power Stations of OHPC as mentioned in the above table

c) Depreciation:

OHPC has computed depreciation for the FY 2020-21 @ 2.57% on the Historic project cost as on 01.04.1996 (excluding de-capitalization) plus an 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 2020-21 as shown in the Table – 9 below to arrive at the depreciation amount to be claimed in the ARR & Tariff of OHPC for the FY 2020-21.

Table – 9
Depreciation Claim for the FY 2020-21

(Rs Crs.)

Sl. No.	Power Stations	Project Cost	Loan Repayment Amount	Depreciation @ 2.57%	Depreciation Claimed	Remark
1.	RHEP	150.34	3.81	3.86	3.86	Depreciation @ 2.57%
2.	UKHEP	129.37	0.43	3.32	3.32	Depreciation @ 2.57%
3.	BHEP	337.23	1.20	8.67	8.67	Depreciation @ 2.57%
4.	HHEP	404.13	13.52	10.39	13.52	Equal to loan Repayment
5.	CHEP	207.09	5.20	5.32	5.32	Depreciation @ 2.57%
6.	UIHEP	1232.75	35.87	31.68	35.87	Equal to loan Repayment
Total		2460.91	54.47	61.21	70.56	

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

OHPC has calculated O&M Expenses as per the Generation Tariff Regulations, 2014 and escalated @ 5.72 % on previous years approved O&M expenses. The Commission in the tariff order of OHPC for FY 2019-20 has determined O&M cost of OHPC hydro stations for the new base year 2019-20 as per Regulations 29(2) (b) of CERC Tariff Regulations 2014.

Accordingly, OHPC has calculated O&M expenses of different power stations of OHPC for FY 2020-21 by escalating the O&M expenses for FY 2019-20 @ 5.72% as per principle adopted by the Commission in earlier tariff orders for OHPC.

Table – 10
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 2019-20 Approved by OERC.	50.31	51.61	45.06	54.25	26.09	227.32	82.75	26.19	336.26

Sl. No.	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	CO	Total
2	O & M expenses for FY 2020-21 with escalation @ 5.72% over FY 2019-20	53.19	54.56	47.64	57.35	27.58	240.32	87.48	27.69	355.49
3	Corporate Office expenses apportioned to different units under OHPC based on Design Energy	3.41	4.37	6.96	3.76	0.98	19.49	8.19	27.69	
4	Total O & M Expenses for the FY 2020-21	56.60	58.93	54.60	61.115	28.566	259.817	95.68		355.49
Less: Amount Received from DoWR.										
5	Less : Income to be received from DOWR towards dam maintenance of UIHEP							(-9.32)		(-9.32)
6	Total O&M Expenses for the FY 2020-21.	56.60	58.93	54.60	61.11	28.566	259.817	86.353		346.170

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 @ 8.55 % as on 1st April, 2019 plus 300 basis points which turns out to be 11.55%. 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- 11
Interest on Working Capital for FY 2020-21

(Rs. Crs)

Sl. No	Description	RHEP	UKH EP	BHEP	HHEP	CHEP	Sub Total	UIHE P	Total
1	Receivables equivalent to two months of fixed cost	11.20	11.05	12.87	16.91	7.59	59.63	29.83	89.46
2	Maintenance spares @ 15% of O&M expenses	8.49	8.84	8.19	9.17	4.28	38.97	12.95	51.93
3	O&M expenses for one month	4.72	4.91	4.55	5.09	2.38	21.65	7.20	28.85
4	Total working capital	24.41	24.80	25.61	31.17	14.25	117.94	49.98	167.92
5	Interest on working capital calculated @ 11.55%	2.820	2.864	2.958	3.600	1.646	13.889	5.772	19.662

Total Annual Fixed Cost

12. Based on the above parameters the station wise ARR and tariff calculated for the FY 2020-21 as proposed by OHPC is summarized below.

Table – 12
ARR and Tariff for the FY 2020-21

Details expenses	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
Existing Saleable Design Energy (MU)	519.75	823.68	1171.17	660.52	485.10	3660.22	1942.38	5602.60
(Rs. in Crs.)								
Return on Equity	2.848	1.034	10.663	16.458	5.575	36.577	49.653	86.230
Interest on Loan	1.094	0.141	0.351	6.772	4.423	12.781	1.331	14.112
Depreciation	3.864	3.325	8.667	13.521	5.322	34.699	35.866	70.565
O&M Expenses	56.602	58.932	54.602	61.115	28.566	259.817	85.353	346.170
Interest on working capital	2.820	2.864	2.958	3.600	1.646	13.889	5.772	19.662
Total ARR	67.227	66.296	77.241	101.467	45.532	357.763	178.975	536.738
Average Tariff (p/u)	129.34	80.49	65.95	153.62	93.86	97.74	92.14	95.80

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 in the discretion of the commission, 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, 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).

In consideration of the above order, OHPC has to deposit application fee of Rs.25 Lakhs for the FY 2020-21. OHPC may be allowed to recover the same amount from GRIDCO. So considering Rs.1.20 Lakhs reimbursement towards publication expenses, the Commission may approve Rs.26.20 Lakhs to be reimbursed from GRIDCO

Table -13
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.

Based on Odisha Electricity (Duty) Amendment Rules, 2017 by Govt. of Odisha in Dept. of Energy vide Notification No.617 dated 24.01.2017, 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.

In view of the above OHPC claims the following as Reimbursement of Electricity Duty for its different power stations for the FY 2020-21 and prays before the Hon’ble Commission for reimbursement of the same from GRIDCO.

Table-14
ED claim for OHPC power station for FY 2020-21

(Rs. in Crs)

P ower Stations	Design Energy (in MU)	Proposed Percentage of Auxiliary Energy Consumption (in %)	Auxiliary Energy Consumption to be approved (in MU)	ED Rate Applicable (in Rs/Unit)	ED proposed for Reimbursement by OHPC @55p/u & AUX @1% (in Crs)
RHEP	525	1	5.25	0.55	0.289
UKHEP	832	1	8.32	0.55	0.458
BHEP	1183	1	11.83	0.55	0.651
HHEP	684	1	6.84	0.55	0.376
CHEP	490	1	4.90	0.55	0.270
UIHEP	1962	1	19.62	0.55	1.079
Total	5676	1	56.76	0.55	3.122

License fee for use of water for generation of Electricity:

As per the gazette Notification Dt. 01.10.2010, OHPC has to pay @Rs. 0.01/KWh as Licence Fee on water used for generation of electricity from all Hydro Electric Project to the tune of Rs.5.676 Crs. based on design energy which is to be reimbursed to OHPC by 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. Accordingly OHPC was paying water cess @1.1paise/ unit for the FY 2017-18, @1.2 paise/ unit for the FY2018-19 & @1.3paise/ unit for the FY 2019-20 and got reimbursed from GRIDCO. Accordingly, OHPC shall pay Licence Fee on water used for generation of electricity for FY 2020-21 @1.4 paise/ unit.

Table-15
License fee for Consumption of water for generation of electricity FY 2020-21

(Rs. in Crs)

Power Stations	Design Energy (in MU)	Licence Fee on water Proposed by OHPC @0.014Rs/Kwh of Generation (in Crs)	Remarks
RHEP	525	0.735	OHPC will claim reimbursement @Rs 0.014/Kwh on actual generation of each Power Station.
UKHEP	832	1.165	
BHEP	1183	1.656	
HHEP	684	0.958	
CHEP	490	0.686	
UIHEP	1962	2.747	
Total	5676	7.946	

OHPC prays before the Commission for approval of provisional amount of Rs7.946Cr towards License fee mentioned in the table above as Reimbursement from GRIDCO subject to approval of reimbursement to the extent of actual water cess paid to the Govt. based on actual generation pattern for the FY2020-21.

SLDC charges

15. 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.1.64 Cr. for the FY 2019-20. Since OHPC has not received the ARR, fees & charges of SLDC for the FY 2020-21, the previous year rate of @Rs.9432.62 per MW per annum fees & charges applicable to OHPC has been escalated @5.72% to arrive at the charges payable by OHPC for the FY 2020-21. Accordingly, OHPC proposes Rs.1.7338 crs. as SLDC charges for FY 200-21 payable by OHPC on an average available installed capacity of 1700 MW.

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

16. 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 62.579 Paise/Unit of Orissa drawl of Machhkund power for FY 2020-21 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 2020-21

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 @ 4.77% for year for 2 years	1.0977

	(Rs. in Crs)
1. O&M Exp. (Odisha share of O&M Exp. For FY 18-19)	14.2001
2. O&M Exp for FY 2020-21 with escalation of 4.77% for 2018-19 & 2019-20	15.5871
3. Power purchase cost of additional 20% above 30% Orissa Share (105MU x 0.008)	0.84
4. Total Annual Expenditure (2 +3)	16.4271
5. Tariff (Paise/Kwh)	62.579

Reimbursement of Contribution Made to ERPC

17. 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 2020-21 to be reimbursed from GRIDCO. OHPC requested to provide this amount in ARR of GRIDCO

Income Tax

18. OHPC has paid Rs.49.0207 cr. towards income tax for FY 2018-19 on operational income of Rs.549.64 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 2020-21.

Two-Part Tariff

19. 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.

- 1) The capacity charge (inclusive of incentive) payable to a hydro generating station for a calendar month shall be

Capacity charge (CC) = AFC x 0.5 x NDM/NDY x (PAFM/NAPAF) in Rupees.

Where, AFC = Annual Fixed Cost specified for the year in rupees

NAPAF= Normative Annual Plant Availability Factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

PAFM = Plant Availability Factor achieved during the month in percentage.

The PAFM shall be computed in accordance with the following formula:

$$\text{PAFM} = 10000 \times \frac{\sum_{i=1}^N \text{DC}_i}{\{N \times \text{IC} \times (100 - \text{Aux})\}} \%$$

Where,

Aux = Normative auxiliary energy consumption in percentage

N = No of days in the month

IC = Installed capacity in MW of the complete generating station

DC_i = Declared Capacity (in ex-bus MW) for the ith day of the month which the station can deliver for at least (3) hours, as certified by the nodal load dispatch centre after the day is over.

- 2) The energy charge shall be payable by every beneficiary for the total energy scheduled to be supplied to the beneficiary, during the calendar month on ex-power plant basis at the computed energy charge rate.

Total energy charge payable to the generating company for a month shall be

{(Energy charge rate in Rs./Kwh) x (Schedule energy (ex-bus)) for the month in Kwh}

- 3) Energy charge rate (ECR) in Rupees per Kwh on ex-bus plant basis for a hydro generating station shall be determined up to three decimal places based on the following formula, subject to provisions in clause(4.41) of OERC (Terms and Conditions for determination of Generation Tariff regulations) 2014.

$$\text{ECR} = \text{AFC} \times 0.5 \times 10 / \{\text{DE} \times (100 - \text{Aux}) \times 100\}$$

Where,

DE= Annual design energy specified for the hydro generating station in Mwh, subject to provisions in Clause-(6) of Schedule-22 of CERC tariff regulations 2014.

Accordingly, annual capacity charges, annual energy charges and energy charge rate of different power stations of OHPC for FY 2020-21 is shown below.

Table-17
Capacity charge and energy charge of OHPC power stations FY 2020-21

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	67.227	33.613	33.613	519.75	64.672
UKHEP	66.296	33.148	33.148	823.68	40.244
BHEP	77.241	38.621	38.621	1171.17	32.976
HHEP	101.467	50.734	50.734	660.52	76.809
CHEP	45.532	22.766	22.766	485.10	46.931
UIHEP	178.975	89.488	89.488	1942.38	46.071

Normative Plant Availability Factor (NAPAF)

20. OHPC has resubmitted the application with all relevant documents for approval of NAPAF of different power stations of OHPC for the block period FY 2019-20 to FY 2023-24. The Case was registered as 52 of 2019. The final order is still awaited. Therefore considering the actual performance of OHPC power station in achieving NAPAF OHPC proposes the revised NAPAFs of the different power station for the next block period (i.e. FY 2019-20 to FY 2023-24) as follows:

Table-18
Normative Plant Availability Factor (NAPAF) for FY 2019-20

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

Prayer

21. OHPC's proposal for annual revenue requirement for FY 2020-21 is as follows
- OHPC prays before the Commission to kindly approve the following in the ARR & Tariff Order of OHPC Power Stations for the FY 2020-21:
- The ARR amounting to Rs.536.738 Crs. of OHPC Power Stations at an average tariff @ 95.80 Paise/Unit.
 - The ACC, AEC & ECR of different Power Stations of OHPC as shown in the Table-20.
 - The NAPAF as shown in the Table-28 for different power stations under OHPC.

4. The miscellaneous reimbursement of Rs.62.2445 Crore by OHPC from GRIDCO.
5. The tariff for energy billing to CSPDCL @ 200.920 Paisa/ Unit considering Up-valued cost of HHEP and the norms of CERC (Terms & Conditions of Tariff) Regulations, 2019.
6. The tariff of MHEP (Joint Scheme) @ 62.579 Paisa/Unit.
7. The average available Installed Capacity as 1700 MW for payment of SLDC charges.

VIEWS OF THE OBJECTORS (Para 22 to 36)

Design Energy

22. One of the objectors pointed out that the Commission should not approve the proposal of OHPC to reduce the design energy of HHEP and CHEP. The objector suggested that the Commission may consider increasing the design energy of these power stations considering the increase in rating of some of the units of HEPs after renovation. Other objector submitted that the design energy fixed for Hydro Generation of the above Power Projects is 5676 MU and actually the OHPC generating more Power than the design energy.

Arrear Water charges

23. That, the data submitted by OHPC in the last financial year reveals that for the period of April, 2005 upto October,2018 , total arrear water charges amounts to Rs.459.33 Cr. much more than the negative balance of (-) Rs.254.183 as submitted by OHPC.

NAPAF of OHPC hydro stations

24. One of the objectors submitted that the NAPAF approved by the Commission for the last control period ending on 31.03.2019 may be considered for determination of capacity charge for FY 2020-21. Another objector suggested OHPC to determine the NAPAF for different hydro stations as per order of the Commission in case of 52/2019.

Additional Capitalization

25. One of the objectors pointed out that OHPC has proposed additional capitalization of Rs 145.055 Cr including proportionate cost towards R&M of # 6 of HHEP and R&M

of # 3 of Chiplima in the petition. The objector requested the Commission to direct OHPC to furnish details of additional capitalization claim for FY 2020-21. The objector requested the Commission that the additional capitalization proposed may be allowed after due scrutiny and after the 2 units brought back into operation. The objector mentioned about apparent error in case of UIHEP.

Installed Capacity

26. 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. Another objector submitted that as per OHPC's submission various units of OHPC hydro stations are under R&M for a prolonged period and are expected to brought back into operation at different periods of FY 2020-21. OHPC has not proposed station-wise installed capacity for calculation of NAPAF in its ARR and tariff application for FY 2020-21

Salable Energy of HHEP

27. One of the objectors submitted that, OHPC in its ARR filing for FY 2020-21 calculated the salable energy for HHEP by deducting 2% as auxiliary consumption and sale of energy to CSEB to the tune of 16.644 MU. The objector proposed the same design energy as approved by the Commission for FY 2019-20.

Manpower

28. One objector has said that OHPC should furnish the list of engineers and their qualification, experience etc. who are managing the power houses.

MDDL of Hirakud Project

29. 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 since the Hirakud reservoir is managed by the Dept of Water Resources, OHPC should not recover the charges for drawl of water by industries.

Repair and Maintenance of Plants

30. One of the objectors submitted that the Commission should ensure that the Balimela unit #1 and #2 should be in operation before giving permission for R&M of Balimela

unit #3 and #4. Another objector proposed that while approving the R&M cost claim of OHPC for unit # 3 of CHEP and # 5 of HHEP the accumulated depreciation already recovered may be deducted from the admitted project cost.

Investment made by OHPC

31. OHPC should produce list of JV companies where it is a promoter and expenditure incurred for these companies till December 2018.

Energy Status Report

32. One objector has claimed that OHPC should produce energy status report from the month of April 2018 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

33. One of the objectors submitted that OHPC's average tariff proposal of 95.80 p/u for FY 2020-21 is unusually high compared to approved tariff for the previous year. Another objector submitted that miscellaneous earning of OHPC like earning from fixed deposit etc may be adjusted against the ARR and balance only should be passed on consumer through tariff. Other objector submitted that the application of increase of tariff from OHPC should not be approved by the Commission as OHPC is earning interest from surplus fund of Rs.811 Cr. which is kept as fixed deposit.

Anticipated generation

34. One of the objector pointed out that difference in anticipated generation from OHPC stations for FY 2019-20 based on data of actual generation / reservoir level as on 20.11.2019 and as on 31.12.2019 as per their second submission is 10.8% is doubtful.

Receipts from Industries

35. One of the objector submitted that the OHPC should furnish the amount received from different industries availing water for their uses as per Government order. The list of industries & industry wise water consumption should also be submitted.

Performance of OHPC

36. One of the objectors submitted that the performance of OHPC is unfortunately poor due to which many of the activities, particularly Renovation and Modernization of the

generating units are not being taken up in time. To substantiate his argument a statement of the commissioning data of the generating units of different power stations, as per data available in the OHPC's Website was also attached by the objector with the submission

REJOINDER AND REPLY OF OHPC TO QUERIES RAISED BY OBJECTORS IN WRITTEN SUBMISSION / DURING HEARING (Para 37 to 50)

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

37. OHPC submitted that the loss of generation arising out of drawl of water from the reservoirs by industries is considered analogous to loss due to Hydrology Failure. Since Hydrology failure is claimed under Secondary Energy Fund which has a present deficit of Rs.254.183 Crs, the compensation received from the industries due to such drawl of water will be accounted for out of the same. This has already been intimated to the Commission in the Tariff filing of OHPC for FY 2015-16 to FY 2019-20. In view of the above the contention of the objector is not correct. The design energy of HHEP & CHEP may be suitably reduced by the Commission considering all previous submissions of OHPC.

OHPC submitted that the actual generation from hydro electric projects depends on the rainfall pattern, availability of water in the reservoir & machines for generation and demand of the state grid. Further the water available in a carry-over reservoir is very often carried over to the next year due to uncertainty and irregular pattern of rainfall which affects the actual generation in a particular year. Therefore, there is always a mismatch between actual generation & design energy. Accordingly, OHPC power stations have never generated exactly equal to its Design Energy (5676 MU) during any financial year. In most of the financial years, the total generation of OHPC is less than the Design Energy of 5676 MU due to the reasons mentioned above.

OHPC has calculated the revenue earning out of sale of secondary energy from FY 1996-97 to FY 2018-19. The detail calculation is enclosed at Annexure-6 of the Original Application of ARR of OHPC for FY 2020-21. As observed the secondary energy fund has always remained in deficit, which is approximately Rs 254.183Crs. as on 31.03.2019.

Arrear Water charges

38. OHPC has submitted that though the energy compensation dues lying pending with the user Industries are high, but it is provisional and subject to revision on account of the applicable rate, which may be finalized in the final order of the Hon'ble High Court of Odisha. However, in pursuance to the interim order of the Hon'ble High Court of Odisha, a very small amount to the tune of Rs.4.5 crore deposited by the industries towards energy compensations available with OHPC is kept as a separate fund as per the suggestion of the CAG. After the decision of Hon'ble High Court of Odisha, the Commission may take suitable decision to give effect to this fund. Earlier OHPC had suggested to adjust this amount in the deficit Hydrology Fund

NAPAF of OHPC hydro stations

39. OHPC has submitted that the Commission may take suitable decision in view of the submission of OHPC in Case No. 52 of 2019. OHPC also submitted that the approved period of outage of the generating units of CHEP, HHEP & BHEP are over. Hence the installed capacities of these power stations are considered full for the purpose of computation of PAFM and therefore there is no need to compute the station wise installed capacity

Additional Capitalization

40. OHPC submitted that the details of the additional capitalization of Rs.79.385 Crores towards proportionate cost of R&M of Unit-6 of HHEP and Rs.65.67 Crs towards R&M cost of Unit-3 of CHEP are furnished at Annexure-IX & X of the original Tariff Application. The details of additional capitalization of Rs.5.278 Crs has furnished at Annexure-8 and 11 of the original Tariff application of OHPC for the FY 2020-21.

The Unit-3 of CHEP is under trial run and synchronized to the State grid and its COD shall be declared very soon before this Financial Year. The Unit-6 of HHEP shall also be available for commercial operation in April'2020. Hence the cost of R&M of these two units need to be capitalized in the tariff computation for FY 2020-21.

OHPC further clarified that there is no apparent error in case of total value of the additional capitalization in respect of UIHEP as pointed out by GRIDCO. The approved project cost of Rs.1194.79 Crs is considered as new addition in case of UIHEP as the project was commissioned after 01.04.1996.

Installed Capacity

41. OHPC submitted that in the tariff Application for FY 2020-21, it has not applied for any reduction of Installed Capacity for computation of Tariff. However, there shall be reduction in the Installed Capacity for Units considered for R&M as per Clause No. 4.1.3 of the agreed PPA between OHPC & GRIDCO which was also duly vetted by the Commission, including separate Orders of the Commission for computation of PAFM & recovery of Capacity Charges from GRIDCO in case of Capital Maintenance and R&M of generating Units.

OHPC has stated that it is in the process of setting up of some feasible Small Hydro Projects through its subsidiary company i.e. Green Energy Development Corporation of Odisha Ltd (GEDCOL) whose status report is enclosed at Annexure-II to rejoinder.

Saleable Energy of HHEP

42. OHPC submitted that the Commission may take suitable decision considering the submission of OHPC & GRIDCO in Case No.58 of 2019.

Manpower

43. OHPC submitted that the detail list of Engineers of OHPC managing the Power Houses had already been furnished as rejoinder to Tariff application of OHPC for FY 2017-18, FY 2018-19 & FY 2019-20, however the same is once again enclosed to the present list of Engineers of OHPC at Annexure-III.

MDDL of Hirakud Project

44. OHPC submitted that this issue has already been clarified in detail under the title “Revision of Design Energy of HHEP & CHEP on account of restriction in generation below 595 ft at HHEP, Burla” at page no. 6 & 7 of the tariff application of OHPC for the FY 2020-21. Accordingly it has been mentioned that “OHPC is constantly loosing energy charges for 31 MU (i.e. 14.81 MU for HHEP, Burla & 15.95 MU for CHEP, Chiplima) every year on account of restriction in generation from Hirakud reservoir below 595 ft. R.L by DoWR, Govt. of Odisha. OHPC has consistently been raising this issue in its earlier tariff applications furnishing all the facts in detail with prayer to the Commission either to consider the reduction in D.E of HHEP, Burla & CHEP, Chiplima proportionately or allow compensation in accordance with the Clause No.11 of the Electricity Act, 2003.”

Repair and Maintenance of Plants

45. OHPC submitted that Unit-3 of CHEP is under trial run and synchronized to the State grid and its COD shall be declared very soon before this Financial Year. The Unit-6 of HHEP shall also be available for commercial operation in April'2020. Hence the cost of R&M of these two units need to be capitalized in the tariff computation for FY 2020-21. OHPC also submitted that the views of objectors are not correct as the Commission determines the tariff of all Utilities including OHPC on the basis of Gross Block approach but not on Net Block approach. This practice is being adopted by the Commission in all the previous cases for all the Utilities.

Investment made by OHPC

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

The information regarding list of Joint Venture / Subsidiary / Associates where in OHPC being a promoter is furnished in the Table below:

Table - 19

Sl. No.	Name of the Joint Venture/ Subsidiary /Associates
1.	Odisha Thermal Power Corporation Ltd (OTPC) J V Company between OHPC & OMC 50% each.
2.	Baitarini West Coal Company Ltd (BWCCCL) J V Company between OHPC, Gujrat Power Corporation Limited (GPCL) & Kerala State Electricity Board (KSEB) 1/3 each.
3.	Odisha Coal & Power Ltd. (OCPL) Company between OPGC & OHPC with 51% & 49%.
4.	Green Energy Development Corporation of Odisha Ltd. (GEDCOL) - 100% subsidiary of OHPC

The total expenditure incurred by those companies till December 2019 are as follows which includes the amount paid by OHPC.

- GEDCOL: Rs.207.37 Cr.
- OTPCL: Rs.264.21 Cr.
- BWCCCL: Rs.29.75 Cr.
- OCPL: Rs.1184.84 Cr.

Energy Status Report

OHPC submitted that the information regarding the actual generation status of OHPC power stations since FY 2009-10 to FY2019-20 (upto 15.01.2020) is enclosed at Annexure-I to the rejoinder.

ARR and Tariff

47. OHPC submitted that the average tariff Approved by the Commission for OHPC is remaining between 80 paise to 90 paise per unit upto the FY 2019-20. The project cost for determination of ARR & Tariff of OHPC Power Stations for the FY 2020-21 is based on Historic project cost of old power stations as on 01.04.1996 (for UIHEP, approved project cost of Rs.1194.79 crore) along with approved additional capitalization/ decapitalization upto 2017-18 and audited additional capitalization & decapitalization for FY 2018-19.

The raise in the Average Tariff is mainly due to the following factors.

- The impact of Ind-AS accounting as per Ministry of Corporate Affairs Notification No. GSR III (E) dated 16.02.2015 for considering the Additional Capitalization of only Rs.5.278 Crs as per the audited account of OHPC for FY 2018-19.
- Capitalization of approved Capital Cost of R&M work of Unit-3 of CHEP, Chiplima of Rs.65.670 Crs. (Unit-3 is under trial run & will be commercialized in FY 2019-20)
- Capitalization of approved Capital Cost of R&M work of Unit-6 of HHEP, Burla of Rs.79.385 Crs. (Unit-6 will be commercialized by December-2020)

The surplus amount of Rs.811 Cr referred by objector money mainly arises due to cumulative effect of the following items since inception of OHPC which are earned under regulatory frame work and approved by Hon'ble Commission.

- Return on Equity with accumulated interest on OHPC own investment.
- Interest on Working Capital.
- Interest on normative loan.
- Balance Depreciation Fund with interest towards OHPC own investment.

Payment of dividend by OHPC to Govt. of Odisha (but not Govt. of India as stated by the Objector) is the compliance of Sec-123 of the Companies Act 2013. As per the said section when a company makes any profit, it is liable to pay dividend to

its shareholders. So OHPC paid dividend to its shareholders i.e. Department of Energy, Govt. of Odisha and it has no effect on the tariff of OHPC being a non-tariff item.

Anticipated Generation

48. OHPC has submitted that the anticipated generation furnished in ARR of OHPC and in the subsequent submission is an estimated value based on the basis of the availability of water, irrigation requirement and peak load requirement of power which is decided in co-ordination with DoE, DoWR, GRIDCO and SLDC. Many times OHPC has requested SLDC to increase generation to achieve the scheduled generation.

Receipts from Industries

49. OHPC submitted that the list of industries, industry wise water consumption & amount received from different industries by OHPC towards compensation for loss of generation from industries are enclosed at Annexure-V to rejoinder.

Performance of OHPC

50. OHPC since its inception is regular in taking up the periodical Renovation & Modernization work of the old Units of different power stations. OHPC has furnished the details of R&M work taken of since beginning. OHPC submitted that it has completed or continuing the R&M works of all old Units whose performance have decreased in the due course of time. OHPC is regularly carrying out need based Capital Maintenance work by replacement of critical parts to increase the reliability of the machines. Also due to obsolescence of technology OHPC is changing the AVR, Governing System, Battery and DC system & Relay and Annunciation system during at regular interval during Annual Maintenance or Capital Maintenance as per the recommendation of OEM & approval of OHPC BoD. OHPC is taking the approvals of the Commission for Capital Maintenance as well as R&M works.

The Units of UKHEP & Unit-3,4&5 of RHEP are around in 30 years of service. OHPC shall plan the R&M of these Units in a phased manner. So the objections of the Objectors regarding poor performance of OHPC due to non-consideration of timely R&M works, is wrong.

VIEWS OF CONSUMER COUNSEL (Para 51)

51. 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 2020-21. The Consumer counsel's observations /suggestions are elaborated below.

- Comparative analysis of ARR approved by the Commission for FY 2019-20 to that of the proposed ARR for FY 2020-21 reveals that there is 9.20 % increase proposed in the ARR for FY 2020-21. Tariff proposed to be increased for Machhakund HEP from FY 2019-20 is 21.89%.
- The reservoir level as on Nov 2019 are noted to be high compare to the level recorded as on Nov 2018; however, anticipated generation for FY 2019-20 is projected lower than FY 2018-19. The Commission may review the same. If the factors behind the increase are controllable, then the tariff may be set accordingly.
- OHPC has considered capitalization of R&M of CHEP and HHEP Burla amounting to Rs.65.67 Cr and Rs.79.38 Cr while calculating equity base which may be reviewed by the Commission as the units are not yet put in operation by OHPC.
- 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 2020-21 @ 2.57% of historic project cost as on 01.04.1996 plus additional capitalization from 01.04.1996 to FY 2018-19. However, OHPC has considered capitalization of R&M of CHEP and HHEP Burla amounting Rs.65.67 Cr and Rs.79.38 Cr while arriving Project cost for FY 2020-21. However, the hydro units of both stations are not put in use as on date. The Commission may look into the matter.
- 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 2019-

20@5.72% to arrive at the O&M expenses for FY 2020-21. In last year order of FY 2019-20, the Commission had allowed escalation @5.17% to find out the provisional base for FY 2019-20. The same may be reviewed with respect to provision given in the OERC Generation Tariff Regulations. The Commission may verify impact on actual employee cost due to 7th Pay Commission based on audited balance sheet of OHPC for FY 2018-19.

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 based on approved O&M cost and annual fixed cost.

OBSERVATIONS OF THE STATE ADVISORY COMMITTEE (SAC) (Para 52)

52. The Commission convened the State Advisory Committee (SAC) meeting on 26.02.2020. The Members of SAC deliberated on different issues related to power sector and the Annual Revenue Requirement of various licensees. However, no specific views were offered related to Annual Revenue Requirement and Tariff Filing of OHPC for the FY 2020-21.

VIEWS OF GOVERNMENT OF ODISHA (Para 53)

53. 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.

The reply of the Government of Odisha is still awaited and in view of this, the Commission assumes the principles adopted for fixation of tariff for the year 2019-20 to be continued for the year 2020-21. Hence, the Commission has decided to keep in abeyance the up-valuation of assets like previous years while determining the tariff of OHPC Power Stations.

COMMISSION'S OBSERVATIONS AND ANALYSIS OF OHPC'S PROPOSAL (PARA 54 TO 101)

54. 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.
55. 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
56. The Annual Revenue Requirement of OHPC power stations for FY 2020-21 has been determined based on OERC (Terms and Conditions of Determination of Generation Tariff) Regulations, 2014.

Power Procurement from OHPC

57. 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

58. 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 2020-21.
59. Accordingly, the Commission's approval of power purchase by GRIDCO from OHPC for FY 2020-21 is given in the table below:

Table - 20
Design Energy approved for OHPC for FY 2020-21

(In MU)

Sl. No.	Name of the Power Station	Anticipated generation for FY 2019-20 as per OHPC taking actual from 01.04.2019 to 20.11.2019 (MU)	Design Energy proposed for FY 2020-21	Energy for Sale proposed by OHPC	Energy for sale approved for FY 2020-21
1	RHEP	644.88	525.00	519.75	519.750
2	UKHEP	754.31	832.00	823.68	823.680
3	BHEP	1441.66	1183.00	1171.17	1171.170
4	HHEP	554.41	684.00	660.516	677.160
5	CHEP	244.76	490.00	485.10	485.100
Sub Total of Old Power Stations		3640.02	3714.00	3660.216	3676.860
6	UIHEP	2148.66	1962.00	1942.38	1942.380
Total		5788.68	5676.00	5602.596	5619.240
	Machkund			262.500	262.500
OHPC Total				5865.096	5881.740

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

Project Cost

60. 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.
61. The Commission had approved Rs.18.51 cr. as de-capitalisation of the asset of different power stations of OHPC from FY 2011-12 to FY 2017-18. There is de-capitalisation of Rs.0.024 cr. in case of old power stations of OHPC and Rs.0.008 cr. in case of UIHEP for FY 2018-19. Thus the total de-capitalisation of old power stations from FY 2011-12 to FY 2018-19 is Rs.13.667 cr. which has been deducted from the historic cost. Similarly Rs.4.878 cr. towards de-capitalisation of UIHEP has been deducted from its project cost for determination of tariff.
62. The Commission had approved new additions of old power stations of OHPC from 01.04.1996 to 31.03.2018 as Rs.612.95 cr. and that of UIHEP as Rs.1231.50 cr. Thus the total approved new additions upto FY 2017-18 was Rs.1844.45 cr. Further OHPC has incurred new additions of Rs.5.278 cr. (4.03 cr. for old power stations and 1.255 cr. for UIHEP) as per INDAS-2015 audited accounts for FY 2018-19. Although OHPC has proposed the cost of R&M of unit-3 Chiplima amounting to Rs.65.67 cr. and proportionate cost of RM&U works of unit-6 of HHEP, Burla amounting to Rs.79.385 cr. as additional capitalisation for tariff computation of FY 2020-21, the Commission does not approve these costs in the absence of proper audited figures. Thus the total capital cost approved upto 31st March 2019 is Rs.2315.85 Cr. (Rs.1674.59 Cr. + Rs.659.81 cr. - Rs.18.55 Cr). The approved project cost for the tariff calculation of 2020-21 is summarised below:

Table –21
Capital cost approved for Tariff Determination of FY 2020-21

(Rs. in Cr.)

Name of the Power Stations	Historic cost of assets as on 01.04.96 & original project cost of UIHEP	Total new additions from 01.04.1996 to 31.03.2019	Total Asset reduction during the FY 2011-12 to 2018-19	Project cost considered for Tariff Calculation based on Historic Cost
1	2	3	4	5 = (2+3) - 4
RHEP	91.09	59.33	0.08	150.34
UKHEP	108.31	21.54	0.48	129.37
BHEP	115.42	222.14	0.33	337.23
HHEP	72.75	263.50	11.50	324.74
CHEP	92.23	50.47	1.27	141.42
Sub Total	479.80	616.97	13.67	1083.10
UIHEP	1194.79	42.84	4.88	1232.75
Total	1674.59	659.81	18.55	2315.85

63. 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 2020-21 in view of the letter No.LC-OERC-06/2019-2283 dated 12.03.2019 of Government of Odisha.

Determination of Tariff

Interest on Loan:

64. 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.**

65. 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 - 22

(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
e.	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

66. Based on the earlier directions of the Commission, OHPC has not considered the impact of interest on Govt. Loan and Normative Loan of UIHEP in the tariff calculation of OHPC for the FY 2020-21. OHPC has also not claimed the accumulated interest on Govt. Loan and Normative loan of UIHEP as regulatory asset in view of the directive of the Commission. Interest on normative loans for additional capitalisation of Chipilima, Upper Kolab, Balimela, Hirakud, Rengali and UIHEP are allowed by the Commission.

67. Considering the above facts, the unit wise interest on loans as described above and the amount approved by the Commission for the FY 2020-21 is presented in the table below :

Table – 23
Interest on Loan for the FY 2020-21

(Rs. in Crs.)

Sl. No.	Source of Loan	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	TOTAL
1	Interest on Normative Loan Proposed by OHPC	1.094	0.141	0.351	6.773	4.42	12.779	1.33	14.109
2	Total Interest Claimed								14.11
3	Approved for FY 2020-21	1.0914	0.141	0.351	2.153	0.144	3.882	1.33	5.213

Accordingly, the Commission has approved an interest payment of Rs.5.213 cr. for all stations of OHPC for FY 2020-21 as against Rs.14.11 cr. proposed by OHPC. The corresponding figure for the last year was Rs.6.60 cr.

Depreciation:

68. 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.
69. 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.5.64 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.5.64=Rs.35.87 Cr. Accordingly, depreciation claimed by OHPC and approved by the Commission for FY 2020-21 is summarized in the table below:

Table – 24
Depreciation approved for 2020-21

(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	150.34	3.86	3.81	3.86
2	UKHEP	129.37	3.32	0.43	3.32
3	BHEP	337.23	8.67	1.20	8.67
4	HHEP	324.74	8.35	7.96	8.35
5	CHEP	141.42	3.63	0.60	3.63
	Sub Total	1083.10	27.84	14.01	27.84
6	UIHEP	1232.75	31.68	35.87	35.87
	Total	2315.85	59.52	49.88	63.70

The Commission approves a total of Rs.63.70 cr. on account of depreciation for tariff purpose in ARR of FY 2020-21 against Rs.63.82 Cr for FY 2019-20.

Return on Equity (RoE) and Income Tax

70. The treatment of 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 only made after 01.04.1996.
71. 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.
72. 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 2019-20 which is subject to change after the actual tax paid during the FY 2019-20. 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 2019-20. Accordingly, the details of RoE of OHPC power stations approved by the Commission for the FY 2020-21 is summarized below:

Table – 25
Return on Equity for FY 2020-21

(Rs. in Cr.)

Sl. No.	Name of the Power Stations	Total Additional Capitalisation from 01.04.1996 to 31.03.2019	Equity Capital rate	Equity Capital	ROE @16% for the FY 2019-20
	1	2	3	4	5
1	RHEP	59.33	30%	17.798	2.848
2	UKHEP	21.54	30%	6.461	1.034
3	BHEP	222.14	30%	66.643	10.663
4	HHEP	263.50	30%	79.049	12.648
5	CHEP	50.47	30%	15.140	2.422
6	UIHEP*	1232.75	25% & 30%*	310.329	49.653
7	Total	1849.72		495.420	79.267

NB : Approved project cost of UIHEP is Rs1194.79Cr. Decapitalisation for FY 2011-12 to FY 2018-19= Rs4.878Cr. Decapitalisation is considered from the approved project cost. New project cost= Rs 1194.79Cr - Rs4.878Cr =Rs1189.912Cr. Additional Capitalisation from FY2013-14 to FY2018-19=Rs42.67Cr. Project Cost for Tariff= Rs1232.59Cr.

As per PPA conditions signed between OHPC and GRIDCO, the Equity Capital of UIHEP has been considered @25% of Rs 1189.912Cr= Rs297.478Cr. Adding to it the 30% equity towards net additional capitalization from FY 2013-14 to FY 2018-19 of Rs 42.67Cr =Rs12.801Cr.

Return on Equity is calculated @16% of Equity Capital as per norms of OERC with a provision of reimbursement of Income Tax paid for the FY 2018-19.

The Commission approves return on equity for all stations of OHPC amounting to Rs.79.267 Cr. for the FY 2020-21 as against the corresponding approved figure of Rs.79.01 cr. for Return on Equity in FY 2019-20.

O&M Expenses

73. 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. For computation of O&M expenses of different power stations of OHPC for the FY 2020-21, OHPC has escalated the approved O&M expenses for FY 2019-20 @ 5.72% as per the principle adopted by the Commission in earlier tariff orders of OHPC. It may be noted that while

computing the O&M expenses of UIHEP for FY 2020-21, the amount to be received towards the dam maintenance expenses from DOWR for the FY 2019-20 is to be deducted from the total expenses. From the audited accounts it is seen that Rs.9.32 cr is to be received from DOWR towards dam maintenance expenses of UIHEP. The details of O&M expenses approved for 2020-21 based on the base figure arrived for FY 2019-20 by the Commission in case No.69 of 2018 while determining the ARR of OHPC for the FY 2019-20 is presented in the table below:

Table – 26
O&M expenses for FY 2020-21

Rs. cr.

Sl. No.	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	CO	Total
1	O & M expenses for FY 2019-20 approved by OERC	50.31	51.61	45.06	54.25	26.09	227.32	82.75	26.19	336.26
2	Escalation of approved O&M expenses @5.72%	53.19	54.56	47.64	57.35	27.58	240.32	87.48	27.69	355.49
2	Corporate Office expenses apportioned to different units under OHPC based on Installed Capacity	3.41	4.37	6.96	3.76	0.98	19.49	8.19	27.69	
3	Total O & M Expenses for the FY 2020-21	56.60	58.93	54.60	61.12	28.57	259.82	95.68		355.49
4	Less Amount to be received from DoWR towards Dam Maintenance Sharing of UIHEP for FY 2018-19							-9.32		-9.32
5	Total O&M Expenses for the FY 2020-21	56.602	58.932	54.602	61.115	28.566	259.817	86.353		346.170

74. Thus, the Commission approves an amount of Rs.346.170 Cr. as O & M expenses for the year 2020-21 as proposed by OHPC. The corresponding approval figure for the FY 2019-20 was Rs.325.88 cr.

Interest on Working Capital

75. 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, 2019 for one year was 8.55%. OHPC has considered the MCLR rate of SBI as on 01.04.2019 plus 300 basis points for computation of interest on working capital. The Commission has adopted this principle which is equivalent to 11.55 % (considering 8.55% as the MCLR rate plus 300 basis points = 11.55%) for FY 2020-21. The detailed calculation of Working Capital approved by the Commission is presented in the Table below:

Table – 27
Interest on Working Capital for FY 2020-21

(Rs. in Crs.)

Sl. No.	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	Interest on Loan & GC	1.09	0.14	0.35	2.15	0.14	3.88	1.33	5.21
2	RoE	2.85	1.03	10.66	12.65	2.42	29.61	49.65	79.27
3	O & M Expenses	56.60	58.93	54.60	61.12	28.57	259.82	86.35	346.17
4	Depreciation	3.86	3.32	8.67	8.35	3.63	27.84	35.87	63.70
5	Total	64.41	63.43	74.28	84.26	34.77	321.15	173.20	494.35
6	O & M Expenses for One Month	4.72	4.91	4.55	5.09	2.38	21.65	7.20	28.85
7	Maintenance spares @15% of O & M Expenses	8.49	8.84	8.19	9.17	4.28	38.97	12.95	51.93
8	Receivable equivalent to Two Months of Annual Fixed Cost	11.20	11.05	12.87	14.60	6.04	55.77	29.83	85.59
9	Total Working Capital	24.41	24.80	25.61	28.86	12.70	116.39	49.98	166.37
10	Interest on Working Capital calculated @ 11.55%	2.820	2.864	2.958	3.333	1.467	13.443	5.772	19.215

Thus, the Commission approves an amount of Rs.19.215 Cr. as interest on working capital for the year 2020-21 as against Rs.19.662 proposed by OHPC for the ensuing year. The corresponding approval figure was Rs.17.64 for FY 2019-20.

Total Annual Fixed Cost

76. Based on the above parameters the station-wise ARR and tariff calculated and approved for the year 2020-21 is indicated in the table below:

Table – 28
Station wise ARR & Tariff of different power station of OHPC Approved for FY 2020-21

(Rs. Cr.)

Components	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total FY2020-21
Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
Return on Equity	2.848	1.034	10.663	12.648	2.422	29.615	49.653	79.267
Interest on Loan	1.094	0.141	0.351	2.153	0.144	3.882	1.331	5.213
Depreciation	3.864	3.325	8.667	8.346	3.635	27.836	35.866	63.702
O & M expenses	56.602	58.932	54.602	61.115	28.566	259.817	86.353	346.170
Interest on Working Capital	2.820	2.864	2.958	3.333	1.467	13.443	5.772	19.215
Total ARR	67.227	66.296	77.241	87.595	36.234	334.592	178.975	513.568
Average Tariff (P/U) for 2020-21	129.34	80.49	65.95	129.36	74.69	91.00	92.14	91.39
Average Tariff for the FY 2019-20 (P/U) (Approved)	125.78	76.47	60.70	126.46	74.06	87.31	88.52	87.73

The Commission approves total ARR of Rs.513.568 crs. at an average price of 91.39 p/u as against proposed ARR of Rs.536.738 cr. @ 95.80 p/u. The corresponding approved figure for FY 2019-20 was Rs.492.950 cr. at an average price of 87.73 p/u.

ARR & Tariff Application Fees and related Publication Expenses

77. 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 2020-21. OHPC shall be allowed to recover the same amount from GRIDCO. In addition to the above, OHPC has stated to have incurred expenses of Rs.1.20 lakh on publication of tariff related matters in the newspaper for the FY 2020-21.

In view of the above, OHPC has claimed Rs.26.20 lakhs towards the Application Fee & Publication Expenses for the FY 2020-21. The 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 2020-21.

License fee for use of water for generation of Electricity:

78. 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.
79. OHPC was paying water cess @1.1paise/ unit for the FY 2017-18 and @1.2 paise/unit for the FY 2018-19 and @1.3 paise/unit for FY 2019-20 and got reimbursed from GRIDCO. Accordingly OHPC has to pay licensee fee on use of water for generation of electricity for FY 2020-21 @1.4 paise/unit.
80. Accordingly the 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 2020-21 @ 1.40 p/Kwh as presented in the table below:

Table - 29
Licence Fee on water used for generation of electricity for OHPC Power station for FY 2020-21

Power Stations	Design Energy (in MU)	Licence Fee on water approved @0.014 Rs/Kwh of Generation (in Crs)
RHEP	525	0.735
UKHEP	832	1.165
BHEP	1183	1.656
HHEP	684	0.958
CHEP	490	0.686

UIHEP	1962	2.747
Total	5676	7.946

81. The Commission considered the above proposal of OHPC and provisionally approves an amount of Rs.7.946 cr. mentioned in the table above to be reimbursed from GRIDCO in the FY 2020-21 based on the design energy of OHPC power stations @1.4 p/KWh.

Electricity Duty on Auxiliary Consumption

82. 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.
83. 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 2020-21 as reimbursement as summarized in the table below:

Table – 30
ED for OHPC Power station for FY 2020-21

(Rs. in Crs.)					
Power Stations	Design Energy (in MU)	Proposed Percentage of Auxiliary Energy Consumption (in %)	Auxiliary Energy Consumption to be approved (in MU)	ED Rate Applicable (in Rs/Unit)	ED proposed for Reimbursement by OHPC @55p/u & AUX @1% (in Crs)
RHEP	525	1	5.25	0.55	0.289
UKHEP	832	1	8.32	0.55	0.458
BHEP	1183	1	11.83	0.55	0.651
HHEP	684	1	6.84	0.55	0.376
CHEP	490	1	4.90	0.55	0.270
UIHEP	1962	1	19.62	0.55	1.079
Total	5676	1	56.76	0.55	3.122

Accordingly an amount of Rs.3.122 Cr. shall be reimbursed by GRIDCO to OHPC on account of ED on auxiliary consumption and transformation loss for the years 2020-21.

SLDC Charges

84. The Commission, while determining the ARR and Fees & Charges of SLDC for the FY 2020-21 in Case No.73/2019, 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.7022.14/MW/Annum to be collected from the generators towards annual charges of SLDC. Considering the installed capacity of 1700 MW of OHPC (as submitted by SLDC in its ARR application), the total SLDC charges of OHPC comes to Rs.1.19 crs. for the FY 2020-21, 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.1.19 cr. as pass through in the ARR of GRIDCO for the FY 2020-21 towards power purchase related cost of OHPC.

Reimbursement of contribution made to ERPC

85. OHPC is contributing towards ERPC establishment fund & ERPC fund from the FY 2006-07 onwards as per their demand note. OHPC had paid Rs.15.0 Lakh towards contribution to ERPC Establishment Fund & Rs.1.0 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 2020-21 to be reimbursed from GRIDCO. Any excess claim (above Rs.16.0 Lakhs) made by ERPC for the FY 2020-21 will be claimed as additional reimbursement in the subsequent Tariff year.
86. Accordingly Commission approves a total reimbursement claim for an amount of Rs.0.16 cr. towards ERPC contribution for FY 2020-21 from GRIDCO.

Income Tax

87. *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 FY 2018-19 is detailed below:

Table - 31

Particulars	Amount (Rs in Lakhs)	Amount of TAX Paid @34.9444% (Rs in Lakhs)
Core Income	54,964.66	4,902.07
Non-Core Income (FD)	10,252.25	3,582.55

interest)		
Total income before meeting all expenses.	65,216.91	8,484.62

It is revealed from the above table that OHPC has paid Rs.49.0207 cr. towards income tax for FY 2018-19 as per audited accounts. Accordingly, OHPC has proposed to get reimbursement of Rs.49.0207 Crs towards income tax for FY 2018-19 on core business amounting to Rs.549.6466 Cr.

88. The Commission has examined the Audited Accounts of OHPC for FY 2018-19. It is revealed from the audited balance sheet that out of total profit before tax (PBIT) of Rs.227.32 cr. interest of Rs.102.52 cr. has been earned on fixed deposits(non-core activities). Applying the applicable tax rate (of 34.9444%) on this amount the tax amount comes to rs.35.82 cr. on non-core activities. Thus after excluding Rs.35.82 cr. from the total income tax of Rs.84.84 cr. paid during FY 2018-19, the balance of Rs.49.02 cr. is the tax on core business. Therefore, the Commission approves Rs.49.02 cr. towards income tax as reimbursement claim from GRIDCO.
89. 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 2020-21 of OHPC are summarized in the table below:

Table – 32
Details of Reimbursement for FY 2020-21

(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 2020-21.	0.735	1.165	1.656	0.958	0.686	2.747	7.946
(b) ED on Auxiliary Consumption for FY 2020-21.	0.289	0.458	0.651	0.376	0.270	1.079	3.122
(c) SLDC charges							1.19
(e) Application fees and publication expenses							0.262
(f) ERPC charges							0.16
(g) Income Tax as per Audit Account of FY 2018-19							49.0207
Total							61.7007

Thus, the Commission approves the miscellaneous reimbursement of Rs.61.7007 cr. The above expenditure has been included in GRIDCO's ARR and hence shown as revenue requirement in OHPC filing.

Two-Part Tariff

90. 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.

91. Accordingly, the Commission approves the rate of energy charge and the capacity charge of OHPC power stations for FY 2020-21 as summarized in the table below:

**Table - 33
Energy Charge and Capacity Charge for 2020-21**

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 2020-21	Energy Charge Rate(P/U)
RHEP, Rengali	67.227	33.613	33.613	519.75	129.34	64.672
UKHEP, Baraniput	66.296	33.148	33.148	823.68	80.49	40.244
BHEP, Balimela	77.241	38.621	38.621	1171.17	65.95	32.976
HHEP, Burla	87.595	43.798	43.798	677.16	129.36	64.678
CHEP, Chiplima	36.234	18.117	18.117	485.10	74.69	37.347
UIHEP, Mukhiguda	178.975	89.488	89.488	1942.38	92.14	46.071

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)

92. 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 20.03.2020 vide case no. 52/2019 has re-determined NAPAF of OHPC Stations for the control period from 01.04.2019 to 31.03.2024 for recovery of Capacity Charges as given in the table below:

Table – 34

Name of Power Stations	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
NAPAF (%)	75	75	83- for first 3 years 87 – for subsequent 2 years	80	87	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

93. 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 without considering the state government support and it shall be applicable for billing to CSPDCL only. OHPC has submitted that the tariff for billing of energy to CSPDCL is computed as per the CERC (Terms and Conditions of Tariff) Regulations, 2019 as furnished in the table below:

Table - 36
Tariff for CSPDCL for 2020-21

	(Rs. Cr.)
Details of Expenses HHEP	Amount (Rs in Crs)
Salable Design Energy of HHEP	677.16 MU
Project Cost (Up-valued cost as on 01.04.1996 + Capitalization up to 31.03.2019 - Decapitalization)	461.54Cr
Return on Equity (@ 25.3629%)	35.12
Interest on Loan	10.47
Depreciation (@ 5.28%)	24.37
O & M expenses (Escalated @ 4.77%)	61.64
Interest on Working Capital (@ 12.05%)	4.47
Total ARR	136.06
Average Tariff (p/u)	200.920

The Commission approves the average tariff of 200.920 p/u for HHEP for billing to CSPDCL for FY 2020-21 as against 226.99 p/u approved during FY 2019-20.

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

94. 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.
95. The proposed tariff of 62.579 Paise/KWh of Odisha drawl of Machhkund power for FY 2020-21 has been computed on cost reimbursement basis. The O&M Expenses of Rs. 14.2001 Crs. for the FY 2018-19 has been escalated @ 4.77% per year to arrive at O & M Expenses of Rs. 15.5871 Crs for FY 2020-21. 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 calculated to be Rs. 16.4271 Cr for FY 2020-21. The cost per unit is 62.579 Paise considering 50% share of design energy of Machhkund i.e. 262.50 MU.
96. 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 for the FY 2020-21 is given in the table below:

Table - 37
Projected Tariff of Machhkund H. E. (J) Scheme For FY 2020-21

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 @ 4.77% for year for 2 years	1.0977
	<u>(Rs. in Crs)</u>
1. O&M Exp. (Odisha share of O&M Exp. For FY 18-19)	14.2001
2. O&M Exp for FY 2020-21 with escalation of 4.77% for 2018-19 & 2019-20	15.5871
3. Power purchase cost of additional 20% above 30% Orissa Share (105MU x 0.008)	0.84
4. Total Annual Expenditure (2 +3)	16.4271
5. Tariff (Paise/Kwh)	62.579
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.	

97. The Commission approves the above rate of 62.579 Paise per Unit for FY 2020-21 as proposed by OHPC for sale of power from Machhkund Hydro Electric Station.

ARR and Approval of Tariff

98. To sum up, the Commission hereby approves the ARR and generation tariff of OHPC for FY 2020-21 as follows:

Table – 38
Summary of ARR Approved for OHPC for FY 2020-21

	Year	RHEP, Rengali	UKHEP, Baraniput	BHEP, Balimela	HHEP, Burla	CHEP, Chiplima	OHPC Old Stations	UIHEP, Mukhiguda	OHPC Total
ARR (Rs Cr)	2019-20 approved	65.38	62.99	71.09	85.64	35.926	321.011	171.94	492.949
	2020-21 Proposed	67.227	66.296	77.241	101.467	45.532	357.763	178.975	536.738
	2020-21 approved	67.227	66.296	77.241	87.595	36.234	334.592	178.975	513.568
Saleable Design Energy (in MU)	2019-20 approved	519.750	823.680	1171.170	677.160	485.100	3676.860	1942.380	5619.240
	2020-21 Proposed	519.75	823.68	1171.17	660.52	485.10	3660.22	1942.38	5602.60
	2020-21 approved	519.750	823.680	1171.170	677.160	485.100	3676.860	1942.380	5619.240
Capacity Charges (Rs in Crs.)	2019-20 approved	32.69	31.49	35.54	42.82	17.96	160.51	85.97	246.47
	2020-21 Proposed	33.613	33.148	38.621	50.734	22.766	178.881	89.488	268.369

	Year	RHEP, Rengali	UKHEP, Baraniput	BHEP, Balimela	HHEP, Burla	CHEP, Chiplima	OHPC Old Stations	UIHEP, Mukhiguda	OHPC Total
	2020-21 approved	33.613	33.148	38.621	43.798	18.117	167.296	89.488	256.784
Average Tariff	2019-20 approved	125.78	76.47	60.70	126.46	74.06	87.31	88.52	87.73
	2020-21 Proposed	129.34	80.49	65.95	153.62	93.86	97.74	92.14	95.80
	2020-21 approved	129.34	80.49	65.95	129.36	74.69	91.00	92.14	91.39
Energy Charge Rate(P/U)	2019-20 approved	62.89	38.23	30.35	63.23	37.03	43.65	44.26	43.86
	2020-21 Proposed	64.672	40.244	32.976	76.809	46.931	48.65	46.071	47.75
	2020-21 approved	64.672	40.244	32.976	64.678	37.347	45.49	46.071	45.697

The unit cost of energy from Machhkund is approved at 62.579 p/u for 2020-21 as against 51.33 p/u approved for 2019-20.

99. The ARR approved in this order is for the entire FY 2020-21 and this order has been made applicable w.e.f. 01.05.2020 due to COVID-19 situation, the differential capacity charge & Energy Charge for the month of April, 2020 (new capacity charge & energy Charge approved in this order to be billed for April, 2020 minus capacity charge & energy charge already billed in old rate i.e. @ FY 2019-20) shall be paid by GRIDCO to OHPC during the FY 2020-21 when such bill is raised by OHPC.
100. The tariff now approved shall be effective from 01.05.2020 and shall be in force until further orders.
101. The application of OHPC in Case No.68 of 2019 for approval of its Annual Revenue Requirement and fixation of generation tariff of different stations for the FY 2020-21 is disposed of.

Sd/-

(S. K. PARHI)
MEMBER

Sd/-

(U. N. BEHERA)
CHAIRPERSON