

***Summary of ARR & Tariff Filings***

Submitted by

***OHPC***

For

***FY 2021-22***

## SUMMARY OF ARR PROPOSAL OF OHPC FOR FY 2021-22

### 1. Installed Capacity

The installed capacity of various Hydro Stations owned by Odisha Hydro Power Corporation (OHPC) is 2087.50(2027.50+ 60) MW including Odisha share of Machhkund. The Installed Capacity of MHEP is 120MW (i.e. 17MW x 3 = 51MW and 23MW x 3 = 69MW). So the 50% Odisha Share from MHEP being 60 MW, has been considered for computation of total IC of OHPC.

### 2. Design Energy of OHPC Stations

The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of Tariff. The approved Design Energy of OHPC Power Stations for the FY 2020-21 is given in the table below:

**Design energy for FY 2020-21**

(in MU)

Sl. No.	Name of the Power Station	Design Energy (DE)	Design Energy for sale
1	RHEP	525.00	519.75
2	UKHEP	832.00	823.68
3	BHEP	1183.00	1171.17
4	HHEP	684.00	677.16
5	CHEP	490.00	485.10
Sub Total of Old Power Stations		3714.00	3676.86
6	UIHEP	1962.00	1942.38
<b>Total</b>		<b>5676.00</b>	<b>5619.24</b>

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

**“The compensation claimed towards hydrology failure is not to be allowed in view of the Commission’s earlier orders dt.10.06.2005 & dt.23.03.2006 wherein OHPC was directed to maintain a separate fund to deposit the revenue earnings out of sale of secondary energy which shall be utilized to replenish the shortfall in revenue due to lesser generation by OHPC in years of hydrology failure to provide necessary comfort to the consumers of the state. {Para 6.5(e) of Order dt.10.06.2005}.”**

The gross actual generation achieved by different power stations of OHPC for the last five years are given in the table below:

(in MU)

Sl. No.	Name of the Power Station	Design Energy (DE)	Saleable Design Energy (DE)	Actual Gen. of 2015-16	Actual Gen. of 2016-17	Actual Gen. of 2017-18	Actual Gen. of 2018-19	Actual Gen. of 2019-20
1	RHEP	525.00	519.75	606.17	553.51	762.54	745.97	647.71
2	UKHEP	832.00	823.68	727.82	620.01	675.65	923.88	813.04
3	BHEP	1183.00	1171.17	599.83	998.53	1475.07	1677.63	1510.40
4	HHEP	684.00	677.16	457.09	535.88	614.07	380.69	502.25
5	CHEP	490.00	485.10	216.76	200.57	219.11	158.51	234.0
6	UIHEP	1962.00	1942.38	1654.16	1522.91	1740.82	2142.60	2234.19
<b>Total</b>		<b>5676.00</b>	<b>5619.24</b>	<b>4261.84</b>	<b>4431.41</b>	<b>5487.26</b>	<b>6028.68</b>	<b>6004.23</b>

OHPC has calculated the revenue earning out of sale of secondary energy from FY 1996-97 to FY 2019-20. As observed the secondary energy fund has always remained in deficit, which is approximately Rs 246.78Cr. as on 31.03.2020.

OHPC have received total amount Rs 0.219 Cr. in FY 2019-20 towards energy compensation charges. Though OHPC was adjusting this amount in the secondary energy fund, but CAG of India has observed to keep this compensation in a separate account, as the matter is under sub-judice in the Court of Law.

Govt. of Odisha communicated to OERC its suggestions/views/comments on various issues involving tariff setting for the year 2016-17 having a direct bearing on fixation of tariff for the year 2016-17 vide their letter No.2091 dated 11.03.2016. DoE, GoO has viewed the following on generation of HHEP, Burla below 595ft of Hirakud

The response of DoWR/ DoE is still awaited. After getting Notification the reduction of Design Energy of HHEP, Burla & CHEP, Chiplima can be done in the Tariff computation.

Pending decision from DoE/ DoWR, OHPC has not considered reduction in Design Energy of HHEP, Burla & CHEP, Chiplima due to restriction in Generation at HHEP, Burla below RL 595ft in Hirakud Reservoir.

Considering the above facts, OHPC proposes the following Design Energy for its Power stations for computation of tariff for the FY 2021-22.

**Proposed Design Energy for FY 2021-22**

(in MU)

Sl. No.	Name of the Power Station	Design Energy approved for FY2020-21	Saleable Design Energy approved for FY 2020-21	Design Energy proposed for FY 2021-22	Saleable Design Energy proposed for FY 2021-22
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	<b>660.516</b>
5	CHEP	490.00	485.10	490.00	485.10
<b>Sub Total of Old Power Stations</b>		<b>3714.00</b>	<b>3676.86</b>	<b>3714.00</b>	<b>3660.216</b>
6	UIHEP	1962.00	1942.38	1962.00	1942.38
<b>Total</b>		<b>5676.00</b>	<b>5619.24</b>	<b>5676.00</b>	<b>5619.24</b>

OHPC pray before the Hon'ble Commission to approve the proposed Saleable Design Energy of different power stations of OHPC for FY 2021-22 as furnished in the Table above. Further the deficit of secondary energy fund amounting to Rs 246.78Cr may kindly be recognized.

**3. Reservoir Level and Anticipated Generation for FY 2021-22**

The Reservoir Level of OHPC Power Stations as on 15.11.19 vis-à-vis on 25.11.20 is given below:

**Reservoir level of power stations**

Sl. No.	Reservoirs	As on 15.11.2019	As on 15.11.2020
1.	Rengali	123.78mtr.	120.41 mtr.
2.	Kolab	857.19 mtr.	852.74 mtr.
3.	Balimela	1513.90 ft.	1502.00 ft.
4.	Hirakud	629.87 ft.	627.87 ft.
5.	Indravati	640.47 mtr.	637.56 mtr.

The actual generation of different Power Stations under OHPC from 01.04.2020 up to 17.11.2020 and anticipated generation up to 31.03.2021 for the FY 2020-21 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.

### Actual /Anticipated Energy Generation

Sl. No.	Name of the power stations	Actual generation from 01.04.20 up to 17.11.20 (in MU)	Anticipated generation from 18.11.20 to 31.03.21 based on DoWR& DoE Schedule (in MU)	Total Anticipated generation for the FY 2020-21 based on DoWR& DoE Schedule (in MU)
1.	RHEP	879.1718	234.367	1113.539
2.	UKHEP	568.688	165.133	733.821
3.	BHEP	1198.123	447.600	1645.723
4.	HHEP	494.824	143.200	638.024
5.	CHEP	245.047	86.600	331.647
6.	UIHEP	1343.9745	539.200	1883.175
<b>Total</b>		<b>4729.828</b>	<b>1616.10</b>	<b>6345.928</b>

The extra/ shortfall in generation from the design energy of the respective Power Stations shall be accounted towards the secondary energy fund as per Order of the Commission.

#### 4. Project Cost

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. 254/96dtd. 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, 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 Crores as per the Notification No. 1068 Dtd. 29.01.2003 of DoE, GoO.

OHPC, based on the Audited Accounts of FY2019-20(prepared as per INDAS 2015), has considered the additional capitalization of Rs26.859Crs for calculation of Tariff for FY2021-22 details of which is furnished.

OERC had approved Rs18.55Crs as decapitalization of the asset of different power stations of OHPC from FY2011-12 to FY2018-19. There is de-capitalization of Rs 0.245 Cr in case of Old power stations of OHPC & Rs0.277Cr in case of UIHEP for FY 2019-20. Thus the total decapitalization of Old power station from FY2011-12 to FY2019-20 is Rs13.905Crs which has been deducted from the Historic Cost. Similarly Rs4.912Crs towards decapitalization of UIHEP has been deducted from its project cost for determination of Tariff.

## Project Cost for tariff Calculation for FY 2021-22

(in Rs. Cr.)

Name of the power stations	Historic Cost as on 01.04.1996	Asset reduction during FY 2011-12 to FY 2019-20	New additions proposed in Tariff calculation FY 2021-22	Project Cost considered Tariff calculation based on Historic Cost
1	2	3	4	5=2+4-3
RHEP	91.09	0.09	61.40	152.40
UKHEP	108.31	0.49	27.15	134.97
BHEP	115.42	0.53	224.49	339.38
HHEP	72.75	11.51	265.91	327.15
CHEP	92.23	1.28	51.74	142.69
<b>Sub Total</b>	<b>479.80</b>	<b>13.90</b>	<b>630.69</b>	<b>1096.59</b>
UIHEP	1194.79 (approved project cost)	4.91	55.99	1245.87
<b>Total</b>	<b>1674.59</b>	<b>18.82</b>	<b>686.68</b>	<b>2342.45</b>

Note: Project cost approved for UIHEP after CoD is Rs 1194.79.Cr

### 5. Determination of Annual Fixed Cost

OERC (Terms and conditions for determination of Generation Tariff) Regulations, 2020 that specifies methodology for computation of tariff for supply of electricity from a hydro generating station. The tariff shall comprise 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 capital
- c. Depreciation
- d. Operation and Maintenance expenses
- e. Interest on working capital

#### a. Return on equity (ROE):

Based on the Commission's tariff order dtd 19<sup>th</sup> April, 2002 and subsequent government notification the ROE to OHPC was allowed on new investments made after 01.04.1996. According to Clause No. 4.5 & 4.6 of OERC (Terms and conditions for determination of Generation Tariff) Regulations, 2014 the Return on Equity shall be computed @16% of the equity amount. Also as per the provisions made in the said clause the income tax of the Generating Company shall be recovered from the beneficiaries (income tax on other income streams shall not be considered).

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 decapitalization for FY 2018-19. 30% of this additional capitalization is considered as equity base.

Moreover, OHPC has paid Rs 48.2469Cr. towards income tax for FY 2019-20 on the core business.

**Computation of RoE for different power stations of OHPC for FY 2021-22**  
(in Rs. cr.)

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 2021-22 (in Crs)	RoE approved by OERC for 2020-21 (in Crs)
1	2	3	4=2*3	5=16% of 4	6
RHEP	61.402	30	18.421	2.947	2.484
UKHEP	27.154	30	8.146	1.303	1.034
BHEP	224.492	30	67.348	10.776	10.663
HHEP	265.906	30	79.772	12.764	12.648
CHEP	51.735	30	15.521	2.483	2.422
UIHEP	1245.87	25&30	314.267	50.283	49.653
Total	1876.56		503.474	<b>80.556</b>	<b>79.267</b>

Thus, OHPC has appealed before the Commission to approve Rs. 80.556 Crs. as RoE for FY 2021-22 for different power stations of OHPC.

**b. Interest on loan**

The loan liabilities on OHPC consist of state Government loan, PFC loans and Normative Loans. The State Government loan liabilities outstanding as on 01.04.1996 is given in the table below:

**Loan liabilities transferred to OHPC by State Govt.**

(Rs.inCrs)

Sl. No.	Description of loan	Amount as on 01.04.1996
1.	9.8% loan	39.20
2.	13% loan (UIHEP)	497.86
3.	Interest free loan (UIHEP)	132.14
4.	13% loan (Potteru)	14.30
5.	Zero Coupon Bond-I	383.10
6.	Zero Coupon Bond-II	383.10

Commission in the para 65 of Tariff approval of OHPC for the FY 2018-19 has stated as follows:

“.....Government of Odisha communicated its suggestions/views/comments on various issues involving tariff setting for the year 2018-19 including subsidy / subvention and other important matters having a direct bearing on fixation of tariff for the year 2018-19 vide their letter No.ELC-OERC-03/2018/2253 dated 12.03.2018.

“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 present difficult situation, the Govt. agrees to extend the status-quo on up-valuation till 2018-19.”

Considering the difference in opinion in the debt servicing of the government investment in UIHEP between the DoE, GoO and OERC, the OHPC is of the view that, both DoE, GoO and OERC may agree to a single decision which will not put OHPC into trouble in Tariff computation of OHPC Power Stations.

**Present Status of UIHEP Govt. Loan based on the approvals of OERC**

**(Rs. 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 2020-21 @ Rs30.23 Crore	332.53
Loan Repayment made till FY 2019 -20 & to be paid for FY2020-21	332.53
Balance Outstanding Loan as on 01.04.2021	165.33Crore
Cumulative interest on UIHEP Govt. Loan from FY 2006-07 to FY 2020-21 @ 7%	394.73 Crore(Govt. proposed to consider as regulatory asset )
Cumulative interest on normative loan from FY 2001-02 to FY 2020-21 @ 7%	118.39 Crore (Not paid)

PFC loan of Rs319.49 has already been repaid in full by FY 2009-10. OHPC has so far paid Rs302.30 Cr to Govt. by March 2020. The depreciation approved for FY 2020-21 for Rs 30.23Cr shall be paid by the end of this Financial Year (2020-21). 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 2020-21 stands at Rs394.73Cr.

**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 of Normative loan not approved by the Commission.

Commission in the Para 131 of Compendium of Tariff Order of OHPC for FY 2013-14 has observed that “*after the total repayment of Govt. loan as approved above, this loan repayment may start 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 UIHEP Loan Liability as on 31.03.2040**

- i) PFC loan of Rs319.49 Crs will stand repaid.
- ii) Govt. Loan of Rs 497.86Cr. shall stand repaid. Normative loan of Rs 78.74 Cr shall stand repaid.
- iii) Cumulative depreciation passed in the Tariff Upto FY2028-29 shall be Rs319.49Cr +Rs497.86Cr + Rs78.74Cr = Rs896.09Cr.(stands repaid)
- iv) Balance Depreciation to be recovered within the balance useful life i.e. upto FY2039-40 = Rs1075.311Crs (90% of project cost) – Rs896.09Cr( Cumm. Dep. Recovered) = Rs179.22Cr.(not recovered)----- (a)
- v) Cumulative Interest on Govt. Loan of UIHEP starting from FY2029-30 to FY2039-40 @Rs30.23Crs will be partly paid and balance unpaid amount not approved by Commission shall stand at Rs33.65Cr.(not recovered) ----- (b)
- vi) Cumulative Interest on normative loan not approved by the Commission shall stand at Rs 160.92Cr.(not recovered) ----- (c)

Total liability of UIHEP Loanas on 31.03.2036 will beRs 373.79 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 2021-22 based on PFC interest rate applicable to BHEP. Similarly, the normative loan of HHEP, Burla is considered @ 8.75 % for FY 2021-22 based on PFC interest rate applicable to HHEP. The Normative loan of UIHEP due to the additional capitalization based on audited accounts of FY 2019-20 is considered @7% being the prevailing rate of interest for State Govt. Loan as per the OERC tariff norms.

Commission has never allowed interest and/or principal of the Normative Loan of Rs 78.74Crs in previous Tariff approvals of OHPC. The accumulated interest calculated upto

31.03.2021 will be Rs 118.39Crore at the prevailing rate of interest of State Govt. Loan @7%.

Hence, based on the earlier directions of the OERC, OHPC has not considered the impact of interest on Govt Loan & Normative Loan of UIHEP in the Tariff Calculation of OHPC for the FY2021-22. 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.

**Statement of Outstanding Loan & Interest thereon for the FY 2021-22**

**(Rs. in Crs.)**

<b>Sl. No.</b>	<b>Source of Loan</b>	<b>Loan O/S as on 01.04.2021</b>	<b>Interest on Loan for the FY 2021-22</b>
1	State Govt. Loan of UIHEP @7%*	165.33	0.00
2	Normative Loan of Rs78.74Cr for UIHEP, Mukhiguda @ 7%	78.74	0.00
3	Normative Loan for Add. Cap. FY2015-16 to FY 2019-20 Chiplima @ 9.80%	2.05	0.171
4	Normative Loan for Add. Cap. . FY2015-16 to FY 2019-20 UKHEP@ 9.80%	5.14	0.45
5	Normative Loan for Add. Cap. . FY2015-16 to FY 2019-20 HHEP@ 8.75%	22.31	1.590
6	Normative Loan for Add. Cap. . FY2015-16 to FY 2019-20 BHEP@ 9.6%	4.70	0.38
7	Normative Loan for Add. Cap. . FY2015-16 to FY 2019-20 RHEP@ 9.80%	2.25	0.19
8	Normative Loan for Add. Cap. . FY2015-16 to FY 2019-20 UIHEP@ 7.0%	25.401	1.522
9	Normative Loan for R&M of Unit #1, Rengali @ 9.80%	3.55	0.26
10	Normative Loan for R&M of Unit #2, Rengali @ 9.80%	4.92	0.40
<b>Total</b>		<b>314.38</b>	<b>4.97</b>

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

**Interest on loan of different power house of OHPC**

(Rs. Cr.)

Sl. No.	Source of loan	Interest on loan for FY 2021-22						(Rs. In Crs)
		RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	TOTAL
1.	Normative loan	0.854	0.446	0.383	1.590	0.171	1.522	4.968
2.	Govt. Loan	-	-	-	-	-	-	-
<b>Total</b>		<b>0.854</b>	<b>0.446</b>	<b>0.383</b>	<b>1.590</b>	<b>0.171</b>	<b>1.522</b>	<b>4.968</b>

**Therefore OHPC prays before the Hon’ble Commission to approve Rs 4.968Crs. in the tariff of OHPC for the FY2021-22 for payment of Interest towards Normative Loans of the different Power Stations of OHPC as mentioned in the above table.**

**c. Depreciation**

Depreciation is the refund of capital subscribed and is a constant charge against an asset to create a fund for its replacement.

Honorable Commission at clause no. 4.21 of OERC (Terms and Conditions for determination of generation tariff) Regulations, 2014 has specified for OHPC as follows:

**“Provided that for existing plants of OHPC as per the direction of the High Court of Orissa, depreciation will be calculated at pre-1992 norms notified by Government of India on the book value of the assets.”**

OHPC has computed depreciation for the FY 2021-22 @ 2.57% on the Historic project cost as on 01.04.1996 (excluding de-capitalization) plus an additional capitalization w.e.f. 01.04.1996up to FY 2019-20 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.

UIHEP depreciation is calculated based on straight line method following which 90% of the project cost shall be recovered on the last year of the project life i.e., FY 2034-35. By the way Commission is allowing Rs30.23Cr annually under depreciation for repayment of State Govt. loan starting from the FY2010-11 onwards as per the order at Para No. 131 of the Compendium of OHPC Tariff Order for FY 2013-14.

For depreciation on the additional capitalization up to 2018-19 and for additional capitalization of FY 2019-20(Audited), OHPC has calculated the normative loan repayment of different power stations as per the terms approved by the OERC.

The comparative statement for actual repayment of loans and depreciation @2.57% for the FY 2021-22 as shown in the table below to arrive at the depreciation amount to be claimed in the ARR & Tariff of OHPC for the FY 2021-22.

**Depreciation Claim for the FY 2021-22 (Rs. in Crs)**

Sl. No.	Power Stations	Project Cost	Loan Repayment Amount	Depreciation @ 2.57%	Depreciation Claimed	Remark
1.	RHEP	152.40	3.99	3.92	3.99	Equal to loan Repayment
2.	UKHEP	134.97	1.16	3.47	3.47	Depreciation @ 2.57%
3.	BHEP	339.38	1.41	8.72	8.72	Depreciation @ 2.57%
4.	HHEP	327.15	8.26	8.41	8.41	Depreciation @ 2.57%
5.	CHEP	142.69	0.61	3.67	3.67	Depreciation @ 2.57%
6.	UIHEP	1245.87	37.54	32.02	37.54	Equal to loan Repayment
Total		2342.45	52.99	60.20	<b>65.80</b>	

**OHPC prays before Commission to approve Rs. 65.80 Cr towards depreciation for FY 2021-22.**

**d. Operation and Maintenance (O&M) Expenses:**

O & M Expenses has been calculated as per the Generation Tariff Regulations, 2020. Accordingly OHPC for computation of O&M Expense of different power stations of OHPC for the FY 2021-22 has escalated the approved O&M expenses for FY 2020-21 @ 5.72% as per the principle adopted by the Commission in earlier tariff orders of OHPC.

It may be noted here that OERC has deducted an amount of Rs10.075Crs from the O&M Expense of UIHEP, Mukhiguda towards the Dam Maintenance Expense received from DoWR for the FY 2019-20 while computing the O&M expenses of UIHEP for FY 2020-21. Assuming the same principle, OHPC has deducted Rs10.075Crs from the escalated O&M expenses of UIHEP for the FY 2021-22.

**Statement of O & M Expenses for different power stations of OHPC for FY2021-22  
(Rs.in Cr.)**

Sl. No.	Particulars	RHE P	UKH EP	BHEP	HHE P	CHEP	Sub Total	UIHEP	CO	Total
1	O & M expenses for FY 2020-21 Approved by OERC.	53.19	54.56	47.64	57.35	27.58	240.32	87.48	27.69	355.49
2	O & M expenses for FY 2021-22 with escalation @ 5.72% over FY 2020-21	56.23	57.68	50.37	60.63	29.16	254.07	92.48	29.27	375.82
3	Corporate Office expenses apportioned to different units under OHPC based on Installed Capacity	3.61	4.62	7.36	3.98	1.04	20.61	8.66	29.27	
4	<b>Total O &amp; M Expenses for the FY 2021-22</b>	<b>59.84</b>	<b>62.30</b>	<b>57.73</b>	<b>64.61</b>	<b>30.20</b>	<b>274.68</b>	<b>101.15</b>		<b>375.82</b>
<b>Less: Amount Received from DoWR.</b>										
5	Less : Income to be received from DOWR towards dam maintenance of UIHEP							(-) 10.075		(-) 10.075
6	<b>Total O&amp;M Expenses for the FY 2021-22</b>	<b>59.84</b>	<b>62.30</b>	<b>57.73</b>	<b>64.61</b>	<b>30.20</b>	<b>274.68</b>	<b>91.072</b>		<b>365.749</b>

OHPC prays before the Hon'ble Commission to approve Rs365.749Crs towards O&M Expenses for the FY 2021-22 for the different Power Stations of OHPC as mentioned in the above table.

**e. Interest on Working Capital**

OERC at clause no. 24(4) of the OERC (Terms & Conditions for determination of Generation Tariff) Regulation, 2020

The Reserve Bank of India has issued guidelines for setting lending rate (on loans) by commercial banks under the name Marginal Cost of Funds based Lending Rate (MCLR). This MCLR will replace the prevailing SBI base rate from April 2016 onwards. The MCLR

as on 1st April 2020 of SBI for one year was 7.75%. OHPC has considered the MCLR rate of SBI as on 01.04.2019 plus 300 basis point for computation of Interest on working capital. Hon'ble Commission may approve the same.

Accordingly, based on the above principles OHPC has calculated the Interest on working Capital of different power stations of OHPC for the FY 2021-22 in the table below:

Table below summarizes the station wise interest on working capital as proposed by the OHPC for FY 2021-22.

### **Interest on Working Capital for FY 2021-22**

(Rs. in Crs)

Sl. No	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	Receivables equivalent to two months of fixed cost	11.73	11.72	13.42	15.10	6.33	58.30	31.01	89.31
2	Maintenance spares @ 15% of O&M expenses	8.98	9.35	8.66	9.69	4.53	41.20	13.66	54.86
3	O&M expenses for one month	4.99	5.19	4.81	5.38	2.52	22.89	7.59	30.48
4	Total working capital	25.70	26.26	26.89	30.18	13.37	122.39	52.26	174.65
5	Interest on working capital calculated @ 10.75%	<b>2.762</b>	<b>2.823</b>	<b>2.890</b>	<b>3.244</b>	<b>1.437</b>	<b>13.157</b>	<b>5.618</b>	<b>18.775</b>

OHPC prays before the Hon'ble Commission to approve Rs 18.775Crs towards Interest on Working Capital for the FY 2021-22 for the different Power Stations of OHPC as mentioned in the above table.

### **Annual Revenue Requirement (ARR) & Tariff for the FY 2021-22**

Based on the above parameters the power station wise ARR and tariff of OHPC have been calculated for the FY 2021-22as follows:

The values of ARR along with its different components and the average tariff computed considering the Saleable Design Energy of 5619.24 MU for the FY 2021-22 is shown in the table below.

**Station wise ARR and Tariff for the FY 2021-22 considering saleable D.E. of 5619.24 MU**

<b>Details expenses</b>	<b>RHEP</b>	<b>UKHEP</b>	<b>BHEP</b>	<b>HHEP</b>	<b>CHEP</b>	<b>Sub Total</b>	<b>UIHEP</b>	<b>Total</b>
Existing Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
(Rs. in Crs.)								
Return on Equity	2.947	1.303	10.776	12.764	2.483	30.273	50.283	80.556
Interest on Loan	0.854	0.446	0.383	1.590	0.171	3.445	1.522	4.968
Depreciation	3.992	3.469	8.722	8.408	3.667	28.258	37.541	65.799
O&M Expenses	59.842	62.301	57.729	64.608	30.197	274.677	91.072	365.749
Interest on working capital	2.762	2.823	2.890	3.244	1.437	13.157	5.618	18.775
<b>Total ARR</b>	<b>70.398</b>	<b>70.342</b>	<b>80.500</b>	<b>90.614</b>	<b>37.956</b>	<b>349.811</b>	<b>186.035</b>	<b>535.846</b>
<b>Average Tariff (p/u)</b>	<b>135.45</b>	<b>85.40</b>	<b>68.73</b>	<b>133.81</b>	<b>78.24</b>	<b>95.14</b>	<b>95.78</b>	<b>95.36</b>

**6. Two-Part Tariff**

As per clause no. 28 of the OERC (Terms and conditions for determination of Generation Tariff) Regulation 2020, 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:

$$PAFM = 10000 \times \sum_{i=1}^N DC_i / \{N \times IC \times (100 - Aux)\} \%$$

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<sub>i</sub> = Declared Capacity (in ex-bus MW) for the i<sup>th</sup> 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.

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

Where,

DE = Annual design energy specified for the hydro generating station in MWh, subject to provisions in Clause-3 (1) (s) of CERC tariff regulations 2020.

Accordingly, annual capacity charges, annual energy charges and energy charge rate of different power stations of OHPC for FY 2021-22 is shown below.

#### Capacity charge and energy charge of OHPC power stations for FY 2021-22

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	70.398	35.199	35.199	519.75	67.723
UKHEP	70.342	35.171	35.171	823.68	42.700
BHEP	80.500	40.250	40.250	1171.17	34.367
HHEP	90.614	45.307	45.307	677.16	66.907
CHEP	37.956	18.978	18.978	485.10	39.122
UIHEP	186.035	93.017	93.017	1942.38	47.888



OHPC prays before the Hon'ble Commission to approve the ACC, AEC & ECR of its power stations as indicated in Table above for the FY 2021-22.

#### 7. Application Fee and Publication Expenses

As per the OERC tariff regulation 2020, 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 FY2021-22. OHPC may be allowed to recover the same amount from GRIDCO. So considering Rs1.50 Lakhs reimbursement towards publication expenses, Hon'ble OERC may kindly approve Rs26.70Lakhs to be reimbursed from GRIDCO.

#### Application Fees and Publication Expenses

(Rs. In lakhs)

Sl. No.	Particulars	Amount to be reimbursed
1	Application fee for FY2021-22	25.00
2	Publication expenses for FY2021-22	1.50
3	Differential Publication Expense of FY2019-20	0.209
3	Differential Publication Expense of FY2020-21	0.299
	<b>Total</b>	<b>27.008</b>

#### 8. Electricity Duty on Auxiliary Consumption

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.

Based on the subsequent implementation of 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.

Further in pursuance to Sub-section-I of Section-3 of Orissa Electricity (Duty) Act-1961 and supersession to the Govt. Notification No 9539 BT(ed)-01/2016-En dated 27.12.2016, 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 as per the Gazette Notification No. 912 dtd. 12.05.2017. Accordingly OHPC has computed ED @55paise per Unit for all power station for FY 2021-22 as reimbursement.

**ED claim for OHPC power station for FY 2021-22**

**(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

Hence, OHPC pray before the OERC to approve reimbursement of ED amounting to Rs3.122Cr from GRIDCO which may kindly be provisioned in the ARR.

**9. 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 FY2019-20 & @1.4paise/ unit for FY 2020-21 and got reimbursed from GRIDCO. Accordingly OHPC shall pay Licence Fee on water used for generation of electricity for FY 2021-22 @1.5paise/ unit

**License fee for Consumption of water for generation of electricity FY 2021-22**

**(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	0.788	OHPC will claim reimbursement @Rs 0.015/Kwh on actual generation of each Power Station.
UKHEP	832	1.248	
BHEP	1183	1.775	
HHEP	684	1.026	
CHEP	490	0.735	
UIHEP	1962	2.943	
Total	5676	<b>8.514</b>	

Hence, OHPC prays before the Hon'ble Commission for approval of provisional amount of Rs8.514 Cr 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 FY2021-22 .

#### 10. SLDC Charges

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. Commission has fixed Rs.7022.14/MW/Annum to be collected from the generators towards annual charges of SLDC for the FY2020-21.

The Commission has approved for Rs.1.19Cr. for the FY 2020-21, which is to be collected by SLDC from OHPC on monthly basis and OHPC has to reimburse the same from GRIDCO. Since OHPC has not received the ARR, fees & charges of SLDC for the FY 2021-22, the previous year approved charges applicable to OHPC has been escalated @5.72% to arrive at the charges payable by OHPC for the FY 2021-22.

Accordingly, Rs. 1.2580Crs. has provisionally been considered as fees & charges of SLDC payable by OHPC on the average available Installed Capacity of 1708 MW

#### 11. Reimbursement of Contribution Made to ERPC

Annually OHPC is paying Rs15Lakhs towards contribution to ERPC Establishment Fund & Rs01 Lakh towards contribution to ERPC Fund. Assuming the same claim of ERPC, OHPC has claimed this amount of Rs 16.0 Lakhs as a pass through in the tariff for FY 2021-22 to be reimbursed from GRIDCO. Any excess claim (above Rs16.0 Lakhs) made by ERPC for the FY 2021-22 will be claimed as additional reimbursement in the subsequent Tariff year.

#### 12. Income Tax

Income Tax paid by OHPC for the FY2019-20 is detailed below:

##### Income Tax paid by OHPC for the FY 2019-20

Particulars	Amount (Rs in Lakhs)	Amount of TAX Paid @34.9444% (Rs in Lakhs)
Core Income	56286.98	4824.69
Non-Core Income (FD interest)	11878.49	4150.82
Total income before meeting all expenses.	68165.47	8975.51

Accordingly, OHPC is entitled to get reimbursement of Rs 48.2469Crs towards income tax for FY 2019-20 on core business amounting to Rs562.8698Cr.

#### 13. Details of Reimbursement Cost:

Total reimbursement cost claimed for the FY 2021-22 is given in the table below.

### Details of Reimbursement for FY 2021-22

<b>Component of Costs</b>	<b>RHEP</b>	<b>UKHEP</b>	<b>BHEP</b>	<b>HHEP</b>	<b>CHEP</b>	<b>UIHEP</b>	<b>Total</b>
(a) License fee for use of water for generation of electricity for FY 2021-22.	0.788	1.248	1.775	1.026	0.735	2.943	<b>8.514</b>
(b) ED on Auxiliary Energy Consumption for FY2021-22.	0.289	0.458	0.651	0.376	0.270	1.079	<b>3.122</b>
(c) Differential ED on Auxiliary Energy Consumption for period 05.11.2016 to 31.03.2017.	0.126	0.199	0.284	0.163	0.117	0.470	<b>1.359</b>
(d) SLDC charges							<b>1.2580</b>
(e) Application fees and publication expenses for FY2021-22							<b>0.265</b>
(f) Differential publication expenses for FY2019-20							<b>0.021</b>
(g) Differential publication expenses for FY2020-21							<b>0.029</b>
(h) ERPC charges							<b>0.16</b>
(i) Income Tax as per Audited Account of FY 2019-20							<b>48.2469</b>
<b>Total</b>							<b>62.9749</b>

Thus, the Commission may approve the total reimbursement of Rs62.9749Cr. as proposed by OHPC in table above. The above expenditure may be included in GRIDCO's ARR and hence shown as revenue requirement in OHPC filing for FY 2021-22.

#### **14. Tariff for Energy Billing to CSPDCL:**

The erstwhile Chhattisgarh State Electricity Board (CSEB), presently Chhattisgarh State Power Distribution Company Limited (CSPDCL) drawing energy from Hirakud generation towards 5MW share of Chhattisgarh State (erstwhile share holder being Madhya Pradesh) is taking a plea since the FY 2006-07 to pay the energy charges at the tariff approved by the Commission for HHEP, Burla, applicable for the consumers of Odisha, considering the supportive measures extended by the Govt. of Odisha which is considerably less than the actual cost of generations from HHEP on which billing is made to them as per the Minutes of Meeting dtd. 24.12.2004.

Commission have provisionally fixed the ECR for billing to CSPDCL for the FY 2015-16 to FY 2020-21. OHPC is in the process of truing up of the expenditure for its power stations which will be filed before OERC for approval. Considering the approved up-valued project cost of HHEP after truing-up, OHPC shall compute the ECR for billing to CSPDCL from the FY 2006-07 onwards, and file an application before the Hon'ble Commission for approval of the same. However for coming FY 2021-22 OHPC has computed the tariff for

billing of Energy to CSPDCL as per the CERC (Terms and Conditions of Tariff) Regulation'2019 as furnished at Table below.

**Tariff for CSPDCL for 2021-22**

<b>Details of Expenses HHEP</b>	<b>Amount (Rs in Crs)</b>
Salable Design Energy of HHEP	677.16 MU
Project Cost (Up-valued cost as on 01.04.1996 + Capitalization up to 31.03.2020 - Decapitalization)	384.56Cr
Return on Equity (@ 25.3629%)	29.26
Interest on Loan	3.40
Depreciation (@ 5.28%)	20.30
O & M expenses (Escalated @ 4.77%)	64.04
Interest on Working Capital (@ 11.25%)	4.47
Total ARR	121.89
Average Tariff (p/u)	180.003

OHPC prays Commission approve the tariff for energy billing to CSPDCL @ 180.003 paisa/unit for the FY 2021-22.

**15. Annual Revenue Requirement & Tariff for Machhkund H.E. (Jt.) Scheme**

The total expected annual expenditure towards 50% power purchase cost from MHEP is calculated to be Rs. 65.3580 Crores for FY 2021-22. The cost per unit is Rs 2.5150 considering drawal of 50% share of saleable design energy of Machhkund i.e. 259.875 MU. The Final bill received from APGENCO towards 30% share of O&M expenditure payable by OHPC to APGENCO for FY 2019-20 amounting to Rs 64.48768 Crores

**Projected Tariff of Machhkund H. E. (J) Scheme for FY 2021-22**

<b>PROJECTED TARIFF OF MACHHKUND (JT.) HEP FOR 2021-22</b>	
	<b>2021-22</b>
<b>Present Installed Capacity of MHEP (Jt.) Scheme (MW)</b>	<b>120</b>
<b>(50%) Odisha Share as per New Agreement dated 23.10.2020 (MW)</b>	<b>60</b>
<b>Design Energy of MHEP for Generation (MU)</b>	<b>525</b>
<b>Normative Auxiliary Energy Consumption (AUX) (%)</b>	<b>1%</b>
<b>Normative Auxiliary Energy Consumption (AUX) (MU)</b>	<b>5.25</b>
<b>Saleable Design Energy for sharing between Andhra Pradesh &amp; Odisha (MU)</b>	<b>519.75</b>
<b>(50%) Saleable Design Energy Share of Odisha (MU)</b>	<b>259.875</b>
<b>Drawal of Toal Share of Odisha Energy by GRIDCO (MU)</b>	<b>259.875</b>
<b>O&amp;M Escalation factor @ 5.72 % for two years over the O&amp;M Bill of MHEP for FY 2019-20.</b>	<b>1.1177</b>
	<b>(Rs. in Crs.)</b>

<b>Total Audited Cost of O&amp;M Bill of MHEP (Jt.) for the FY 2019-20</b>	<b>64.48768</b>
<b>50% O&amp;M Expenditure share (Orissa share of Actual O&amp;M Expenditure for 2019-20 )</b>	<b>32.2438</b>
<b>1. Payment of 20% share of Present Depreciated Project Cost of MHEP (Jt.) by OHPC</b>	<b>27.4200</b>
<b>2. O&amp;M Expenditure for FY 2021-22 applying the escalation factor</b>	<b>36.0380</b>
<b>3. The provisional interest on the above investment of Rs 27.42 Crores @ Bank rate of SBI i.e. 10.75%.</b>	<b>1.60</b>
<b>4. The provisional interest liability on advance payment towards 15% of annual O&amp;M Expenditure of Rs 5.50 Crores.</b>	<b>0.30</b>
<b>Total Expected Expenditure during the FY 2021-22</b>	<b>65.358</b>
<b>Tariff (Rs/Kwh)</b>	<b>2.5150</b>
OHPC shall raise monthly energy bills to GRIDCO at the tariff Rs 2.5150/kWh during the FY 2021-22 to make payment of O&M cost to APGENCO and recover the own expenditure of Rs 27.42 Crores along with interest accrued thereof as per the new Agreement.	
<b>Reimbursements of Statutory Dues/Duty/Cess: (Rs in Crores)</b>	
1. Actual ED @ 55 paise/kWh on AUX at the present level of 3% AUX on Odisha share of Design Energy of 262.50 MU: Rs 0.433125 Crores	
2. Water Cess @ 1.5 paise / kWh on Odisha share of Design Energy of 262.50 MU: Rs 0.39375 Crores	
<b>3. Total Reimbursement by OHPC from GRIDCO: Rs 0.826875 Crores</b>	

## 16. Normative Plant Availability Factor (NAPAF)

As per OERC Tariff Regulations, 2020 the 50% of the annual fixed cost of a generating station is to be recovered through capacity charge. OERC in Case No. 52 of 2019 had fixed the NAPAF of different power stations for the control period 2019-20 to 2023-24. After going through the above Order, OHPC Board of Directors in 157th meeting advised to file review petition before the OERC for review of the Order dated 20.03.2020 in Case No.52 of 2019 with a prayer to reduce NAPAF to a realistic achievement keeping in view the life of the machines vis-à-vis the performance of machines during last 5 years. In the context of non-consideration of NAPAF as proposed by OHPC for its power stations for the block period 2019-2024, which had been proposed in line with the principles/ guidelines set by Hon'ble CERC for the present block period, OHPC has filed a review petition with a prayer to review the Order dated 20.03.2020 in Case No. 52 of 2019 on the basis of errors apparent on the face of the record as well as sufficient reason for revision of the Order dated 20.03.2020 of the OERC.

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:

**Normative Plant Availability Factor proposed by OHPC for FY 2021-22**

Power Stations	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP
NAPAF (%)	77	81	81	65	68	88

**PRAYER**

OHPC pray before the Hon'ble Commission to kindly approve the following in the ARR & Tariff Order of OHPC Power Stations for the FY 2021-22:

- i) The ARR amounting to Rs 535.846Crs. of OHPC Power Stations at an average tariff @ 95.36 Paise/Unit.
- ii) The ACC, AEC & ECR of different Power Stations of OHPC.
- iii) The miscellaneous reimbursement of Rs 62.9749 Crore by OHPC from GRIDCO.
- iv) The tariff for energy billing to CSPDCL @ 1.80003 Rs / kWh considering Up-valued cost of HHEP and the norms of CERC (Terms & Conditions of Tariff) Regulations, 2019.
- v) The tariff of MHEP (Joint Scheme) @ 2.5150 Rs/unit with provision of Rs 65.358 Crores in the ARR of OHPC & GRIDCO to enable OHPC to make payment of O&M cost to APGENCO and recover the own expenditure of Rs 27.42 Crores including interest accrued thereof as per the new Agreement. Further, provision of an amount of Rs 0.826875 Crores for payment of statutory dues subject to actual truing up.
- vi) The average available Installed Capacity as 1708 MW for payment of SLDC charges.
- vii) The Power Station wise NAPAFs proposed by OHPC.

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