

**ODISHA ELECTRICITY REGULATORY COMMISSION  
BIDYUT NIYAMAK BHAWAN,  
UNIT – VIII, BHUBANESWAR – 751 012**

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**Present:     Shri S.P. Nanda, Chairperson  
                 Shri B.K. Misra, Member  
                 Shri S.P. Swain, Member**

**CASE NO.81/2013**

**DATE OF HEARING         :   03.02.2014**

**DATE OF ORDER            :   22.03.2014**

**IN THE MATTER OF :   Application for approval of Annual Revenue Requirement and Generation Tariff of OHPC stations for the FY 2014-15 under Sections 62 & 86 of the Electricity Act, 2003 read with related provisions of OERC (Terms and Conditions for Determination of Tariff) Regulations, 2004 and OERC (Conduct of Business) Regulations, 2004.**

**ORDER**

The Odisha Hydro Power Corporation (OHPC) Ltd. has filed an application before the Commission for determination of Annual Revenue Requirement (ARR) and fixation of Generation Tariff for its different power stations for the financial year 2014-15.

**PROCEDURAL HISTORY (Para 1 to 8)**

1.     The OHPC Ltd. 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 Orissa 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 Ltd. is supplying its entire power to GRIDCO Ltd., who in turn is supplying the same to the Distribution Licensees of the State of Odisha. After the Electricity Act, 2003 came into force and promulgation of the Government of Orissa Transfer Scheme, 2005, GRIDCO 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 Ltd. 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 30<sup>th</sup> 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 30.11.2013 OHPC Ltd., as a generating company, had filed the Annual 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 2014-15.

3. After due scrutiny and admission of the aforesaid application, the Commission 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 received 5 nos. of objections from the following persons/organizations:

(1) Sri G.N. Agrawal, Convenor-cum-Gen. Secy, Sambalpur District Consumers Federation, Balajee Mandir Bhawan, Khetrajpur, Dist-Sambalpur-768003, (2) Shri Ramesh Ch. Satpathy, Secretary, National Institute of Indian Labour, Plot No.302(B), Beherasahi, Nayapalli, Bhubaneswar-751012, (3) Shri R.P. Mahapatra, Retd. Chief Engineer & Member (Gen., OSEB), Plot No.775(Pt.), Lane-3, Jayadev Vihar, Bhubaneswar-751013, (4) Shri Prasanta Kumar Das, President, State Public Interest Protection Council, Tala Telenga Bazar, Cuttack-9, (5) Shri A.K. Bohra, CEO (Comm.), CSO, NESCO, WESCO & SOUTHCO, Regd. Office- Plot No. N-1/22, IRC Village, Nayapalli, Bhubaneswar-15 were filed their suggestions/ objections.

All the above named objectors along with the representative of Department of Energy, Government of Odisha were present during tariff hearing except Objector No. 4 and their written submissions filed before the Commission were taken on record and also considered by the Commission. ***GRIDCO Ltd. had filed its objections after the due date i.e.15.01.2014 which was also taken on record and also considered by the Commission.***

4. The applicant submitted its reply to issues raised by the various objectors.
5. 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 Annual Revenue Requirement and generation tariff proposal for its different power stations for the financial year 2014-15 . The Consumer Counsel presented his views on the matter in the hearing.
6. The date of hearing was fixed as 03.02.2014 at 3.30 PM and was duly notified in the leading and widely circulated newspaper mentioning the list of objectors. The Commission also issued individual notice to the objectors and Government of Odisha through the Department of Energy informing them about the date and time of hearing and requesting to send the Government's authorized representative to take part during the proceedings and offer the views/suggestion/proposal of the Govt. as a stakeholder.
7. In its consultative process, the Commission conducted a public hearing at its premises on 03.02.2014 and heard the Applicant, Objectors, Consumer Counsel and the Representative of the Dept. of Energy, Government of Odisha at length.
8. The Commission convened the State Advisory Committee (SAC) meeting on 15.02.2014 at 3.30 PM to discuss about the ARR application and generation tariff

proposal of the generating company for FY 2014-15. The Members of SAC presented their valuable suggestions and views on the matter for consideration of the Commission.

#### **ARR PROPOSAL OF OHPC FOR FY 2014-15 (Para 9 to 29)**

##### **Installed Capacity**

9. The total installed capacity of the various Hydro Stations owned by the Orissa Hydro Power Corporation (OHPC) is projected at 1987 MW for FY 2014-15 including Orissa's share of Machkund.

The installed capacity of different generating stations as reported by OHPC for the FY 2014-15 is given in the table below:

**Table – 1**  
**Installed Capacity of OHPC Stations**

Sl. No.	Name of the Power Station	Installed Capacity(MW)			
		2013-14			2014-15
1	Rengali (RHEP)	250.00			250.00
2	Upper Kolab (UKHEP)	320.00			320.00
3	Balimela (BHEP)	510.00			510.00
4	Hirakund (HHEP)	275.50 (01.04.2013 to 14.06.2013)	220.50 (15.06.2013 to 15.10.2013)	200.50 (16.10.2013 to 31.03.2014)	200.50
5	Chiplima (CHEP)	72.00			72.00
6	Upper Indravati (UIHEP)	600.00			600.00
7	Machhakund (30% Orissa Share)	34.50			34.50
<b>Total</b>		<b>2062.00</b> (01.04.2013 to 14.06.2013)	<b>2007.00</b> (15.06.2013 to 15.10.2013)	<b>1987.00</b> (16.10.2013 to 31.03.2014)	<b>1987.00</b>

##### **Design Energy of OHPC Stations**

10. The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of tariff. The station-wise design energy proposed by OHPC for consideration during FY 2014-15 ARR and Tariff determination is given in the following table :

**Table - 2**  
**Design Energy Proposed for FY 2014-15**

Sl. No.	Name of the Power Station	Design Energy (MU)	Design Energy for Sale (MU)
1	RHEP	525.00	519.75
2	UKHEP	832.00	823.68
3	BHEP	1183.00	1171.17
4	HHEP	517.00	511.83
5	CHEP	357.00	353.43
	Subtotal of Old Power Stations	3414.00	3379.86
6	UIHEP	1962.00	1942.38
<b>Total</b>		<b>5376.00</b>	<b>5322.24</b>

### Reservoir Level and Anticipated Generation for FY 2013-14

11. The reservoir level of Power stations reported by OHPC as on 12.11.2013 vis-à-vis on 12.11.2012 is given below:

**Table - 3**  
**Reservoir Level for the FY 2013-14**

Sl. No.	Reservoirs	As on 12.11.2012	As on 12.11.2013
1.	Rengali	123.32 (m)	123.84 (m)
2.	Kolab	856.91 (m)	856.38 (m)
3.	Balimela	1508.80 (ft)	1516.10 (ft)
4.	Hirakund	629.67 (ft)	629.89 (ft)
5.	Indravati	639.70 (m)	641.48 (m)

The actual generation of different power stations under OHPC up to 11.11.2013 is given below.

**Table - 4**  
**Actual Energy Generation for the FY 2013-14**

Sl. No.	Name of the Power Stations	Actual Generation from 01.04.13 up to 11.11.13 (MU)
1.	RHEP	753.222
2.	UKHEP	625.237
3.	BHEP	1296.4
4.	HHEP	562.057
5.	CHEP	228.805
6.	UIHEP	1856.413
<b>Total</b>		<b>5322.134</b>

### Project Cost

12. The revalued cost of old power stations under OHPC is Rs.1196.80 crore 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.

The project cost of OHPC power stations reported for computation of ARR for the FY 2014-15 is given in the table below:

**Table - 5**  
**Capital Cost proposed for FY 2014-15 (Rs. in Crore)**

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

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
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
	<b>Total</b>	<b>473.00</b>	<b>1190.00</b>	<b>502.36</b>	<b>975.36</b>	<b>1692.36</b>
6.	UIHEP	<i>Approved project cost</i>				<b>1194.79</b>

#### **Determination of Annual Fixed Cost for FY 2014-15**

13. 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 proposal 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:

- Return on Equity (ROE)
- Interest on Loan Capital
- Depreciation
- Operation and Maintenance (O&M) expenses
- Interest on Working Capital

#### **Return on Equity (ROE)**

14. As per CERC norms OHPC has calculated the rate of return on equity at 16.50% with tax grossing up at minimum alternative tax rate payable on this amount on a normative basis and has finally calculated the return at 24.9962%. The total ROE has been proposed for FY 2014-15 at Rs.112.143 cr.

#### **Interest on Loan**

15. The loan liabilities of OHPC consist of State Govt. Loan and PFC Loans.

**PFC Loan :** The PFC Loans were obtained in connection with R&M projects of HHEP, Burla and extension project of BHEP, Balimela as shown below:

**Table - 6**  
**PFC Loan Outstanding**

Sl. No.	Name of the Units	Outstanding Loan as on 01.04.2014	Loan Repayment for FY 2014-15
1.	Unit # 3 & # 4, Burla	INR 12.99 Crore	INR 6.52 Crore
2.	Unit # 7 & # 8, Balimela	USD 6363000.01	INR 9.60 Crore

**Status of Normative Loan:** Though 9.8% state Govt. loan has been repaid, 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. The Normative Loan BHEP, Balimela is considered @ 9.6% for FY 2014-15 based on PFC interest rate applicable to BHEP.

The Unit wise interest on loan and guarantee for FY 2014-15 proposed by OHPC is presented in the table below:

**Table - 7**  
**Abstract of Interest and Guarantee Commission for FY 2014-15**

Sl. No.	Source of Loan	Interest on Loan and G.C. for FY 2014-15 (Rs. in Crore)						Total
		RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	
1.	PFC Loan	-	-	3.21	0.80	-	-	<b>4.01</b>
2.	Normative Loan	3.01	0.46	1.38	0.19	0.88	5.48	<b>11.40</b>
3.	Govt. Loan	-	-	-	-	-	34.85	<b>34.85</b>
4.	G.C.	-	-	0.64	0.44	-	-	<b>1.08</b>
<b>Total</b>		<b>3.01</b>	<b>0.46</b>	<b>5.23</b>	<b>1.44</b>	<b>0.88</b>	<b>40.33</b>	<b>51.35</b>

16. **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 for the FY 2014-15 @ 2.57% on the historical project cost as on 31.03.2013 plus additional capitalization w. e. f. 01.04.1996 up to 2011-12.

In case of HHEP and BHEP, since the loan repayment is more than computed depreciation @ 2.57%, the actual loan repayment has been considered to meet the requirement for repayment of principal loan installment. In case of UKHEP, CHEP & RHEP; the depreciation @ 2.57% has been considered.

In case of 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 2014-15 for recovery through tariff.

Hence, the depreciation of all power stations proposed by OHPC for the FY 2014-15 is mentioned as under.

**Table - 8**  
**Station wise Depreciation Claimed for FY 2014-15**

(Rs. Cr.)

Sl. No.	Name of the power station	Depreciation	Remark
1	RHEP	3.77	2.57%
2	UKHEP	3.19	2.57%
3	BHEP	15.17	Equal to loan repayment
4	HHEP	7.01	Equal to loan repayment
5	CHEP	3.51	2.57%
	<b>Sub Total</b>	<b>32.66</b>	
6	UIHEP	30.23	Spread over useful life of the plant
<b>Grand Total</b>		<b>62.89</b>	

17. **Operation & Maintenance (O&M) Expenses:** As the control period for the FY 2009-10 to FY 2013-14 will complete by 31.3.2014 and Regulation for next block period i.e. FY 2014-15 to FY 2018-19 is yet to come in to force, therefore OHPC has considered the same procedure for the calculation of O&M expenses that was prevailing for the previous block period. Accordingly, OHPC has computed the O&M expenses of different power stations for the FY 2014-15 in line with the CERC (Terms and Conditions of Tariff) Regulations, 2009-14 as follows.

As per Clause 19 (f) (ii) of the said Regulations, normative O&M expenses shall be calculated with escalation of @ 5.72% per annum. Accordingly the average normalized O&M expenses of different power stations under OHPC along with Corporate Office expenses for the FY 2012-13 has been derived and further escalated twice @ 5.72% to arrive at the O&M expenses for the FY 2014-15. Then the Corporate Office expenses amounting to Rs.19.65 Crore have been apportioned to different Units under OHPC based on Installed Capacity and included in the O&M expenses for FY 2014-15. The O&M expenses along with the Arrear salary and terminal liabilities of Corporate Office have been proposed in ARR for the FY 2014-15.

**Table – 9**  
**O&M Expenses for 2014-15**

<b>Description</b>	<b>RHEP</b>	<b>UKHEP</b>	<b>BHEP</b>	<b>HHEP</b>	<b>CHEP</b>	<b>Subtotal</b>	<b>UIHEP</b>	<b>Total</b>
Total O&M expenses for the FY 2014-15	43.10	33.79	63.30	63.49	14.80	218.47	64.84	<b>283.32</b>
Total arrear salary & terminal liabilities	1.23	1.24	4.37	2.00	0.85	9.68	1.47	<b>11.14</b>
<b>Grand Total</b>	<b>44.33</b>	<b>35.03</b>	<b>67.67</b>	<b>65.49</b>	<b>15.65</b>	<b>228.15</b>	<b>66.31</b>	<b>294.46</b>

18. **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. 14.75%.

In accordance with CERC guidelines, the interest on working capital shall be payable on normative basis. The station wise interest on working capital as proposed by OHPC for FY 2014-15 are summarized in the Table below:

**Table - 10**  
**Interest on Working Capital for FY 2014-15**

(Rs. Cr.)

Sl. No.	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	Receivables equivalent to two months of fixed cost	9.71	7.02	18.17	15.21	4.10	54.19	36.53	90.73
2	Maintenance spares@15% of expenses	6.65	5.25	10.15	9.82	2.35	34.22	9.95	44.17
3	O&M expenses for one month	3.69	2.92	5.64	5.46	1.30	19.01	5.53	24.54
4	Total working capital	20.05	15.19	33.96	30.49	7.75	107.43	52.01	159.43
5	Interest on working capital calculated @ 14.75%	<b>2.96</b>	<b>2.24</b>	<b>5.01</b>	<b>4.50</b>	<b>1.14</b>	<b>15.85</b>	<b>7.67</b>	<b>23.52</b>

**Annual Revenue Requirement (ARR) for the FY 2014-15**

19. Based on the above parameters the station wise ARR and tariff are calculated by OHPC for the FY 2014-15 (without up-valuation of assets) with the existing saleable design energy is given at Table no.12.

OHPC has also indicated an alternative tariff calculation provided Commission/State Govt. allows the up-valuation of assets of the different stations.

**Table - 11**  
**Summary of ARR proposal without & with up-valuation for FY 2014-15**

Details	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
Existing Saleable Design Energy(MU)	519.75	823.68	1171.17	511.83	353.43	3379.86	1942.38	5322.24
<b>(Rs. in Crore)</b>								
Total ARR (without up-valuation)	58.23	42.09	109.00	91.25	24.57	325.15	219.20	544.35
Avg. p/u Tariff (without up-valuation)	<b>112.04</b>	<b>51.11</b>	<b>93.07</b>	<b>178.27</b>	<b>69.53</b>	<b>96.20</b>	<b>112.85</b>	<b>102.28</b>
<b>If up-valuation of assets is allowed by the Commission/State Govt.</b>								
Total ARR (with up-valuation)	82.57	71.02	134.71	100.67	39.12	428.10	219.20	647.31
Avg. p/u Tariff (with up-valuation)	<b>158.86</b>	<b>86.23</b>	<b>115.03</b>	<b>196.70</b>	<b>110.70</b>	<b>126.66</b>	<b>112.85</b>	<b>121.62</b>

**Application Fee and the Publication Expenses**

20. 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.



The application fee and publication expenses proposed by OHPC are given below:

**Table - 12**  
**Application Fee and the Publication Expenses**  
**(Rs. lakh)**

Application Fee	Publication Expenses	Total Amount
25.00	1.50	26.50

**Electricity duty on Auxiliary Consumption**

21. 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 Hydro Electric Projects to the tune of Rs.0.54 Crore is to be reimbursed to OHPC by GRIDCO for the FY 2014-15.

**License fee for use of water for generation of Electricity**

22. As per the gazette notification dated 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 Project to the tune of Rs.5.376 Crore 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.

**SLDC charges**

23. 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.1.59 Crore as SLDC charges for the FY 2014-15 to be collected by SLDC from OHPC on monthly basis and OHPC shall get the amount reimbursed from GRIDCO.

Since OHPC has not received the ARR & fees & charges of for the FY 2014-15, the previous year fees & charges applicable to OHPC has been escalated @ 5.72%. Hence a final sum of Rs.1.68094 Crore has provisionally been considered as fees and charges payable by OHPC to SLDC for the FY 2014-15.

**ARR and Tariff for Machhkund H.E. (Jt.) Scheme**

24. Machhkund Hydro Electric Project is a joint scheme of Government of Andhra Pradesh and Government of Orissa with 70% and 30% share with option of Government of Orissa to draw an additional 20% power at a cost of Rs. 0.08 P/U as per the interstate supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Orissa.

The proposed tariff of 41.68 Paisa/kWh of Orissa drawl of Machhkund power for FY 2014-15 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.

### **Foreign Exchange Fluctuation Loss of PFC Loan of BHEP**

25. Due to variation in Foreign Exchange Rate OHPC has incurred a loss of Rs.0.76 Crore towards payment of interest and Rs.4.64 Crore towards principal repayment on the PFC loan of BHEP from FY 2007-08 to FY 2013-14. As per clause no 41 (Recovery of cost of Hedging and Foreign Exchange Rate Variation) of CERC regulation 2009, recovery of cost of hedging and foreign exchange rate variation shall be made directly by the generating company from the beneficiaries. Hence the Hon'ble Commission may approve the same to be reimbursed by GRIDCO.

### **Reimbursement of Contribution Made to ERPC**

26. OHPC is contributing towards ERPC establishment fund & ERPC fund from the FY 2006-07 onwards as per their demand note. Hence, the Commission may approve a total reimbursement claim for an amount of Rs.1.2546 Crore towards contribution from the FY 2006-07 to FY 2014-15 from GRIDCO.

### **Two-Part Tariff**

27. 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.

As per the CERC Tariff Regulation station wise capacity charge and energy charge proposed by OHPC for FY 2014-15 is presented in the table below:

**Table - 13**  
**Capacity Charge and Energy Charge of power stations**  
**(Without considering Up-valuation of asset)**

<b>Name of the Power Stations</b>	<b>Annual Fixed Cost (Rs. in Cr.)</b>	<b>Capacity Charge (Rs. in Cr.)</b>	<b>Energy Charge (Rs. in Cr.)</b>	<b>Design Energy (MU)</b>	<b>Energy Charge Rate (p/u)</b>
RHEP	58.23	29.115	29.115	519.75	56.017
UKHEP	42.09	21.045	21.045	823.68	25.550
BHEP	109.00	54.500	54.500	1171.17	46.535
HHEP	91.25	45.625	45.625	511.83	89.141
CHEP	24.57	12.285	12.285	353.43	34.759
UIHEP	219.20	109.600	109.600	1942.38	56.426

**Table – 14**  
**Capacity Charge and Energy Charge of power stations**  
**(With considering Up-valuation of asset)**

<b>Name of the Power Stations</b>	<b>Annual Fixed Cost (Rs. in Cr.)</b>	<b>Capacity Charge (Rs. in Cr.)</b>	<b>Energy Charge (Rs. in Cr.)</b>	<b>Design Energy (MU)</b>	<b>Energy Charge Rate (p/u)</b>
RHEP	82.57	41.285	41.285	519.75	79.432
UKHEP	71.02	35.51	35.51	823.68	43.111
BHEP	134.71	67.355	67.355	1171.17	57.511
HHEP	100.67	50.335	50.335	511.83	98.343
CHEP	39.12	19.560	19.560	353.43	55.343
UIHEP	219.20	109.60	109.60	1942.38	56.426

### **Normative Plant Availability Factor (NAPAF)**

28. The 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 01.4.2009 to 31.3.2014. OHPC has proposed revised NAPAF of the different power station for the next block period (i.e. FY 2014-15 to FY 2018-19) as follows:

**Table - 15**  
**Proposed NAPAF for next Block Period (FY 2014-15 to FY 2018-19)**

<b>Name of Power Stations</b>	<b>HHEP</b>	<b>CHEP</b>	<b>BHEP</b>	<b>RHEP</b>	<b>UKHE P</b>	<b>UIHEP</b>
<b>NAPAF (%)</b>	73	70	80	70	85	88

### **Compensation Claim towards Hydrology Failure & towards Restriction in Generation pending before the Commission**

29. In addition to the above OHPC has proposed a compensation claim towards hydrology failure for past three years to be allowed in the tariff of FY 2014-15. OHPC in its original Tariff Application for the FY 2013-14 had a submission that loss of Energy Charges for the FY 2009-10, 2010-11 and FY 2011-12 amounting Rs.52.23 Crore, Rs.22.69 Crore and Rs.36.00 Crore respectively may be considered as pass on in tariff in five equal installments.

OHPC has proposed that the Commission may make provision to compensate Rs.110.92 Crore to OHPC towards Hydrology Failure from FY 2009-10 to FY 2011-12 and also compensate Rs.48.73 Crore on account of restriction in generation during the FY 2012-13.

### **Prayer**

OHPC pray before the Commission to approve Rs.647.31 Crore ARR for the FY 2014-15 at an Average Tariff @ 121.62 Paisa/kWh considering Up-valuation of assets with present Saleable Design Energy of 5322.24 MU, allow Miscellaneous reimbursement of Rs.15.1059 Crore and make provision for realization of Rs.110.92 Crore towards Hydrology Failure from the FY 2009-10 to FY 2011-12 & Realization of Rs.48.73 Crore towards Restriction in Generation during the FY 2012-13.

### **VIEWS OF THE OBJECTORS (Para 30 to 59)**

#### **Functioning and due R&M activity of Chiplima, Hirakud and Balimela HEPs**

30. Some objectors have suggested that OHPC should furnish the status report about Chiplima weed problem and the expenditure made on this before the Commission. They have further suggested that OHPC may be asked to explain the reasons for low energy generation by Chiplima when Hirakud generation is normal. They have also suggested that Unit 5 and Unit 6 of HHEP at Burla, and one Unit of CHEP have completed almost 50 years of life. All these 9 Units are due for renovation, modernization and operating (RM&U) and action on war footing should be initiated.

#### **Performance Improvement of CHEP after TRCM Installation**

31. One objector has suggested that OHPC may present the improvement of generation in Chiplima after installation of trash rack cleaning machine (TRCM) vis-à-vis the projected improvement.

### **Drawl of Water from OHPC Reservoir and Loss of Generation**

32. One of the objectors has submitted that the thermal power plants and the industries requiring water may be instructed to have their own reservoirs and such industries shall not be allowed to lift water from OHPC reservoirs. He has further submitted that the Commission may seek for an explanation on charges levied on the industries utilizing water from OHPC reservoirs. He has submitted that loss of generation (32.4 MU) of the Burla and Chiplima power house is due to diversion of water for industrial use and maintaining the MDDL at 595 feet instead of 590 feet as per design. As suggested by the Technical Expert Committee appointed by Govt. of Odisha in July 2006, OHPC should claim the amount from the industries on account of loss of generation at the rate of procurement of power by GRIDCO from other sources.
33. He has further suggested that the Commission may reduce the ARR of OHPC by an amount equal to loss of hydro generation multiplied by the highest rate for procurement of power by GRIDCO.
34. The CEO of M/s WESCO, NESCO, SOUTHCO has submitted that Hon'ble High Court in their judgment dated 30.03.2012 in WPC No 8409 of 2012 at Para 24 (ii) had directed State Govt. to take steps to compute the amount of compensation to be recovered from the industrial units those who have used the water. The said amount recovered from the industries would be paid to OHPC with in the period of three months. OHPC has not taken any miscellaneous income and any revenue to be earned towards compensation from industries during 2014-15.

### **Design Energy vs. Actual Generation of OHPC Stations**

35. DISCOMs have suggested that the tariff for FY 2014-15 may be calculated by considering minimum generation of 7612 MU (262 MU for Machhkund) instead of design energy of OHPC hydro stations and have proposed an average tariff for OHPC stations as 43.31 paisa/unit as against 102.28 paisa/unit claimed by OHPC for FY 2014-15.
36. Another objector has submitted that the calculation should be made based on Design Energy and not on estimated generation during 2014-15.
37. GRIDCO has submitted that Commission in its order dated 30.01.2013 in case no. 121 of 2009 in the matter of "Application for Approval of Revised Design Energy of Hydro Stations" has decided not to approve the proposed reduction of design energy as submitted by OHPC. Hence reduction in design energy of different HEP on account of generation held up by District Administration and retirement of Unit 5 & 6 of HHEP, is not justified, hence may not be accepted.

### **Interest on Govt. Loan and Normative Loan of UIHEP**

38. Chief Executive Officer (Commerce), NESCO, WESCO & SOUTHCO submitted that OHPC should not be allowed to claim interest on state govt. loan for UIHEP.

### **Return on Equity**

39. DISCOMs submit that as per submission of OHPC, the Unit- 1 turbine of RHEP was not damaged and new turbine procured has been used to replace the damaged turbine of Unit- 2. For the above R&M work a new proposal should be submitted by RHEP before Commission for approval. The total capital expenditure towards replacement of damaged turbine of Unit- 2 may be considered after due approval of revised estimate and after declaration of audited account of FY 2013-14 by OHPC.

**Interest on Normative Loan and Additional Capitalization for R&M Work of RHEP Unit- 2**

40. Two objectors have suggested that Additional capitalization of amount Rs.23.41 Cr made during FY 2013-14 on account of R&M of damaged turbine of Unit- 2 of the RHEP should not be allowed by the Commission in for calculation of Normative loan for FY 2014-15.

**O & M Expenses**

41. The CEO of M/s WESCO, NESCO, SOUTHCO has submitted that the O&M expenses have always been less than the yearly approved O&M expenses (excluding arrear salary and Terminal liabilities). For terminal liabilities, Honorable Commission has been allowing additional fund every year on O&M head. Prudency check of O&M expenses for FY 2008-09 to 2012-13 needs to be done by Honorable Commission for the same.

**Depreciation:**

42. One objector has submitted that OHPC may not be allowed to claim depreciation on account of capitalization of Rs.23.41 Cr of RHEP Unit# 1, as the turbine has not been replaced.

**Peaking Capacity**

43. One of the objectors has submitted that OHPC should project the monthly generation of each of HEP indicating both the energy and peaking capacity available based on reservoir level.
44. One objector submitted that due to increase in peaking capacity of Balimela HEP without any increase in the design energy, the fixed cost and ECR of the station is increased substantially and therefore the benefit on account of the UI may be passed on to the consumer by reducing annual fixed charge.

**Joint Venture for Setting up Thermal Power Projects**

45. One objector has submitted that thermal power generation is not the core competency of OHPC and therefore the surplus funds of OHPC should not be diverted towards the 50% share holding in the joint venture TPP with OMC. However, the progress of the Thermal Power Project may be submitted.
46. Another objector has asked about contribution of OHPC during last 5 years to OPTCL functioning and the present status of thermal power plant.

**Development of New Hydro Projects**

47. One of the objectors suggested that OHPC should furnish the status of development of new hydro projects.
48. One objector has submitted that OHPC should urgently take up construction of new hydro power projects rather than investing money for setting up thermal power projects in joint venture with OMC.
49. Another objector has submitted that they have repeatedly raising the issue of submission / publication of VISION DOCUMENT by OHPC and OERC in ARR order for FY 2012-13 has directed OHPC to prepare & publish the VISION DOCUMENT 2025, but no action seem to have been taken by the petitioner till date and OERC directive has been violated.

### **ARR & Truing Up Exercise**

50. One objector has submitted that the revaluation of assets for the purpose of determination of tariff is not permissible and that the Commission may have a separate Public Hearing for determination of the value of assets of OHPC transferred by the GoO on 01.04.1996.
51. Another objector has filed that with the given good reservoir level and monsoon, design energy for the FY 2014-15 of 5376 MU is not acceptable.
52. Some of the objectors have submitted that there is an urgent need of truing up exercise of OHPC ARR for previous year based on audited account before finalization of ARR of OHPC for FY 2014-15.

### **Failure to Operate Potteru HEP**

53. One objector said that the OHPC has failed miserably to operate Potteru HEP (2x3 MW) but asked for Rs.14.30 Cr as payment of interest on loan to Govt. for pass on to consumer through tariff is strongly objected.

### **Employees of GEDCOL**

54. An objector has asked for the list of chairman and members of BOD and employees now on roll in GEDCOL. The expenditure incurred during FY 2013-14 and the proposed expenditure in FY 2014-15 and the modality of meeting such expenditure in respect of GEDCOL should be furnished before acceptance of ARR for the FY 2014-15. GRIDCO has objected that since the reduction in DE of the HEP of OHPC has not been allowed by the Commission as cited earlier, the DE of all the HPSs should remain as 5676 MU for the FY 2014-15.

### **Application Fee & Publication Expenses**

55. OHPC had incurred expenses of Rs.70,710 & Rs.60,311 on publication of tariff related matters in newspapers in the FY 2010-11 and 2011-12 respectively.
56. However OHPC has claimed to have incurred expenses to an amount of Rs.1.06 lakh on publication of tariff related matters in newspapers for the FY 2012-13 which is much higher than the previous years and higher than the approved figure of Rs.1.0 lakh by Commission and OHPC prayed for approval of Rs.1.5 lakh towards publication expenses for FY 2014-15 may not be approved.

### **Tariff for FY 2014-15**

57. The effect of up valuation of assets will have a cascading effect in increase in price of energy, which ultimately would have to be borne by the consumers of the state through higher retail tariff. Hence, GRIDCO proposes before the Commission not to consider the up-valuation of asset while determining the tariff of OHPC for the FY 2014-15.

### **NAPAF**

58. OHPC has been able to achieve the PAFM (%) for most of its HPSs for the block period 2009-14, which is even higher than the NAPAF (%) in the years when hydrology failure occurred. OHPC was able to recover full capacity charges during the above period. Hence, the proposal of OHPC for reduction in NAPAF of HPS may not be accepted.

### **Compensation Claim towards Hydrology Failure and towards Restriction in Generation**

59. Since, OHPC is recovering its annual fixed charges on availability of machines; the compensation claim of OHPC of Rs.159.65 Cr may be rejected.

### **REJOINDER OF OHPC TO QUERIES RAISED DURING HEARING (Para 60 to 86)**

60. 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 furnished herewith:

#### **Functioning and due R&M activity of Chiplima, Hirakund and Balimela HEPs**

- Unit-3 of Chiplima: The tender for R&M with new TG of Unit-3 of CHEP has been floated on 02.04.2013 and tendering process is going on. Six bidders have submitted their bids. Evaluation of Part-I (Eligibility Criteria) is in process. The proposal for R&M with new TG of Unit-3 of CHEP has already been filed on dated 28.08.2013 before Hon'ble OERC for according in principal approval.
- Unit-5 & 6 of HHEP, Burla: The proposal for R&M with new TG of Unit-5 & 6 has already been filed on dated 07.10.2013 before Commission for according in principle approval.
- Unit-1 to 6 of BHEP, Balimela: After approval of PAC, GoO, tendering process is going on and last date of submission of bid is re-scheduled to 24.02.2014. The proposal for R&M with new TG has already been filed on dated 13.09.2013 before OERC for according in principle approval.

#### **Successful operation of Trash Rack Cleaning Machine (TRCM) at Chiplima**

61. The Trash Rack Cleaning Machine (TRCM) has been successfully commissioned in the month of June 2010, to arrest chocking of weeds in the trash rack at a cost of Rs.6.80 Crs. As a result, the generation from Chiplima power project has improved for the subsequent years. CHEP has generated 255 MU in the FY 2010-11, 322.5 MU generations in the FY 2011-12 and 280 MU in the FY 2012-13 while 326.38 MU is expected to generate in the FY 2013-14.

#### **Drawl of Water from OHPC Reservoir and Loss of Generation**

62. The state Government has recently taken a view that the industrial consumers drawing water from the reservoirs shall compensate OHPC towards the loss of power generation. The GoO, Dept. of Water Resources (DoWR) has issued the executive instruction vide letter no. 25983, Dated 01.10.2013 that these industrial units shall execute a supplement agreement with OHPC. None of the industrial units have signed the agreement till date. OHPC agrees to adjust the revenue actually realized from the industries in the ARR to be decided by the Hon'ble commission.

#### **Operation of Hirakund**

63. Hirakund Reservoir is a multipurpose dam project with priorities for irrigation & flood control. The MDDL of Hirakund is 590fts. The district administration has not allowed reducing the RL of Hirakund Reservoir beyond 595fts for irrigation of Khariff crops in Hirakund command areas. The minimum water level of RL 595 ft is required for a driving head to push water through the canal network which runs for about 150 km. The copy of the proceedings of 72<sup>nd</sup> meeting of Hirakund Co-ordination Committee is enclosed in rejoinder.

### **Design Energy V/s. Actual Generation of OHPC Stations**

64. The generation of 7612 MU for the FY 2014-15 of OHPC as projected by the DISCOM's cannot be visualized at this moment as the generation is dependent on the hydrology of the FY 2014-15. However considering the water availability in the reservoirs, OHPC may generate 1586 MU from 01.04.2013 to 30.06.2013 during FY 2014-15.
65. It is observed that OHPC has achieved its Design Energy in the FY 2007-08 and FY 2008-09 due to favorable hydrology conditions. But in the subsequent year it could not achieve mainly due to hydrology failure.
66. However, for the FY 2013-14, the available Water Potential in different reservoirs under OHPC is sufficient to generate more than DE. The total actual generation from different PS under OHPC Ltd. except MHEP for the period from 01.04.2013 to 31.12.2013 is 5870.1292 MU. For the balance period of the FY 2013-14, the generation of 1278 MU has been scheduled.
67. Thus OHPC Ltd. is expecting to achieve 7148.1292 MU in the FY 2013-14. The estimation of 7350 MU made by the DISCOM is not at all realistic and has no merit due to the fact that the rainfall during FY 2014-15 can't be predicted.

### **Interest on Govt. Loan and Normative Loan of UIHEP**

68. There is no such statutory provision that the interest on Govt. Loan will be repaid after payment of Principal. As such, CAG in its report for the FY 2012-13 also commented that, "Interest payable on loan from Govt. of Orissa is understated & accumulated profit is overstated to the tune of Rs.243.95 Cr due to non provision of interest payable on Govt. of Orissa Loan- 2(A) UIHEP of Rs.497.86 Cr @7% p.a. since FY 2006-07 to FY 2012-13".
69. As Commission directed for Debt-moratorium during the FY 2010-11 to 2012-13, OHPC could not make repayment of the UIHEP/Govt. loan during the said FY. Therefore the loan outstanding stands at Rs.497.86 Cr as on 31.03.2013. Hence the OHPC is entitled to receive the interest @ 7% on the entire outstanding of Rs.497.86 Cr with effect from 01.04.2006 to 31.03.2013.
70. OHPC had prayed before Honorable Commission to allow interest (@ weighted average rate as per CERC norms) for an amount of Rs.79.29 Cr on Normative loan from 01.02.2001 to 31.03.2014 as RA in line with National Tariff Policy 2006 against the normative loan outstanding of Rs.78.23 Cr.

### **Return on Equity**

71. The combined capital cost of R&M works of Unit- 1 & 2 is Rs.45.69 Cr (Rs.25.36 Cr + Rs.20.33 Cr) is less than the approved R&M cost of Rs.47.5 Cr for Unit- 1. Also OHPC in its tariff application for the FY 2013-14 had intimated to take up the R&M works of Unit- 2 RHEP within approved cost of Rs.47.5 Cr by Honorable Commission. So, within that approved cost OHPC has renovated both unit- 1 & 2 of RHEP and thus the Capitalization of Rs.23.41 Cr (including Rs.0.09 Cr towards balance R&M of Unit- 1, Rs.2.99 Cr towards additional capitalization for the FY 2012-13) is quite justified.



### **Interest on Normative Loan and Additional Capitalization for R&M Work of RHEP Unit- 2**

72. The combined capital cost of R&M works of Unit- 1 & 2 is Rs.45.69 Cr (Rs.25.36 CR + Rs.20.33 Cr) is less than the approved R&M cost of Rs.47.5 Cr for Unit- 1. Also OHPC in its tariff application for the FY 2013-14 had intimated to take up the R&M works of Unit- 2 RHEP within approved cost of Rs.47.5 Cr by Honorable Commission. So, within that approved cost OHPC has renovated both unit- 1 & 2 of RHEP and thus the Capitalization of Rs.23.41 Cr (including Rs.0.09 Cr towards balance R&M of Unit- 1, Rs.2.99 Cr towards additional capitalization for the FY 2012-13) is quite justified.

### **O & M Expenses**

73. The O&M expenses considered in the tariff for the FY 2013-14 amounting to Rs.216.67 Cr are as per the CERC (Terms and Conditions of Tariff) Regulations, 2009.

### **Depreciation**

74. The reason for including additional capitalization has already been justified in previous sections therefore Commission may consider depreciation of OHPC in full as submitted in the application.

### **Peaking Capacity**

75. The 7th & 8th units are set up to meet Peaking demand and also to meet the generation gap when units 1 to 6 are taken for R&M in phase with two units at a time. The peaking capacity of Balimela 7th & 8th units is for the consumers of the state of Orissa.
76. The additional cost of procurement of power from the market by GRIDCO during the peaking period is being compensated by the generation capacity of unit#7 and unit #8 thus providing relief to the consumers of Orissa. Further, additions of Unit- 7 & 8 have no effect on design energy, which is actually governed by the live storage capacity of the reservoir.

### **Joint Venture for Setting up Thermal Power Projects**

77. The decision to set up thermal power project in JV was taken up by the state Government during 2006. The thermal project besides earning revenue shall feed the state during the poor monsoon and hydrology failure to meet the demand of state. Other than OPGC 51% share, the state govt. have no thermal power plants under its control. To improve the base load and to meet the load demand of the state in the coming years, State Govt. took decision to establish a thermal power plant in the state. For the Thermal Power Project, EIA report has been received which is being submitted to SPC Board for taking up public hearing. The total land for project has been finalized. Feasibility report prepared by M/s Development Consultants Pvt. Ltd is under re-assessment to include the cost of railway line, track hopper and wagon tippers. Site specific studies / investigations / clearances are under process. Present status of the plant has been submitted by OHPC in detail in rejoinder. The land acquisition by OPTCL at Kamakshya Nagar, Denkanal is in progress. Till date, OHPC has provided Rs.103.94 Cr to OPTCL. The copy of Ledger Account has been submitted in rejoinder.

### **Steps Taken for Development of New Hydro Projects**

78. From a capacity of 1237.5 MW during transfer of assets from Govt. of Orissa and OSEB, OHPC at present has an installed capacity of 2062 MW. Projects of 600 MW UIHEP, Makhiguda in 2001; RM&U of Units 1 & 2 of 99 MW in 1998, Unit 3 & 4 of 64 MW in 2006 at HHEP, Burla, resulting an additional capacity of 40 MW and installation of two new Units (7 & 8) at BHEP, Balimela (150 MW) in December 2008 and January 2009 respectively. The total capacity augmentation is 790 MW. OHPC has prepared pre feasibility report (PFR) for the Pumped Storage Scheme at three different location i.e. UIHEP, Makhiguda (600 MW), UKHEP, Upper Kolab (320 MW), BHEP, Balimela (400 MW). The DPR of Indravati Pump Storage Project the detailed tendering and construction work will be taken up.

### **Truing Up Exercise**

79. OHPC has computed a loss of Rs.110.92 Cr since 2009-10 to 2011-12 on account of hydrology failure and computed a shortfall in energy charges for the FY2012-13 to the tune of Rs.48.73 Cr. Thus a cumulative amount of Rs.149.654 Cr has been incurred by the OHPC up to 31.03.2013. Hon'ble Commission may allow the OHPC to recover this amount in ARR for FY 2014-15.

### **Potteru HEP**

80. OHPC has submitted a detail report to Dept. of Energy, Govt. of Orissa for approval for disposal of Potteru SHEP, with all relevant documents. OHPC has never capitalized the Potteru HEP, so the question of loan recovery and passing of interest does not arise.

### **Typological Error in the Computation of ARR of BHEP for FY 2014-15**

81. OHPC has inadvertently omitted the normative loan recovery amount of Rs.0.10 Cr from additional capitalization amount for FY 2012-13. So, the depreciation recovery for BHEP shall be Rs.15.27 Cr instead of Rs.15.17 Cr.

### **De-silting of Reservoirs**

82. Honorable High Court in their judgment Order dated 30.03.2012 in WP © No. 8409 of 2011 has directed in clause no. 24 (ii) to State Govt. & DoWR that, "A corpus should be created by imposing a levy on the industries drawing water from different reservoirs for the purpose of maintenance of reservoirs and water sources, by making periodical dredging and removal of shoals etc. In that respect, appropriate legal provisions should be made within three months." DoWR has to take action in this regard.

### **Restriction in Generation of HHEP below RL 595 ft**

83. As per PPA of all the individual power stations of OHPC executed between GRIDCO & OHPC and duly vetted by Commission has the provision as, " Any statutory order issued by the Govt. of Orissa duly endorsed by the Commission shall be binding on both parties and the provisions of the PPA shall be interpreted accordingly".
84. Views of objectors and the direction of DoWR regarding electricity generation from Hirakund Reservoir below 595 ft is quite contradicting. In this context Commission may like to advise Govt. to allow OHPC to generate up to 590 ft at HHEP, Burla keeping aside the decision taken in the 72<sup>nd</sup> meeting of Hirakund Co-ordination Committee dated 04.12.2013 and 1<sup>st</sup> meeting of the committee on water utilization

policy dated 03.07.2012. Otherwise OHPC may be allowed to generate at 595 ft level with reduction in DE of HHEP & CHEP as decided by Honorable Commission.

#### **Interest on Income**

85. As on 30.01.2014 OHPC is having a surplus of about Rs.700 Cr in its bank deposits against which there are liabilities of about Rs.320 Cr to be paid within 6 to 7 months out of this surplus. Further, in case GRIDCO fails to pay the regular energy dues the liabilities shall be further increased on account of monthly regular expenses. In addition to this it is to mention that these surpluses are created mainly due to non-declaration of dividend since FY 1996-97 to FY 2008-09 and plugging back the same for future equity contribution.
86. Interest income is not an element of tariff determination. Further, it may not be out of place to mention here that OHPC is planning to invest Rs.987 Cr towards the Equity contribution during 12<sup>th</sup> FYP. Therefore, OHPC Prays before the Commission not to deduct the income from interest towards fixed deposit from the ARR of OHPC which is in line with CERC Regulations.

#### **VIEWS OF CONSUMER COUNSEL (Para 87 to 94)**

87. On behalf of WISE, Pune the Consumer Counsel made a presentation on the Analysis of ARR and tariff filing of OHPC for 2014-15. The Consumer counsel's observations /suggestions are elaborated below.
88. Comparative analysis of ARR approved by the Commission for FY 2013-14 to that of the proposed ARR for FY 2014-15 reveals that the ARR for FY 2014-15 (without up valuation of assets)of OHPC HEP excluding Machhkund is proposed to be increased by 36.9% in comparison with the approved ARR of FY 2013-14.
89. During FY 2014-15, OHPC proposes to supply an estimated saleable designed energy of 5322.45 MU at an average rate of 102.28 P/kWh. During FY 2013-14, same unit supply was approved by Commission at an average rate of 70.77 P/kWh. Hence the proposed overall increase in OHPC tariff will be 44.5% compared to previous year's approved tariff. While in case of Machhakund the proposed tariff will increase by 35.3% compared to previous year.
90. OHPC has reported an expenditure of Rs.31.62 Cr on account of capitalization of assets during FY 2013-14. Runner purchased for Unit-1 has been put in to operation in Unit-2. This needs to be verified on the basis of actual status of work. Therefore, the expenses may not be allowed as pass through. Hon. Commission may consider the RoE on account of additional capitalization in FY 2013-14 to pass through in the ARR after verifying the cost and status of the work.
91. The consumer counsel noted that the OHPC has claimed interest on normative loan with respect to the RHEP, UKHEP, BHEP and CHEP. This is notional loan and interest is claimed for equity infusion in excess of 30% by OHPC. The consumer counsel requested to set aside this loan in order to avoid increase in tariff.
92. The consumer counsel requested the Commission to direct OHPC to match the repayment of loan with the depreciation claimed as mentioned in OERC and CERC tariff regulations.
93. The consumer counsel noticed that OHPC is claiming interest on working capital on normative basis as per provision under CERC Tariff Regulation 2009. The audited account as per current ARR shows net profit of Rs.47.1 Cr during FY 2012-13 which

is a considerable amount to prevent from availing loan for working capital requirement. This implies that OHPC may not require availing loan for working capital requirement, and, therefore, it is requested that interest on working capital may not be allowed as pass through in ARR of FY 2014-15.

94. The Commission may ask for the status of steps taken by DoWR with regard to de-silting of Hirakund reservoir.

#### **OBSERVATIONS OF THE STATE ADVISORY COMMITTEE (SAC)**

95. The Commission convened the State Advisory Committee (SAC) meeting on 28.02.2013. The Members of SAC deliberated on different issues related to power sector and the Annual Revenue Requirement of various licensees. However, no specific view was offered related to Annual Revenue Requirement and Tariff filing of OHPC.

#### **COMMISSION'S OBSERVATIONS AND ANALYSIS OF OHPC'S PROPOSAL (Para 96 - 150)**

96. The Commission has carefully examined and analysed the proposal of OHPC. The written and oral submissions of the objectors have been considered while deciding the various parameters for determining 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 in respect of all these stations has also been provided along with tariff calculations.
97. During the course of public hearing, the objectors had raised certain pertinent issues having direct impact on tariff of OHPC. Issue-wise response was submitted by OHPC. Commission's analysis to the following pertinent issues related to tariff of OHPC are discussed as under:
- Power Procurement from OHPC
  - Annual Fixed Cost
  - Two-part Tariff (Capacity Charge & Energy Charge)
  - Issues relating to Machhkund Hydro Electric Project
  - Compensation claimed towards Hydrology Failure & Loss of energy charge due to restriction in generation in the FY 2012-13

#### **Power Procurement from OHPC**

98. The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) was 2062 MW as on 1<sup>st</sup> of April 2013 including Odisha share of Machhkund. Subsequently, for the FY 2013-14 after 15.06.2013 the installed capacity has been reduced to 2007.00 MW due to reduction of installed capacity of units 5 & 6 of HHEP, Burla in line with Commission's order dt.26.12.2012 and 02.07.2013 passed by the Commission in Case No.31/2012 & Case No.09/2013 wherein the total installed capacity of both the units were considered as 20 MW together in place of original installed capacity of 75 MW (2x37.5 MW). In accordance with Section 61(a) of the Electricity Act, 2003, the Commission is to be guided by the principles and methodologies specified by the CERC (Terms & Conditions of Tariff) Regulations

notified from time to time for determination of tariff applicable to generating companies such as that of OHPC.

99. Auxiliary energy consumption for surface hydro electric power generating stations with static excitation system is to be determined at 0.5% of energy generated and transformation loss from generation voltage to transmission voltage is to be calculated at 0.5% of energy generated. Accordingly, energy sent out from the generating stations in respect of OHPC should be determined deducting 1% on gross generation treating 0.5% towards auxiliary consumption and 0.5% towards transformation loss. Accordingly, GRIDCO has considered 5501.66 MU of availability from OHPC hydro stations including Machhkund as per this generation plan submitted by OHPC after deduction of 16.60 MU of allocations to CSEB from Hirakud Power Station and 0.5% auxiliary consumption and 0.5% transformation loss.
100. OHPC has furnished a tentative monthly generation programme for its different units. The same has also been furnished by OHPC to GRIDCO in regard to generation during FY 2014-15. GRIDCO has projected the power purchase from OHPC stations based on the latest generation plan submitted by OHPC for different stations. As indicated earlier, the design energy of OHPC old stations as proposed by OHPC is 3379.86 MU for FY 2014-15 on account of reduction of design energy in case of HHEP, Burla and CHEP, Chiplima. The Commission do not accept the proposal for reduction in design energy proposed by OHPC in case of HHEP, Burla from 684.00 MU to 517.00 MU and of Chiplima from 490.00 MU to 357.00 MU. The Commission has already rejected the proposal of OHPC for reduction of design energy vide its order dtd. 30.01.2013 in Case No.121/2009.
101. Further, it is premature to predict the rainfall at this point of time. The Commission cannot accept a figure of 7612 MU as suggested by the DISCOMS as generation depends on hydrological condition, reservoir levels and water use by other agencies. Acceptance of such a high figure would mean reduced drawal from high cost energy sources, which in turn would affect the power purchase cost of GRIDCO in case of reduced hydro generation. As such, the Commission considers it appropriate to accept and approve a figure of 3676.86 MU as net energy available from the Old Stations and 1942.38 MU in case of UIHEP for the year 2014-15 after deduction of auxiliary consumption and transformation loss based on design energy. However, the Commission advises OHPC to have optimal operation of its generating stations to maximize generation not to spill water during monsoon months, unless it becomes absolutely necessary for dam safety. The Commission reiterates its direction that OHPC should maintain and test its generating units which are capable of its rated capacity including margin of over generation during pick time (Continuous operation of 3hours at a time in a day) one by one and keep all its units ready for optimal generation during the monsoon time for maximizing the secondary generation.

#### **Machhkund**

102. This hydro power station is a joint venture of Government of Odisha and Andhra Pradesh with an installed capacity of 114.5 MW and design energy of 525 MU. Machhkund is in operation in synchronization with Southern Grid and power from Machhkund is being availed by Odisha through radial load. Based on the 50% drawal by GRIDCO, the quantity comes to 262.50 MU. GRIDCO has projected drawl of 262.50 MU for the FY 2014-15. The Commission approves 262.50 MU to be drawn from this station during 2014-15.

103. The Commission's approval of power to be purchased by GRIDCO for FY 2014-15 from various stations of OHPC is given in the table below:-

**Table - 16**  
**Hydro Drawal and Projections for 2014-15**

Sl. No.	Name of the HE Project	Installed Capacity (MW)	Design Energy (MU)	Commission's Approval for 2013-14 (MU)	Commission's Approval 2014-15 (MU)
1.	Hirakud	220.50	684.00	677.16	677.16
2.	Chiplima	72.00	490.00	485.10	485.10
3.	Balimela	510	1183.00	1171.17	1171.17
4.	Rengali	250	525.00	519.75	519.75
5.	Upper Kolab	320	832.00	823.68	823.68
	<b>Total (Old Stations)</b>	<b>1372.50</b>	<b>3714.00</b>	<b>3676.86</b>	<b>3676.86</b>
6.	UIHEP	600	1962.00	1942.38	1942.38
7.	<b>Machhkund (Odisha Share)</b>	34.50	<b>262.50</b>	<b>262.50</b>	<b>262.50</b>
	<b>Total Hydro</b>	<b>2007.00</b>	<b>5938.50</b>	<b>5881.74</b>	<b>5881.74</b>

Thus, the Commission for tariff purpose approves the total saleable energy of OHPC power stations (including Machhkund share) at 5881.74 MU as per the design energy of the power stations as determined by the Commission.

**Annual Fixed Cost:**

104. Determination of annual fixed cost of OHPC stations includes interest on loan, depreciation, return on equity, O&M expenses and interest on working capital. These factors in turn are again based on the total loan liabilities of OHPC, the equity components and the total fixed assets of OHPC power stations. In this context, the Commission vide its letter No.JT(FN)-175/02/4617 dtd.28.12.2012 has written to the Govt. regarding keeping in abeyance the upvaluation of assets, moratorium of debt services etc.

**Keeping in abeyance the upvaluation of assets, moratorium of debt services etc.**

The Commission have advised the State Govt. to take the following steps vide their letter No. DIR(T)-344 / 2008 (Vol-III) -4440 dated 19.7.2010.

- (i) GRIDCO/OPTCL and OHPC would be entitled to depreciation on the assets prior to revaluation, calculated at pre-92 norms notified by Govt. of India, as per the direction of Hon'ble High Court of Orissa.
- (ii) Moratorium on debt servicing by GRIDCO and OHPC to the State Govt. would be allowed till the power sector turns-around except the amount in respect of loan from the World Bank to the extent the State Govt. is required to pay to the Govt. of India.
- (iii) GRIDCO & OHPC shall not be entitled to any RoE till the sector become viable on cash basis. The State Govt. investment actually made in Upper Indravati Project, excluding the normative equity, should yield return to the State Govt. with effect from FY 2010-11 after clearance of loan liabilities of PFC. However, interest at the rate of 7% should be charged and paid on this investment from FY 2006-07 onwards. Return on Equity on the old Hydro Power Plants may be allowed to OHPC, in respect of new projects commissioned after 01.04.1996.

(iv) The concessions/Govt. support, indicated above are subject to the following stipulations:

- The State owned utilities viz. OHPC, GRIDCO and OPTCL earning accounting/book profit are made to utilize the same for capital investment, servicing of Govt. loan and payment of dividend.

The State Govt. in response to the letter of Commission vide No.4440 dtd.19.07.2010 have extended the following concession in their letter No.2404 dtd.21.03.2011. The extract of the letter is given below for ready reference:

- i) Moratorium on debt servicing by GRIDCO & OPTCL and OHPC to the State Government till the power sector turns around except the amount in respect of loan from the World Bank to the extent to the State Government is required to pay to Government of India.
- ii) Keeping in abeyance the effect of up-valuation of assets of OHPC and GRIDCO/OPTCL till the sector turns around.
- iii) The OHPC, GRIDCO & OPTCL shall not be entitled any RoE till the Sector becomes viable on cash basis.
- iv) Government in Finance Department, after careful examination of the issues, have observed that “an open ended commitment by the State Government to extend this supportive measures would be undesirable. At the first stage these supports may be continued till 2012-13 after which a review should be made by the State Government and on that basis a view could be taken on the need for further extension of these measures”.

The Commission in its letter No. 2502 dtd. 06.01.2012 again requested for following amendment.

The Commission would therefore like to request the State Govt. to issue the amended notification as suggested by the Commission vide their letter No.4440 dtd.19.07.2010, so that this would appropriately be reflected while determining the annual revenue requirement of the distribution licensees for the year 2012-13. In absence of specific communication in this regard by 31.01.2012, the Commission would assume the extension of the benefit notified on 29.01.2003 & 06.05.2003 till the sector as a whole turns around.

In reply to the Commission's letter dated 06.1.2012, the Department of Energy in their letter dated 19.3.2012 have mentioned the following:-

*“The suggestions of the Hon'ble Commission to keep the support of govt. in the matter of keeping the effect of upvaluation of assets of GRIDCO / OPTCL & OHPC, allowing the moratorium on debt services to the State Govt.'s till the sector turn around and not allowing ROE to GRIDCO/OPTCL and OHPC till the sector becomes viable on cash basis has not been agreed to by the Govt. in Finance Department. However, steps have been taken in regard to other recommendations of the Hon'ble Commission in their letter No.4440 dated 19.7.2010 and the proposal will be placed before the Cabinet for approval after which required notification will be issued.”*

The Commission vide letter No.Dir(T)-175/02/77 dtd.16.01.2014 intimated that the Commission has not yet received the detailed notification of the State Govt. The concession was given only upto the financial year 2012-13. The same concession may

be continued for FY 2014-15 and onwards so that the effect of upvaluation is not considered while determining the tariff for the ensuing year.

However, pending receipt of reply/notification from the Govt. the Commission would assume the extension of benefit notified by the Govt. on 29.1.2003 and 06.5.2003 shall continue till the sector as a whole turns around.

2. Reply from the State Govt. on this issue is awaited. The Commission has not yet received the detailed notification of the State Govt. The concession was given only up to the financial year 2012-13. The same concession may be continued for FY 2013-14 and onwards so that the effect of upvaluation is not considered while determining the tariff for the ensuing year.

However, pending receipt of reply/notification from the Govt. Commission would assume the extension of benefit notified by the Govt. on 29.1.2003 and 06.5.2003 to continue till the sector as a whole turns around.”

#### 105. **Interest on Loan:**

The loan liabilities of OHPC consist of State Govt. loan, PFC loans and the Normative Loan.

##### • **State Govt. Loan**

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

OHPC has submitted that, the State Govt. vide their Notification Dt.06.01.2010 at Para (v) mentioned that;

“The State Govt. investment made in Upper Indravati Project, excluding the normative equity, should yield return to the State Govt. with effect from FY 2010-11 after clearance of loan liabilities of PFC. However, interest at the rate of 7% should be charged and paid on this investment from FY 2006-07 onwards.”

Although State Govt. indicated to charge and pay interest @ 7% w.e.f. FY 2006-07, the Commission has not allowed the same in the ARR of OHPC since FY 2006-07 onwards. The details Statement of State Govt. loan of UIHEP is given below:

**Table - 17**

	(Rs.in Cr.)
Original Approved Project Cost	1195.42
Project cost deducting the infirm power cost	1194.79
25% Equity	298.70
Loan outstanding as on 01.04.2014	497.86
Depreciation allowed from 2010-11 to 2013-14 @ Rs30.23 Crore	120.92
Loan Repayment made till FY 2013-14	00
Balance Outstanding Loan as on 01.04.2014	497.86
Interest claimed for the year 2014-15@ 7% on Rs 497.86Crs	34.85

- OHPC has claimed cumulative interest to be recovered from FY 2006-07 to FY 2012-13 to the extent of Rs.243.95 Crs towards UIHEP Govt. loan.
- OHPC submits to approve Rs.34.85 Crs towards interest on Govt loan of UIHEP in the Tariff for the FY 2014-15.



## II) PFC Loan

The PFC loans were obtained in connection with R & M projects of HHEP, Burla and extension project of BHEP, Balimela as shown below.

**Table - 18**  
**PFC loan outstanding**

Sl. No.	Name of the Units	Outstanding loan as on 01.04.2014	Loan Repayment for FY 2014-15
1.	Unit #3 & #4, Burla	12.99 Crs (INR)	6.52 Crs (INR)
2.	Unit #7 & #8, Balimela	6363000.01 (USD)	9.60 Crs (INR)

The interest on PFC loan is calculated to be **Rs.0.80 Crs. & Rs.3.21 Crs.** for Burla & Balimela respectively. On account of repayment of Principal & Interest in Indian rupees in respect of PFC Loan availed in USD for Unit 7 & Unit 8 of BHEP, Balimela, OHPC has incurred a loss of Rs.4.64Crs towards payment of principal and Rs.1.35Crs towards payment of interest from FY2007-08 to FY 2013-14 due to fluctuation Loss.

## III) Normative Loan

The normative loans of CHEP, RHEP & UKHEP is considered @ 9.8% as per Clause No. 5 of CERC Regulation, 2009. The normative loan of BHEP, Balimela is considered @ 9.6 % for FY 2014-15 based on PFC interest rate applicable to BHEP.

As far as repayment of normative loan of UIHEP amounting to Rs.78.23 Crs is concerned, the Commission in the para 131 of Compendium of Tariff Order of OHPC for FY 2013-14 had 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 Crs. 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**”.

OHPC has submitted that if the repayment of Normative Loan & interest is not allowed as per CERC norms, the normative loan principal & normative interest shall be Rs.242.63Crs( Normative Loan Rs.78.23Crs + Interest @7% from FY2006-07 to FY 2036-37 as Rs.164.4Crs.) even after the useful life of UIHEP.

Hence, the Commission may allow the accumulated interest on Normative Loans of UIHEP upto FY 2013-14 in present Tariff as well as from the FY 2014-15 onwards in line with the CERC norms.

### **Abstract of Interest and GC**

As summarized in Table-7, the Unit wise interest on loan and guarantee commission as proposed by OHPC is scrutinized by the Commission.

The Commission has examined the proposal of OHPC towards payment of interest on Govt. loan of Rs.497.86 cr. and interest on normative loan of Rs.78.23 crs. The Commission has already dealt with the matter in Case No.100/2012 and as per para 131 of the compendium of tariff orders for FY 2013-14 directed as follows. The extract is reproduced below:

“The Commission has analysed the proposal of OHPC and observes that the principal repayment has already been passed in the tariff of 2010-11, 2011-12 and 2012-13 @ Rs.30.23 Cr. per year. The same amount is allowed in the tariff of 2013-14 towards

principal repayment. The total principal repayment will take 17 years i.e. beginning with 2010-11 and will terminate by 2027-28. Thereafter, the interest payment will be taken into consideration. In this circumstances for the year 2013-14 an amount of Rs.30.23 Cr. is allowed as principal repayment under the head depreciation. No interest component for UIHEP is allowed in the tariff for 2013-14.

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

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

106. The Commission has examined the proposal of OHPC to consider the interest on Govt. loan of Rs.497.86 Crs. from the FY 2006-07 to 2013-14 and the interest on normative loan of Rs.78.23 Crs. from the FY 2001-02 to 2013-14. The Commission observed that the depreciation has already been allowed in the tariff of 2010-11, 2011-12, 2012-13 and 2013-14 @ Rs.30.23 Cr. per year. The same amount is also allowed in the tariff of 2014-15 towards principal repayment of UIHEP Govt Loan. Thus OHPC is required to make Principal repayment of Rs 30.23 Crs. against the depreciation allowed during the FY 2014-15. Further the depreciation allowed from the FY 2010-11 to 2013-14 totals amounting to Rs 120.92 Crs. may also be paid to the Govt. of Odisha.
- ii) The Commission may consider the interest accumulated on Govt Loan and Normative loan of UIHEP in the ARR of OHPC after completion of the Principal repayment of the Govt loan and Normative loan as per our observations above.
- iii) The Commission has examined the Comments of Comptroller and Auditor General of India regarding non-booking of interest by OHPC on Govt loan extended to UIHEP @ 7% w.e.f 2006-07 onwards based on the Govt Notification dated 6.01.2010 which provides that :-

***“The State Government investment actually made in Upper Indravati Project, excluding the Normative Equity, should yield return to the State Government w.e.f FY 2010-11 after clearance of loan liabilities of PFC. However, interest @ 7% should be charged and paid on this investment from FY 2006-07 onwards.”***

On examination of OHPC Audited Books of Accounts for FY-2012-13, it is found that OHPC is yet to book the interest on UIHEP Loan in its books of accounts on the ground that the Commission disallowed the interest in the ARR of OHPC. Commission has disallowed the interest on UIHEP loan to reduce the tariff burden on

the Consumers. In this connection the clarification of the Commission in its Order dated 20.03.2013 is reproduced below:-

*“The Commission has analyzed the proposal of OHPC and observes that the principal repayment has already been passed in the tariff of 2010-11, 2011-12 and 2012-13 @ Rs.30.23 Cr. per year. The same amount is allowed in the tariff of 2013-14 towards principal repayment. The total principal repayment will take 17 years i.e. beginning with 2010-11 and will terminate by 2027-28. Thereafter, the interest payment will be taken into consideration”.*

Thus the Commission has accepted the interest element on UIHEP Govt loan since 2006-07 but could not pass the same to avoid tariff burden on Consumers. Hence the matter has been crystallized in the Tariff Order for FY 2013-14. Therefore, OHPC is required to book the interest on UIHEP Govt Loan @ 7% w.e.f 2006-07 on accrual basis based on the Tariff Order dated 20.3.2013.

**In line with the above observations and the Commission’s letter No. Dir(T)-175/02/77 dtd.16.01.2014 to the Government, no interest on loan for UIHEP is allowed for the purpose of tariff for FY 2014-15.**

107. The Unit-wise interest on loan and guarantee commission as described above and approved by the Commission for the FY 2014-15 is as given below:

**Table - 19**

**(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	-	-	3.21	0.80	-	-	4.01
2.	Normative loan	3.01	0.46	1.38	0.19	0.88	0.00	5.92
3.	G.C.	-	-	0.64	0.44	-	-	1.08
<b>Total</b>		<b>3.01</b>	<b>0.46</b>	<b>5.23</b>	<b>1.44</b>	<b>0.88</b>	<b>0.00</b>	<b>11.02</b>

**The Commission accepts and approves interest payment of Rs.11.02 crore for OHPC old stations for the FY 2014-15 as proposed by OHPC as against Rs.11.37 Cr. allowed in the tariff for the FY 2013-14.**

#### **Depreciation:**

108. From FY 2003-04 onwards, as per the directions of the High Court of Odisha, depreciation was calculated at pre-1992 norms notified by Govt. of India on the book value of the assets. During 2004-05 again, the Commission calculated depreciation limiting to principal repayment.

For the purpose of determination of Annual Fixed Cost, depreciation computed @ 2.57% of the project cost is considered for FY 2014-15. However, in case of Balimela where loan repayment is more than the computed depreciation @ 2.57%, the actual loan repayment has been considered and the depreciation amount has been extended to meet full repayment of principal loan for the FY 2014-15. In case of UIHEP, the 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 2014-15 for recovery through tariff.

109. The details of repayment of loan as submitted by OHPC for old stations is as under:

**Table – 20**  
**Statement of Repayment of Loans**  
**(Rs. cr.)**

<b>Power Stations</b>	<b>2013-14</b>	<b>2014-15</b>
HHEP	6.52	7.01
CHEP	2.31	2.63
BHEP	15.17	15.27
RHEP	1.78	3.41
UKHEP	1.45	1.68
UIHEP	30.23	30.23
<b>Total</b>	<b>57.46</b>	<b>60.23</b>

110. For the year 2014-15, depreciation is claimed in the tariff applying 2.57% in case of RHEP, UKHEP and CHEP whereas for BHEP and HHEP the requirement for actual loan repayment is considered for recovery through depreciation as approved by the Commission which is as summarized below:

**Table – 21**  
**Depreciation approved for 2014-15**

<b>Name of the Power Station</b>	<b>Approved Depreciation (Rs. Cr)</b>	<b>Remark</b>
HHEP	7.01	Equal to loan repayment
CHEP	3.51	2.57%
BHEP	15.27	Equal to loan repayment
RHEP	3.77	2.57%
UKHEP	3.19	2.57%
<b>Sub-Total</b>	<b>32.76</b>	
UIHEP	<b>30.23</b>	Spread over useful life of the plant
<b>Grand Total</b>	<b>62.99</b>	

The amount of depreciation of Rs.32.76 Crore is approved by the Commission for the FY 2014-15 for the old power stations of OHPC. In respect of UIHEP, the depreciation is calculated based on straight line method after deducting the cumulative depreciation allowed in ARR till 2009-10 from the depreciable value of the project cost. This comes to Rs.30.23 Crore as determined during FY 2010-11. The same amount is also approved for the FY 2013-14 which is found to be adequate enough for OHPC to meet its loan repayment liability.

**Thus the Commission approves a total amount of Rs.62.99 cr. on account of depreciation for tariff purpose in ARR of FY 2014-15, as proposed by OHPC in its application.**

#### **Return on Equity**

111. In regard to the equity base of OHPC, the same was already 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.

112. Based on the contents of the above order and subsequent Govt. Notification dtd.29.01.2003, the Return on Equity for the year 2004-05 was allowed to OHPC on new investments made only after 01.04.1996. Further, the State Govt. vide its Notification dtd. 06.01.2010 has extended the same upto the year 2010-11. Based on the observation of the State Govt. as mentioned above the supportive measures will be continued till 2012-13, the Commission would therefore, accept the equity base as the investments made after 01.04.1996.
113. As stated earlier in para 14, OHPC has calculated the ROE at 24.9962%. It is worth mentioning here that CERC has recently come out with a new tariff order wherein the addition to the return on equity on account of normative income tax has been discontinued.
114. The Commission is of the view that actual tax paid can be allowed as a pass through but not a notional calculation of the tax on normative basis. Accordingly the Commission decides to allow return on equity at 16% with new capital addition with a provision to reimburse the actual income tax paid during the FY 2012-13 which is subject to change after the truing up order passed on actual tax paid during the FY 2014-15. Accordingly the details of ROE of OHPC power stations for the FY 2014-15 is furnished below:

**Table - 22**

Sl. No.	Name of the Power Station	Value of New capital addition	Equity Portion (%)	Amount of Equity	ROE Proposed by OHPC @ 24.9962% for FY 2014-15	ROE approved by the Commission for FY 2014-15 @ 16%
1.	RHEP	55.57	30	16.671	4.167	2.667
2.	UKHEP	15.79	30	4.738	1.184	0.758
3.	BHEP	212.42	30	63.725	15.929	10.196
4.	HHEP	204.94	25	51.235	12.807	8.198
5.	CHEP	45.24	30	13.572	3.392	2.172
	Sub Total	533.96		149.941	<b>37.479</b>	<b>23.991</b>
6.	UIHEP	1194.79	25	298.698	74.663	47.792
<b>Total</b>					<b>112.143</b>	<b>71.783</b>

115. **The Commission approves return on equity for all the OHPC stations amounting to Rs.71.78 Cr. for the FY 2014-15 as summarized in the table above.**

#### **O&M Expenses**

116. The Commission after due scrutiny approves O&M expenses at Rs.294.46 cr. for FY 2014-15 as proposed by OHPC. Station wise O&M expenses approved for FY 2014-15 is presented in the table below:

**Table -23**  
**Statement of O & M Expenses for 2014-15**

(Rs. in Crs.)

Sl. No	PARTICULARS	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
1	O&M Expenses calculated averaging audited expense of each power station of OHPC from FY2008-09 to FY2012-13 as per CERC Tariff Regulation 2009	36.31	27.35	52.04	55.00	12.59	183.29	52.61	17.58	253.48
2	O & M expenses for FY 2013-14 with escalation @ 5.72% over FY 2012-13	38.39	28.91	55.02	58.15	13.31	193.77	55.62	18.59	267.98
3	O & M expenses for FY 2014-15 with escalation @ 5.72% over FY 2013-14	40.58	30.57	58.16	61.47	14.07	204.86	58.80	19.65	283.31
4	Corporate Office expenses apportioned to different units under OHPC based on Installed Capacity	2.52	3.22	5.13	2.02	0.72	13.61	6.04	19.65	
5	Total O&M Expenses for the FY 2014-15	<b>43.10</b>	<b>33.79</b>	<b>63.30</b>	<b>63.49</b>	<b>14.80</b>	<b>218.47</b>	<b>64.84</b>		
	<b>Add: Arrear salary and terminal liabilities</b>									
6	Arrear terminal liabilities of Rs. 78.01 Cr. as on 31.03.2009 claimed over a period of seven years staring from 2010-11.	1.03	0.98	3.96	1.84	0.79	8.60	0.99	1.56	11.15
7	Arrear salary and terminal liabilities of Corporate office apportioned to different units under OHPC on the basis of installed capacity.	0.20	0.26	0.41	0.16	0.06	1.08	0.48	1.56	

Sl. No	PARTICULARS	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
8	Total Arrear Salary and Terminal Liabilities.	1.23	1.24	4.37	2.00	0.85	9.68	1.47		11.15
9	<b>Total O&amp;M Expenses for the FY 2014-15 including terminal liabilities</b>	<b>44.33</b>	<b>35.03</b>	<b>67.67</b>	<b>65.49</b>	<b>15.65</b>	<b>228.15</b>	<b>66.31</b>		<b>294.46</b>

#### **Interest on Working Capital:**

117. As per the prevailing CERC Regulations, 2009 the basis for calculation of Working Capital shall include the following:

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

The Commission has adopted the rate of interest on Working Capital @10% since OHPC is not actually borrowing any working capital from the banks. Thus the rate of interest applicable for bank deposits plus 0.5% is approved for the purpose of calculation of rate of interest on working capital which comes to 10%. The detail calculation of Working Capital approved by the Commission is presented in the Table below:

**Table – 24**  
**Interest on Working Capital for FY 2014-15**

(Rs. Cr.)

Sl. No.	Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub Total	UIHEP	Total
1	O&M Expenses for One Month	3.69	2.92	5.64	5.46	1.30	19.01	5.53	24.54
2	Maintenance spares @15% of O&M Expenses	6.65	5.25	10.15	9.82	2.35	34.22	9.95	44.17
3	Receivable equivalent to Two Months of Annual Fixed Cost	9.29	6.82	16.94	14.18	3.83	51.06	24.73	75.78
4	Total Working Capital	19.63	14.99	32.73	29.46	7.48	104.29	40.02	144.49
5	<b>Interest on Working Capital calculated @ 10%</b>	<b>1.96</b>	<b>1.50</b>	<b>3.27</b>	<b>2.95</b>	<b>0.75</b>	<b>10.43</b>	<b>4.02</b>	<b>14.45</b>

Thus, the Commission approves an amount of Rs.14.77 cr. as interest on working capital during the year 2014-15 as against the OHPC proposal of Rs.23.52 cr. which was calculated @14.75% rate of interest. The interest of Working Capital approved by the Commission for FY 2013-14 was Rs.16.90 Cr.

#### **Total Annual Fixed Cost**

118. Based on the above parameters the station-wise ARR and tariff calculated for the year 2013-14 is indicated in the table below:

**Table – 25**  
**Station-wise Tariff Approved For 2014-15**

Details of expenses	(Rs. Cr.)							
	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub-Total	UIHEP	Total
Saleable Design Energy(MU)	519.75	823.68	1171.17	677.16	485.10	<b>3676.86</b>	1942.38	<b>5619.24</b>
Interest on loan	3.01	0.46	5.23	1.44	0.88	<b>11.02</b>	0.00	<b>11.02</b>
Return on Equity	2.667	0.758	10.196	8.198	2.172	<b>23.991</b>	47.792	<b>71.78</b>
Depreciation	3.77	3.19	15.27	7.01	3.51	<b>32.75</b>	30.23	<b>62.99</b>
O&M expenses	44.33	35.02	67.66	65.49	15.64	<b>228.15</b>	66.31	<b>294.46</b>
Interest on working capital	1.96	1.50	3.27	2.95	0.75	<b>10.43</b>	4.02	<b>14.45</b>
<b>Total ARR (Rs. Crore)</b>	<b>55.74</b>	<b>40.93</b>	<b>101.63</b>	<b>85.09</b>	<b>22.96</b>	<b>306.34</b>	<b>148.35</b>	<b>454.70</b>
<b>Income tax paid during FY 2012-13 *</b>	<b>0.44</b>	<b>0.12</b>	<b>1.67</b>	<b>1.35</b>	<b>0.36</b>	<b>3.94</b>	<b>7.85</b>	<b>11.79</b>
<b>Net ARR</b>	<b>56.18</b>	<b>41.05</b>	<b>103.31</b>	<b>86.43</b>	<b>23.31</b>	<b>310.28</b>	<b>156.20</b>	<b>466.49</b>
<b>Average cost (P/U) 2014-15</b>	<b>108.08</b>	<b>49.84</b>	<b>88.21</b>	<b>127.64</b>	<b>48.06</b>	<b>84.39</b>	<b>80.42</b>	<b>83.02</b>
Average cost (P/U) for 2013-14	<b>78.48</b>	<b>35.36</b>	<b>71.14</b>	<b>92.53</b>	<b>52.21</b>	<b>65.62</b>	<b>80.53</b>	<b>70.77</b>

#### **ARR & Tariff Application Fees and related Publication Expenses**

119. As per Regulation 42 of CERC Tariff Regulations, 2009, the application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the transmission customers, as the case may be. Accordingly, OHPC has claimed for reimbursement of Rs.0.2650 cr. from GRIDCO towards ARR and tariff application fees and related publication expenses. The Commission approves the said amount of Rs.0.2650 cr. as pass through in the ARR of GRIDCO for the year 2014-15.

#### **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.5.376 cr. which is to be reimbursed to OHPC by GRIDCO, based on design energy.

120. OHPC has proposed 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 licence fee paid to Govt. of Odisha from GRIDCO.



121. The Commission considered the above proposal of OHPC and since the Commission does not change the design energy of OHPC power stations in view of the existing design energy license fee is accordingly approved for reimbursement. However, the Commission provisionally approves an amount of Rs.5.676 cr. to be reimbursed from GRIDCO in the FY 2014-15 based on the design energy of OHPC power stations @ Rs.0.01 per KWh. The station-wise details is summarized in the table below:

**Table - 26**

							(Rs. Cr.)
Description	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	Total
Licence fee for Consumption of water for generation of electricity	0.525	0.832	1.183	0.684	0.49	1.962	5.676

**Electricity Duty on Auxiliary Consumption**

109. 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.

ED on Auxiliary consumption of all Hydro Electric Project to the tune of Rs.0.54 Crs. as shown in the table below is to be reimbursed to OHPC by GRIDCO for the FY 2014-15 considering the reduction in design energy of HHEP and CHEP.

**Table - 27**

**OHPC Proposal for ED on Auxiliary Consumption**

								(Rs. Crs.)
Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	Total
ED on Auxiliary Consumption	0.05	0.08	0.12	0.05	0.04	0.34	0.20	0.54

The Commission examined the proposal of OHPC and in view of unaltered design energy of OHPC stations approves ED on auxiliary consumption of all hydro electric projects to the tune of Rs.0.57 cr. to be reimbursed to OHPC by GRIDCO. Considering the proposal of OHPC the Commission allows annual adjustment on reimbursement of ED at the year end limiting to 0.5% of the cumulative actual generation during the financial year instead of limiting to monthly generation. The detail of reimbursement provisionally approved for the FY 2014-15 is presented in the table below:

**Table – 28**

**Commission approval for ED on Auxiliary Consumption**

								(Rs. Crs)
Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	Total
ED on Auxiliary Consumption	0.05	0.08	0.12	0.07	0.05	0.37	0.20	0.57

### **SLDC Charges**

122. The Commission, while determining the ARR and Fees & Charges of SLDC for the FY 2014-15 in Case No.82/2013, has allowed SLDC to levy and collect Annual Charges from the users towards System Operation Functions and Market Operation Functions in accordance with Regulations 22 & 23 of CERC (Fees and Charges of Regional Load Dispatch Centre and Other Related Matters) Regulations, 2009. Accordingly, the Commission has fixed Rs.8237.46 /MW/Annum to be collected from the generators towards annual charges of SLDC. Considering the installed capacity of 2027.50 MW of OHPC (as submitted by SLDC in its ARR application), the total SLDC charges of OHPC comes to Rs.1.67 cr. for the FY 2014-15, which is to be collected by SLDC from OHPC on monthly basis and OHPC has to reimburse the same from GRIDCO. Accordingly, the Commission provisionally approves an amount of Rs.1.67 as pass through in the ARR of GRIDCO for the FY 2013-14 towards power purchase related cost of OHPC.

### **Foreign Exchange Fluctuation loss of PFC Loan of BHEP**

123. OHPC had applied for fluctuation loss on account of Foreign Exchange Variation towards PFC loan of BHEP during FY 2012-13. The Commission had observed that “to the extent the generating company is not able to hedge the Foreign Exchange exposure, the extra rupee liability towards interest payment and loan repayment corresponding to the normative foreign currency loan in the relevant year shall be permissible provided it is not attributable to the generating company or its supplier or contractor.”

The Commission had directed OHPC to furnish the details of payment both principal and interest on this account from the beginning so that the net amount could be determined and the same will be considered in the ARR of GRIDCO for the FY 2013-14.

Accordingly, OHPC has calculated the details of payments of principal and interest on PFC Loan of BHEP for R&M works of Unit 7 & Unit 8 and furnished the evidential documents in support of this. OHPC has prayed to approve Rs.5.99 Crs. (i.e. Rs.35Crs. towards interest + Rs.4.64 Crs. towards principal) to be reimbursed from GRIDCO in the FY 2014-15.

The Commission has examined the documents furnished by OHPC and approves Rs.5.99 cr. towards Foreign Exchange Fluctuation loss of PFC loan of BHEP.

### **Reimbursement of contribution made to ERPC**

124. OHPC has proposed to approve a total reimbursement claim for an amount of Rs.1.1046 cr. towards ERPC contribution from FY 2006-07 to FY 2013-14 and Rs.0.15 cr. for FY 2014-15 from GRIDCO. The Commission does not approve the reimbursement claim of OHPC for the period from FY 2006-07 to FY 2013-14 at present and only approves Rs.0.15 cr. contribution to ERPC for the FY 2014-15.
125. 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, Foreign Exchange fluctuation loss of PFC loan of BHEP and Reimbursement of contribution made to ERPC for FY 2014-15 of OHPC are summarized in the table below:

Table – 29

(Rs. Cr.)

Component of Costs	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	Total
(a) License fee for use of water for generation of electricity	0.525	0.832	1.183	0.684	0.490	1.962	<b>5.676</b>
(b) ED on Auxiliary Consumption	0.05	0.08	0.12	0.07	0.05	0.20	<b>0.57</b>
(c) SLDC charges							<b>1.67</b>
(d) Application fees and publication expenses							<b>0.2650</b>
(e) Fluctuation loss of PFC loan of BHEP			5.99				<b>5.99</b>
(f) Reimbursement of contribution made to ERPC							<b>0.15</b>
<b>Total</b>							<b>14.321</b>

Thus, the Commission approves the miscellaneous reimbursement of Rs.14.171Cr. as against OHPC proposal of Rs.15.1056 crore. The above expenditure has been included in GRIDCO's ARR and hence shown as revenue requirement in OHPC filing.

### Two-Part Tariff

126. As per Regulation-22 of new CERC Tariff Regulations, 2009, 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 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 as per the formula indicated at below.

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

Capacity charge (C.C) =  $AFC \times 0.5 \times NDM/NDY \times PAFM/NAPAF$  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:

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

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-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(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.

127. Accordingly, the Commission approves the rate of energy charge and the capacity charge of OHPC power stations for FY 2014-15 as summarized in the table below:

**Table - 30**  
**Energy Charge and Capacity Charge for 2014-15**

Name of the Power Stations	Annual Fixed Cost (Rs. Cr.)	Capacity Charge (Rs. Cr.)	Energy Charge (Rs. Cr.)	Design Energy (MU)	Energy Charge Rate (P/U)
Rengali HEP	56.18	28.09	28.09	519.75	54.045
Upper Kolab HEP	41.05	20.525	20.525	823.68	24.918
Balimela HEP	103.31	51.655	51.655	1171.17	44.105
Hirakud HEP	86.43	43.215	43.215	677.16	63.818
Chiplima HEP	23.31	11.655	11.655	485.10	24.025
Upper Indravati HEP	156.20	78.10	78.10	1942.38	40.208

The recovery of capacity charge and energy charge for a calendar month shall be as per the CERC Tariff Regulations, 2009.

#### **Normative Annual Plant Availability Factor (NAPAF)**

128. OHPC in its ARR and Tariff Application has submitted that as per CERC Tariff regulations, 50% of the annual fixed cost of a generating station is to be recovered through capacity charge. The Commission vide its order dated 02.11.2010 in 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 below:

**Table - 31**

<b>Power Stations</b>	<b>HHEP</b>	<b>CHEP</b>	<b>BHEP</b>	<b>RHEP</b>	<b>UKHEP</b>	<b>UIHEP</b>
NAPAF (%)	78	75	85	75	85	88

129. The NAPAF fixed by CERC in its Tariff Regulation, 2009 for different central generating stations are based on the performance data available from various central generating stations. The details of plant availability of different OHPC power stations for the block period FY 2009-10 to FY 2013-14 (upto December, 2013) is as follows:

**Table - 32**

<b>Power Stations</b>	<b>Existing NAPAF (%)</b>	<b>Actual Plant Availability (%)</b>					<b>Average of 5 years (%)</b>
		<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14 (upto Dec'13)</b>	
HHEP	78	78.49	77.63	57.66	76.10	81.60	73.91
CHEP	75	78.49	82.25	80.93	72.95	78.47	78.63
BHEP	85	86.10	81.11	73.72	84.70	74.99	80.38
RHEP	75	68.80	79.24	81.04	76.33	80.23	76.97
UKHEP	85	90.61	84.77	94.61	88.53	83.04	88.59
UIHEP	88	96.49	92.06	97.02	86.09	95.64	93.35

130. OHPC has stated that most of their Hydro power plants have already outlived their useful life of 35 years and always prone to frequent trouble. These old machines go to frequent outage in spite of availing periodic maintenance. Frequent outage due to aging of machine parts, obsolescence of some critical spare, also due to non-availability of spares reduces the machine availability during the past years thereby reducing the plant availability factor below the normative level.
131. The Declared Capacity of the low head Hydro Station having storage and pondage type reservoir reduces with the reduction in Reservoir level. Hence, the plant availability factor reduces considerably during the years of bad hydrology. Also due to delayed rainfall or inconsistent rainfall the rise in RL is delayed, thereby reduces the declared capacity. Taking all these aspects into consideration the NAPAF for hydro stations having low head shall be relaxed further 5% compared to normative PAF allowed in the previous block period.
132. OHPC has prayed that the NAPAF of its power stations for the next Block period may be re-determined considering the actual availability of power stations in the last five years as benchmark for OHPC stations and necessary relaxation may be made in fixing the NAPAF for optimum recovery of Capacity Charges during the FY 2014-15 to FY 2018-19. Therefore OHPC proposes NAPAF of the different power station for the next block period (i.e. FY-2014-15 to FY 2018-19) as follows:

**Table - 33**

<b>Power Stations</b>	<b>HHEP</b>	<b>CHEP</b>	<b>BHEP</b>	<b>RHEP</b>	<b>UKHEP</b>	<b>UIHEP</b>
NAPAF (%)	73	70	80	70	85	88

133. The Commission observed that vide its order dated 02.11.2010 passed in Case No. 65/2010, the NAPAF of different OHPC Stations was determined for the control period from 01.04.2009 to 31.03.2014 as given in the table below:-

**Table - 34**

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

134. While determining the above NAPAF of OHPC stations the Commission has made a detailed analysis and study of individual generating stations of OHPC based on the CERC norms and the operating conditions and known plant limitations of each generating station along with the valuable suggestions of various objectors. The Commission further observed that in the draft CERC Tariff Regulations for the Control Period 2014-2019, CERC has determined the NAPAF of different central hydro stations having pondage and storage type reservoirs considering the practical difficulties and known operational constraints, which varies from 69% to 90%.
135. The Commission has examined the submissions of OHPC regarding the actual plant availability achieved by OHPC stations during the last five years i.e. from 2009-10 to 2013-14 (upto December, 2013). It has been observed that the actual plant availability of individual generating stations almost coincides with the NAPAF approved by the Commission with minor variation. However, in case of BHEP the actual plant availability is less than the NAPAF of 85% in four years out of last five years because of the ageing of the machines. On the contrary in case of UKHEP the actual plant availability is recorded more than the approved NAPAF of 85% for about four years out of last five years.
136. In view of the above, the Commission re-determines the NAPAF of OHPC stations for the next control period i.e. from 2014-15 to 2018-19 as given in the table below:

**Table - 35**

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

The monthly capacity charge of each OHPC stations shall be computed for the FY 2014-15 based on the above NAPAF.

137. However, the capacity of the generating units under Renovation and Modernization shall not be considered in installed capacity while computing the plant availability factor. Further, while computing the plant availability, the capacity of the generating units under capital maintenance requiring maintenance period of more than 45 days may also be deducted from installed capacity after due approval of the Commission.
138. 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.

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

139. Machhkund Hydro Electric Project is a joint scheme of Govt. of Andhra Pradesh and Govt. of Odisha with 70% and 30% share with option of Govt. of Odisha to draw an additional 20% power at a cost of Rs.0.08 per KWh as per the inter state supplementary agreement in the year 1978 between Govt. of Andhra Pradesh and Govt. of Odisha.
140. The proposed tariff of 41.68 Paise/KWh of Odisha drawl of Machhkund power for FY 2014-15 has been computed on cost reimbursement basis. Actual O&M Expenses of Rs.9.038 Crs. for the FY 2012-13 has been escalated @ 5.72% per year to arrive at O & M Expenses of Rs.10.1017 Crs for FY 2014-15. 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.10.942 Cr for FY 2014-15. The cost per unit is 41.68 Paise considering 50% share of design energy of Machhkund i.e. 262.50 MU. The final bill towards share of working expenses payable by OHPC for FY 2012-13 is furnished along with the application.

Since, all the Units of Machhkund project are more than 50 years old, it has been proposed to go for R&M of all the six units and up-gradation wherever possible taking in to account of the existing water conductor system.

The tariff proposed by OHPC is based on assumption that GRIDCO will draw power up to 50% of D. E. of Machhkund equivalent to 262.50 MU. The projected tariff calculation is given in the table below:

**Table - 36**  
**Projected Tariff of Machhkund H.E. (J) Scheme For FY 2014-15**

Installed Capacity (MW)	114.50
Odisha share as per Original Agreement (30%)	34.50 MW
Net. 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 @ 5.72% per year for 2 years	1.1177
	(Rs. in Crs)
1. O&M Exp. (Odisha share of Actual O&M Exp. For FY 12-13)	9.038
2. O&M Exp for FY 2014-15	10.1017
3. Power purchase cost of additional 20% above 30% Orissa Share (105MU x 0.08)	0.84
4. Total Annual Expenditure (2 +3)	10.942
5. Tariff (Paise/Kwh)	41.68
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.	

141. The Commission approves the above rate of 41.68 Paise per Unit for FY 2014-15 as proposed by OHPC for sale of power from Machhkund Hydro Electric Station.

**Compensation claim towards hydrology failure**

142. OHPC in its Original Tariff application for the FY 2013-14 had a submission that loss of Energy charges for the period from FY 2009-10 to FY 2011-12 amounting to Rs.105 cr. (approx.) may be considered as pass through in tariff in 05(five) equal installments.

OHPC has stated that the Commission in its order dt.30.01.2013 in Case No: 121/2009 in the matter of Approval of Revised Design Energy of Hydro Stations of OHPC at Clause No. 9 has allowed OHPC to recover in line with the CERC Regulations, the Revenue shortfall occurred in the event of Hydrology failure & worse monsoon years when the energy generation of any Hydro projects falls short of its Design Energy not attributable to the generators.

OHPC has calculated the hydrology failure of Rs.52.23 Crs. for FY 2009-10; Rs.22.69 Crs. for FY 2010-11 and Rs.36.0 Crs. for FY 2011-12.

OHPC has submitted that a total shortfall of Rs.110.92 Crs. towards Hydrology failure from FY 2009-10 to FY 2011-12 may be allowed as per the CERC norms along with the compensation of Rs.48.73 Crs. on account of restriction in generation for the FY 2012-13. The total claim pending is summarized in the following table.

**Table – 37**

<b>Sl. No.</b>	<b>PARTICULARS</b>	<b>AMOUNT</b>
1	Hydrology Failure for FY 2009-10	Rs.52.23Crs.
2	Hydrology Failure for FY 2010-11	Rs.22.69Crs.
3	Hydrology Failure for FY 2011-12	Rs.36.00Crs
4	Restriction in generation for FY 2012-13	Rs.48.73Crs.
	<b>Total</b>	<b>Rs.159.65Crs.</b>

**Commission's Observation**

143. The Commission has examined the submission of OHPC and observed that 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}.
144. Regarding compensation claimed due to restriction in generation, the Commission will consider the issue of raising MDDL from 590ft. to 595ft. by Water Resources Dept. to support irrigation once the resolution taken in this regard is implemented through a formal notification of the Revised Rule curve to be followed for this purpose.

**ARR and Approval of Tariff**

145. To sum up, the Commission hereby approves the ARR and generation tariff of OHPC for FY 2014-15 as follows:

**Table – 38**

<b>Name of the Power Stations</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>
<b>Approved for 2013-14</b>								
Total ARR (Rs. Crore)	<b>40.79</b>	<b>29.13</b>	<b>83.31</b>	<b>62.66</b>	<b>25.33</b>	<b>241.26</b>	<b>156.41</b>	<b>397.67</b>
Average cost (P/U)	<b>78.48</b>	<b>35.36</b>	<b>71.14</b>	<b>92.53</b>	<b>52.21</b>	<b>65.62</b>	<b>80.53</b>	<b>70.77</b>
<b>Approval for 2014-15</b>								
Total ARR (Rs. Crore)	<b>56.18</b>	<b>41.05</b>	<b>103.31</b>	<b>86.43</b>	<b>23.31</b>	<b>310.28</b>	<b>156.20</b>	<b>466.49</b>
Average cost (P/U)	<b>108.08</b>	<b>49.84</b>	<b>88.21</b>	<b>127.64</b>	<b>48.06</b>	<b>84.39</b>	<b>80.42</b>	<b>83.02</b>

146. Based on this approved Annual Revenue Requirement the rate of energy charge and the capacity charge of OHPC power stations are determined for FY 2014-15. The Capacity charge and the rate of Energy charge as approved at para 135 above and the corresponding approved rates for the FY 2013-14 are summarized in the table below :



**Table – 39**  
**Energy Charge and Capacity Charge for 2013-14 & Approval for 2014-15**

Name of the Power Stations	Annual Fixed Cost (Rs. crore)		Capacity Charge (Rs. crore)		Energy Charge (Rs. crore)		Energy Charge Rate (P/U)	
	13-14	14-15	13-14	14-15	13-14	14-15	13-14	14-15
Rengali HEP	40.79	56.18	20.39	28.09	20.39	28.09	39.230	54.045
Upper Kolab HEP	29.13	41.05	14.56	20.525	14.56	20.525	17.676	24.918
Balimela HEP	83.31	103.31	41.65	51.655	41.65	51.655	35.562	44.105
Hirakud HEP	62.66	86.43	31.33	43.215	31.33	43.215	46.266	63.818
Chiplima HEP	25.33	23.31	12.66	11.655	12.66	11.655	26.097	24.025
Upper Indravati HEP	156.41	156.20	78.20	78.10	78.20	78.10	40.259	40.208

The unit cost of energy from Machhkund is approved at 41.68 paise for 2014-15 as against 30.80 paise per unit approved for 2013-14.

147. In view of the coming general election to Lok Sabha and State Legislative Assembly it was decided in the 39<sup>th</sup> Meeting of FOR held at Chandigarh on 18.01.2014 that a reference shall be made on behalf of all SERCs and CERC to the Election Commission regarding the release of Tariff Order during the currency of Model Code of Conduct. Accordingly a reference in this regard had been made by Chairman FOR on 20.01.2014 to the Election Commission of India. The Election Commission of India in their reply dtd. 17.02.2014 stated that Model Code of Conduct is applicable to Electricity Regulatory Commission as has been done during last Lok Sabha Election in the year 2009. In case any Commission requires relaxation then the matter may be referred to the Election Commission.

In view of the above the Commission decides as follows:

148. Since the last date of election in Odisha is 17<sup>th</sup> April, 2014 and this may get extended by a day or two in case of re-polling the Commission decides to pass the Order on 22.03.2014 but it will be kept under sealed cover for release to the general public on the day following the last day of election in Odisha (including day re-polling). The Secretary, OERC shall take appropriate action to release the order as directed above.
149. The Tariff now approved shall be effective from 01.04.2014 and shall be in force until further orders.
150. The application of OHPC in Case No.81 of 2013 for approval of its Annual Revenue Requirement and fixation of generation tariff of different stations for the FY 2014-15 is disposed of.

Sd/-

**(S. P. SWAIN)**  
**MEMBER**

Sd/-

**(B. K. MISRA)**  
**MEMBER**

Sd/-

**(S. P. NANDA)**  
**CHAIRPERSON**