

Summary of ARR & Tariff Filings

Submitted by

OHPC

For

FY 2013-14

SUMMARY OF ARR PROPOSAL OF OHPC FOR FY 2013-14

Installed Capacity

- The total installed capacity of the various Hydro Stations owned by the Orissa Hydro Power Corporation (OHPC) is projected at 2062 MW for FY 2013-14 including Orissa's share of Machkund.

The installed capacity of different generating stations as reported by OHPC for the FY 2013-14 is given in the table below.

Table – 1
Installed capacity of OHPC stations

Sl. No.	Name of the Power Station	Installed Capacity (MW)	
		2012-13	2013-14
1	Rengali (RHEP)	250.00	250.00
2	Upper Kolab(UKHEP)	320.00	320.00
3	Balimela(BHEP)	510.00	510.00
4	Hirakud (HHEP)	275.50	275.50
5	Chiplima (CHEP)	72.00	72.00
6	Upper Indravati (UIHEP)	600.00	600.00
7	Machhakund (30% Orissa share)	34.50	34.50
Total		2062.00	2062.00

Design Energy of OHPC Stations

- The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of tariff. The hydro power station wise design energy proposed by OHPC for consideration during FY 2013-14 ARR and Tariff determination is given in the following table.

Table – 2
Design Energy for FY 2013-14

Sl. No.	Name of the Power Station	Design Energy (DE) (in MU)	Design Energy for sale (in MU)
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
Total		5676.00	5619.24

Reservoir Level and Anticipated Generation for FY 2013-14

- The reservoir level of Power Stations reported by OHPC as on 01.11.2012 vis-à-vis on 01.11.2011 is given below

Table – 3
Reservoir Level and Anticipated Generation for FY 2013-14

Sl No.	Reservoirs	As on 01.11.2011	As on 01.11.2012
1.	Rengali	123.26 (m)	122.95 (m)
2.	Kolab	849.76 (m)	856.54 (m)
3.	Balimela	1463.00 (ft)	1503.20 (ft)
4.	Hirakud	627.31(ft)	629.37 (ft)
5.	Indravati	630.70 (m)	639.60 (m)

The actual generation of different power stations under OHPC up to 31.10.2012 and anticipated generation up to 31st March 2013 is also provided as given below in table-4, taking into consideration the directives of the Govt. of Odisha.

Table – 4
Actual /anticipated energy generation for FY 2012-13

Sl. No.	Name of the power stations	Actual generation from 01.04.12 up to 18.11.12 (in MU)	Anticipated generation from 19.11.12 up to 31.03.13 (in MU)	Total
1.	RHEP	585.07	159.90	744.97
2.	UKHEP	266.67	200.53	467.2
3.	BHEP	243.34	413.19	656.53
4.	HHEP	575.78	145.56	721.34
5.	CHEP	194.26	112.62	306.88
6.	UIHEP	1126.16	584.50	1710.66
Total		2991.28	1616.3	4607.58

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 no 5207 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. The historical cost of old power station of OHPC is Rs.479.80 Crores. Further, Hon'ble Commission, in the Order dated 20.03.2008 has approved Rs.1195.42 crores as final capital cost of UIHEP for the purpose of determination of tariff.

OHPC has capitalized Rs. 25.36 Crs. in the FY 2012-13 towards R&M Works of Unit #1, RHEP, against approved project cost of Rs. 47.5Crs. During the R&M works of Unit #1, Rengali; it was observed that the Unit #1 turbine was not damaged. So, OHPC decided to use the existing turbine of Unit #1 to save further delay in commissioning and bring back the Unit before onset of Monsoon. However, OHPC proposes that the new turbine procured for Unit #1 will be used to replace the damaged turbine of Unit #2. The replacement of Unit #2 turbine along with the replacement works of auxiliaries like AVR & Governing system will be taken by OHPC shortly and will be capitalized in the subsequent year after due approval of Hon'ble commission.

OHPC has also made additional capitalization in Power house Electrical & Mechanical Works, Water Supply Installation, Electrical Installation & substation equipments of different Power Houses as mentioned below during the FY 2012-13 excluding the capitalization (Rs. 25.36 Crs.) of Unit #1, RHEP.

	Power House	Additional Capitalization (in Crs.)
1)	RHEP, Rengali	3.19
2)	BHEP, Balimela	2.07
3)	HHEP, Burla	0.22
4)	CHEP, Chiplima	0.16
	Total	5.64

Further, the OHPC has reduced the capital asset for Rs. 6.07 Crs. from HHEP, Burla; Rs. 0.03 Crs. from BHEP, Balimela & Rs. 0.7 Crs. from CHEP, Chiplima on account of reduction of assets during the FY 2011-12. The values of respective assets have been reduced and deducted from the Historical Cost as well as Revalued Cost of assets as on 01.04.1996 to get the reduced historical cost & reduced revalued cost as given below.

5. The reduced historical cost of Rs. 473 Crs. is considered for determination of Tariff.

Table- 5
Reduced Historical Cost and Reduced Revalued Cost

(Rs. in Crs.)

Sl No.	Name of the power station	Historical cost of asset as on 01.04.1996	Revalued cost of asset as on 01.04.1996	Reduction of assets during the FY 2011-12	Reduced historical cost as on 01.04.1996	Reduced revalued cost as on 01.04.1996
1	2	3	4	5	6 = 3 - 5	7 = 4 - 5
1	RHEP	91.09	259.01	0.00	91.09	259.01
2	UKHEP	108.31	307.96	0.00	108.31	307.96
3	BHEP	115.42	334.66	0.03	115.39	334.63
4	HHEP	72.75	130.16	6.07	66.68	124.09
5	CHEP	92.23	165.01	0.70	91.53	164.31
	Total (Old PS)	479.80	1196.80	6.80	473.00	1190.00

6. The project cost of OHPC power stations reported for computation of ARR for the FY 2013-14 is given in the table below:

Table- 6
Capital Cost proposed for FY 2013-14 (Rs. Crs.)

Sl. No.	Name of the power stations	Reduced Historical Cost as on 01.04.1996.	Reduced Revalued Cost as on 01.04.1996.	New additions up to 31.03.2013	Project cost considered for Tariff Calculation based on revised historical cost	Project Cost based on revalued cost
1	2	3	4	5	6=3+5	7=4+5
1.	RHEP	91.09	259.01	32.16	123.25	291.17
2.	UKHEP	108.31	307.96	14.11	122.42	322.07

3.	BHEP	115.39	334.63	211.69	327.08	546.32
4.	HHEP	66.68	124.09	201.42	268.10	325.51
5.	CHEP	91.53	164.31	42.98	134.51	207.29
	Total	473.00	1190.00	502.36	975.36	1692.36
6.	<i>UIHEP</i>	<i>Approved project cost</i>				1194.79

Determination of Annual Fixed Cost for FY 2013-14

7. Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2009 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):** Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per the following formula.

$$\text{Rate of pre-tax return on equity} = 15.5\% / (1-t)$$

Where “t” is the MAT rate payable by OHPC.

For the FY 2013-14, it is 18.50%.

The minimum alternate tax rate payable by OHPC is 20.00775%, including surcharge (7.5%) and Cess (3%).

$$\therefore \text{Rate of return on equity} = 15.50\% / (1 - 0.2000775) = 19.3768\%$$

The pre-tax return on equity @ 19.3768% has been considered for FY 2013-14 for OHPC power stations.

Based on the order of the Hon’ble Commission vide case no. 64/2008 dated 20.03.09 at clause no. 181, the historical cost of assets as on 01.04.96 has not been considered for ROE. The new capital additions made by OHPC from 01.04.96 up to 31.03.2012 has been taken for calculation of ROE with an equity base of 25% for HHEP and 30% for all other old power stations. For RHEP, an amount of Rs. 31 Crs. has been capitalized additionally towards addition of plant and machinery, substation equipments, electrical installation for unit-1, Rengali and other units which has been considered for computation of ROE. For UIHEP equity base of 25% on approved project cost minus infirm power cost has been considered for computation of ROE as given in the Table-7 below.

Table – 7
RoE proposed for FY 2013-14

(Rs. cr.)

Sl. No.	Name of the Power Station	Value of New capital addition from 01.04.1996 to 31.03.2013	Equity Capital Rate (%)	Value of Equity capital	ROE @19.3768% Proposed for 2013-14
1.	RHEP	32.16	30	9.65	1.87
2.	UKHEP	14.11	30	4.25	0.82
3.	BHEP	211.69	30	63.51	12.31
4.	HHEP	201.42	25	50.35	9.76
5.	CHEP	42.98	30	12.89	2.50
	Sub Total	502.35	-	140.65	27.26
6.	UIHEP	Project cost 1194.79	25	298.70	57.88
Total					85.14

- b. **Interest on loan:** The loan liabilities on OHPC consist of state Government loans and PFC loans. The State Government loan has been repaid by the FY 2012-13.

As per the order of the Commission dated 20.03.2010 in case no. 147/2009, Hon'ble Commission vide Commission letter dated 27.01.10 has advised the State Government that the effects of up-valuation of asset and moratorium on debt services of State Govt. loans may be kept in abeyance till the end of FY 2012-13, i.e., till the end of Control Period of Business plan instead of 2010-11. The State Government has agreed to modify the previous notification dated 20.03.2010 in line with the OERC suggestions in their Letter No. 2404 Dt. 21.03.2011. The revalued cost of the project has not been considered, moratorium on debt servicing to the state Govt. has been approved till the power sector turn around except the amount of loan from World Bank to the extent the state Govt. is required to pay to Govt. of India .. However, the OHPC was not considered entitled to any ROE till the sector become viable on cash basis. Further, after careful examination, the Finance Department, Govt of Odisha opined that the support extended by Govt could be continued till FY 2012-13 after which a review should be made by State Govt on the need for further extension of these measures to OHPC. However, OHPC has assumed extension of the concessions to be continued in FY 2013-14 and accordingly calculated interest on outstanding of PFC loans and normative loans.

The OHPC availed PFC loans in connection with R & M projects of HHEP, Burla and extension project of BHEP, Balimela.

Based on Para 106 and Para 107 of OERC tariff order for the FY 2012-13 for OHPC, the 7% loan on UIHEP has not been considered by OHPC in the tariff of FY 2013-14.

Since, 9.8% state Govt. loan has been repaid but, normative loans of the respective units are still pending, the normative loans of CHEP, RHEP & UKHEP is considered @ 9.8% as per Clause No. 5 of CERC Regulation, 2009

and @ 9.6% for BHEP, Balimela for FY 2013-14 based on PFC interest rate applicable to BHEP.

The Hydro station-wise interest payable on government / PFC loan and Guarantee Commission for FY 2013-14 as reported by OHPC is presented in Table No 8 below.

Table – 8
Interest on loan and G.C for FY 2013-14

(Rs. cr.)

Sl. No.	Source of loan	Interest on loan and G.C for FY 2013-14						
		RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	TOTAL
1.	PFC loan	-	-	3.93	1.38	-	-	5.31
2.	Normative loan	1.65	0.50	1.87	-	0.96	-	4.98
3.	G.C.	-	-	0.64	0.44	-	-	1.08
	Total	1.65	0.50	6.44	1.81	0.97	0.00	11.37

c. Depreciation

Depreciation is the refund of capital subscribed and is a constant charge against an asset to create a fund for its replacement. It is an important component of annual fixed cost of the generating station.

CERC Tariff regulation 2009-14 has specified rates for calculation of depreciation based on the capital cost admitted by the Commission.

OHPC has computed depreciation @ 2.57% for FY 2013-14 on the reduced historical project cost plus additional capitalization w.e.f. 01.04.1996 up to 2012-13.

In case of BHEP, since the loan repayment is more than the computed depreciation @ 2.57%, the actual loan repayment has been considered to meet the requirement for repayment of principal loan installment. For UIHEP, Hon'ble Commission has allowed recovery of depreciation from balance depreciable value of the project spread equally over the balance life period of the project. Therefore, depreciation of Rs. 30.23 Crs. has been considered for FY 2013-14 for recovery through tariff. Table 9 below presents the station-wise depreciation proposed by OHPC for FY 2013-14

Table - 9
Depreciation claimed for FY 2013-14

Sl. No.	Name of the power station	Depreciation (Rs. Crs)	Remark
1	RHEP	3.17	2.57%
2	UKHEP	3.15	2.57%
3	BHEP	15.17	Equal to loan repayment
4	HHEP	6.89	2.57%
5	CHEP	3.46	2.57%
	Sub Total	31.84	
6	UIHEP	30.23	Spread over useful life of the Plant.
	Grand Total	62.07	

d. Operation and Maintenance (O&M) expenses:

As per CERC Tariff Regulations 2009, normative O&M expenses shall be calculated with escalation of @ 5.72% per annum. O&M as per following is proposed by OHPC for FY 2013-14.

- i. O & M expenses allowed for the year 2012-13 has been escalated @ 5.72% to arrive at the O & M expenses for the FY 2013-14.
- ii. Corporate Office expenses amounting to Rs.13.84 Crs. have been apportioned to different Units under OHPC based on Installed Capacity and included in the O & M expenses for FY 2013-14.
- iii. Arrear salary and terminal liabilities of Corporate Office amounting to Rs. 1.56 Crs. has been apportioned to different units and included in the O & M Expenses for the Tariff proposal for FY 2013-14.

Table - 10
Statement of O&M Expenses for FY 2013-14

(Rs. cr.)

Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O.	Total
O&M expenses for FY 2013-14 including arrear salary and terminal liabilities	31.92	23.13	45.08	40.69	17.06	157.87	58.80	13.84	216.67
O&M approved for 2012-13	27.42	18.65	35.23	34.77	14.87	130.94	50.37	13.09	13.09

e. Interest on Working Capital

As per CERC Tariff Regulation 2009, the basis for calculation of working capital shall include the following:

- i) Receivables equivalent to two months fixed cost.
- ii) Maintenance spares @ 15% operational and maintenance expenses and
- iii) Operation and maintenance expenses for one month.

The rate of interest on working capital considered is the short-term prime-lending rate of SBI i.e. 14.5% for.. In accordance with CERC guidelines, the interest on working capital shall be payable on normative basis.

Table -11 below summarizes the station wise interest on working capital as proposed by the OHPC for FY 2013-14.

Table - 11
Interest on Working Capital for FY 2013-14 (Rs. Cr)

Sl. No.	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	SUB TOTAL	UIHEP	Total
1	Receivables equivalent to two months of fixed cost	6.78	4.85	13.75	10.34	4.19	39.91	25.43	65.34
2	Maintenance spares @ 15% of O & M expenses	4.79	3.47	6.76	6.10	2.56	23.68	8.82	32.50
3	O&M expenses for one month	2.66	1.93	3.76	3.39	1.42	13.16	4.90	18.06
4	Total working capital	14.23	10.24	24.27	19.83	8.17	76.75	39.15	115.90
5	Interest on working capital calculated @ 14.5%	2.06	1.49	3.52	2.88	1.19	11.13	5.68	16.81

Total Annual Fixed Cost without up-valuation of asset & with present Design Energy (5169.24 MU):

8. Based on the above parameters the station wise ARR and tariff calculated for the FY 2013-14 as indicated by OHPC is presented in the table -12 below.

Table -12
Station-wise ARR and Tariff without up-valuation of asset & with Present Design Energy (5169.24 MU) for FY 2013-14

Details expenses	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	Total
Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
(Rs. cr.)								
Return on Equity	1.87	0.82	12.31	9.76	2.50	27.25	57.88	85.13
Interest on Loan	1.65	0.50	6.44	1.81	0.97	11.27	0.00	11.37
Depreciation	3.17	3.15	15.17	6.89	3.46	31.83	30.23	62.07
O&M expenses	31.92	23.13	45.08	40.69	17.06	157.87	58.80	216.67
Interest on working capital	2.06	1.49	3.52	2.88	1.19	11.13	5.68	16.81
Total ARR	40.67	29.08	82.52	62.03	25.16	239.46	152.59	392.05

(Rs. in Crs.)								
Average Tariff (p/u)	78.25	35.30	70.46	91.50	51.87	65.13	78.56	69.77

In case up-valuation of assets is considered, the station-wise ARR of different power houses will be as shown in Table – 13. In this case reduced revalued cost of Rs. 1190 Crs. alongwith new capital addition for Rs. 502.36 Crs. since 01.04.1996 is considered. Interest on Govt. Loan on UIHEP is considered alongwith other existing loans for calculation of tariff.

Table - 13
Station wise ARR and Tariff for the FY 2013-14 considering up-valuation of assets & existing saleable D.E.

Details expenses	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	Total
Existing Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
	(Rs. cr.)							
Return on Equity	16.93	18.72	31.76	15.77	12.05	95.22	57.88	153.10
Interest on Loan	1.65	0.50	6.44	1.81	0.97	11.37	33.98	45.35
Depreciation	7.48	8.28	15.17	8.37	5.33	44.62	30.23	74.85
O&M expenses	31.92	23.13	45.08	40.69	17.06	157.88	58.80	216.67
Interest on working capital	2.54	2.06	4.00	3.06	1.47	13.13	6.52	19.65
Total ARR (Rs. in Crs.)	60.52	52.69	102.45	69.69	36.88	322.22	187.40	509.62
Average Tariff (p/u) with Revalued Cost	116.43	63.96	87.47	102.92	76.02	87.63	96.48	90.69
Average Tariff (p/u) without Revalued Cost	78.25	35.30	70.46	91.50	51.87	65.13	78.56	69.77

Tariff based on proposed Revised Design Energy of OHPC without up-valuation of assets:

- Keeping in view of upstream utilisation of water, change in rainfall pattern during the long period and silting of reservoir etc. resulted in less generation of different power

stations of OHPC than the fixed design energy of 5676MU. OHPC has reassessed the design energy of different power houses through independent group of consultant (M/s SPARC) as per Hon'ble Commission's Tariff order in case no. 153/2004.

After eliminating the effect of industrial use of water from the upstream sides of reservoir OHPC has reassessed the design energy of its different power houses as follows:

Table – 14
Reassessed Design Energy

Sl. No.	Power Station	Existing D. E.	Revised D. E. for approval	Saleable Design Energy considered for Tariff
1	RHEP	525	669.96	663.26
2	UKHEP	832	653.37	646.83
3	BHEP	1183	928.56	919.27
4	HHEP	684	627.44	621.16
5	CHEP	490	356.67	353.10
6	UIHEP	1962	1703.82	1686.78
Total		5676	4939.82	4890.42

If revision of design energy is considered then, the tariff structure of different power houses is as per table – 15. The reduced historical cost of Rs. 473 Crs. along with new capital addition of Rs. 502.36 Crs. since 01.04.1996 is considered. Proposed revised design energy (D.E.) of 4890.4 MU has been considered instead of existing D.E. of 5619.24 MU and interest of 7% Govt. loan of UIHEP is not considered along with other existing loans for calculation of tariff.

Table - 15
Station wise ARR and Tariff for FY 2013-14 considering the proposed revised saleable D.E. without up-valuation of assets

Details of Expenses	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
Existing Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
Revised Saleable Design Energy (MU)	663.26	646.83	919.27	621.16	353.10	3203.62	1686.78	4890.4
(Rs. in Crs.)								
Return on Equity	1.87	0.82	12.31	9.76	2.50	27.25	57.88	85.13
Interest on Loan	1.65	0.50	6.44	1.81	0.97	11.37	0.00	11.37
Depreciation	3.17	3.15	15.17	6.89	3.46	31.83	30.23	62.07
O&M Expenses	31.92	23.13	45.08	40.69	17.06	157.87	58.80	216.67
Interest on working capital	2.06	1.49	3.51	2.88	1.19	11.12	5.68	16.80
Total ARR (Rs. in Crs.)	40.67	29.08	82.29	62.03	25.16	239.23	152.59	392.07

Average Tariff (p/u) for existing D.E	78.25	35.30	70.46	91.50	51.87	65.13	78.56	69.77
Average Tariff (p/u) for Revised D.E	61.32	44.97	89.76	99.86	71.25	74.75	90.46	80.17

If the effect of up-valuation of asset is considered alongwith the revised D.E., the tariff structure of different power stations of OHPC will be as per the following table. The reduced revalued cost of Rs. 1190 Crs. alongwith new capital addition for Rs. 502.36 Crs. since 01.04.1996 has been considered. Proposed revised design energy (D.E.) of 4890.4 MU has been considered instead of existing D.E. of 5619.24 MU and interest of 7% Govt. loan on UIHEP is considered alongwith other existing loans for calculation of tariff.

Table - 16
Station wise ARR and Tariff for FY 2013-14 considering up-valuation of assets & proposed revised saleable D.E.

Details expenses	RHEP	UKHE P	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
Existing Saleable Design Energy (MU)	519.75	823.68	1171.17	677.16	485.10	3676.86	1942.38	5619.24
Proposed Revised Saleable Design Energy (MU)	663.26	646.83	919.27	621.16	353.10	3203.62	1686.78	4890.40
(Rs. in Crs.)								
Return on Equity	16.93	18.72	31.76	15.77	12.05	95.22	57.88	153.10
Interest on Loan	1.65	0.50	6.44	1.81	0.97	11.37	33.98	45.35
Depreciation	7.48	8.28	15.17	8.37	5.33	44.62	30.23	74.85
O&M Expenses	31.92	23.13	45.08	40.69	17.06	157.88	58.80	216.67
Interest on working capital	2.54	2.06	4.00	3.06	1.47	13.13	6.52	19.65
Total ARR (Rs. in Crs.)	60.52	52.69	102.45	69.69	36.88	322.22	187.40	509.62
Average Tariff (p/u) with Revalued cost	116.43	63.96	87.47	102.92	76.02	87.63	96.48	90.69
Average Tariff (p/u) with Revalued cost & Revised Design Energy	91.24	81.45	111.44	112.20	104.44	100.58	111.10	104.21

Application fee and publication expenses:

- As per the CERC tariff regulation 2009, 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). As per above provision, the application fee and publication expenses proposed by OHPC for FY 2013-14 are given in table - 16 below.

Table -17
Application Fees and Publication Expenses

Sl. No.	Application fee (lakhs)	Publication expenses (lakhs)	Total (lakhs)
1	25.00	1.00	26.00

Electricity duty on Auxiliary Consumption:

11. As per the agreed PPA between OHPC and GRIDCO, 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. Accordingly, ED on Auxiliary consumption of all the hydro electric projects to the tune of Rs.0.57 Crore is to be reimbursed to OHPC by GRIDCO. OHPC requested that Hon'ble Commission may approve the same. Further, the OHPC has requested the Hon'ble OERC to consider the ED reimbursement on auxiliary consumption to OHPC @ 0.5% of Annual Generation (cumulative) instead of limiting to 0.5% of Monthly Generation or else the ED reimbursement amount of Rs. 0.57 Cr. may be allowed in the ARR of OHPC instead of in the ARR of GRIDCO in order to avoid the ambiguity arising between OHPC & GRIDCO on ED payment/reimbursement, which will save the time & paper works in this process.

License fee for use of water for generation of Electricity:

12. As per the gazette notification dt. 01.10.2010, OHPC has to pay Rs. 0.01/kwh as license fee on water used for generation of electricity from all Hydro Electric Projects to the tune of Rs. 5.676 Crs. and this is to be reimbursed to OHPC by GRIDCO, based on design energy. OHPC further requested that since, the above calculation is based on design energy of Hydro Projects, the actual generation from OHPC Power Stations may be considered for reimbursement of license fee paid to Govt. of Orissa from GRIDCO. Hon'ble Commission may approve the same.

SLDC charges:

13. As per CERC (fees & charges of regional load dispatch centre and other related matters) regulations, 2009 SLDC has to levy and collect annual charges from the users towards system operation charges and market operation charges. Hon'ble Commission has allowed Rs. 1.90 Crs. as SLDC charges for the Financial Year 2012-13 to be collected by SLDC from OHPC. OHPC proposes Rs 2.00868 Crs. (escalated at 5.72% to arrive at the charges payable by SLDC) to be considered provisionally as fees and charges payable by OHPC to SLDC for the FY 2013-14.

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

14. 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 Orissa to draw an additional 20% power (105 MU) at a cost of Rs. 0.08 P/U as per the inter state supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Orissa. The proposed tariff of 30.80 P/U of Orissa drawl of Machhkund power for FY 2013-14 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 equivalent to 262.50 MU.

Table -18
Proposed Tariff for Machhkund HEP (Jt scheme) FY 2013-14

Installed Capacity (MW)	114.50
Orissa share as per Original Agreement (30%)	34.50 MW
Net. Energy for sharing between Andhra Pradesh & Orissa	525.00 MW
Expected Energy Drawl by Orissa (50%)	262.50 MU
Energy Drawl of 30% of Orissa share	157.50 MU
Purchase of Power up to 20% as per Supplementary Agreement	105.00 MU
O&M Escalation factor @ 5.72% per year for 2 years	1.1177
	(Rs. in Crs)
1. O&M Exp. (Orissa share of Actual O&M Exp. For FY 11-12)	6.48
2. O&M Exp for FY 2013-14	7.24
3. Power purchase cost of additional 20% above 30% OrissaShare (105MU × 0.08)	0.84
4. Total Annual Expenditure (2 +3)	8.08
5. Tariff (Paise/Kwh)	30.80
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.	

Two-Part Tariff :

15. As per Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulation 2009, 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.

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

$$\text{Capacity charge (C.C)} = \text{AFC} \times 0.5 \times \text{NDM/NDY} \times \text{PAFM/NAPAF in Rupees.}$$

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:

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

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_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 provisions in clause(6) and (7) of Schedule-22 of CERC Tariff regulations 2009.

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

Where,

DE= Annual design energy specified for the hydro generating station in Mwh, subject to provisions in Clause-(6) of Schedule-22 of CERC tariff regulations 2009.

As per the CERC Tariff regulation station-wise capacity charge and energy charge proposed by OHPC for the FY 2013-14 is presented in table -18 and table - 19 below considering and without considering the up-valuation of asset.

Table -19
Capacity charge and energy charge of power stations
(Without considering the up-valuation of asset)

Name of the power stations	Annual Fixed Cost (Rs. in Crs)	Capacity Charge (Rs. in Crs)	Energy Charge (Rs. in Crs)	Energy Charge Rate in present D.E (p/u)	Energy Charge Rate in revised D.E (p/u)
Rengali HEP	40.67	20.335	20.335	39.12	30.65
Upper Kolab HEP	29.08	14.54	14.54	17.65	22.475

Balimela HEP	82.52	41.26	41.26	35.23	44.88
Hirakud HEP	62.03	31.015	31.015	45.8	49.93
Chiplima HEP	25.16	12.58	12.58	25.93	35.625
Upper Indravati HEP	152.59	76.295	76.295	39.28	45.23

Table - 20
Capacity charge and energy charge of power stations
(Considering the up-valuation of asset)

Name of the power stations	Annual Fixed Cost (Rs. in Crs)	Capacity Charge (Rs. in Crs)	Energy Charge (Rs. in Crs)	Energy Charge Rate in present D.E (p/u)	Energy Charge Rate in revised D.E (p/u)
Rengali HEP	60.52	30.26	30.26	58.22	45.62
Upper Kolab HEP	52.69	26.345	26.345	31.98	40.73
Balimela HEP	102.45	51.225	51.225	43.74	55.72
Hirakud HEP	69.69	34.845	34.845	51.45	56.09
Chiplima HEP	36.88	18.44	18.44	38.01	52.22
Upper Indravati HEP	187.40	93.70	93.70	48.24	55.55

Normative Plant Availability Factor (NAPAF):

16. Hon'ble Commission in the order dated 02.11.2010 vide case no. 65/2010 has approved the NAPAF of OHPC Stations for the control period from 01.04.2009 to 31.03.2014 as given in the table - 20 below. OHPC proposes to consider the NAPAF for FY 2013-14 as given in the table - 20.

Table – 21
Station wise Normative NAPAF proposed for FY 2013-14

Name of Power Stations	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
NAPAF (%)	78	75	85	75	85	88

Less Recovery of ARR for the FY 2012-13:

17. OHPC claim that due to restriction in generation from the Balimela, Upper Indravati and Upper Kolab power stations, there will be a shortfall of 1102.85 MU of generation for which OHPC will not able to recover its total approved Energy Charges from these Power Stations, even though availability of water & machines in the power stations are above normative value. OHPC submitted that as per the directives of the state Govt., the generation of Power Stations of OHPC has been restricted for the FY 2012-13 so as to keep water for the summer months of April, May and June, 2013 for the interest of the State of Odisha.

Therefore, it is pleaded that OHPC may be compensated for recovery of shortfall in energy charges for the FY 2012-13 for an amount of Rs. 34.72 Crs.

Loss of Energy charges on account of Hydrology Failure:

18. OHPC requested for approval of the cumulative loss of Energy Charges for the period from FY 2009-10 to FY 2012-13 to the tune of Rs. 140 Crs. On account of hydrology failure in the corresponding period. OHPC requested that this amount may be considered as pass on in Tariff in 5 (five) equal installments in the ARR of subsequent Financial Years.

PRAYER

OHPC prayed that, the Hon'ble Commission may kindly approve Rs. 509.74 Crs. as Annual Fixed Cost & Average Tariff @ 104.23 p/u considering both Up-valuation of assets & proposed Revised Design Energy (4890.40 MU). Further, OHPC requested that the Commission may allow OHPC to pass on of 1st installment (Rs 27.9136 Crs.) in the ARR of FY 2013-14 towards compensation of Energy Charges and the balance installments in the subsequent years.