

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

Present : Shri B. K. Das, Chairperson
Shri K. C. Badu, Member
Shri B. K. Misra, Member

Case No. 147/2009

DATE OF HEARING : 08.02.2010

DATE OF ORDER : 20.03.2010

IN THE MATTER OF : Application for approval of Annual Revenue Requirement and Generation Tariff of OHPC stations for the FY 2010-11 under Section 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 Orissa Hydro Power Corporation (OHPC) has filed an application before the Commission for determination of Annual Revenue Requirement (ARR) and fixation of Tariff for its different power stations for the financial year 2010-11.

PROCEDURAL HISTORY (Para 1 to 9)

1. The OHPC is a “Generating Company” under the meaning of Sec.2 (28) of the Electricity Act, 2003. 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 Orissa. Thus, OHPC is supplying its entire power to GRIDCO, who in turn is supplying the same to the Distribution Licensees of the State. 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 is evacuating the powers from the generating stations of OHPC and delivering it to the Distribution Licensees.
2. From the above, it appears that the real beneficiaries of OHPC’s power are the Distribution Licensees of the State. Due to the current Single Buyer Model, as prevailing in the State of Orissa, GRIDCO acts as a medium to receive the power produced by OHPC for the Distribution Licensees.
3. As per Regulation 61(2) of the OERC (Conduct of Business) Regulations, 2004, a generating company is required to file an application by 30th November of each year to the Commission for determination of tariff for any of its generating stations, for

sale of energy in the State of Orissa giving details of fixed and variable costs associated with the generation and sale of energy from the generating stations. Accordingly, on 30.11.2009 OHPC, as a generating company, had filed its Annual Revenue Requirement (ARR) and fixation of tariff application before the Commission for the FY 2010-11 in respect of each of its generating stations separately.

4. After due scrutiny and admission of the aforesaid application, the Commission directed OHPC to publish its application in the approved format. In compliance to the same; public notice was given in leading and widely circulated newspapers and was also posted in the Commission's website, in order to invite objections from the general public. The applicant was also directed to file its rejoinder to the objections filed by the objectors. In response to the aforesaid public notice the Commission received 09 nos. of objections from the following persons/organizations:

(1) Sambalpur District Consumers Federation, Balajee Mandir Bhawan, Khetraipur, Sambalpur (2) Shri Jayadev Mishra, N-4/98, Nayapalli, Bhubaneswar (3) Shri R.P. Mahapatra, Plot No.775(Pt.), Lane-3, Jayadev Vihar, Bhubaneswar (4) Utkal Chamber of Commerce & Industry, N/6, IRC Village, Nayapalli, Bhubaneswar (5) Shri Ramesh Ch. Satpathy, Plot No.302(B), Beherasahi, Nayapalli, Bhubaneswar (6) SOUTHCO, Corporate Office, Courtpeta, Berhampur (7) NESCO, Corporate Office, Januganj, Balasore (8) WESCO, Corporate Office, Burla, Dist.-Sambalpur (9) GRIDCO, Janpath, Bhubaneswar. All the above named objectors were present during the tariff hearing and their written submissions filed before the Commission were taken in to record for consideration of the Commission.

5. The applicant submitted its reply to issues raised by the various objectors.
6. 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 to Dr. S. Meher, Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, as Consumer Counsel for objective analysis of the applicant's Annual Revenue Requirement and tariff proposal. The Consumer Counsel presented his view on the matter in the hearing.
7. The date of hearing as fixed was as 08.02.2010 and was duly notified in the leading and widely circulated newspapers mentioning the list of objectors. The Commission also issued notice to the Government of Orissa 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 in the proceedings. .
8. In its consultative process, the Commission conducted a public hearing at its premises on 08.02.2010 and heard the Applicant, Objectors, Consumer Counsel and the Representative of the Dept. of Energy, Government. of Orissa at length.
9. The Commission convened the State Advisory Committee (SAC) meeting on 18.02.2010 at 3:30PM to discuss about the ARR application and tariff proposal of the generating company. The Members of SAC presented their valuable suggestions and views on the matter for consideration of the Commission.

ARR PROPOSAL OF OHPC FOR FY 2010-11 (Para 10 to 18)

Installed Capacity

10. The various power stations owned by OHPC are 1) Hirakud Hydro Electric Power Project (HHEP), 2) Chiplima Hydro Electric Power Project (CHEP), 3) Balimela Hydro Electric Power Project (BHEP), 4) Rengali Hydro Electric Power Project (RHEP), 5) Upper Kolab Hydro Electric Power Project (UKHEP), 6) Upper Indravati

Hydro Electric Power Project (UIHEP), 7) Machhkund Hydro Electric Power Project in which Orissa has got a share. These abbreviations shall be used throughout the order against each power station named above. The total installed capacity of the various Hydro Stations owned by the Orissa Hydro Power Corporation (OHPC) is projected at 2062 MW for FY 2010-11 including Orissa's share of Machkund. This is including additional capacity of 150 MW due to extension of Units 7 & 8 at Balimela Power Station, which were declared under commercial operation on 23.12.2008 and 23.01.2009 respectively.

Accordingly, the installed capacity of different generating stations of OHPC for the FY 2010-11 is given in the table below.

Table - 1

Sl. No.	Name of the Power Station	Installed Capacity (MW)	
		2009-10	2010-11
1	Hirakud (HHEP)	275.50	275.50
2	Chiplima (CHEP)	72.00	72.00
3	Balimela (BHEP)	510.00	510.00
4	Rengali (RHEP)	250.00	250.00
5	Upper Kolab (UKHEP)	320.00	320.00
6	Upper Indravati (UIHEP)	600.00	600.00
7	Machhkund (Orissa share)	34.50	34.50
Total		2062	2062

Design Energy of OHPC Stations

11. The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of tariff. As per the direction of Commission OHPC had submitted report on reassessment of design energy of Hydro stations under OHPC to the Commission through affidavit on dated 31.05.2008. A detailed presentation was made before the Commission as well as the CEA containing the procedure and the methodology adopted for the process of reassessment of design energy. The CEA had opined vide Lr. No. 3/81/HP&I (1)-2009/20 dtd. 07.01.2009 that the reports on reassessment of design energy furnished by OHPC have been broadly in line with the guidelines issued by CEA. However, authenticity/accuracy of the various data adopted for the review may be ascertained by OERC. Since the reassessment of design energy has the repercussion on hydro tariff, the Commission has decided to dispose of the case through a Public Hearing. A public notice was published in the newspapers inviting objections/suggestions from the public and after receiving the objections hearing was held on 01.12.2009. But the objectors wanted more detailed information and to go through the reports. Hence, the date of filing of objections was extended till 31.12.2009. Now, that the objectors have asked for more time the hearing is not concluded and no decision has been taken regarding finalization of revised design energy of the OHPC stations.

The existing design energy and the revised design energy (as submitted by OHPC) of OHPC Power Stations considered for 2010-11 are given in the table below.

Table - 2

Sl. No.	Name of the Power Stations	Existing Design Energy (MU)	Existing Design Energy for sale (MU)	Revised Design Energy (MU)	Revised Design Energy for sale (MU)
1	HPS (Burla & Chiplima)	1174	1162.26	957.43	947.85
2	BHEP	1183	1171.17	928.56	919.27
3	RHEP	525	519.75	669.96	663.26
4	UKHEP	832	823.68	643.86	637.42
5	UIHEP	1962	1942.38	1703.82	1686.78
Total		5676	5619.24	4903.63	4854.58

Project Cost

12. The revalued cost of old power stations under OHPC is Rs.1196.80 Crs as on 01.04.1996 as per the notification no 5207 dtd. 01.04.1996 of Department of Energy, Government of Orissa. The Commission in its Order dated 23.03.2006 at clause no. 5.4 (C) had approved the same. The historical cost of old power station of OHPC is Rs.479.80 Crores. Further, the 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 considered for computation of ARR for the FY 2010-11 is given in the table below:

Table- 3

(Rs. cr.)						
Sl. No.	Name of the power stations	Historical cost of asset as on 01.04.96	Revalued cost of assets as on 01.04.96	New additions up to 2009-10	Project cost for 2010-11 (based on original cost)	Project cost for 2010-11 (based on revalued cost)
1.	HHEP	72.75	130.16	190.09	262.84	320.25
2.	CHEP	92.23	165.01	36.02	128.25	201.03
3.	BHEP	115.42	334.66	208.74	324.16	543.40
4.	RHEP	91.09	259.01	2.83	93.92	261.84
5.	UKHEP	108.31	307.96	3.81	112.12	311.77
	Total	479.80	1196.80	441.49	921.29	1638.29
6.	UIHEP	-	-	-	1195.42	1195.42

The revalued cost of HPS of 295.17 Cr. has been apportioned to HHEP and CHEP based on the revaluation of cost made by M/s MECON. Similarly, the historical cost of assets of HPS amounting to 164.98 Cr. has been apportioned based on the ratio of apportion made for revalued cost of assets.

Principles Adopted For Determination of Annual Fixed Cost

13. Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2009 for computation of tariff for supply of electricity from a hydro generating station shall comprise capacity charge and energy charge to be shared on 50:50 basis for recovery of annual fixed cost. The Annual Fixed Cost of a hydro generating station shall consist of the following components:

- a. Return on equity (ROE)
 - b. Interest on loan capital
 - c. Depreciation
 - d. Operation and Maintenance expenses
 - e. Interest on working capital
- a. Return on equity (ROE)- Return on equity shall be computed on pre-tax basis at the base rate of 15.5%. The pre-tax return on equity has been considered @ 18.674% per annum for FY 2010-11 for OHPC power stations.

Based on the order of the Commission vide case no. 64/2008 dated 20.03.09 at clause no. 181, the historical cost of assets as on 01.04.96 has not been considered for ROE. The new capital additions made by OHPC from 01.04.96 up to 31.03.2010 has been taken for calculation of ROE with an equity base 25% for HHEP, CHEP and 30% for all other old power stations. For UIHEP equity base of 25% on approved project cost minus infirm cost of power has been considered for computation of ROE.

Table - 4

(Rs. cr.)				
Sl No.	Name of the power station	Additional capital up to 31.03.2010	Equity capital	ROE at 18.674 %
1.	HHEP	190.09	47.52	8.874
2.	CHEP	36.02	9.00	1.682
3.	BHEP	208.74	62.622	11.694
4.	RHEP	2.83	0.849	0.159
5.	UKHEP	3.81	1.143	0.213
6.	UIHEP	Project cost 1194.79	298.79	55.779

- b. Interest on loan: The loan liabilities on OHPC consist of state Government loans and PFC loans. The State Government loan outstanding as on 01.04.10 is Rs. 8.08 Cr. after adjustment of repayment towards principal.

As per the order of the Commission order dated 20.03.2009 in case no. 64/2008, Commission has suggested to the Government of Orissa for extension of financial benefits in terms of freeze on ROE and moratorium on service of Government loan, which the finance department has already concurred from 2006-07 to 2010-11. Accordingly, OHPC has not considered the interest on all State Government loans except the State Government loan of Rs. 39.20 Crore. OHPC has obtained loan from PFC for projects like Burla, Upper Indravati, and for extension of Unit-7 and 8 of Balimela.

OHPC has successfully paid back the PFC loan of Rs. 320 Crs for UIHEP.

The interest on outstanding loans and guarantee commission payable by OHPC for the FY 2010-11 is Rs.15.20 Cr.

- c. Depreciation

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

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

OHPC has computed depreciation @ 2.57% on the historical project cost plus additional capitalization up to 2009-10 considered for FY 2010-11.

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. For UIHEP, the depreciation has been considered @ 3.6% on the approved project cost as per the PPA between OHPC and GRIDCO, since OHPC shall fully repay the PFC loan in FY 2009-10 and the project has not completed 12 years from COD.

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

As per new CERC Tariff Regulation 2009, normative O&M expenses shall be calculated as follows:-

- i) The actual O&M expenses for the years 2003-04 to 2007-08 shall be escalated @ 5.17% per annum to bring it to the 2007-08 price level and then averaged to arrive at the O&M expenses of the generating stations at 2007-08 price level. Then it is to be escalated @ 5.72% per annum to arrive at the O&M expenses for the year 2010-11.
- ii) The Commission in the tariff order for the FY 2009-10 has approved the salary enhancement of employees for 2009-10 separately. So the, salary enhancement as approved by the Commission for FY 2009-10 has been escalated @ 5.72% to arrive for FY 2010-11 and which is included in the O&M expenses.
- iii) The Commission has not approved 40% arrear salary for the year 2009-10 on account of implementation of 6th Pay Commission in OHPC due to non-submission of copy of approval of Board of Directors of OHPC on the mode of payment of arrear dues on implementation of the said salary revision. The approval of Board of Directors of OHPC on mode of payment of arrear has been enclosed in the annexure-2 to the tariff application. The 40% of arrear salary has been paid to employees of OHPC during the FY 2009-10, and 30% of arrear salary is to be paid during FY 2010-11. Both 40% (Rs.20.82 Cr.) plus 30% (Rs. 15.63 Cr.) have been included in the ARR of FY 2010-11
- iv) Similarly, corporate office expenses amounting to Rs. 16.57 Crs has been apportioned to different Units under OHPC based on installed capacity and included in the O&M expenses for FY 2010-11.
- v) As per Government notification 54080 dtd. 16.12.2008, 100% arrear salary has to be paid in one installment to employees retired or retiring on or before 31.03.2009. Since 40% of the arrear salary has been paid in FY 2009-10, balance 30% has been included as in para (iii) above and residual 30% (Rs. 1.42 Cr.) included in the O&M expenses for FY 2010-11.
- vi) Since, Burla Power House and Chiplima Power House has been declared as separate Unit, the O&M expenses as approved by Commission for FY 2009-10 has been apportioned in the ratio of 70:30

as per man power strength, as employee cost constitute major portion of O&M expenses.

- vii) Increase in remote area allowance on account of 6th Pay Commission as arrear from 4/2009 to 31.03.2010 and for the financial year 2010-11 total amounting to Rs. 3.46 Crs. (detail at annexure-3) included in the O& M expenses.
- viii) Arrear terminal liabilities of Rs. 78.01 Cr as on 31.03.2009 on account of revised pay scales effective from 01.01.2006 claimed over a period of 5 years starting from FY 2010-11 is included in the O&M expenses.
- ix) Spares for unit 3 & 4, HHEP Burla: Spares valued Rs 9.27 Crs purchased during 2009-10 for these two units have been spread over five years starting from the year 2010-11. Accordingly, one fifth of the expenditure amounting to Rs 1.86 Crs has been included in the O& M expenses.

Table - 5
Statement of O&M Expenses for 2010-11

Description	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	Total
O&M expenses for FY 2010-11	36.14	26.31	51.05	44.41	17.88	175.79	63.07	238.85
O&M approved for 2009-10	26.03	16.39	30.95	43.93		117.30	50.93	168.23

(Rs. cr.)

e. Interest on Working Capital

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

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

The rate of interest on working capital considered for is the short-term prime-lending rate of SBI i.e. 11.75%. In accordance with CERC guidelines, the interest on working capital shall be payable on normative basis.

f. Application fee and the publication expenses:-

In CERC tariff regulation 2009, the application filing fee and the expenses incurred on publication of notices may in the discretion of the commission, be allowed to be recovered by the generating company directly from the beneficiaries. As per the Commission notification no. 1992 on dated 31.08.2009 in the clause no. 17 Commission has fixed a fee of Rs. 5000/- per MW as application fee for determination of tariff of conventional fuel based plant/ hydel plants, subject to maximum limit of Rs. 25,00,000/- (Rupees Twenty five lakhs).

In consideration of the above order, OHPC has to deposit application fee of Rs. 25 lakhs. OHPC may be allowed to recover the same amount from the beneficiaries. In addition to the above, OHPC has incurred expenses on publication of tariff related matters in the newspaper in the FY 2009-10.

Hence the Commission may allow for recovery of application fee and publication expenses directly from GRIDCO for FY 2010-11.

g. Total Annual Fixed Cost:

Based on the above parameters the station wise ARR and tariff calculated for the FY 2010-11 is indicated in the table below:

Table - 6
Statio-wise ARR and Tariff for FY 2010-11, considering old design energy:
(Rs. cr.)

Details expenses	HHEP	CHEP	BHEP	RHEP	UKHEP	Subtotal	UIHEP	Total
Saleable Design Energy (Mu)	677.16	485.10	1171.17	519.75	823.68	3676.86	1942.38	5619.24
Return on Equity	8.87	1.68	11.69	0.16	0.21	22.62	55.78	78.40
Interest on Loan	3.64	1.00	10.10	0.21	0.25	15.20	-----	15.20
Depreciation	7.97	3.30	16.12	2.41	2.88	32.68	43.01	75.69
O&M expenses	44.41	17.88	51.05	36.14	26.31	175.79	63.07	238.86
Interest on working capital	2.54	0.98	3.21	1.79	1.33	9.84	4.99	14.83
Total ARR (Rs. in Crs.)	67.43	24.83	92.16	40.71	30.98	256.13	166.85	422.98
Average Tariff proposed (p/u)	99.58	51.19	78.69	78.33	37.62	69.66	85.90	75.27
Average Tariff approved for 2009-10 (p/u)	64.96		56.66	58.22	25.19	52.46	73.35	59.68

Note: (1) The average tariff shall change on approval of reassessed design energy by OERC.

(2) Application & publication expenses (Rs. 25.73 Lakhs), MAT for 2008-09 Rs.2.25 Cr. And ED on auxiliary consumption amounting to Rs. 0.57 Crs. shall be recovered directly from GRIDCO in FY2010-11.

Table - 7
Station-wise ARR and Tariff for FY 2010-11, based on revised design energy
(Rs. cr.)

Details expenses	HHEP	CHEP	BHEP	RHEP	UKHEP	Subtotal	UIHEP	Total
Saleable Design Energy (Mu)	595.26	352.60	919.27	663.26	637.42	3167.81	1686.78	4854.59
Return on Equity	8.87	1.68	11.69	0.16	0.21	22.62	55.78	78.40
Interest on Loan	3.64	1.00	10.10	0.21	0.25	15.20	-----	15.20
Depreciation	7.97	3.30	16.12	2.41	2.88	32.68	43.01	75.69
O&M expenses	44.41	17.88	51.05	36.14	26.31	175.79	63.07	238.86
Interest on working capital	2.54	0.98	3.21	1.79	1.33	9.84	4.99	14.83
Total ARR (Rs. in Crs.)	67.43	24.83	92.16	40.71	30.98	256.13	166.85	422.98
Average Tariff(p/u)	113.28	70.42	100.26	61.38	48.61	80.58	98.92	87.13

Income Tax:

14. As per new CERC Tariff regulations 2009, Tax on the income streams of the generating company shall not be recovered from the beneficiaries, provided that the deferred tax liability, excluding fringe benefit tax for the period up to 31st March 2009 whenever it materializes, shall be recoverable directly from the beneficiaries and from the long term customer. Accordingly, income tax i.e. Minimum Alternate Tax paid by OHPC during the FY 2008-09 to the tune of Rs. 2.25 Crore is to be reimbursed directly from GRIDCO. The Commission may allow for recovery of Income Tax (MAT) from GRIDCO paid by OHPC for FY 2008-09.

Electricity duty on Auxiliary Consumption:

15. 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.
16. Accordingly, ED on Auxiliary consumption of all the hydro electric project to the tune of Rs.0.57 Crore is to be reimbursed to OHPC by GRIDCO.

Tariff for Machhkund H.E. (Jt) Scheme

17. Machhkund Hydro Electric Project is a joint scheme of Government of Andhra Pradesh and Government of Orissa with 70% and 30% 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 inter state supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Orissa. The proposed tariff of 21.947 P/U of Orissa drawl of Machhkund power for FY 2010-11 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. The generation of Machhkund is assumed to be 525 MU and 50% drawl thereof by GRIDCO. But like every other hydro stations the generation up to D.E is subject to vagaries of nature and drawl of 262.50 MU can not be ensured with 100% accuracy. Therefore, OHPC proposes for approval of the tariff rate provisionally subject to reconciliation at the end of FY 2010-11 between OHPC and GRIDCO based on actual energy drawl by M/s GRIDCO with a cap of maximum 50% of the actual energy delivered at ESO point.

Two-Part Tariff

18. As per Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulation 2009, the annual fixed cost of a power station shall be recovered through capacity charge (inclusive of incentives) and energy charge to be shared on a 50:50 basis.

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

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

Where

AFC = Annual Fixed Cost specified for the year in rupees

NAPAF= Normative Annual Plant Availability Factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

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

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

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

Where

Aux = Normative auxiliary energy consumption in percentage

N = No of days in the month

IC = Installed capacity in MW of the complete generating station

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

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

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

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

- 3) Energy charge rate (ECR) in Rupees per Kwh on ex-bus plant basis for a hydro generating station shall be determined up to three decimal places based on the following formula, subject provisions in clause(6) and (7) of Schedule-22 of CERC Tariff regulations 2009.

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

Where,

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

VIEWS OF THE OBJECTORS ON ARR & TARIFF OF OHPC FOR FY 2010-11 (Para 19 to 45)

19. OHPC was allowed, at the outset of the hearing, to make a presentation on its ARR and tariff application for the FY 2010-11. Dr. Shibalal Meher of Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar appointed as Consumer Counsel by the Commission presented its analysis of the proposal on ARR and tariff filing. Thereafter the objectors made their comments/observations on the proposed ARR of OHPC for FY 2010-11. Director (Tariff) then raised certain queries on the OHPC filing.
20. The Commission has considered all the issues raised by the participants in their written as well as oral submissions during the public hearing. Some of the objections

were found to be of general nature whereas others were specific to the proposed Revenue Requirement and Tariff filing for the FY 2010-11. Based on their nature and type, these objections have been categorized broadly as indicated below:

Consumer Counsel:

21. Dr. Shibalal Meher of Nabakrushna Choudhury Centre for Development Studies, Consumer Counsel, had analyzed the application and some of the important observations are as follows:
22. Due to the existing single-buyer-model presently prevailing in the State of Orissa, OHPC is supplying its entire power to GRIDCO, who in turn is supplying power to the Distribution Licensees of the State. Tariff proposals for all the old power stations and UIHEP show significant increase in tariff during FY 2010-11 as compared to 2009-10 due to increase in its ARR. Tariff proposals for power stations like HPS and UKHEP show increase more than double in tariff.

Table - 8

Comparison of Tariff of Different Power Stations

Power Stations	Existing Tariff (P/U)	Proposed Tariff (P/U)	Change (P/U)
HHEP	-	99.58	-
CHEP	-	51.19	-
BHEP	56.66	78.69	22.03
RHEP	58.22	78.33	20.11
UKHEP	25.19	37.62	12.43
UIHEP	73.35	85.90	12.55
Total	59.68	75.27	15.59

23. This increase in tariff, if allowed, would impose heavy burden on the consumers of the State, observed the Consumer Counsel. OHPC has projected an increase in ARR to the tune of 26% during 2010-11 in order to meet the increasing expenses of these six power stations.
24. The Consumer Counsel submitted that the ARR proposal for the power stations like BHEP, RHEP and UKHEP assumes significant increase during FY 2010-11 compared to the FY 2009-10. Table-7 below clarifies the point.

Table - 9
ARR of Different Power Stations

(Rs. cr.)					
Power Stations	2008-09 approved	2009-10 approved	% Change	2010-11 proposed	% Change over 2009-10
HHEP	60.44	75.51	24.93	67.43	22.18
CHEP				24.83	
BHEP	61.29	66.36	8.27	92.16	38.88
RHEP	25.50	30.26	18.67	40.71	34.53
UKHEP	20.44	20.75	1.52	30.98	49.30
UIHEP	123.85	142.47	15.03	166.85	17.11
All	291.52	335.35	15.03	422.96	26.11

25. The Consumer Counsel observed that the main reasons for significant increase in ARR of these power stations are on account of increase in O&M expenses, depreciation and return on equity.
26. The Consumer Counsel summarized the presentation by saying that there is scope for reducing ARR, as these power stations have proposed significantly higher increase in ARR. The Counsel felt that increase in tariff should not be allowed in the best interest of the consumers. On the other hand, there should be curtailment in Revenue Requirement for which there is a need to assess the Revenue Requirement of OHPC.

VIEWS OF THE OBJECTORS

Review of Design Energy

27. Many objectors opposed to the proposal of OHPC for reduction of design energy. Some pointed out that the availability of water resources has not been utilized optimally by OHPC with an intention to revise the design energy and propose for increase in tariff of Hydro generating stations. The objectors pointed out that generation during FY 2008-09 is comparatively much less than the previous year generation although there is a marginal difference between the reservoir levels as on 1st Nov. in the above two years. Hence, design energy should not be taken as sole criteria for determination of availability but other factors like reservoir level, machine availability, live storage capacity and average generation during last five years should be taken into consideration for estimation of availability from Hydro Generating stations.
28. The OHPC instead of improving its performance in the generation of Hydro Power has suddenly come with a novel proposal to reduce the design energy for sale from all old Hydel stations like HPS Burla, Balimela HEP, Upper Kolab HEP and even from Upper Indravati HEP, which has just started its full generation only seven years ago in 2002. All the objectors opposed the proposal of OHPC for revision of design energy for sale which would result in reduction of design energy of 764.66 MU in a normal monsoon year, from 5619.24 MU to 4854.58 MU.
29. One objector has pointed out that OHPC is simply revising its design energy without any effort to maintain original design energy of Hydro stations.
30. As the new Design Energy has not been approved by the Commission so far, the objectors suggested for considering the old designed Energy for the purpose of fixation of tariff.

Electricity Duty:

31. One of the objectors has stated that there is no need for claiming Rs. 0.57 crore towards ED on auxiliary consumption to be reimbursed by GRIDCO as it is claimed by OHPC. The payment towards ED will be as per the provisions of PPA & GRIDCO has included the same in its ARR during FY 2010-11.

Income Tax:

32. One of the objectors, GRIDCO has stated that OHPC has claimed Rs. 2.25 crore towards reimbursement of income tax during FY 2008-09 pertaining to Balimela & UIHEP, but GRIDCO has not received the bill so far. After receipt of bill the same will be processed based on tax on profit of core business excluding incentive and other income. However, based on payment towards income tax during FY 2007-08, an amount of Rs. 13.75 crore has been included in the ARR during FY 2010-11 towards payment of income tax during FY 2008-09.

Return on Equity:

33. GRIDCO has suggested that return on equity is only allowed after COD of the unit. Hence, the return on equity allowed to OHPC prior to COD of the plant need to be recovered and adjusted against the capital cost of the unit. The Commission may take considered view on the ROE already allowed to OHPC during 2007-08 & 2008-09.

Balimela Extension:

34. One of the objectors pointed out that in the ARR during FY 2009-10, OHPC capitalized Rs. 180 crore for 7th and 8th unit of Balimela Power House. In the present ARR OHPC have capitalized Rs. 206 crore towards 7th and 8th unit of Balimela Power House. But OHPC has not furnished the detailed audited account in support of such expenditure.
35. OHPC has not clarified as to whether the capital cost has been reduced to the extent of earning from infirm power or not. But GRIDCO has already paid Rs. 5.96 crore towards infirm power procured from 7th & 8th unit of Balimela Power House. As per the prevailing regulation and the provision of PPA any revenue earned from sale of infirm power shall be applied for reduction in capital cost.

O & M Expenses

36. The submission on O & M expenses by the objectors are briefly stated as follows.
- (a) OHPC should not claim 5.72% escalation over the O & M allowed during 2009-10 as the same is not in conformity with prevailing CERC regulation.
 - (b) OHPC for the first time included corporate office expenditure amounting to Rs. 16.57 crore in the O & M expenditure, which has been apportioned to different units of OHPC, based on the installed capacity. One objector has requested to furnish the details of expenditure of Rs. 16.57 crore by OHPC.
 - (c) OHPC has proposed for apportioning the O & M expenditure of HPS between Burla Power House & Chiplima Power House based on man power ratio of the power station, i.e. 70:30. Since CERC for Thermal Station is allowing the O & M cost per MW basis, it is proposed to share the cost based on the installed capacity rather than on the manpower basis.
 - (d) OHPC has claimed escalation of 5.72% on previous years O & M expenses as well as on salary enhancement of employees. Increase in remote area

allowance appears to be included in the enhanced pay. OHPC may justify its claim towards increase in remote area allowance of Rs. 3.46 crore.

- (e) OHPC has included 1/5th of the spare costs amounting to Rs. 1.894 crore purchased for Hirakud H E Project, Burla in the O & M for FY 2010-11. Every year O & M cost includes the payments towards salary, wages, and purchases of spares. Hence, there is no justification for claiming spare cost separately over and above O & M cost.
- (f) One of the objectors has pointed out that it is a matter of shame and utter ridicule that due to unwanted grass and weeds problem OHPC is not able to generate from its 72 MW Hydel Power Station. The O & M of Chiplima Power Station of HPS is at the lowest ebb under OHPC administration. Under OHPC regime, the performance of this powerhouse is worst and at many times without generation or at very low generation of about 10/15 MW. Long back it was decided to construct a bridge-cum-trash rack system at the upstream of the fore-bay pond at Chiplima Power House to arrest the weeds and to make powerhouse fully operational. But no tangible effort has been undertaken.

Depreciation:

- 37. Some objectors have indicated that OHPC has claimed depreciation applying rate of 2.57% on the book value of asset in case of RHEP, UKHEP and CHEP and @ 3.6% for UIHEP. But the objector submits that the depreciation should be equal to the extent of actual loan repayment. Accordingly the objector proposes Rs. 7.97 crore for HHEP, Rs. 1.72 crore for CHEP, Rs. 16.12 crore for BHEP, Rs. 1.05 crore for RHEP, Rs. 1.25 crore for UKHEP and Rs. 43.01 crore for UIHEP.
- 38. Another objector claims that as per the present regulation in force after repayment of loan the balance depreciation should be recovered equally through balance life period of the plant. Hence, UIHEP having no loan to be recovered at present, the depreciation may be calculated at the rate of 1.16%, i.e. $[90\% - (5.28 \times 12)]/23$.

Credit towards Colony Consumption

- 39. OERC in its order dated 01.11.08 had directed that for any consumption in excess of the auxiliary consumption, OHPC can give a credit to itself at a rate equal to the retail supply tariff for supply in bulk housing colonies as applicable to the consumers of DISTCOs and it will be effective from 01.11.08. So one of the objectors pointed out that OHPC has to furnish the amount to be credited towards colony consumption, so that the amount can be adjusted against the ARR of OHPC for FY 2010-11.

Reservoir Levels and Anticipated Generation

- 40. The OHPC has supplied powerhouse wise generation for the year 2008-09 totaling to 3973.85 MU. The objector has pointed out low generation at Chiplima at 114.759 MU as against the design energy of 490 MU. It is mostly due to weeds in power channel. It is again proposed that Chiplima generation can be substantially improved if the second power channel and subsidiary reservoir proposed for Chiplima B can be expedited. The weed cleaning with dredgers will not be a full proof arrangement. The annual loss here is about 350 MU which if available to GRIDCO could fetch at least Rs 1.50 crore a year.

Interest on Loan

41. Some of the objectors submitted their comments on interest on loans calculated by OHPC in its ARR which are briefly as under:
 - (a) The calculations made by OHPC is not in line with the correctives previously suggested by the OERC and accepted by the Govt. of Orissa.
 - (b) The interest on “Normative Loan” should be disallowed.

Interest on Working Capital

42. Some of the objectors submitted that the purpose of computation of working capital, which is calculated as per CERC norms and interest on working capital, should be calculated based on SBI PLR rate of 11.75%.

Application Fee and Publication Expenses

43. One of the objectors pointed out that OHPC may be allowed to recover the publication expenses only from GRIDCO but not the application fee as the same is disallowed by CERC in case of NHPC.

Miscellaneous Income

44. One of the objectors suggested for the following to be included in the ARR of OHPC for FY 2010-11.
 - (a) Cash discounts received from PFC on repayment of loans taken from time to time.
 - (b) Interest received on GRIDCO bonds.

Truing Up

45. Some objectors commented that there should be parity in truing up treatment. The benefits of high hydro conditions should be passed on to the consumers of Orissa by truing up of the performance of OHPC during the previous years (2003-04 to 2007-08) and that the impact should be taken into account in the ARR of OHPC for the year 2010-11.

REJOINDER OF OHPC (Para 46 to 93)

46. The application for approval of Annual Revenue Requirement (ARR) & Tariff for the FY 2010-11 in respect of individual Power Stations of OHPC was filed before the Commission on 30.11.2009. Suggestions/objections on the ARR application have been received from a number of objectors. The compliance to the suggestions/objections raised by the objectors is furnished herewith:

Reassessment of Design Energy:

47. In the matter of approval of Revised Design Energy of Hydro Stations of OHPC, hearing was held on 01.12.2009 at 11:00 A M by the Commission. Most of the respondents prayed before the Commission to fix another date for hearing on the revision of design energy of Hydro Power Stations under OHPC, as the petitioner has not served the documents containing data and its detailed analysis, and also the presentations made before the Commission prior to hearing. The Commission directed OHPC to serve the document containing data and detailed analysis carried out in arriving the revised design energy along with the presentations made before OERC and CEA to the respondents in CD form on or before 10.12.2009. OHPC vide Letter no. 9905(wt) dated 08.12.2009 submitted the documents to respondents in compliance

to the direction issued by the Commission. OHPC requests the Commission to approve the revised design energy of OHPC before finalization of tariff for FY 2010-11.

48. OHPC is of the view that Design Energy is never been taken as criteria for determining the availability of the stations. It is the quantum of energy, which could be generated, in a 90% dependable year with 95% availability of installed capacity of the generating station is taken into such consideration.
49. The licensee's claim of less generation of (5696 MU) in FY 2008-09 than the previous year generation (7887 MU) in FY 2007-08 albeit marginal difference between reservoir levels on 1st November in the above two years is due to following reasons:-
 - i. Additional generation in the monsoon period, due to good rainfall in FY 07-08
 - ii. Reduction in generation in the monsoon period to meet the Rabi crop requirement in the FY 2008-09, due to failure of monsoon.
50. OHPC does not agree with the licensee's submission of 6948.03 MU during 2010-11, as it solely depends on the rainfall pattern. Hence it is justifiable to consider 90% dependability criteria for energy available from OHPC station for FY 2010-11, i.e. Design energy.
51. The Commission shall take suitable decision as suggested on readdressing the ruling curve of Hirakud on reassessment of design energy. On reassessment of design energy as submitted to the Commission, M/s SPARC has duly considered the ruling curve effect.
52. There is no such proposal for a second power channel and creation of subsidiary reservoir for Chiplima-B project. The present reassessment of design energy does not take into consideration such proposal.
53. The revision of Design energy of power station under OHPC is pending before the Commission for approval. Therefore, OHPC has filed its ARR and tariff proposal taking into account both original and revised design energy. Hence, the concern of objector of revising design energy every year is not correct. In all previous years, the tariff order of OHPC has been approved based on original design energy.

Credit towards colony consumption:

54. The OERC in Order dated 16.12.2009 on the case No. 135/2009 has observed that for relaxed norm of auxiliary consumption of any generating station, OHPC may come to the Commission in its ARR and Tariff filing or with a separate application thereafter, with sufficient and reasonable grounds for such a relaxation. Further, since the order dated 01.11.2008 of the Commission has been challenged by SOUTHCO and is currently subjudice before the ATE, New Delhi, OHPC may come to the Commission after the disposal of the said appeal. In view of the above order, the Commission may adopt a uniform policy for all the colonies, i.e. of OHPC, OPTCL and GRIDCO etc, on credit towards colony consumption.

Allocation of PPAs:

55. In the Government of Orissa Transfer Scheme 2005, GRIDCO is the deemed trading licensee, which has since been entrusted with the bulk supply business for the State as a whole. Therefore, the existing Bulk Supply Agreement and Power Purchase

Agreement (PPAs) with GRIDCO are in line with the OERC regulation. Hence, OERC has the authority to take suitable decision on the matter.

Prospective Plan for Hydro development:

56. For development of new H.E. Project, “Interdepartmental Technical Co-ordination Committee” with the members from WR Department and Energy Department has been constituted by Government of Orissa to sort out the issue relating to development of new projects. The nine number of newly identified projects are as follows:
- i. Middle Kolab HEP
 - ii. Tel Integrated Project
 - iii. Lower Vansadhara Project
 - iv. Balijori HEP
 - v. Salki HEP
 - vi. Khadago Dam Project
 - vii. Uttei- Roul Integrated Project
 - viii. Mahanadi-Bramhani River Link
 - ix. Barmul HEP.
57. OHPC Board in the 94th meeting has accorded approval for a mini hydel station in the depletion channel of Podagada dam of Indravati Reservoir of 2 x 3 MW capacity. This will meet the downstream water requirement of Indravati River in Nawarangapur district.
58. At present OHPC is in the final stage for preparation of revised DPR for SINDOL-I (90 MW, Deogaon HEP) engaging WAPCOS as consultant. PFR has been prepared by WAPCOS for SINDOL-II and III.
59. Development of pump storage and river link projects at different locations in Orissa are under scrutiny of the DOWR and decision will be taken by the Inter-departmental Co-ordination Committee constituted by Government of Orissa.

Income Tax:

60. In the tariff order of OHPC for FY 2009-10, the Commission directed for income tax reimbursement directly from M/s GRIDCO. Hence, the claim of OHPC of Rs. 2.25 Crore towards reimbursement of Income Tax paid for FY 2008-09 has to be reimbursed in FY 2010-11.

Application fee and publication expenses:

61. In case of NHPC and PGCIL, CERC adopt Multi Year Tariff (MYT) for five years, hence they have to bear the application fee once in five year. But, OERC has adopted year-wise tariff for OHPC, wherein OHPC have to deposit application fee every year for approval of ARR and Tariff, hence the financial implication will be five times that of MYT. OHPC requests for approval of application fee and publication expenses of OHPC to be recovered directly from the beneficiaries.

7th and 8th Unit of Balimela Power House

62. The detailed audited account of capitalization of expenses for Unit 7th and 8th of BHEP has been submitted by OHPC, which comes out to be Rs. 206.069 crores. This capitalized expense has been arrived at after deduction of the value of infirm power sold to GRIDCO. Though due to technical reasons the units could not be commissioned by March/April 2007, a capital expenditure of Rs. 178.00 Cr had been spent as on 31.03.2007 against Rs. 180 Cr taken in the tariff of 2007-08. In other words, almost full capital expenditure had been incurred in the project and more power (1832 MU) than design energy (1183 MU) has been supplied from this power station. Hence the claim of RoE made on the capital expenditure incurred is justified. The two units were put on commercial operation on 23.12.2008 (Unit - 7) and 23.01.2009 (Unit - 8) during the FY 2008-09. Hence, the claim of RoE for the FY 2008-09 is just and right.

O & M Expenses:

63. The Corporate office expenses need to be included in the O&M Expenses of the power stations. The practice was, however, discontinued during the last three years (2006-07 to 2009-10) with the presumption that GRIDCO shall pay the arrear energy bill in addition to current monthly bill to offset the CO expenses. But GRIDCO did not adhere to its commitment all through except for a brief period (about 2 years, till sept-08) resulting in no income for compensating the CO expenses that increased considerably due to implementation of revised 6th Pay Commission scale across the board along with the accrued terminal liabilities. In view of the aforesaid facts, the corporate office expenses have been allocated to different power stations for the year 2010-11 based on their installed capacity.
64. For thermal power stations the employee cost constitute nearly 40% of the total O&M expenses, whereas, the salary and wages component constitutes nearly 80% of the total O&M expenses cost in case of HHEP & CHEP. Hence, it is reasonable to apportion the O&M expenses based on actual salary and wages expenses in the ratio of 70:30.
65. The OERC approval of salary increase for FY 2009-10 amounting to Rs. 28.56 Cr was based on tentative calculation. However, the implication for the year is estimated at Rs. 21.0 Cr. Therefore, the balance amount of Rs. 7.56 Cr may be adjusted towards the arrear and current hike in remote area allowance on account of implementation of 6th Pay Commission scale.
66. Since, the spares for Unit 3 and 4 of HHEP Burla of Rs. 9.27 Cr purchased during 2009-10, will not be covered in the O&M expenses at once, OHPC has claimed the cost of spares spread over five years starting from 2010-11.
67. The claim of licensee that no such guidelines for calculation of O&M expenses for state generating stations is not correct. OERC approved the tariff of OHPC for FY 2009-10 based on CERC guidelines. Hence, the proposal of licensee for O&M escalation @4% is not acceptable to OHPC.
68. The performance of the power stations of OHPC has improved considerably from 1996-97 to FY 2008-09 except in case of Chiplima. In case of Chiplima power house, work is under progress for installation of Trash rack cleaning machine. Upon commissioning of TRCM, it is expected that the performance of Chiplima will improve. With regard to repair and maintenance of generating stations, it is carried out taking into consideration all codal procedure in vogue and norms of awarding

contract for such works. The apprehension of objector on utilization of huge fund for repair/maintenance work is rather exaggerated.

Depreciation:

69. Depreciation is the capital on hand which is required to provide matching contribution for replacement of old assets after completion of life span of generating station.
70. The present CERC regulation calls for depreciated value of asset to be spread over the balance useful life of the assets after a period of 12(twelve) years from the date of commercial operation. UIHEP has not yet completed the estimated number of years from COD and therefore depreciation rate @ 1.16% stated by GRIDCO is not appropriate. Depreciation @3.60% has been claimed as per the PPA between OHPC and GRIDCO for UIHEP.
71. As per the direction of the High Court of Orissa, depreciation was calculated as per pre-1992 norms notified by Government of India on the book value of assets. Where the loan repayment is higher than the depreciation arrived, actual loan repayment has been allowed by OERC. Hence, the depreciation is claimed @2.57% in case of RHEP, UKHEP and CHEP and @3.6% for UIHEP, where as for BHEP and HHEP the requirement for actual loan repayment is considered for recovery through depreciation.
72. The claim of licensee for recovery of depreciation to the actual loan repayment in case of CHEP, RHEP and UKHEP is not justified as it would lead to under recovery of depreciation.

Interest on loan:

73. CERC Tariff regulation 2009 has allowed the generators to recover the interest on normative loan as per norms and is allowed to all other generators, which may not be denied to OHPC. In the earlier years, interest on normative loans has been allowed in the tariff by OERC.

Return on Equity:

74. The upward revision of equity base from Rs. 54.75 Cr for 2009-10 to Rs. 62.62 Cr. for 2010-11 is due to revision of capital cost of Unit 7 and 8 in BHEP.
75. The RoE claimed is Rs. 22.62 crore for old generating stations and Rs. 55.779 crore for UIHEP in the pre-tax rate. Considering installed capacity of 2062 MW, the RoE claimed is nominal. The fund available thereof is to take up new project in pipeline and for R&M of power stations of OHPC.

Interest on Working Capital:

76. Interest on working capital is based on SBI PLR rate of 11.75% and has already been claimed by OHPC in the application. Interest on working capital is based on O&M expenses for one month, receivables for 60 days and capital requirement of maintenance of spares. Since, the above parameters calculated by licensee based on their own assumptions/calculations are not in line with CERC norms, these are not justified.

Reservoir Levels and Anticipated Generation:

77. The low generation in Hirakud and Rengali is due to monsoon failure. The spilling condition in Hirakud and Rengali is due to reservoir management through Rule curve, even though the reservoir has not reached the FRL.

78. The low generation of Chiplima is contributed due to Monsoon failure. Regular chocking of trash rack is due to weed in the power channel. Work has been started for installation of automatic trash rack cleaning machine (TRCM) at the existing trash rack of all the units of CHEP.
79. Hirakud-B and Chiplima-B projects have since been considered as unviable proposals.
80. Peaking capacity increase in BHEP reduces the deficit during peak hours and benefits the consumers of state from load shedding or import of high cost power during evening/morning peak. Since, the benefit is availed by the consumers/ beneficiaries, it is justified to share the burden on account increase in fixed cost.

Availability of Energy for 2010-11:

81. The year 2006-07 and 2007-08 were exceptional years for OHPC due to very good monsoon. The average of above two years can not be taken as reference for FY 2010-11. During 2008-09 OHPC generated 5660.602 MU and anticipated generation for the FY2009-10 is expected to be 3939.322 MU. Hence the proposal of generation of 7000 MU by OHPC is not achievable in reality.

Peak availability:

82. The peak availability has been considered based on water availability and generation plan as per irrigation requirement. The month-wise availability of peaking capacity from 2008-09 and 2009-10 has been submitted to OERC.

Miscellaneous Income:

83. The cash discounts amounting to Rs.14.22 Lakhs received from PFC on repayment of loans and the nominal interest received from M/s GRIDCO bonds have accrued to OHPC due to prudential financial management. The CERC tariff regulations do not recognize such other incomes to be considered in the ARR / tariff proposal.

Truing up:

84. OERC in the order dated 22.10.2005 in case no. 38/2005, has pronounced that “the revenue earned out of the sale of secondary energy may remain a part of normal fund of OHPC, but shall be utilized to replenish the shortfall in revenue due to less generation by OHPC in the year of Hydrology failure. Thereafter, no compensation has been given to OHPC in the years of Hydrology failure”. An analysis of the shortfall/under-recovery in revenue on account of hydrology conditions and the additional revenue generated on account of secondary energy since 1996/97 up to 2008-09 reveals that Orissa Hydro Power Corporation Ltd has earned additional revenue of only Rs 40.04 Crore. Such additional revenue shall be nullified in the year 2010-11 as this year is one of the worst year on account of hydrology failure. To add to this problem, GRIDCO, which was regular in releasing monthly current energy bills, is facing constraints to make payments regularly. Therefore, the proposal of truing up does not hold good for OHPC.

Additional Submission on Fees and Charges of SLDC:

85. OPTCL has filed application before the Commission for annual revenue requirement and fees and charges of SLDC to be borne by the users. As per the filing, OHPC has to pay fees and charges for an amount Rs. 348.421 lacs, annually to SLDC. OHPC has submitted its objections/suggestions on fees and charges payable to SLDC. OERC

may allow for recovery of fees and charges payable by OHPC to SLDC directly from GRIDCO for FY 2010-11 as per the approval of fees and charges for SLDC.

Normative Annual Plant Availability Factor:

86. CERC Tariff regulation 2009, 27.1(ii) stipulated that “Storage and pondage type plants with head variation between FRL and MDDL of more than 8%, where the plant availability is not affected by silt. Plant-specific allowance to be provided in NAPAF for reduction in MW output capability as reservoir level falls over the months. As a general guideline the allowance on this account in terms of a multiplying factor may be worked out from the projection of annual average of next head, applying the formula:

$$\text{(Average head/ Rated head)} + 0.02$$

Alternatively in case of a difficulty in making such projection, the multiplying factor may be determined as:

$$\text{(Head at MDDL/Rated head)} \times 0.5 + 0.52$$

87. The average head during 2008-09 of Rengali as per OHPC application for ARR is 34.94 meters. The figure 37.67 meters as claimed by M/s GRIDCO, may be corrected accordingly. Hence the average head during 2007-08 and 2008-09 = 34.79 meters, not 36.16 meters as per calculation of M/s GRIDCO.
88. The consideration of average head to calculate the allowance on account of head variation is faulty due to following reasons:
- The above two years considered for calculating average head are the best years in terms of water availability in the reservoirs due to excellent monsoon. In the year of monsoon failure, the average head as calculated above is almost difficult to achieve, and there is no data available to claim the achievable head in all the 12 months of a year.
89. The second method, wherein the Head at MDDL and Rated head are design parameters, it is more prudent to take these parameters to arrive at the allowance due to head variation.
90. OHPC, in its submission of ARR application calculated the NAPAF as per CERC guidelines in the best monsoon years i.e. 2007-08 and 2008-09. The detailed calculation and analysis has been submitted by OHPC in its compliance to Commission queries vide letter no. 270 dated 12.01.2010.

Machhkund Hydro Electric (Joint) Scheme:

91. The royalty amount from 1997-98 till 31.03.2011 has been included in the ARR of OHPC to facilitate GRIDCO to realize the said amount through their ARR for 2010-11 and make the payment to OHPC.
92. The proposal for escalation of O&M expenses @4% is not in accordance with the CERC regulation. Hence the tariff proposed by the licensee does not merit consideration.

Potteru Small H.E. Project:

93. The reasons of delay and problems encountered in execution of the PSHE project are:
- (i) Frequent law and order problem at site.
 - (ii) Delay in civil construction by Water Resources Department.

- (iii) Frequent breach of canal and weed problem.
- (iv) Insufficient water availability to run the machine.
- (v) Delay in erection and commissioning of units by the erector, M/s B&C Engineering Ltd., Chennai.

QUERIES RAISED BY THE DIRECTOR (TARIFF) DURING HEARING ON 08.02.2010

- 94. The cash flow statement submitted by OHPC reveals cash surplus of the order of Rs.751.14 cr. by the end of 2009, the break up of which is submitted by OHPC. Authenticated documents justifying the utilization of such surplus cash in different funds such as terminal liability fund, hydrology fund, joint venture fund, depreciation fund, Machhkund fund etc. may be provided. Further, interest earned from such investments may be quantified and furnished.
- 95. PPAs for OHPC Old Power Stations: From the compliance to the Commission's query it is observed that the PPA for Old Power Stations of OHPC has been signed with GRIDCO on 20.11.2009. OHPC in consultation with GRIDCO may expedite the process of submission of PPAs to OERC for necessary approval.
- 96. Status of Potteru Small Hydro Project: The status of the Potteru Small HE project has not been reflected in the ARR application for 2010-11. The latest status indicating the expenditure incurred, reason for delay on execution of the project etc. may be submitted.

REPLY TO QUERIES RAISED BY THE DIRECTOR (TARIFF) DURING HEARING ON 08.02.2010 (Para 97 to 100)

- 97. The reply of OHPC to the issues raised by the Director (Tariff) during hearing on 08.02.2010 is summarized below:

Details of Cash Balance of Rs.751.14 Cr

- 98. The above cash balance including the accrued interest as on 30th November, 2009 has been earmarked for meeting the following committed liabilities.
 - (a) Terminal (Pension) liabilities – Rs.140.95 cr
 - (b) Hydrology Fund – Rs.40.05 Cr.
 - (c) Joint Venture Fund – Rs.100.00 Cr.
 - (d) Machkund Fund – Rs.100.00 Cr.
 - (e) Miscellaneous. Liabilities – Rs.20.00 Cr.
 - (f) Depreciation Fund – Rs.336.14 Cr.
 - (g) Rolling Working Capital – Rs.14.00 Cr.

These cash balances are earmarked for meeting committed liabilities and are put in short term fixed deposits of Nationalized Banks at the competitive rates determined on offers against quotations.

Miscellaneous receipts are mostly realization from sale of tender documents, sale of Scrap, penalties recovered from defaulting suppliers/ contractors.

PPA for OHPC Old Power Stations:

99. OHPC in consultation with GRIDCO will submit the PPAs of old power stations shortly to OERC as directed.

Status of Potteru Small Hydro Project:

100. In the 94th Meeting of Board of Directors of OHPC held on dtd. 10th July '09 it was suggested to move a proposal with a self contained note to the DoE, Govt. of Orissa for grant of permission to dispose of the pottery Small Hydro electric Project. The mode of disposal will be outright sale of the project including all assets and liabilities on "as-is-where-is-basis", after due approval from the Govt. OHPC vide letter No. 7490 (WE) dtd. 11.09.2009 has written to Govt. for grant of permission to dispose of the project. Permission is awaited from the Govt. The total expenditure of PSHEP up to 31.03.2010 is estimated to be Rs.37.43 Crs.

VIEWS OF GOVERNMENT OF ORISSA

101. Regarding upvaluation assets of GRIDCO/OHPC he stated that necessary notification for keeping in abeyance the upvaluation of assets of GRIDCO and OHPC till 2010-11 has been issued by the Government under intimation to all concerned. Government orders will be obtained for modification of the above notification on the basis of the suggestion of OERC intimated vide their Lr. NO. JD(F)-175/02/3235 dt. 27.01.2010.

OBSERVATIONS OF THE STATE ADVISORY COMMITTEE (SAC) (Para 102 to 115)

102. The State Advisory Committee (SAC) constituted under Section 87 of Electricity Act, 2003 met on 18th Feb, 2010 to deliberate on the Annual Revenue Requirement and tariff application for the FY 2010-11 of utilities, namely OHPC, OPTCL, GRIDCO, SLDC, CESU, NESCO, SOUTHCO and WESCO.
103. The Director (Tariff) made a brief presentation on the ARR and tariff applications for FY 2010-11 as under:

Table - 10

Name of the Utility	ARR approved by OERC in FY 2009-10 (Rs Crore)	ARR proposed for FY 2010-11 (Rs Crore)	% Rise Proposed in ARR for FY 2010-11	OERC approved Tariff in FY 2009-10 (Paise/KWH)	Proposed Tariff for FY 2010-11 (Paise/KWH)	% rise proposed in Tariff for FY 2010-11
OHPC	335.35	422.98	26.13	59.68	75.27	26.12
GRIDCO	2949.80	5480.22	85.78	122.20	262.89	115.13
OPTCL	394.15	1443.50	266.23	20.50	68.72	235.22
SLDC	9.66	14.90	54.30	0.50 (Avg)	0.71 (Avg)	42.00
DISCOMs	3827.48	3995.36	4.38	265.15	280.98	5.97

It was pointed out to the Members of SAC that the proposed tariff hike of 5.97% as shown by the DISCOMs is based on the existing Bulk Supply Price (BSP) and Transmission Tariff of GRIDCO & OPTCL respectively for the year 2009-10. Any

increase in BSP for the DISCOMs and the Transmission Tariff of OPTCL would correspondingly add to the proposed rise suggested by the DISCOMs in their Retail Supply Tariff.

104. One member of SAC pointed out that the OHPC, the Generating Company for hydro power, the GRICDO, the bulk supplier and the OPTCL, the transmission Utility must function efficiently as well as the four distribution companies. But these Govt. companies, OHPC, GRIDCO and OPTCL are the epitomes of inefficiency, not to speak to the distribution companies who are equally inefficient. GRIDCO in its ARR proposes an increase of 150% in BST. This will pass on to retail cost. Transmission Cost is proposed to be increased by 300%. If the DISTCOs increase the retail tariff after their hand are forced, we cannot blame them. In fact this time with the ongoing BST they have proposed very minor upward hike.
105. Regarding OHPC, he wished to know how design energy changes. What are its parameters? Why has it come down? What is a comparable figure? Design energy is down by 13% and a hike of 26% increase is proposed by OHPC. The combination will be a 46% hike. It is not understood how the design energy of OHPC power station would be reduced from 5881.74 MU to 5117.08 MU for sale. The reduction being of the order of 13%.
106. The hike in cost of generation, procurement and distribution has been proposed on the ground of implementation of recommendation of 6th pay Commission for the employees and the pensioner. It must be remembered that their pay hike is to be borne ultimately by the consumers. Their pay/pension hike must be linked to their productivity and efficiency parameters and not merely because such recommendation has been implemented for State Govt. employees.
107. Some Members pointed out that in order to ensure higher generation from the hydro generating stations de-silting of the reservoirs should be undertaken on a priority basis in consultation with Water Resource Department.
108. Responding to the views of the members of the SAC, the Director (Finance), OHPC submitted that during 2007-08 OHPC power stations generated 7850 MU (excluding 175 MU drawal from Machhkund) and energy sold was 7734 (excluding 175 MU Orissa drawal from Machhkund). During 2008-09 the generation was reduced to 5660.60 MU and energy sold was 5496.59 MU (excluding Orissa drawal from Machhkund 242.84 MU). During 2009-10 the total energy for sale will however be 3900 MU or around 4000 MU as the upper limit which may be attributed to hydrology failure and restricted use of water. It is the cheaper hydro sources of generation which has helped GRIDCO to sell surplus power and earn profit and thereby reduce the accumulated loss and supply power to the distribution companies at a lower rate, keeping the distribution retail tariff constant for about nine years. During peak demand hours OHPC power stations are generating and helping the Grid discipline and ensure power supply to the consumers. It is not fair to say that OHPC has manipulated to revise the design energy in order to claim higher tariff rather it is the OHPC which has been helping power sector in the State for supply of power at a low and affordable rate so far. The credit must go to OHPC which is acting against huge odds in the inaccessible terrain. The Commission urged for a review of design energy of OHPC which was presented to CEA and OERC. There is no manipulation of design energy.

109. When the cost of generation is increasing mainly because of hike in salary and wages of employees on implementation of 6th Pay Commission and requirement of fund for repair and maintenance of hydro stations on a increase scale, it is natural that there should be a hike in generation tariff. Keeping in view the requirement of irrigation and timing thereof the hydro stations are bound to generate hydro energy for the benefit of the consumers of the State and it will continue to do so but it can no longer continue with existing low tariff because the employees would be dis-incentivised to work and the repair and maintenance of the generating stations would be neglected resulting in low generation.
110. Though tariff is bound to increase because of increase in salary & wages, price of coal & other materials, decline in hydro generation as percentage of the total demand of the State from 56.67% in 2004-05 to 30.33% in 2008-09 and to below 30% during 2009-10, the Commission may keep in view the paying capacity of the consumers and the tariff should be at affordable rates for various categories of consumers.
111. Steps should be taken for de-silting of various hydro reservoirs so that there is generation of low cost hydro power as per the approved design of energy of various hydro power stations.
112. The Commission should very carefully scrutinize the revenue requirement projected by the power utilities on different items and should allow the reasonable expenditure to them. The payment of revised salary/wages and the arrears arising out of implementation of recommendations of 6th Pay Commission should be linked to their improvement in performance.
113. Any cost increase in generation and transmission would reflect in the Retail Tariff. It is, therefore, necessary for OHPC and OPTCL and GRIDCO to function efficiently, so that the generation cost and transmission cost are kept at the reasonable level in order to avoid substantial hike in the Retail Tariff.
114. OHPC has submitted that its efficiency can be judged from the prompt action taken after Naxals took seizure of valve House of BHEP in the night of 19th December 2009 at gun point and the miscreants put fire in the cables and panels in the valve House. The cable gallery of valve House, control cables and control panels were all damaged. The employees on duty showed exemplary courage and sense of responsibility in the most trying times. OHPC immediately took action and started the repair and maintenance work immediately thereafter. The generating units brought back to grid on 11.01.2010, within 20 days of the incident, defying threats from the Maoists.
115. On the whole, the SAC Members stressed on reduction of loss and cost of supply to ultimate consumers and improvement in performance standard and opined for a moderate rise in tariff which must be accompanied by improvement in quality of supply and service to the consumers.

COMMISSION'S OBSERVATIONS AND ANALYSIS OF OHPC'S PROPOSAL (Para 116 to 163)

116. The Commission has thoroughly 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.

117. During the course of public hearing, the objectors had raised certain 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:

- Review of Design Energy
- Power Procurement from OHPC
- Separation of Hiraakud and Chiplima Hydro Electric Projects
- Annual Fixed Cost which consists of
 - (i) Interest on loan capital
 - (ii) Depreciation
 - (iii) Return on Equity
 - (iv) Operation and Maintenance Expenses
 - (v) Interest on working capital
- Two-part Tariff (Capacity Charge & Energy Charge)
- Treatment of Revenue Earned from Excess Generation
- Normative Annual Plant Availability Factor (NAPAF)
- Machhkund Hydro Electric Project
- Peaking capability of Balimela HEP
- Prospective Hydro Development in the State
- Renovation and modernisation

Review of Design Energy:

118. The Design Energy (DE) of a Hydro Power Station is an important parameter for determination of tariff. As per the direction of Commission, OHPC had submitted report on reassessment of design energy of Hydro stations under OHPC to the Commission through affidavit on 31.05.2008. A detailed presentation was made before the Commission as well as to the CEA containing the procedure and the methodology adopted for the process of reassessment of design energy. The CEA had opined vide Letter. No. 3/81/HP&I (1)-2009/20 dated. 07.01.2009 that the reports on reassessment of design energy furnished by OHPC have been broadly in line with the guidelines issued by CEA. However, authenticity/accuracy of the various data adopted for the review may be ascertained by OERC. Since the reassessment of design energy has the repercussion on hydro tariff, the Commission has decided to dispose of the case through a Public Hearing. A public notice was published in the newspapers inviting objections/suggestions from the public and after receiving the objections hearing was held on 01.12.2009. But the objectors wanted more detailed information and to go through the reports. Hence, the date of filing of objections was extended till 31.12.2009. Now, that the objectors have asked for more time the hearing is not concluded and no decision has been taken regarding finalization of design energy of the OHPC stations.

119. During hearing of the Case, many objectors opposed to the proposal of OHPC for reduction of design energy. Some objectors pointed out that the availability of water resources has not been utilized optimally by OHPC with an intention for increase in tariff of Hydro generating stations by revising the design energy.
120. The Commission feels that the finalization of design energy through the process of public hearing would require time. In view of this, the Commission decided to adopt the existing level of design energy for sale at 5619.24 MU including Indravati for the year 2010-11 and final decision will be taken on the proposal of revised design energy by OHPC only after conclusion of public hearing.

Status of Individual Station-wise PPA:

121. OHPC has stated that the long-term PPAs for old power stations of OHPC has been signed between OHPC and GRIDCO on 20.11.2009. OHPC and GRIDCO will jointly submit the PPAs of old power stations to OERC shortly.

Power Procurement from OHPC

122. The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) is 2062 MW as on 1st of April 2010 including Orissa share of Machhkund. The details of drawal approved by the Commission for 2009-10 and the projections made by GRIDCO for 2010-11 are presented in the following table:

**Table - 11
Hydro Drawal and Projections for 2010-11**

Sl. No.	Name of the HE Project	Installed Capacity (MW)	Design Energy (MU)	Commission's Approval for 2009-10 (MU)	Proposed Drawal by GRIDCO for 2010-11 (MU)
1.	Hirakud	347.50	1174.00	1132.79	997.16
2.	Chiplima			-	-
3.	Balimela	510	1183.00	1171.17	1172.16
4.	Rengali	250	525.00	817.74	688.05
5.	Upper Kolab	320	832.00	826.65	828.63
	Total (Old Stations)	1427.50	3714.00	3948.35	3686.00
6.	UIHEP	600	1962.00	971.09	1944.36
7.	Machhkund (Orissa Share)	34.50	262.50	265.00	262.50
	Total Hydro	2062	5938.50	6184.44	5892.86

123. 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 Regulations for determination of tariff applicable to generating companies. The new CERC (Terms & Conditions of Tariff) Regulations, 2009 has already come into force w.e.f. 01.04.2009 and shall remain in force for a period of five years from the date of commencement.
124. 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.

125. As indicated in the above table, the design energy of OHPC's old stations is 3714 MU. After deduction of auxiliary consumption and transformation loss, energy sent out to GRIDCO comes to 3676.86 MU. In case of UIHEP, the design energy is 1962.00 MU. After deduction of auxiliary consumption and transformation loss, energy sent out to GRIDCO comes to 1942.38 MU.
126. 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 2010-11. GRIDCO has projected the power purchase from OHPC stations based on the latest generation plan submitted by OHPC for different stations. GRIDCO has considered 5892.86 MU of availability from OHPC hydro stations as per this generation plan after deduction of 16.60 MU of allocations to CSEB from Hirakud Power Station and 0.5% auxiliary consumption and 0.5% transformation loss.
127. As indicated earlier, the design energy of OHPC old stations being 3676.86 MU, it is premature to predict the rainfall at this point of time. The Commission cannot accept a figure of 7000 MU as suggested by some of the objectors 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 2010-11 after deduction of auxiliary consumption and transformation loss.

Machhkund

128. This hydro power station is a joint venture of Government of Orissa 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 Orissa 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 2010-11. The Commission approves 262.50 MU to be drawn from this station during 2010-11. The Commission desires that sufficient load of SOUTHCO should be radially put on Machhkund system disconnecting from Orissa Grid, so that everyday at least 50% generation of Machhkund is drawn by Orissa State. SOUTHCO and OPTCL should address the issue.
129. The Commission's approval of power to be purchased by GRIDCO for 2010-11 from various stations of OHPC is given in the table below.

Table - 12
Drawl From Hydro Stations (2010-11) (MU)

Source of Generation	Commission's Approval (2009-10)	GRIDCO Proposal (2010-11)	Commission's Approval (2010-11)
Burla	1132.79	997.16	677.16
Chiplima			485.10
Balimela	1171.17	1172.16	1171.17
Rengali	817.74	688.05	519.75
Upper Kolab	826.65	828.63	823.68
OHPC (Old stations)	3948.35	3686.00	3676.86
Upper Indravati	1971.09	1944.36	1942.38
Machkund	265.00	262.50	262.50
Total Hydro	6184.44	5892.86	5881.74

Separation of Hirakud and Chiplima Power Projects:

130. Hirakud Power House at Burla and Chiplima Power House at Chiplima are being treated as one complex namely Hirakud Power system and the bus-bars of both the power houses are connected with 2 nos. of 132 kV tie lines. The Commission in its tariff order dtd.20.3.2009 for FY 2009-10 in Case No.64/2009 had advised OHPC to make all efforts to execute separate PPA for Hirakud and Chiplima power house and present separate tariff filing for both the power houses for FY 2010-11 onwards. Accordingly, OHPC has presented separate tariff filing for both the power houses namely Hirakud Hydro Electric Project (HHEP) and Chiplima Hydro Electric Project (CHEP). The Commission is determining separate tariff for both the power stations for the FY 2010-11.
131. Further, the Commission directs OHPC to take up the matter with OPTCL and State govt. for hand over of 132 kV tie lines between Hirakud and Chiplima power stations to OPTCL for operation and maintenance.

Annual Fixed Cost:

132. For the purpose of computation of Annual Fixed Cost as per CERC Regulations, a detailed analysis of the following components has been made as under:

Interest on Loan:

133. The loan liabilities of OHPC consists of State Govt. loans and PFC loans. These loan liabilities outstanding as on 01.04.1996 are summarized in the table below.

Table - 13
Statement of State Government Loans (Rs. cr.)

Sl. No.	Description of Loan	Amount as on 01.04.1996
1	9.8% loan	39.20
2	13% loan (UIHEP)	497.86
3	Interest free loan (UIHEP)	132.14
4	13% loan (Potteru)	14.3
5	Zero coupon Bond-I	383.10
6	Zero coupon Bond-II	383.10
7	Other loan	0.99

As revealed from the above table, the State Government loan of Rs.39.20 crore carries interest rate of 9.8% with repayment period of 15 years. There is a moratorium on principal repayment for five years starting from 2001-02. The Commission during 2001-02 and 2002-03 had allowed the repayment of principal amount of Rs.3.89 crore/annum. The same loan quantum would reduce to Rs.8.08 crore by 01.04.2010 after adjustment of repayments towards principal. In the meanwhile OHPC has apportioned the said loan quantum to the different generating units and claimed interest thereon.

As per the recommendations of the Kanungo Committee and the subsequent Govt. of Orissa Notification dtd.29.01.2003, the effect of up-valuation of assets would be kept in abeyance from the financial year 2001-02 prospectively till 2005-06 or till the sector turns around, whichever is earlier. In the meanwhile, the Commission has suggested to the Govt. of Orissa for extension of these financial benefits to the consumers of the State beyond 2005-06. The State Govt. has responded vide its Notification dtd. 06.01.2010 that;

“Keeping in view the earlier decision of the State Government on the recommendations of Kanungo Committee’s Report, the present suggestions of the OERC the State Government with approval of the cabinet has decided that the upvaluation of the assets of GRIDCO/OPTCL and OHPC indicated in the Notification No. 5210 dtd. 01.04.1996 and No. 5207 dtd. 01.04.1996 would be kept in abeyance for the financial year 2006-07 to 2010-11 and has agreed to the following:

- (i) The bonds issued by GRIDCO and OHPC, to the State Government, consequent upon revaluation of assets shall not carry any interest for a further period of five years from FY 2006-07 to FY 2010-11.*
- (ii) The additional equity share, allotted to the State Government based on revaluation of assets, should not earn any Return on Equity for a further period of five years from FY 2006-07 to FY 2010-11.*
- (iii) Both GRIDCO/OPTCL and OHPC would be entitled to depreciation on the revalued (pre-92) assets.*
- (iv) Both GRIDCO/OPTCL and OHPC shall repay the principle amount of the loan amount actually taken from the State Government along with the interest as per the terms and condition of loan other than those attributable to the revaluation of assets.*
- (v) The State Government investment actually made in Upper Indravati project, excluding the normative equity, should yield return to the State Government 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.*
- (vi) Returns on equity on the old Hydro Power Plants may be allowed to OHPC, in respect of new projects commissioned after 01.04.1996.”*

In response to the above Notification of GoO, the Commission in its letter dtd. 27.01.2010 has advised the State Government that “the effects of up-valuation of asset and moratorium on debt services of State Govt. loan may be kept in abeyance till end of FY 2012-13 i.e. end of control period of Business Plan instead of 2010-11 as approved by the State Govt. in their Notification dtd. 06.01.2010”.

In response to Commission's letter dtd. 27.01.2010, the State Government vide their letter No. 1577 dtd. 23.02.2010 has intimated that *"In this regard necessary notification for keeping in abeyance the upvaluation of assets of GRIDCO and OHPC till 2010-11 has been issued by Government under intimation to all concerned. Government orders will be obtained for modification of the above notification on the basis of the suggestion of OERC intimated vide their letter No. JD(F)-175/02/3235 dtd. 27.01.2010."*

Accordingly, the interest impact of all other State Government loans except the above-mentioned Rs.39.20 crore (Rs.8.08 crore outstanding as on 01.04.2010) is not considered for the purpose of calculation of tariff of OHPC stations.

The PFC loans were obtained in connection with projects like Chiplima, Burla, Upper Indravati and for extension of units 7 & 8 of Balimela. The outstanding PFC loan amount as on 01.04.2010 is indicated in the table below:

Table - 14
PFC Loan Outstanding

	(Rs. cr.)	
	As on 01.04.2009	As on 01.04.2010
(a) Unit 3 & 4 Burla	45.59	39.07
(b) Unit 7 & 8 Balimela	76.80	67.20
(c) UIHEP	32.08	0.00
Total	154.47	106.27

For OHPC old stations, interest on loan including Guarantee Commission aggregates to Rs.15.20 crore and in case of UIHEP since the loan amount is fully repaid, the outstanding is nil for the year 2010-11 as compared to Rs.16.85 crore and Rs.2.88 crore respectively for the FY 2009-10 as summarized in the table below:

Table - 15
Statement of OHPC Loans and Interest on Loan

Source of Loan	Loan Outstanding		Interest on Loan			
	As on 1.04.2009	As on 1.04.2010	OERC Appr. for FY 2009- 10	OHPC Proposal for FY 2010-11	Commission 's Approval for FY 2010- 11	Approved for 2010-11 after adjustment at BHEP
Govt. loan @ 9.8%	11.97	8.08	1.17	0.79	0.79	0.79
PFC Loan for 3 & 4 Burla	45.59	39.07	3.65	3.09	3.09	3.09
PFC Loan for Balimela 7 & 8	76.80	67.20	6.95	6.02	6.02	- 2.78 *
Deemed loan for Burla	22.56	1.17	1.82	0.05	0.05	0.05
Deemed loan for Chiplima		12.24		0.92	0.92	0.92
Deemed loan for Balimela	24.00	39.00	2.18	3.25	3.25	3.25
Govt. Guarantee Commission	-	-	1.08	1.08	1.08	1.08
Sub total (Old Stations)	180.92	166.76	16.85	15.20	15.20	6.40
UIHEP (PFC Loan)	32.08	0.00	2.88	0.00	0.00	0.00

(*) While approving the interest on loan of Balimela Power Station, the Commission has observed that the Unit 7 & 8 of Balimela were scheduled for capitalization in FY 2007-08 and as per the proposal made by OHPC the Commission had already

approved Rs.8.80 crore towards interest of the same project while approving the ARR for 2007-08. However, the commissioning of the project took place during FY 2008-09. Thus the interest on loan already passed on to the Tariff of 2007-08 is adjusted and deducted from the interest on loan of Balimela HEP for the year 2010-11. Accordingly, the Commission approves interest payment of Rs.6.40 crore for OHPC old stations for the FY 2010-11 instead of Rs.15.20 cr. Since the outstanding loan is nil, no interest has been passed on for UIHEP for the FY 2010-11.

Depreciation:

134. Depreciation is an important component of annual operating cost of the generating companies and it constitutes between 20 to 25% of the annual expenditure. In the instant case, the capital assets have been re-valued nearly 3 times of its historical cost. Earlier, upto FY 2000-01, the Commission had calculated depreciation on prevalent norms i.e. post'94 rate, which substantially raised the revenue requirement due to upfront loading. Since 2001-02, as a part of corrective measures depreciation was limited to the principal loan repayment during a particular year. However, during 2003-04, as per the directions of the High Court of Orissa, 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 2010-11. However, in case of Burla and Balimela where loan repayment is more than the computed depreciation @ 2.57%, the differential amount has been considered and the depreciation amount has been extended to meet full repayment of principal loan for the FY 2010-11. The details of repayment of loan as submitted by OHPC for old stations is as under:

Table – 16
Statement of Repayment of Loans
(Rs. cr.)

Power Stations	2009-10	2010-11
RHEP	1.05	1.05
UKHEP	1.25	1.25
BHEP	13.55	16.12
HHEP	12.50	7.97
CHEP		1.72
Total	28.35	28.11

For the year 2010-11, 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 by OHPC as summarized below:

Table – 17

Name of the Power Station	Depreciation (Rs. Crore)	Remark
RHEP	2.41	2.57%
Upper Kolab	2.88	2.57%
Balimela	16.12	Equal to loan repayment
Burla	7.97	Equal to loan repayment
Chiplima	3.30	2.57%
Total	32.68	

The amount of depreciation of Rs.32.68 crore is approved by the Commission for the FY 2010-11 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. Since the depreciation amount to the extent of Rs.319.49 Crore has already been recovered, this amount has been deducted from the depreciable value of the project cost. The balance amount is divided by remaining life period of the project while calculating depreciation for FY 2010-11. The detailed calculation is summarized in the following table.

Table – 18
Depreciation Recovered Through Tariff of UIHEP

		(Rs. cr.)
(i)	Original cost of the Project	1194.79
(ii)	90% of the Project cost as on 31.03.2009	1075.31
(iii)	Cumulative depreciation allowed in ARR till 2009-10	319.49
(iv)	Depreciation claimed in ARR of 2010-11	43.01
(v)	Depreciation allowed in ARR for FY 2010-11	30.23

Return on Equity:

135. The new CERC Tariff Regulations for the period 2009-14 provides the following:
- (a) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.
 - (b) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% and the rate of return on equity shall be computed by grossing up the base rate with the normal tax rate for the year 2008-09 applicable to the concerned generating company.
 - (c) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

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

Where t is the applicable tax rate.
136. Accordingly, the rate of return for OHPC power stations comes to 18.674% for the year 2010-11.
137. 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.
138. 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. The Commission vide its letter No.2807 dtd. JD(F)- 175/02/3235 dtd. 27.01.2010 had advised the Government to keep in abeyance the up-valuation of assets and other policy measures till 2012-13 and the Govt. vide its Lr. No. 1577 dtd. 23.02.2010 has rendered its views that Government orders will be obtained for modification of the above notification on the basis of the suggestions of OERC intimated vide their letter No. JD(F)-175/02/3235 dtd. 27.01.2010.

139. Based on the above RoE for Old Stations is calculated @ 18.674% on OHPC's own investment of Rs.47.52 crore in case of HPS and Rs.9.01 Cr in case of CHEP and Rs.62.62 Cr in case of Balimela. Thus RoE comes to Rs.8.87 crore in case of HHEP, Rs.1.68 cr in case CHEP and Rs. 11.69 cr in case of Balimela. However, in case of Balimela, expecting commissioning of the project of the units 7 & 8 during 2007-08, RoE to the extent of Rs.7.56 cr was allowed at the time of approval of ARR for 2007-08. However, the commissioning of the project was made during the FY 2008-09. Thus the above RoE of Rs.7.56 cr, which was already allowed, is deducted from ARR of Balimela HEP for the year 2010-11. Thus the net RoE allowed for FY 2010-11 in case of Balimela is (Rs.11.69 cr – 7.56 cr.) Rs. 4.13 cr. Similarly, for Rengali and Upper Kolab the RoE on the own investments of OHPC after 01.04.1996 comes to Rs.0.16 crore and Rs.0.21 crore respectively. The total RoE for OHPC old stations comes to Rs.15.06 crore for FY 2010-11.
140. In case of UIHEP RoE is calculated @ 18.674 % on Government equity of Rs.298.70 crore which comes to Rs.55.78 crore. The Commission approves RoE @ 18.674% in line with new CERC norms to this project with a view to encourage the growth of hydropower in the State. OHPC should make all attempts to explore the possibilities on a long-term basis for utilization of hydro potential in the State. The Commission approves return on equity for all the OHPC stations amounting to Rs.70.84 crore for the FY 2010-11 as summarized in the table below:

Table – 19

(Rs. cr.)

Name of the Power Station	Return on Equity 2009-10 (@ 17.481%)	Return on Equity 2010-11 (@ 18.674%)	Return on Equity Approved for 2010-11 after adjustment at BHEP
RHEP	0.14	0.16	0.16
Upper Kolab	0.21	0.21	0.21
Balimela	9.57	11.69	4.13
HHEP	10.16	8.87	8.87
CHEP		1.68	1.68
UIHEP	52.22	55.78	55.78
Total	72.30	78.39	70.84

O&M Expenses:

141. OHPC has projected the O&M expenses of each of its power stations as given in the table below:

Table – 20
O & M Exp. for 2010-11

(Rs.cr.)

Sl No	OHPC Proposal	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
1	O& M expenses for 2010-11 with escalation @ 5.72% over 2009-10.	20.64	14.08	26.26	26.26	11.25	98.49	39.66	10.77	148.92
2	Add: Increase in salary and remote area allowances									
a	Salary increase allowed by OERC in Year 2009-10 on account of 6th Pay Commission	3.32	2.26	4.49	4.35	1.86	16.28	4.72	0.89	21.89

Sl No	OHPC Proposal	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
b	Salary increase for Tariff Year 2010-11 @ 5.72% on (a).	3.51	2.39	4.75	4.60	1.97	17.21	4.99	0.94	23.14
c	Increase in remote area allowance(RAA) on account of 6th Pay Commission (i)+(ii)	0.76	0.33	1.03	0.40	0.19	2.71	0.75	0.00	3.46
i	For the period 4/2009 to 31.03.2010	0.37	0.11	0.51	0.16	0.10	1.25	0.33	0.00	1.58
ii	For the period 04/2010 to 31.03.2011	0.39	0.22	0.52	0.24	0.09	1.46	0.42	0.00	1.88
3	O&M Expenses after increase in current year salary and RAA (1+2(b)+c)	24.91	16.80	32.04	31.26	13.41	118.41	45.40	11.71	175.52
4	Add:Arrear salary and terminal liabilities									
a	40% Arrear salary paid by OHPC during Financial Year 2009-10.	3.60	2.62	4.02	2.66	1.14	14.04	5.3	1.48	20.82
b	30% Arrear salary to be paid by OHPC during 2010-11	2.70	1.97	3.02	2.00	0.86	10.54	3.98	1.11	15.63
c	30% arrear salary of employees retired or retiring on 31.03.2009 as per GoO notification	0.19	0.08	0.55	0.15	0.06	1.03	0.31	0.08	1.42
d	Arrear terminal liabilities of Rs. 78.01 Cr. as on 31.03.2009 claimed over a period of five years starting from 2010-11.	1.44	1.37	5.54	2.58	1.11	12.04	1.38	2.19	15.61
5	Spares for Unit-3&4 ,HHEP Burla amounting Rs 9.27 Crs purchased during 2009-10 has been spread over 5 years starting from 2010-11				1.86					1.86
6	Corporate office expenses apportioned to different units under OHPC	2.04	2.62	4.17	2.25	0.59	11.67	4.90	15.67	
	Total : (3+4+5+6)	34.88	25.46	49.34	42.75	17.16	167.73	61.27	32.24	230.86

142. OHPC has stated that as per new CERC Tariff Regulation 2009, normative O&M expenses shall be calculated as follows:-

- i) The actual O&M expenses for the years 2003-04 to 2007-08 shall be escalated @ 5.17% per annum to bring it to the 2007-08 price level and then averaged to arrive at the O&M expenses of the generating stations at 2007-08 price level. Then it is to be escalated @ 5.72% per annum to arrive at the O&M expenses for the year 2010-11.
- ii) The Commission in the tariff order for the FY 2009-10 has approved the salary enhancement of employees for 2009-10 separately. So the, salary enhancement as approved by the Commission for FY 2009-10 has been escalated @ 5.72% to arrive for FY 2010-11 which is included in the O&M expenses.
- iii) OHPC has already disbursed the 40% arrear salary on account of implementation of 6th Pay Commission and 30% of arrear salary is to be paid

during FY 2010-11. Both 40% (Rs.20.82 Cr.) plus 30% (Rs. 15.63 Cr.) have been included in the ARR of FY 2010-11

- iv) Similarly, corporate office expenses amounting to Rs. 16.57 Crs has been apportioned to different Units under OHPC based on installed capacity and included in the O&M expenses for FY 2010-11.
 - v) As per Government notification 54080 dtd. 16.12.2008, 100% arrear salary has to be paid in one installment to employees retired or retiring on 31.03.2009. Since 40% of the arrear salary has been paid in FY 2009-10, balance 30% has been included as in para (iii) above and residual 30% (Rs. 1.42 Cr.) included in the O&M expenses for FY 2010-11.
 - vi) Since, Burla Power House and Chiplima Power House has been declared as separate Unit, the O&M expenses as approved by Commission for FY 2009-10 has been apportioned in the ratio of 70:30 as per man power strength, as employee cost constitute major portion of O&M expenses.
 - vii) Increase in remote area allowance on account of 6th Pay Commission as arrear from 4/2009 to 31.03.2010 and for the financial year 2010-11 total amounting to Rs. 3.46 Crs. included in the O& M expenses.
 - viii) Arrear terminal liabilities of Rs. 78.01 Cr as on 31.03.2009 on account of revised pay scales effective from 01.01.2006 claimed over a period of 5 years starting from FY 2010-11 is included in the O&M expenses.
 - ix) Spares for unit 3 & 4, HHEP Burla: Spares valued Rs 9.27 Crs purchased during 2009-10 for these two units have been spread over five years starting from the year 2010-11. Accordingly, one fifth of the expenditure amounting to Rs 1.86 Crs has been included in the O& M expenses. The summary of O&M expenses projected by OHPC for 2010-11 is given below:
143. The Commission has thoroughly analyzed the O&M expenses as proposed by OHPC and approves the following expenses to be passed on in ARR 2010-11. O&M expenses are taken considering
- (a) 5.72% escalation on the O&M expenses amount for 2009-10.
 - (b) 40% arrear already given by OHPC to its employees.
 - (c) Remote Area Allowance as claimed by OHPC for the year 2009-10 and 2010-11.
 - (d) 30% arrear salary of employees retired or retiring on 31.03.2009.
 - (e) Arrear terminal liabilities of Rs.78.01 cr as on 31.03.2009 spread over a period of seven years starting from 2010-11 instead of five years claimed by OHPC.
 - (f) Corporate office expenses apportioned to different units under OHPC.
144. The Commission has decided that 30% arrear salary to be paid by OHPC during 2010-11 will not be passed on to ARR of 2010-11 in stead, it will be passed through after OHPC disburses this amount to its employees and it will be subsequently considered in the ARR. OHPC has proposed some expenses of Rs. 9.27 crore for the purchase of spares for Unit- 3 and 4, HHEP, Burla and the same expense to be spread over five years starting from the year 2010-11. The Commission has decided that since adequate amount of O&M expenses are considered for FY 2010-11 and escalation @ 5.72% is also allowed, adequate funds will be available with OHPC to

purchase the spares for maintenance of its units. Thus Rs.1.86 crore as proposed by OHPC in this regard is not approved in the O&M expenses of 2010-11. The details of O&M expenses approved by the Commission for the FY 2010-11 is presented in the table below:

Table – 21
O & M Expenses approved for the FY 2010-11

(Rs. cr.)

Sl No	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
1	O& M expenses for 2009-10 as per CERC norm with salary increase on account of 6th Pay Revision	22.84	15.58	29.33	29.19	12.50	109.44	42.23	11.08	69.59
2	O& M expenses for 2010-11 with escalation @ 5.72% over 2009-10 as per CERC norm.	24.15	16.47	31.01	30.86	13.22	115.70	44.65	11.71	73.57
3	Increase in remote area allowance on account of 6th Pay Revision for 2010-11	0.39	0.22	0.52	0.24	0.09	1.46	0.42	0.00	1.88
4	Corporate office expenses apportioned to different units under OHPC	1.44	1.85	2.95	1.59	0.42	8.25	3.47	0.00	
5	Total O&M Expenses for the year 2010-11.	25.98	18.54	34.47	32.69	13.72	125.41	48.53	0.00	173.94
Add: Arrear salary and terminal liabilities										
6	40% Arrear salary paid by OHPC during Financial Year 2009-10.	3.60	2.62	4.02	2.66	1.14	14.04	5.3	1.48	20.82
7	30% arrear salary of employees retired as on 31.03.2009 as per GoO notification	0.19	0.08	0.55	0.15	0.06	1.03	0.31	0.08	1.42
8	Arrear terminal liabilities of Rs. 78.01 Cr. as on 31.03.2009 allowed over a period of Seven years starting from 2010-11.	1.03	0.98	3.96	1.84	0.79	8.60	0.99	1.56	11.15
9	Increase in remote area allowance for 2009-10 on account of 6th Pay Revision, which was not passed in tariff for the year 2009-10.	0.37	0.11	0.51	0.16	0.10	1.25	0.33	0.00	1.58
10	Total arrear salary and terminal liabilities	5.19	3.79	9.04	4.81	2.09	24.92	6.93	3.12	34.97
11	Arrear salary and terminal liabilities of Corporate office apportioned to different units under OHPC	0.39	0.49	0.79	0.42	0.11	2.20	0.92	0.00	

Sl No	Particulars	RHEP	UKHEP	BHEP	HHEP	CHEP	Subtotal	UIHEP	C.O	TOTAL
12	Arrear salary and terminal liabilities allowed in O&M expenses for the year 2010-11.	5.57	4.28	9.82	5.24	2.20	27.12	7.85	0.00	34.97
13	Total O&M Expenses for the year 2010-11 including arrear salary and terminal liabilities.	31.55	22.82	44.30	37.93	15.92	152.53	56.38	0.00	208.91

Interest on Working Capital:

145. As per the new CERC Regulations 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 rate of interest on working capital shall be the short-term prime-lending rate of State Bank of India. In accordance with CERC guideline, the interest on working capital shall be payable on normative basis as shown in table below:

Table – 22
Interest on Working Capital for FY 2010-11

Description	(Rs. cr.)	
	OHPC Old Stns	UIHEP
Receivables equivalent to two months of fixed cost.	35.84	24.47
Maintenance spares @ 15% of Operational and Maintenance expenses	22.88	8.46
Operation and Maintenance expenses for one month.	12.71	4.70
Total Working Capital	71.43	37.63
Interest on working capital calculated @ 11.75%	8.39	4.42

Total Annual Fixed Cost

146. Based on the above parameters the station-wise ARR and tariff calculated for the year 2010-11 is indicated in the table below:

Table – 23
STATION-WISE TARIFF APPROVED FOR 2010-11

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	3676.86	1942.38	5619.24
Interest on loan	0.21	0.25	1.30	3.64	1.00	6.40	0.00	6.40
Return on Equity	0.16	0.21	4.13	8.87	1.68	15.06	55.78	70.84
Depreciation	2.41	2.88	16.12	7.97	3.30	32.68	30.23	62.91
O&M expenses	31.56	22.82	44.30	37.92	15.93	152.53	56.39	208.92
Interest on working capital	1.57	1.16	2.55	2.23	0.88	8.39	4.42	12.81
Total ARR (Rs. Crore)	35.91	27.32	68.40	60.64	22.79	215.06	146.82	361.88
Average cost (P/U) 2010-11	69.09	33.17	58.41	89.54	46.98	58.49	75.59	64.40
Average cost (P/U) for 2009- 10	58.22	25.19	56.66	64.96		52.46	73.35	59.68

Income Tax

147. As per new CERC Tariff Regulations, 2009, *Tax on the income streams of the generating company or the transmission licensee, as the case may be, shall not be recovered from the beneficiaries, or the long-term transmission customers, as the case may be:*

Provided that the deferred tax liability, excluding Fringe Benefit Tax, for the period up to 31st March, 2009 whenever it materializes, shall be recoverable directly from the beneficiaries and the long-term customer.

148. Accordingly, income tax i.e. Maximum Alternate Tax paid by OHPC during the FY 2008-09 to the tune of Rs. 2.25 Crore is to be reimbursed directly from GRIDCO.

ARR & Tariff Application Fees and related Publication Expenses

149. 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.0.26 cr. from GRIDCO towards ARR and tariff application fees and related publication expenses. The Commission approves the said amount of Rs.0.26 cr. as pass through in the ARR of GRIDCO.

Electricity Duty on Auxiliary Consumption

150. 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.
151. Accordingly, ED on Auxiliary consumption of all the hydro-electric projects to the tune of Rs.0.57 crore is to be reimbursed to OHPC by GRIDCO through separate billing. The Commission approves the same.

SLDC Charges

152. The Commission, while determining the ARR and Fees & Charges of SLDC for the FY 2010-11 in Case no.146/2009, 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 Despatch Centre and Other Related Matters) Regulations, 2009. Accordingly, the Commission has fixed Rs.8930/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.1.81 cr. for the FY 2010-11, which is to be collected by SLDC from OHPC on monthly basis and OHPC has to reimburse the same from GRIDCO.
153. The details of ED on auxiliary consumption and income tax and application fees & related publication expenses of OHPC are summarized in the table below:

Table – 24

(Rs. cr.)

Component of Costs	RHEP	UKHEP	BHEP	HHEP	CHEP	UIHEP	Total
ED on Auxil. Consumption	0.05	0.08	0.12	0.07	0.05	0.20	0.57
Income Tax (MAT)	0.00	0.00	0.08	0.00	0.00	2.17	2.25
Application fees & publication expenses							0.26
SLDC Charges for the FY 2010-11							1.81
Total							4.89

Two-Part Tariff

154. 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.

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

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

Where

AFC = Annual Fixed Cost specified for the year in rupees

NAPAF= Normative Annual Plant Availability Factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

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

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

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

Where

Aux = Normative auxiliary energy consumption in percentage

N = No of days in the month

IC = Installed capacity in MW of the complete generating station

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

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

Total energy charge payable to the generating company for a month shall be
 {(Energy charge rate in Rs./ Kwh) x (Schedule energy (ex-bus)) for the month
 in Kwh}

- (3) Energy charge rate (ECR) in Rupees per Kwh on ex-bus plant basis for a hydro generating station shall be determined up to three decimal places based on the following formula, subject 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.

155. Accordingly, the Commission approves the rate of energy charge and the capacity charge of OHPC power stations for FY 2010-11 as summarized in the table below:

Table - 25

Energy Charge and Capacity Charge for 2010-11

Name of the Power Stations	Annual Fixed Cost (Rs. crore)	Capacity Charge (Rs. crore)	Energy Charge (Rs. crore)	Energy Charge Rate (P/U)
Rengali HEP	35.91	17.955	17.955	34.545
Upper Kolab HEP	27.32	13.660	13.660	16.584
Balimela HEP	68.40	34.20	34.20	29.201
Hirakud HEP	60.64	30.32	30.32	44.775
Chiplima HEP	22.79	11.395	11.395	23.490
Upper Indravati HEP	146.82	73.410	73.410	37.793

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

Normative Annual Plant Availability Factor (NAPAF)

156. Regulation 27(i) of the CERC (Terms and Conditions of Tariff) Regulations, 2009 stipulates the following:

- (1) Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations shall be determined by the Commission as per the following criteria:
- (i) Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt: 90%.
 - (ii) Storage and Pondage type plants with head variation between FRL and MDDL of more than 8%, where plant availability is not affected by silt: Plant specific allowance to be provided in NAPAF for reduction in MW output capability as reservoir level falls over the months. As a general guideline the allowance on this account in terms of multiplying factor may be worked out from the projection of annual average of net head, applying the formula:

$$(Average\ head / Rated\ head) + 0.02$$

Alternatively in case of difficulty in making such projection, the multiplying factor may be determined as:

$$(\text{Head at MDDL/Rated head}) \times 0.5 + 0.52.$$

- (iii) Pondage type plants where plant availability is significantly affected by silt: 85%
 - (iv) Run-of-river type plants: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant.
- (2) A further allowance may be made by the Commission in NAPAF determination under special circumstances, e.g. abnormal silt problem OR other operating conditions, and known plant limitations.
- (3) Further allowance of 5% may be allowed for difficulties in North East Region.
- (4) In case of a new hydro electric project the developer shall have the option of approaching the Commission in advance for fixation of NAPAF based on the principles enumerated in sub-clause (1), (2) and (3) of this regulation.
- (5) Based on the above, the Normative annual plant availability factor (NAPAF) of the hydro generating stations already in operation shall be as follows:
157. OHPC in its compliance to the queries of Hon'ble Commission has mentioned the following:

The NAPAF of 90% has been benchmarked by CERC regulations 2009 based on the performance data available for various power stations under central scheme. Chamera-I and Chamera-II stations of NHPC have been considered as benchmark stations based on the consistent performance of these stations. The details of availability of OHPC power stations from 2004-05 to 2008-09 is given in the table below:

Table- 26

Sl. No	Name of the Power Station	2004-05	2005-06	2006-07	2007-08	2008-09	Average for 5 years
1	HHEP	78.76	65.41	68.94	82.26	86.65	76.4
2	CHEP	50.91	47.98	53.21	46.08	68.50	53.34
3	BHEP	86.60	87.18	88.74	89.51	86.89	87.78
4	RHEP	88.77	81.16	70.65	86.47	75.44	80.5
5	UKHEP	93.90	76.50	80.90	92.00	87.58	86.18
6	UIHEP	90.27	68.86	89.00	90.24	89.17	85.51

158. The detailed performance parameters of these stations from 2004-05 to 2008-09 as per the CERC formats were furnished by OHPC. Based on these performance parameters, the detailed plant availability of OHPC power stations from FY 2004-05 to 2008-09 as arrived is given in the table above. The average plant availability of OHPC power station for the last five years is given in the table below:-

Table - 27

	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
Average Plant Availability for last 5 years	76.40	53.34	87.78	80.50	86.18	85.51

159. Hence, for calculating NAPAF of OHPC power stations the actual availability of power stations in the last five years shall be considered as benchmark for OHPC taking into consideration, other factors as enshrined in the CERC tariff regulations, 2009. The detailed calculation for different power stations is given below:-

High Head Power Stations (UIHEP, UKHEP, and BHEP):-

160. The head variation between Full Reservoirs Level (FRL) and Minimum Draw Down Level (MDDL) for UIHEP, UKHEP and BHEP is given below:-

Table - 28

Name of the power station	FRL	MDDL	Maximum head	Minimum head	% head variation
Upper Kolab	858 m	844 m	265.73 m	241.72 m	9.03 %
Balimela	462.08 m	438.91 m	289 m	257 m	11.07 %
Upper Indravati	642 m	625 m	379 m	358 m	5.54 %

For Upper Indravati the head variation is less than 8%, hence the actual plant availability factor (average) for last five years shall be considered as NAPAF without any multiplying factor for head variation, which comes out to be 85.51% may be considered as 85%.

In case of Balimela and Upper Kolab the head variation is more than 8%, hence the multiplying factor for such power station is given below:-

Table - 29

Name of power station	% of head variation	Rated head	Head at MDDL	Multiplying factor (Head at MDDL/ Rated head x 0.5 + 0.52)
Upper Kolab	9.03%	253.0 m	241.72 m	0.9977
Balimela	11.07%	274.0 m	257.0 m	0.989

Considering the above multiplying factor and the actual average plant availability for last five years, the NAPAF shall be

Table - 30

Name of the power station	M.F.	Average plant availability	NAPAF (%)
Upper Kolab	0.9977	86.18	85.98
Balimela	0.989	85.51	84.57

Hence, NAPAF (%) for Upper Kolab and Balimela shall be taken as 85% .

Low Head Power Station:-

161. **HHEP:-** For Hirakud Hydro Electric Project, the head variation is 25.35% from FRL and MDDL as given below:

Table - 31

Name of the power station	FRL	MDDL	Maximum Head	Minimum Head	%head variation
HHEP	630 Ft	590 Ft	35.5 m	26.5 m	25.35

Considering the head variation of 25.35% the multiplying factor arrived is given in the table below:-

Table - 32

Name of the power station	%head variation	Unit No.	Rated Head	Head at MDDL	M.F.
HHEP	25.35%	1 & 2	31.6 m	26.5 m	0.93
		3 & 4	30.78 m	26.5 m	0.95
		5,6 & 7	26.5 m	26.5 m	1.00

The average plant availability of HHEP is 76.4% for last five years from 2004-05 to 2008-09. The NAPAF of power station taking into consideration the multiplying factor (M.F) due to head variation is given in the table below:-

Table - 33

Unit	M.F.	Average plant availability	NAPAF
1 & 2	0.93	76.4	71.052
3 & 4	0.95	76.4	72.58
5, 6 & 7	1.00	76.4	76.40

The NAPAF for whole power station considering weighted average capacity of all units is

$$\text{NAPAF for HHEP} = (49.5 \times 2 \times 71.052 + 32 \times 2 \times 72.58 + 37.50 \times 3 \times 76.40) / 275.50 = 73.59$$

Hence, OHPC proposes a revised NAPAF of 73.00% for HHEP Burla considering the actual plant availability and multiplying factor due to head variation. Therefore, the proposal of 80% NAPAF in the application for ARR for 2010-11 shall be revised to 73%.

162. **RHEP:** In case of Rengali power station the Percentage head variation is almost 40% as given in the table below from FRL to MDDL.

Table - 34

Name of the power station	FRL	MDDL	Maximum Head	Minimum Head	%head variation
RHEP	123.5 m	109.72 m	46.5 m	28.0 m	39.78 %

The multiplying factor to be considered for arriving at NAPAF for RHEP is given in the table below:

Table - 35

Name of the power station	%head variation	Rated Head	Head at MDDL	M.F.
RHEP	39.78%	40.0 m	28.0 m	0.87 m

The average plant availability factor of RHEP is 80.5% for last five years from 2004-05 to 2008-09. The NAPAF of power station taking into account the multiplying factor (M.F) due to head variation is given below in the table below:

Table - 36

Name of the power station	M.F.	Average Plant Availability for last 5 years	NAPAF
RHEP	0.87	80.5	70.035

In the application for ARR of OHPC for FY 2010-11, OHPC proposed NAPAF of 72% based on the actual head available for FY 2007-08 and 2008-09, which are considered as best years as far as water availability is concerned which will not be the case for the 90% dependable year.

Hence, OHPC proposes a revised NAPAF of 70% for RHEP, considering the actual plant availability and multiplying factor due to head variation. Therefore, the proposal of 72% NAPAF in the application for ARR for 2010 shall be revised to 70%.

163. **CHEP:** For Chiplima Hydro Electric Project, the head variation is minimal and hence there will be no consideration for head variation. However, from the initial stage of commissioning of CHEP, since 1963, the maximum generation of CHEP is restricted to 64.77 MW (21.59 MW for each unit) due to restricted water carrying capability of power channel, i.e. 12500 cusec.

The average plant availability for last five years i.e. from 2004-05 to 2008-09 for CHEP is 53.34%. This reduction in plant availability is due to inherent weed problem in the power channel. OHPC, therefore, proposes for special consideration to CHEP because of the constraints upon which power house is operated. The Chiplima power station has an upstream pondage, but it is only for meeting 3 hours of power generation and not for the diurnal variation of power demand, and depends upon the water release from HHEP. Hence, it cannot truly be called as run-of-river power station with pondage. In the CERC tariff regulations, 2009 NAPAF approved for run-of-river power station is 55%. Hence, the NAPAF for CHEP shall be considered at 55% as proposed in the application for ARR of OHPC.

164. In its oral submission during hearing, OHPC had expressed that except UIHEP, OHPC power stations are very old and require frequent maintenance for availability of their generation capacity. In case of HHEP, Burla and RHEP, Rengali, there is considerable head variation. These factors are to be taken into consideration while determining the NAPAF of power stations of OHPC. So that annual capacity charge is fully recoverable.
165. GRIDCO in its objections to the application of OHPC has suggested that CERC Regulation 2009 Clause 29.1 stipulates the following for NAPAF.
- (i) Storage and Pondage type plants with head variation between full reservoir level (FRL) and Minimum Draw Down Level (MDDL) upto 8% and where plant availability is not affected by slit – 90%.
 - (ii) Storage and Pondage type plant where the variation is more than 8% and plant availability is not affected by slit, plant specific allowance to be provided in NAPAF for reduction in MW output capability as reservoir level falls over the month. The allowance on this account in terms of a multiplying factor may be worked up by applying the formula given below:

- (a) [Avg. head/ Rated head + 0.02]
- (b) [(Head at MDDL/Rated head x 0.5) + 0.52]

Head variation and allowance to be provided in NAPAF as furnished by OHPC and indicated in (page 51) of OERC order in respect of OHPC ARR FY 2009-10. The head variation of UIHEP is well within 8% and the plant is in operation since last 10 years only and hence its NAPAF should be 90%.

166. The head variation of other generating stations is more than 8%. OHPC in their present filing have proposed 72% NAPAF for Rengali and 55% for Chiplima. But as per the calculation, the NAPAF for Rengali comes to 78.30%. The NAPAF of Rengali as per 1st Method of CERC is indicated below:

- (a) Average head during 07-08 of Rengali of OHPC submission: 34.65 mtrs.
- (b) Average head during 08-09 of Rengali of OHPC submission: 37.67 mtrs.
- (c) Average head during 07-08 and 08-09 = 36.16 mtrs.

Rated head of Rengali = 40 mtr.

$$\begin{aligned} \text{Multiplying factor} &= \text{Average/Rated head} + 0.02 \\ &= 36.16/40 + 0.02 = 0.924 \end{aligned}$$

$$\text{So, NAPAF of Rengali} = 90\% \times 0.924 = 83.16\%$$

But the head variation in Rengali Power House comes to 39% and hence NAPAF may be fixed between 75% - 80%.

167. OHPC may furnish calculation by adopting 1st method of CERC for other generating stations. In view of the above and giving allowance of 5% as the units are old the NAPAF of 85% may be considered for Balimela and Upper Kolab and 82% for HHEP. Chiplima is a base load plant having firm power of 55 MW. In the meanwhile renovation of Unit 1 and 2 of Chiplima have been completed and the cost has been capitalized. The renovation schemes envisage better performance and more generation of power. Hence, the availability of the units bears prime importance to utilize the discharge of Hirakud generating station and hence its NAPAF may be allowed as 80%.

168. The Commission looked into the provisions of CERC (Terms and conditions of Tariff) Regulations 2009 and the statement of reasons thereon along with the views of OHPC, GRIDCO and other respondents. It is observed that further study and analysis is required for determination of NAPAF for OHPC power stations. Hence, the Commission desires to determine the NAPAF of OHPC stations through a separate hearing involving different stakeholders including GRIDCO, SLDC and DISCOMs. The Commission directs OHPC to file a separate petition before the Commission for approval of NAPAF of its individual power stations within 60 days of issue of this order. However, based on the submissions of OHPC and GRIDCO, the Commission provisionally approves the following percentage of NAPAF of OHPC's power stations for the FY 2010-11.

Table – 37
NAPAF approved for 2010-11

Name of the power station	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
NAPAF (%)	82	70	85	75	85	87

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

169. 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 per Kwh as per the inter state supplementary agreement in the year 1978 between Government of Andhra Pradesh and Government of Orissa.
170. OHPC has requested for approval of a rate of 21.95 paise/unit for purchase of power of Machhkund Power Station for the year 2010-11 based on energy drawl of 262.50 MU. Orissa has to pay O & M charges for the energy drawl from Machhkund upto 30% and beyond 30% and upto 50% @ 8 paise/unit. OHPC has also requested to pass through an amount of Rs 0.52 Crore towards arrear royalty to be reimbursed from GRIDCO and payable to the State Govt. With this principle, the cost of Machhkund power comes to 21.95 P/U considering energy drawl of 262.5 MU.
171. The Commission has taken into consideration the net payable by Orissa towards O&M expenses for the year 2008-09 (actual) on account of 30% share which is of the order of Rs.3.94 crore. Allowing an escalation of 5.72% per annum for the year 2009-10 and 2010-11, O&M expenses come to Rs. 4.404 crore. Taking power purchase cost of Rs. 0.84 crore towards purchase of power beyond 30% and upto 50% @ 8 paise/unit and arrear royalty of Rs 0.52 crore as proposed by OHPC, total cost comes to Rs. 5.76 crore. Hence, the rate per unit of Machhkund power comes to 21.95 paise for the year 2010-11 considering energy drawl of 262.50 MU. Accordingly, the Commission approves the procurement cost of Rs.5.76 crore for payment towards the energy of 262.50 MU from Machhkund HEP for FY 2010-11. This is against 13.90 paise/unit approved for 2009-10 for drawal of 262.50 MU for Rs.3.65 cr.

Peaking Capability of Balimela Hydro-Electric Project

172. The Commission observed that Units 7 & 8 have been commissioned at BHEP and 150 MW (2X75 MW) has added without increase in design energy only for meeting the peak demand of the State. Hence, there should be maximum generation during the peaking period. Therefore, the Commission directs OHPC to make proper maintenance of the generating units so that there will be maximum availability during peak hours. The Commission also desires that all available generating units be tested for its full capacity (including design margin available) one by one in the Balimela and other power stations of OHPC, before the onset of monsoon and head of power stations may give a report of peaking capability of each generating units and combined peaking capability of the station. In the monsoon months all generating units should be operated round the clock at its full peaking capability subject to availability of inflow.

Weeds Problem in Chiplima Power House

173. Some objectors pointed out that the generation at Chiplima Power House is being hampered due to severe growth of weeds in the ponds and power channel of the power house. It is observed that OHPC is seriously trying to tackle the weeds problem. OHPC has submitted that the trash racks are being choked frequently due to which the units are running at part load. At times shutdown of generating units are being taken for cleaning of trash rack by engaging underwater divers. The trash racks are getting damaged frequently due to choking of weeds in it. This weeds problem is very old persisting since OSEB period. Previously several steps were attempted to

eliminate the said problem without much success. To manage the weeds problem, OHPC has awarded the work to M/s General Mechanical Works Pvt. Ltd (M/s GMW Chennai) for installation of Trash Rack Cleaning Mechanism (TRCM) at the intake of Chiplima Power House on the existing rail of the gantry crane. The total cost will be Rs.6.06 cr. excluding taxes and duties. The work is scheduled for completion in June 2010. It is expected that, with the completion of TRCM the generation and availability of Chiplima will substantially improve.

Perspective Hydro Development in the State

174. Many objectors raised that OHPC and the State Govt. should take initiatives to explore the possibilities of development of hydro power in the State. In its reply OHPC has expressed that the matter has been taken up with the State Govt. for development of viable hydro projects in the State. Since the development of hydro power is very crucial for the power sector in Orissa to supply power at affordable cost to the consumers of the State where most of the people are living below the poverty line, OHPC and the Govt. of Orissa should give due importance to the suggestions made by very eminent hydro experts during the course of public hearing.

Renovation and Modernization:

175. OHPC proposes to take up the R&M of Unit 5&6 of HHEP, Burla and Unit-3 of CHEP, Chiplima. The selection of consultant for taking up the work is under process. Residual Life Assessment study of Unit-1 and 2 of BHEP were taken up from 25.07.2008 to 07.11.2008. CEA has approved the proposed plan of OHPC to take up the equipment wise R&M work of all 6 units of BHEP in phased manner. OHPC has filed a petition before the Commission for taking up the R&M work of Unit-1 of RHEP, due to major breakdown of its stator and rotor. The unit has completed 23 years in service. The Commission has heard the petition on 13.11.2009 and taking all the factors into consideration has accorded in-principle approval of the proposal and allowed OHPC to undertake the R&M work of Unit-1 of RHEP at the earliest. In case of R&M of this unit the estimated capital cost is of the order of Rs.47.50 cr. and the completion period is two years. The Commission has passed this order on 18.01.2010 in case No.125/2009. In the said order the Commission has advised that for effective co-ordination and smooth implementation, the Energy Department might arrange a meeting at the level of Chief Secretary and invite APC, Principal Secretary, Finance Department and other Senior Officers to workout a time bound action plan for arresting the leakage in dam gates of Rengali project. The Commission has directed to complete the aforesaid R&M work within the estimated capital cost and completion period. OHPC was also directed to furnish the details of work to be carried out and its estimated cost along with detailed financing plan of the said R&M works to the Commission for assessment of its impact on tariff in future. All R&M works should be taken up immediately after the monsoon period is over, so that work could be completed in all respect before the onset of next monsoon.
176. To sum up, the Commission hereby approves the ARR and generation tariff of OHPC for FY 2010-11 as follows:

Table – 38

Name of the Power Stations	RHEP	UKHEP	BHEP	HHEP	CHEP	Sub-total	UIHEP	Total
2009-10								
Total ARR (Rs. Crore)	30.26	20.75	66.36	75.51		192.87	142.47	335.34
Average cost (P/U)	58.22	25.19	56.66	64.96		52.46	73.35	59.68
Approval for 2010-11								
Total ARR (Rs. Crore)	35.91	27.32	68.40	60.64	22.79	215.06	146.82	361.88
Average cost (P/U)	69.09	33.17	58.41	89.54	46.98	58.49	75.59	64.40

Based on this approved Annual Revenue Requirement the rate of energy charge and the capacity charge of OHPC power stations are determined for FY 2010-11. The Capacity charge and the rate of Energy charge as approved at para 155 above and the corresponding approved rates for the FY2009-10 are summarized in the table below :

Table – 39

Energy Charge and Capacity Charge for 2009-10 & Approval for 2010-11

Name of the Power Stations	Annual Fixed Cost (Rs. crore)		Capacity Charge (Rs. crore)		Energy Charge (Rs. crore)		Energy Charge Rate (P/U)	
	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11
Rengali HEP	30.26	35.91	15.130	17.955	15.130	17.955	29.11	34.545
Upper Kolab HEP	20.75	27.32	10.375	13.660	10.375	13.660	12.60	16.584
Balimela HEP	66.36	68.40	33.180	34.20	33.180	34.20	28.33	29.201
Hirakud HEP		60.64		30.32		30.32		44.775
Chiplima HEP	75.51	22.79	37.755	11.395	37.755	11.395	32.48	23.490
Upper Indravati HEP	142.47	146.82	71.235	73.410	71.235	73.410	36.68	37.793

The unit cost of energy from Machhkund is approved at 21.95 paise for 2010-11 against 13.90 paise per unit approved for 2009-10

177. **The Normative Annual Plant Availability Factor (NAPAF)** provisionally approved by the Commission at para 168 above for FY 2010-11 and the corresponding approved NAPAF for FY 2009-10 is presented in the table below:

Table – 40

NAPAF approved for 2009-10 & 2010-11

Name of the power station	HHEP	CHEP	BHEP	RHEP	UKHEP	UIHEP
NAPAF (%) for 2009-10	80		85	80	85	85
NAPAF (%) for 2010-11	82	70	85	75	85	87

178. The application of OHPC for approval of its Annual Revenue Requirement and fixation of generation tariff for the FY 2010-11 thus stands disposed of.

The Tariff now approved shall be operative from 01.04.2010 and shall continue until further order.

(B.K. MISRA)
MEMBER

(K. C. BADU)
MEMBER

(B. K. DAS)
CHAIRPERSON