

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

*** **

Present : **Shri B. K. Das, Chairperson**
Shri S. K. Jena, Member
Shri K. C. Badu, Member

CASE No.60/2007

DATE OF HEARING : **31.01.2008**

DATE OF ORDER : **20.03.2008**

IN THE MATTER OF : Application for approval of Annual Revenue Requirement and Tariff of OHPC stations for the FY 2008-09 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 2008-09.

PROCEDURAL HISTORY (Para 1– 8)

1. The OHPC is a “Generating Company” under the meaning of Sec.2 (28) of the Electricity Act, 2003. After the unbundling of Orissa State Electricity Board (OSEB) in the year 1996, assets, liability and personnel of the Board were transferred to this generating company to carry out the business of generation of electricity. The entire power produced by OHPC through its various generating stations is fully dedicated to the State of Orissa. By this historical eventuality, 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 Government of Orissa Transfer Scheme, 2005, GRIDCO as a Deemed Licensee has been entrusted with 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 OHPC’s dedicated generating stations and delivering it at Distribution Licensee’s end.

2. From the above, it appears that the real beneficiaries of OHPC's power are the Distribution Licensees of the State. Due to existing 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 station 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 station. Accordingly, on 30.11.2007 OHPC, as a generating company, had filed its Annual Revenue Requirement (ARR) and fixation of tariff application before the Commission for the FY 2008-09 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 published in leading and widely circulated newspapers and was also pasted in 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 objections from the following persons/organisations.

(1) Jayadev Mishra, N-4/98, Nayapalli, Bhubaneswar, (2) Mr. Ramesh Ch. Satpathy, Secretary, National Institute of Indian Labour, 302(B), Beherasahi, Nayapalli, Bhubaneswar, (3) Mr. R.P. Mohapatra, 775, Jayadev Vihar, Bhubaneswar, (4) Mr. M.V. Rao, Chairman, M/s. UCCI, N/6, IRC Village, Nayapalli, Bhubaneswar, (5) NESCO, Januganj, Balasore, (6) SOUTHCO, Courtpetta, Berhampur, (7) GRIDCO, Janpath, Bhubaneswar, (8) Mr. K.C. Mohapatra, Chairman, PDC, F/6, BJB Nagar, Bhubaneswar, (9) WESCO, Burla, Sambalpur, (10) Mr. G.N. Agrawal, General Secy., Sambalpur District Consumers Federation, Balaji Mandir Bhawan, Khetrajpur, Sambalpur.

5. Date of hearing was fixed and it 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 about the date of hearing and requesting to send the Government's authorised representative to take part in the proceeding.
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 Nabakrushna Choudhury Centre for Development Studies, Chandrasekharpur, Bhubaneswar the premier Govt. of Orissa's Institute as Consumer Counsel for objective analysis of the applicant's Annual Revenue Requirement and tariff proposal. The Consumer Counsel submitted its report to the Commission and its representative put forth its analysis and views on the matter in the presence of all the parties present during the hearing.
7. In its consultative process, the Commission conducted a public hearing at its premises on 31.01.2008 and heard the applicant, objectors, consumer counsel and the representative of the Government. The objections/suggestions of the objectors who remained absent during the hearing has also been taken into record and considered by the Commission.
8. The Commission convened the State Advisory Committee (SAC) meeting on 12.02.2008 to discuss about the ARR application and tariff proposal of the generating company. The members of SAC represented their valuable suggestions and views on the matter and the Commission considered the same.

SUBMISSION OF APPLICATION OF OHPC FOR ARR & TARIFF FOR FY 2008-09: (Para 9 – 28)

9. The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) is maintained at 2062 MW as on 1st of April 2007 including Orissa's share of Machkund. The details of installed capacity and design energy of the old stations and UIHEP are presented in the table below. An additional capacity of 150 MW was proposed for FY 2007-08 due to the extension of units 7&8 at Balimela power station. No further additions have been proposed for the ensuing financial year i.e. 2008-09. Accordingly, Installed Capacity for FY 2008-09 of different generating stations of OHPC is considered as follows:

Table - 1

Sl. No.	Names of Power Stations	Installed Capacity (MW)		
		For 2006-07	For 2007-08	For 2008-09
1	Hirakud (Burla & Chiplima)	347.50	347.50	347.50
2	Balimela	360	510	510
3	Rengali	250	250	250
4	Upper Kolab	320	320	320
5	Upper Indravati	600	600	600
6	Machhkund (Orissa Share)	34.50	34.50	34.50
Total		1912	2062	2062

DESIGN ENERGY OF OHPC STATIONS:

10. The Commission in its order dated 10.06.2005 at para – 6.5 (a), had directed that re-assessment of design energy of OHPC Power Stations should be done by appointing an independent group of consultants under the auspices of the Commission. Accordingly, OHPC has apprised the commission regarding the progress from time to time. The Commission has regularly monitored the progress for early completion of the job. Meanwhile, OHPC has awarded the work order to M/s SPARC, Bhubaneswar, a consultancy agency, to carry out the job of re-assessment of design energy of its Power Stations. M/s SPARC has already submitted the draft final report of all the power stations and the technical data / information pertaining to the power stations has been scrutinized by OHPC. It was presented before the Commission on 30.01.2008 and the Commission suggested to resubmit the proposal of the revised / amended Design Energy through the affidavit after it is vetted by BOD of OHPC.

The design energy of OHPC Power Stations considered for tariff calculation, for the FY 2008-09 are given as under:

Table – 2

Sl. No.	Name of the Power Stations	Design Energy (MU)	Design Energy for sale (MU)
1	HPS (Burla & Chiplima)	1174	1162.26
2	BHEP	1183	1171.17
3	RHEP	525	519.75
4	UKHEP	832	823.68
5	UIHEP	1962	1942.38
Total		5676	5619.24

PROJECT COST:

11. Old Power Stations:

The ARR of OHPC old Power Stations for the FY 2008-09 have been computed based on the historical cost of the projects as on 01.04.96 with audited additional capital expenditure till March'07 and estimated capital expenditure during FY 2007-08 as per the account of OHPC. Further, the commission, in its order dated 22.03.07, (approval of ARR & Tariff of OHPC power stations for the FY 2007-08) have already approved Rs.1195.42 Crores as the final capital cost of Upper Indravati H.E. Project for the purpose of determination of tariff. The same has been considered for computation of ARR of UIHEP for the FY 2008-09. The project costs of OHPC Power Stations considered for computation of ARR for the FY 2008-09 are as given under:

Table - 3

(Rs. in Crs.)

Sl. No.	Name of the Power Stations	Transferred Cost as on 01.04.06	Project Cost approved (FY 2007-08)	Project Cost considered for tariff purpose (FY 2008-09)
1	HPS	295.17	368.09	370.42
2	BHEP	334.66	297.66	297.74
3	RHEP	259.01	93.69	93.81
4	UKHEP	307.96	109.18	112.19
Total		1196.80	868.62	874.16
5	UIHEP	-	1195.42	1195.42

PRINCIPLES ADOPTED FOR DETERMINATION OF ANNUAL REVENUE REQUIREMENT:

12. OHPC has been submitting the ARR and Tariff in respect of each of the power stations separately in conformity with CERC Regulations from the financial year 2005-06 onwards. OHPC has stated that the present filing is made as per CERC Regulations with regard to the terms and conditions for determination of generation tariff.
13. The fixed assets are based on the historical cost as on 01.04.96 plus additions made after this date as adopted by the Commission in its order dated 10.06.05.

14. Return on Equity (RoE) has been considered @ 14% per annum for the FY 2008-09 for each of the Power Stations with an equity base of 25% of the original Project Cost and additional capital expenditure of HPS, Burla. In case of BHEP extension project and additional capital expenditures of all the power stations except HPS, Burla, RoE has been considered @ 14% on an equity base of 30% as per the CERC norms.
15. The depreciation is computed @ 2.57% on the Project Cost considered for the FY 2008-09. However, in case of HPS & BHEP, where loan repayment is more than the computed depreciation, the differential amount have been taken in the calculation as Advance Against Depreciation & included in the depreciation for the FY 2008-09. In case of UIHEP, the depreciation could be Rs. 43.01 Crs @3.60% of the project cost. However, it is limited to the principal loan repayment of Rs. 32.07 Crs for the year 2008-09 in line with the PPA.
16. Operation and maintenance expenses in case of UIHEP includes Rs. 1.00 Cr for special repair of rotor poles as approved by the Commission earlier and Rs. 7 Crs towards proposed major repair of governor & excitation system of UIHEP machines (out of estimated Rs.14 Crs, only Rs. 7 Crs. has been considered in FY 2008-09 and balance Rs. 7 Crs. will be considered in the FY 2009-10).
17. Further, Rs. 6.0 Crs. at UKHEP has been proposed by OHPC which includes Rs.1 Cr. towards procurement of SCADA equipments and Rs. 5 Cr towards procurement of stator of unit-4 (out of estimated Rs.10 Crs., only Rs.5 Crs. has been considered for the FY 2008-09 and balanced Rs.5 Crs. will be considered in the FY 2009-10).
18. In addition to this, Rs.2 Crs. at RHEP under O&M expenses includes Rs.1 Cr. towards procurement of SCADA equipments and Rs.1 Crs. towards major repair of turbine.
19. The interest on working capital, taken @ 12% per annum at par with the short-term prime lending rate of State Bank of India.
20. Electricity Duty (ED) @ 20 paise / KWh on Auxiliary Consumption, limited to 0.5% of the Design Energy for the year 2008-09 is taken in tariff. However, the Commission has been requested to allow OHPC to claim reimbursement of actual ED on Auxiliary Consumption, payable to the government at the end of the year 2008-09.

21. As per the CERC Tariff Regulation, 2004, Income Tax shall be computed as an expense and recovered from the beneficiaries. Accordingly, income tax paid by OHPC during FY 2006-07 in respect of BHEP, Balimela and UIHEP, Mukhiguda has been included in the computation of ARR for the FY 2008-09. Similarly, the income tax payable by OHPC for the FY 2007-08 shall be included in the ARR for the FY 2009-10.

TOTAL ANNUAL FIXED CHARGES (AFC) & ANNUAL REVENUE REQUIREMENT (ARR):

22. The station-wise AFC & ARR for FY 2008-09 as proposed by OHPC are presented in the table below:

Table - 4

Particulars	(Rs. in Crs.)				
	HPS	BHEP	RHEP	UKHEP	UIHEP
Interest on Loan	5.92	12.13	0.41	0.49	5.70
Depreciation	10.72	13.55	2.41	2.88	32.07
Return on Equity	12.96	11.70	3.30	3.95	41.82
O & M Expenses	35.97	27.37	25.10	24.87	42.12
Interest on working capital	1.80	1.69	0.98	0.99	3.18
ED on Aux. Consumption @20 P/U	0.12	0.12	0.05	0.08	0.20
Income Tax (MAT) for the previous years	0.00	0.21	0.00	0.00	6.63
Total ARR / AFC	67.49	66.77	32.25	33.27	131.72
Average Tariff (P/U)	58.07	57.01	62.06	40.39	67.81

MACHHKUND H. E. (JT.) PROJECT:

23. Machhkund Power Station is a joint project of Govt. of Andhra Pradesh & Govt. of Orissa with 70% and 30% share, at present. The proposed tariff of 25.30 paise/KWh for Orissa drawal of Machhkund power for FY 2008-09 has been computed on cost reimbursement basis. Actual O & M Expenses of Rs. 5.36 Crs. for FY 2006-07 has been escalated @ 4% each year to arrive at Rs. 5.80 Crs. for FY 2008-09 and the power purchase cost of Rs. 0.84 Crs. has been computed @ 8 paise/KWh for 105 MU, the total annual expenditure being Rs. 6.64 Crs. for the year 2008-09. The cost per unit is 25.30 paise considering the 50% of the design energy of 525 MU for Machhkund.

RATE OF PRIMARY AND SECONDARY ENERGY

24. Rate of Primary Energy:

As per the CERC Tariff Regulations, Rate of primary energy for the hydro generating stations, shall be equal to average of the lowest variable charges of the Central Sector Thermal Power Generating Stations of the concerned region for all the months of the previous year. The primary energy charges shall be computed based on the primary energy rate and saleable primary energy of the project.

In case, the primary energy charges recoverable by applying the above primary energy rate exceeds the Annual Fixed Charges of a generating station, the primary energy rate for such generating station shall be calculated by the following formula:

$$\text{Primary Energy Rate} = \frac{\text{Annual Fixed Charges}}{\text{Saleable Primary Energy}}$$

Based on the lowest variable cost of the Central Sector Thermal Power Station of the region approved by the Commission for payment by GRIDCO, the rate of primary energy of all the Power Stations of OHPC for the FY 2008-09 shall be worked out. However, the average energy rates as computed in the Table 4 is shown in Table-5 below:

Table - 5

Name of the Power Station	Average Tariff (Paise/KWh)
HPS (Burla & Chiplima)	58.07
BHEP	57.01
RHEP	62.06
UKHEP	40.39
UIHEP	67.81

Rate of Secondary Energy:

25. As per the CERC Regulations and as approved by OERC for the previous years, the Rate of Secondary Energy is same as the Rate of Primary Energy.

CAPACITY CHARGE:

26. Two-part tariff has already been implemented at all the power stations of OHPC. As per the CERC Regulations, the Capacity Charges shall be computed in accordance with the following formula:

$$\text{Capacity Charges} = (\text{Annual Fixed Charge} - \text{Primary Energy Charge})$$

The monthly Capacity Charges shall be computed as per the formula given in the CERC Regulations. There shall be pro-rata recovery of Capacity Charges in case of the generating station achieves Capacity Index below the prescribed normative levels.

PROJECT COST:

27. As stated in the tariff order dtd. 23.03.06 for the year 2006-07 in Case No. 48 of 2005, the Commission have advised the State Govt. (i) to keep the up-valuation of assets in abeyance & (ii) to extend the moratorium on debt servicing to the State Govt. for a period of another five years beyond FY 2005-06 i.e. till 2010-11. In view of the above, in the tariff proposal for FY 2008-09, (a) the interest on loan, depreciation & RoE on the up-valuation of assets and (b) the interest & installment of principal payment on the State Govt. loan for UIHEP have not been considered. In case the above corrective measures are not accepted by the State Govt., then OHPC may be allowed additional revenue by way of interest on loan / bonds, depreciation for principal repayments of the loan /bonds & RoE on up valued cost of the assets.
28. OHPC further submits that in case, the State Government does not set aside the up valuation of assets as contemplated by the Hon'ble Commission, the ARR and Tariff for the financial year 2008-09 shall accordingly undergo a change.

VIEWS OF THE OBJECTORS ON OHPC TARIFF PROPOSAL FOR FY 2008-09

(Para 29 – 60):

29. OHPC was allowed in the beginning of the hearing to give a power point presentation regarding its ARR and tariff application for the FY 2008-09. Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar has been appointed as Consumer Counsel and its representative presented its analysis of the proposal and objections regarding ARR in the tariff filing. The objectors then made many comments/ observations on the proposed ARR of OHPC for FY 2008-09. Director (Tariff) then raised certain queries on the OHPC filing.

30. 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 2008-09. Based on their nature and type, these objections have been categorized broadly as indicated below:

Nabakrushna Choudhury Centre for Development Studies (NCCDS):

31. In accordance with Section-94(3) of Electricity Act, 2003 which stipulates that the appropriate Commission may authorize any person as it deems fit to represent the interest of consumers in the proceedings before it, the Commission engaged Nabakrushna Choudhury Centre for Development Studies as Consumer Counsel in order to receive quality inputs/ feed back on the tariff proposal in the interest of different sections of consumers. The representative of NCCDS had analyzed the application and some of the important observations are as follows:
32. 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 proposal for the power stations like RHEP and UKHEP indicate significant increase in tariff during FY 2008-09 as compared to 2007-08 due to increase in their ARR.

Table - 6
Comparison of Tariff of Different Power Stations
Between 2007-08 and 2008-09

Power Stations	2006-07 (P/U)	2007-08 (P/U)	% Change
HPS	54.79	58.07	5.99
BHEP	53.52	57.01	6.52
RHEP	35.17	62.06	76.46
UKHEP	21.24	40.39	90.16
UIHEP	67.16	67.81	0.97
MHEP	18.21	25.30	38.93

33. This increase in tariff proposal 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 Rs.38.92 Crore during 2008-09 in order to meet the growing expenses of these five power stations. The Consumer Counsel strongly felt that the proposed increase in tariff should not be allowed. On the other hand, there should be curtailment in Revenue Requirement for which there is a need to assess the Revenue Requirement proposal of OHPC.
34. The Consumer Counsel submitted that the ARR proposal for the power stations like RHEP and UKHEP had increased significantly during FY 2008-09 compared to the FY 2007-08. Table-7 below clarifies the point.

Table - 7
ARR of Different Power Stations (Rs. In Crore)

Power Stations	2006-07	2007-08	% Change	2008-09	% Change
HPS	66.36	63.69	- 4.02	67.49	5.97
BHEP	25.55	62.68	145.32	66.77	6.53
RHEP	18.48	18.28	- 1.08	32.25	76.42
UKHEP	13.47	17.49	29.84	33.27	90.22
UIHEP	127.23	130.46	2.54	131.72	0.97
ALL	251.09	292.60	16.53	331.50	13.29

35. The Consumer Counsel observed that the main reasons for significant increase in ARR of RHEP & UKHEP were due to increase in interest on working capital and O&M expenses by about 70% and 90% respectively. The increase in interest on working capital and the increase in O&M expenses seems to be too high.
36. The Consumer Counsel summarized the presentation by saying that there is scope for reducing ARR, as some Power Stations like RHEP and UKHEP have proposed significantly higher increases in ARR. The Counsel felt that increase in tariff should not be allowed in the best interests 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.

Review of Design Energy:

37. Some of the objectors traced upon the review of the Design Energy of the old Stations of OHPC in compliance to Commission's Order and wanted OHPC to furnish the progress in this regard. One of the objector pointed out that Design Energy in case of flood control reservoirs is not limited to the generation during the storage period, but also includes the secondary generation during flood discharge period. Therefore whenever units are up-rated like that in the Burla Power House, Design Energy of these units should also be increased automatically. The contention of OHPC in this regard is not justified. In fact, for the R&U of Units-I & II of the Burla Power House, the techno-economic feasibility was accepted also taking into account the additional generation due to up-rating. As re-determination of design energy of the existing HEPs under OHPC have fundamental importance in determination of tariff, some objectors requested the Commission for a separate public hearing before finalizing the report of the OHPC Consultant.

Equity Component:

38. Some objectors stated that Equity Component as Notified by Govt. of Orissa should be adopted.

Two-Part Tariff:

39. One of the objector requested the Commission to prescribe a two-part tariff as the concept of two-part tariff providing capacity charges and primary energy charges is a true measure of the efficiency of the generating company. With high installed capacity of the HEPs in Orissa, capacity charges assume a greater significance since high availability will result in greater earning by way of U.I. charges which will ultimately help to reduce the cost of power procured by GRIDCO.
40. The objector submitted that the Hon'ble Commission in its tariff order for the year 2007-08 had only specified single-part tariff towards primary energy charges for Rengali and Upper Kolab Power Stations and the primary energy charges of all other HEPs have been fixed at 41.10 paise per unit. The capacity charge for Balimela HPS and UIHEP are only 23.2%, 29% and 38.8% respectively of the primary energy charges.
41. The objector stated that on the contrary the capacity charges of the Central Hydro-electric Sector out to 77.3% and 80.53% respectively for Chukka and Tala HEPs. Therefore, he submitted that the Hon'ble Commission may determine the capacity charge and primary energy charge in the ratio of 50:50 so that the efficiency of operation can be improved.

Electricity Duty (ED):

42. Some of the objectors submitted that instead of including ED in tariff, it should be claimed separately for payment through year-end adjustment bill. Other objectors stated that Electricity Duty may be considered for payment in accordance with the provisions of PPA.

Individual Station wise PPAs:

43. Some of the objectors pointed out that in spite of continued direction by the Commission in past several years, individual station wise PPAs has not so far been executed between GRIDCO & OHPC and there seems to be shadow-boxing between GRIDCO & OHPC. Some objectors have suggested for execution of separate PPA for Hirakud Power House (Burla) and Chiplima Power House. With reference to UIHEP, the objectors pointed out that the State Govt. have advised the Generation Companies to invest 5% of their profits in peripheral development. The OHPC may invest to improve road communication from Junagad to Mukhiguda including a high level bridge on Hathi River. This will remove constraint of Indravati Generation while Hathi River is in spate of flood down stream.

Prospective Plan for Hydro Development:

44. Some of the objectors pointed out that OHPC has informed regarding development of Sindol – I, II, II projects with NHPC. They can also develop Chiplima B & Hirakud B Project since these do not involve land acquisition & rehabilitation. One objector submitted that Chiplima B should be the first priority – new project above Sindol – I, II & III. OHPC should also take action for pumped storage projects and River link projects for harnessing of hydro power in association with NHPC / NTPC / Private Developers.

Capital Cost of Upper Indravati Hydro-electric Project:

45. One objector has submitted that the Capital Cost of UIHEP as Rs.1195.42 Crores for the purpose of tariff by the Commission is not correct as it should not exceed Rs.468.07 Crores due to the following grounds / reasons:
- (a) That contrary to earlier Orders, the Hon'ble Commission in its orders dated 22.03.2007 in Case No. 54/2006 accepted the Capital Cost of the Upper Indravati Hydro-electric Project as Rs.1195.42 Crs for the purpose of determination of tariff only.

(b) That the Hon'ble Commission in its orders in Case No. 65/2001 and Case No. 4/2002 relating to power procurement by GRIDCO had passed orders as follows:

6.19.2 The PPA between OHPC & GRIDCO for UIHEP was taken up by OERC in Case No. 17 of 1999 and subsequently, reviewed in Case No. 23 of 2000 in which the Commission observed that the estimated cost of Rs.1195.42 Cr to be considered for determining the tariff of UIHEP may be treated as provisional.

6.19.3 While passing the review order the Commission had observed that the "Actual Capital Cost incurred on completion of the Project for the purpose of determination of tariff should be got approved by the CEA as per Section-43-A (2) of the Supply Act, 1948. If CEA refuses to do so then it can be determined by a group of Independent Experts in consultation with CEA".

(c) In its order in Case No. 48/2005 the Commission had observed that the tariff for 2005-06 and 2006-07 shall be determined on the basis of provisional project cost of Rs.1195.42 Cr.

(d) The contention of OHPC that in view of no change in the scope of the project, CEA in its letter dated 28.01.1997 stated that OHPC / Department of Energy should satisfy itself about the reasonableness of the revised cost estimate is not tenable. This reply of CEA was only with reference to the revised estimate to enable OHPC to obtain sanction of loan from the PFC. It has nothing to do with the final capital cost of the project for the purpose of tariff.

(e) The Notification issued by the Govt. of India in S.O. No. 251(E) dated 30.03.1992 in exercise of the powers conferred under Sub-section (2) of Section-43 (A) of the Electricity Supply Act, 1948 has the following provisions relating to determination of the capital expenditure.

"2.2 The capital expenditure of the project is to be financed as per the approved financial package set out in the techno-economic clearance of the Authority.

The project cost shall include capitalized initial spares. The approved project cost shall be the cost which has been specified in the techno-economic clearance of the Authority. The actual capital expenditure incurred on completion of the project shall be the criterion for the fixation tariff. Where the actual expenditure exceeds the approved project cost the excess as approved by the Authority shall be deemed to be the actual capital expenditure for the purpose of determining the tariff, provided that such excess expenditure is not attributable to the Generating Company or its suppliers or contractors.”

- (f) That the submission of OHPC regarding the present cost of a 600 MW HEP is not relevant. The CEA was duty bound prior to enactment of the Electricity Act, 2003 to determine the actual capital expenditure and that excess expenditure attributable to Generation Company or its suppliers or contractors is not to be considered.
- (g) In case of UIHEP, the major damage occurred due to storage of water in the reservoir to higher level before the tunnel gate was properly installed. This resulted in damage to the tunnel and the generating units which required repair even outside India. The enquiry report attributed the damage as man-made. Further there were allegations of malpractice and cases were filed by the Vigilance Department. All these costs cannot be loaded on to determine the capital cost for the purpose of determination of tariff.
- (h) That the Hon'ble Commission having recorded in various tariff orders that the capital cost of Rs.1195.42 Cr is “provisional” has accepted the same as the actual capital expenditure perhaps being exasperated by the continued inaction of the OHPC to take concrete action to determine the actual cost either through the CEA or a group of independent experts.
- (i) The objector therefore submitted that the Hon'ble Commission may review its Tariff Order of 2007-08 and determine the actual cost for the purpose of determination of tariff in the interest of equity and justice for the consumers. The commissioning of the Power Plant took more than 20 years denying the benefit of the cheap hydro power to the State and determination of high capital cost after willful violation of the past orders of the Hon'ble Commission by OHPC is not only unjustified, but will encourage Generators & Licensees to violate Orders.

O & M Expenses:

46. Some of the objectors submitted during the hearing that the claim of OHPC towards O & M expenditure of Rs.155.43 Cr is neither in conformity with CERC norms nor in conformity with PPAs executed between OHPC & GRIDCO.
47. The submissions on O & M Expenses by the objectors are briefly stated as under:
- (a) That considering 4% escalation on the O & M expenditure allowed by OERC for FY 2007-08, O&M expenses shall be of the order of Rs.132.33 Cr for FY 2008-09.
 - (b) Expenditure on SCADA equipment for UKHEP and Rengali HEP should be treated as capital expenditure instead of including the same under O & M.
 - (c) OHPC may meet expenditure towards infrastructure and peripheral development work from their profit.
 - (d) Arrear Electricity charges if any of Rengali HEP & UKHEP should be met from the O & M expenses allowed during respective years.
 - (e) OHPC should come up with R & M proposal of units including expenditure towards runner blade. In this regard the Commission may kindly take a holistic view of R & M so that expenditure incurred on R&M will fetch better performance.
 - (f) Replacement of repaired starter of Unit-4 of UKHEP should be covered under R & M scheme instead of including the same in O & M.
 - (g) The expenditure towards replacement of 2 sets of existing analog governor and AVR should be capitalized after deducting the original value of replaced assets.

Balimela Extension:

48. One objector submitted that in the interest of the sector, both 7th & 8th unit of Balimela Power House need to be made operational early. The return on equity allowed during 2007-08 should be recovered for these units in the tariff for the year 2008-09. Alternatively the same should be adjusted against the additional capitalization on account of 7th & 8th Units of Balimela Power House. OHPC may intimate the expected date of commercial operation of the units.

Functioning of Machkund Power Stations (Joint project):

49. One objector observed that the Machkund Power Station is now under forced outage due to some burning in the power house. OHPC may take up with State Governments and demand deemed generation and adjust this from the drawal of Andhra Pradesh Government through the ER networks.

Functioning of OHPC:

50. Some of the objectors submitted that OHPC is functioning like a subordinate office of the state Govt. which is against the very spirit of Orissa Electricity Reforms Act 1995. Govt. of Orissa have not appointed a full time CMD and full time Director (Finance) of the company. One objector pointed out that OHPC has not filled up posts of skilled workers in power houses and due to shortage of manpower, the work culture and productivity have gone down in all the Hydel stations of OHPC.

Depreciation:

51. Some objectors pointed out that the depreciation in the tariff calculation of OHPC should be as per CERC norms. Their objections on depreciations are briefly stated as under:
- (a) Proper scrutiny of actual loans received and subsequent capitalization and loan repayment schedule be made as in case of BHEP there is mismatch between the closing balance of net loan in FY 2006-07 and opening balance of net loan in FY 2007-08.
 - (b) In the absence of loan repayment schedule some objectors propose depreciation of Rs.3.01 cr as against Rs.13.55 cr in case of BHEP.

Interest on Working Capital:

52. Some of the objectors submitted their comments on interest on working capital calculated by OHPC in its ARR which are briefly as under:
- (a) OHPC may not charge interest on working capital to reduce the impact on tariff.
 - (b) If at all the interest on working capital is charged, it should be computed at 11% instead of at 12% proposed by OHPC.

Interest on Loans:

53. 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 deemed loan should be disallowed.

Reservoir level & availability of power:

54. Some of the objectors mentioned that the availability of power from State Hydro Stations for FY 2008-09 projected by OHPC is about 5884 MU whereas as per their calculation it will be about 7285 MU. This may be clarified by OHPC.

Primary and Secondary Energy charges:

55. Some of the objectors have submitted their views on pricing of Primary and Secondary Energy proposed by OHPC which are briefly stated as under:
- (a) If the secondary energy charges are also made equal to the primary energy charges, the consumers have to bear the cost of high capital investment for a second time.
 - (b) When two additional units are installed in BHEP, there will be a sharp increase in the primary energy charges (as there will be no increase in the design energy).
 - (c) OHPC does not have to incur any additional expenditure for generation of secondary energy.
 - (d) The primary energy charge is very high in Orissa compared to other states. OHPC may be given an incentive only for Secondary energy generation to motivate to maintain 100% machine availability during monsoon.

Return on Equity:

56. Some objectors commented on the proposal of OHPC on Return on Equity (ROE) in their ARR for FY 2008-09 which are briefly stated as under:
- (a) The proposal of return on equity considering 14% per annum for FY 2008-09 for each power station with an equity base of 25% of the original project cost and additional capital expenditure is erroneous.

- (b) The state Govt. may accept OHPC's proposal not to charge ROE in 2008-09 on the transferred asset cost.
- (c) In the absence of the statements on extent of capitalization, proper scrutiny of the capital works in progress and status of CWIP be made before allowing return on equity.

Grant received under APDP scheme:

- 57. One objector pointed out that the receipt of Rs.19.0 cr. for RM&U of units 3 & 4 of Burla Power House under APDP Scheme should not be treated as equity and no returns be allowed on it.

Utilization of Secondary Energy Reserve Fund:

- 58. One objector pointed out that the earnings from secondary energy sale should be considered as income in the ARR as per Hon'ble Commission's Tariff order for FY 2007-08.

Misc. Income:

- 59. Some objectors pointed out that cash discounts received from PFC on repayment of loans taken from time to time, and interest received on GRIDCO bonds be included in the ARR of OHPC.

Truing Up:

- 60. 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 2006-07) as it was done during FY 2002-03 to pass through the fixed cost due to low hydro conditions.

Rejoinder of OHPC: (para 61 – 70)

- 61. The application for approval of Annual Revenue Requirement (ARR) & Tariff for the FY 2008-09 in respect of individual Power Stations of OHPC was filed before the Hon'ble Commission on 29.11.07. Suggestions/objections on the ARR application have been received from a number of objectors. The compliance to the suggestions / objections raised by the objectors are furnished herewith:

62. Compliance to the Objections / Suggestions raised by GRIDCO on the ARR Application of OHPC for FY 2008-09.

(a) **Equity Component:**

The Notification dated 29.01.03 of Govt. of Orissa, DOE stipulates that GRIDCO & OHPC shall not be entitled to any ROE till the sector becomes viable on cash basis, or 2005-06, whichever is earlier. Since no further Notification is issued by the state Govt. to this effect, ROE on historical cost of the OHPC assets has been proposed in the ARR for the FY 2008-09.

(b) **Interest against Deemed Loan:**

While finalizing Interim PPA & Tariff for the FY 1998-99 to 2000-01, in the meetings held on 03.10.01 & 17.04.2002, it was agreed between OHPC & GRIDCO that rate of interest on deemed loan shall be taken @1% above PLR of SBI. Later, vide their letter no. SE:P.P.I – 15/99 (Vol – V) / 2886 dated 03.07.2002, GRIDCO again raised that only SBI, PLR is acceptable to GRIDCO on deemed loan, which was agreed by OHPC during the discussion on 15.07.2002. Accordingly, the SBI PLR is being considered as the rate of interest for deemed loan from the FY 1998-99 onwards till date and approved by the commission. Hence, an agreed & approved rate for interest on deemed loan has been considered in the computation of AFC for the FY 2008-09.

(c) **R & M of Chipilima:**

Unit – II of Chipilima, which is under R & M, has already been commissioned and after test synchronization of the unit, the COD shall be declared shortly. However, it is to mention that the reasons for delay in R & M was due to various constraints. However, OHPC has made all reasonable endeavor to overcome the problems & make the Power House fully operational.

(d) **O & M Expenses:**

- (j) The O & M Expenses has been calculated based on the audited figures of 2006-07 with escalations @ 4% per annum for the year 2007-08 and 2008-09. The same principle has been followed in last year and approved by the Hon'ble Commission.
- (ii) In the ARR for FY 2008-09, OHPC has proposed Rs.1 Crs each at UKHEP and RHEP for procurement of equipments for installation of SCADA system for two generating units at each power station. Since, the amount is small, the same has been taken in O & M expenses, which has a minor impact on tariff. This is for improvement of the data acquisition system & not taken as capital expenditure as it is not going to add to the capacity of the unit.
- (iii) Infrastructure & peripheral development is the present demand of the local area. There should be a provision in the ARR to this effect. Hon'ble commission may kindly consider the same for all generating stations. This is particularly aimed at motivating the employees to stay and work in a good healthy environment.
- (iv) The arrear electricity charges for the period 3/97 to 1/98 in case of RHEP & for the period 7/01 to 12/03 in case of UKHEP has not been paid. However, after reconciliation, the same will be paid to the respective utilities and so proposed to be included in the ARR of FY 2008-09.
- (v) The offer quoted by M/s BHEP, for 8 nos. of runner blades at RHEP is Rs. 4.86 Crs (excluding taxes & duties) for replacement of damaged runner blades of turbines. Since, it is a major repair work and expenditure would not be met from the normal O & M expenses in ARR, OHPC has judiciously proposed to pass on the same in tariff in three years (Rs. 1 Crs + Rs. 2 Crs + Rs.2 Crs) treating the same as deferred revenue expenditure in line with principle followed in the previous years by the Hon'ble commission in case of rotor pole repair at UIHEP, Mukhiguda. OHPC aims at replacing one set of defective a blade which is to be taken out for repair and kept as spare so as to minimize down time.

- (vi) Similarly, the stator of Unit – 4 at UKHEP has been repaired through M/s BHEL in order to avoid for keeping the machines idle for two years, as it will take two year to manufacture a stator for 80 MW machine of UKHEP.M/s BHEL has further advised to keep a stator as spare, which will be immediately replaced when the repaired stator fails to work. Accordingly work order has been placed to the manufacturer M/s BHEL for a new stator. M/s BHEL has offered Rs.7.15 Crs. towards the cost of a new spare stator, excluding applicable taxes and duties. As discussed with M/s BHEL the total expenditure will be around Rs.10 Crs. including the cost of replacement, commissioning & taxes etc. Treating such expenditure as deferred revenue expenditure, OHPC has judiciously proposed to pass on Rs. 5 Crores in the ARR for FY 2008-09 and balance Rs.5 Crores in the year 2009-10. As the stator will be kept as spare for the time being, it has been proposed to pass on the cost in O & M expenses over & above the normative value.
- (vii) The existing analog governor and AVR at UIHEP have become obsolete & spare components of the system are not available at present. Hence, OHPC management has decided to procure two nos.of new Digital Governor & DVR for at least two nos generating units for faster response to the present grid system and the old equipments shall be kept as spare for the rest two generating Units. OHPC has considered such expenditure as deferred revenue expenditure and judiciously proposed to include in ARR for 2008-09 amounting to Rs. 7 Crores and balance amount of Rs. 7 Crores in the year 2009-10 in this same principle as approved by the Commission for repair of rotor pole at UIHEP, Mukhiguda, as it is not possible to meet the same from normal O & M expenses.

(e) **Additional Capitalization:**

The additional capitalization of Rs.2.80 Crs at UKHEP proposed in the ARR application is on account of construction of water supply system as per the account of OHPC. Similarly, the capital addition of Rs.2 Crs. at HPS, is of deferred capital expenditure on account of RM & U of Unit – 3&4.

(f) **Electricity Duty:**

As per the agreed PPA between OHPC & GRIDCO, the taxes & duties including auxiliary consumption etc payable by OHPC to the state Govt & other statutory bodies shall be passed on to GRIDCO in the shape of supplementary bill raised by OHPC and GRIDCO will make payment accordingly within 30 days of receipt of the bills. To facilitate reimbursement of Electricity Duty, GRIDCO should include the same (based on the Design Energy), in their Annual Revenue Requirement prior to beginning of the year. OHPC is of the view that ED on auxiliary consumptions should be reimbursed as per actuals paid to the Govt. of Orissa.

(g) **7th & 8th Unit of Balimela Power House**

Test synchronization of Unit – 7 has been done on 05.01.2008 and now it is under commissioning tests, which is expected to be completed by February'2008. The commissioning of Unit - 8 is expected by March'2008.

The extension units 7th and 8th at Balimela do not envisage additional design energy. The extension will facilitate taking up R & M works of the existing six units of BHEP, which are around 35 years old. Though, due to technical reasons the units could not be commissioned by March '2007, a capital expenditure of Rs. 178 Crores had been spent as on 31.03.2007 against Rs. 180 Crores taken in the tariff of 2007-08. In other words, almost full capital expenditure had been incurred on the project and total generation more than the design energy has been supplied. BHEP has supplied 1436 MU to GRIDCO till December'07 of 2007-08 against its design energy for sale of 1171 MU i.e. additional energy of 265 MU. Since almost full capital expenditure has been incurred and more than the design energy has been supplied, the ROE of Rs.7.56 Crores may remain as such for the year 2007-08.

63. Compliance to the Objections / Suggestions raised by M/s NESCO, M/s WESCO & M/s SOUTHCO on ARR Application of OHPC for the FY 2008-09.

The objections raised by M/s NESCO, M/s WESCO & M/s SOUTHCO are similar in nature and hence a single compliance has been made here under.

(a) **Design Energy:**

In complying with para – 3 of the petition, it is to mention that design energy of a hydel plant is not determined based on the earlier year performance of the power stations and reservoir levels only. There are so many other hydrological & hydro meteorological parameters of about last 25 to 30 years, which determines the design energy of a hydro generating plant. The tariff for the next year projected based on the design energy and in the ARR & Tariff application for FY 2008-09, OHPC has considered the design energy as per the project report. However, it is to further mention here that the work of re-assessment of design energy of OHPC power stations has been taken up and is in the completion stage.

(b) **Treatment of costs:**

The compliance to the Para – 4 of the petition are as here under.

(i) **O & M Expences:**

The compliance to the objections on O & M expenses raised by the petitioner has been complied at Para – 4 of the compliance to the objections of M/s GRIDCO.

(ii) **Interest on Loan**

Interest on loans relating to projects are as per the norms and allowed to all other generators which may not be denied to OHPC. In earlier years interest on deemed loan have been allowed in the tariff by the Hon'ble Commission.

(iii) **Return on equity**

As per the CERC norms, return on equity @14% is being allowed to all generators who supply power to GRIDCO. Since OHPC is one among them & supplying power to GRIDCO should not be debarred for availing return on equity @14% both on the original cost of assets as on 1.4.96 before revaluation & the new additions made thereafter.

(iv) **Depreciation**

Statement of closing loan as on 31.3.07 has been reallocated based on the historical cost of the old assets for proper representation. The closing and opening balance of Govt. loan (Rs.39.20 crores) as on 31.03.2007 and 31.03.2008 respectively of the old units are as under.

Table - 8

Sl.No	Units	Loan (Rs. in crores)	
		31.3.2007 Closing	31.3.2008 Opening
1.	BHEP	6.09	4.73
2.	RHEP	4.55	5.24
3.	HPS	3.69	3.54
4.	UKHEP	5.42	6.24
	TOTAL	19.75	19.75

Hence, there is no mismatch of opening & closing net loan as pointed by licensee. Further as mentioned by licensee regarding in feasibility of additional capitalization of Rs.180 crores, it is stated that the new addition on account of BHEP (Extn. of Unit 7&8) comes to Rs.180 crores which has been shown for tariff calculation.

(v) **Interest on Working Capital**

Interest on Working capital has been calculated correctly @12% (SBI PLR) on the total cost spent for O&M Expenses (1 month), Receivable (2 months) & maintenance spare for 1 year which has been consistently followed. So the interest rate of working capital @11% suggested by licensee may not be considered.

(v) **Miscellaneous Income**

Misc. income is small non-recurring incomes & mostly relate to the prudential cost management. Such incomes do not find place in the CERC norms and therefore not considered in tariff.

(vi) **Proposed ARR**

Since the tariff submitted by OHPC is in order based on above explanation, the proposal for reduction in tariff by licensee for old station & Indrabati should not be considered.

(c) **Truing Up & Utilization of Secondary Energy Reserve Fund:**

In complying with Para – 5 & Para – 6.2 of the petition, it is to mention that as per the existing guidelines, ARR is recovered through tariff on the generation up to design energy of the power station and as per the clarification of the Hon'ble Commission in their order dated 22.10.05 in case no. 38 of 2005, the revenue earned out of the sale of secondary energy may remain as a part of normal fund of OHPC, but shall be utilized to replenish the short fall in revenue due to less generation by OHPC in the years of hydrology failure. Thereafter no compensation is given to OHPC on account of hydrology failure. In view of the absence of any norms and above clarification of the Hon'ble Commission, the truing up treatment may not be applicable to hydro power stations of OHPC.

(d) **Grant received under APDP Scheme**

The State Govt. has not yet changed the nature of Rs. 19 Crores equity as grant.

64. Compliance to the objections / suggestions raised by Sri R.P.Mohapatra on the ARR Application of OHPC for the FY 2008-09.

(a) **General**

In Para 1 to 4 of the objections, the petitioner is concerned about the increase in projected tariff of old power stations of OHPC.

The tariff proposal of OHPC is based on the prevailing guidelines of CERC & OERC. However, the increase in the proposed tariff of old power stations of OHPC (specifically in case of RHEP & UKHEP) for the FY 2008-09 is mainly due to increase in O & M expenses. The generating units are very old and needs some major repairs to make it available for generation at the time of need. The major repairs as proposed in the ARR application could not be met from the

normative O & M expenses. Hon'ble Commission may kindly consider the same judiciously. Further, it is to mention here that the energy generated at RHEP & UKHEP is around one fourth of the total generation of OHPC. Hence the proposed tariff has a negligible impact on the pooled tariff cost of OHPC power stations. However, the major contributions are from BHEP & UIHEP, where the increased in proposed tariff is very nominal.

Furthermore, it is to submit here that OHPC has always complied with the directives of OERC with top priority.

(b) Upper Indravati H.E.Project

In Para -5 of the objection, the petitioner is concerned about the project cost of UIHEP.

With long discussions & deliberations on the project cost of UIHEP during the past years, Hon'ble Commission, in their order dated 22.03.2007, have approved Rs.1195.42 Crs. as the final capital cost of UIHEP (600 MW capacity) for the purpose of determination of tariff. The tariff proposal of UIHEP is based on this approved capital cost.

(c) Separate Fund:

In Para -6 of the objections, the petitioner is concerned about the separate account for the earning from secondary energy.

The Hon'ble Commission in their order dtd. 22.10.05 in case no. 38 of 2005 have clarified that, "the revenue earned out of the sale of secondary energy may remain as part of normal fund of OHPC but shall be utilized to replenish the shortfall in revenue due to less generation by OHPC in years of hydrological failure to provide necessary comfort to the consumers of the state.

Due to huge outstanding against GRIDCO, there is no inflow of funds on account of sale of secondary energy during the past years. The same has already been complied to the petitioner in his objection raised last year.

(d) **Pricing of Secondary Energy**

In Para -7 to 11 of the objections, the petitioner is concerned about the pricing of the secondary energy.

The issue of pricing of the secondary energy has been discussed adequately at CERC & also at OERC during last few years and the Hon'ble Commission in their tariff orders of the previous years have clarified that the rate of secondary energy shall be equal to the rate of primary energy of the view that in order to encourage the growth in hydro power, secondary energy charges should be priced at the same rate as applicable to the primary energy.

Further, it is to mention here that, though there is a up-coming of two units at BHEP, design energy may not be changed as it depends upon hydrological parameters. However, this shall help to meet the peak demand. In last 10 years only once the generation at Balimela has exceeded the design energy and this was due to hydrological parameters. On an average the annual generation at Balimela during past 10 year is 1091 MU, which is very low as compared to design energy.

The primary energy charges is decided by the Commission based on the primary energy rate, i.e. the lowest variable cost of the central sector thermal power stations of the region.

(e) **Reservoir Level & Generation**

As required by the petitioner, the reservoir level of OHPC Power Stations as on 01.11.2006 & 01.11.2007 and the actual generation from April'2007 to October'2007 are given hereunder:

Table – 9

Name of the Power Station	Reservoir Level as on 01.11.2006	Reservoir Level as on 01.11.2007	Actual Generation from April'07 to October'07 (in MU)
HPS	627.65 ft.	627.39 ft.	745.941
BHEP	1512.50 ft.	1513.80 ft.	1104.015
RHEP	122.44 mtr.	120.98 mtr.	753.772
UKHEP	856.17 mtr.	856.06 mtr.	706.793
UIHEP	640.94 mtr.	640.45 mtr.	1878.756

65. Compliance to the Suggestions / Objections raised by Sri Jayadev Mishra on the ARR Application of OHPC for FY 2008-09.

(a) **General**

The ARR & Tariff proposal of OHPC for the FY 2008-09 is in accordance with the prevailing norms for hydro stations. The increase in ARR in comparison to the previous years is due to O & M expenses of old generating units, which is highly essential to keep pace with modern trends ultimately aimed at increasing availability & thereby optimum utilization of water resources.

- (i) The additional capital expenditure indicated in the tariff calculation is as per the audited accounts of OHPC.
- (ii) No notification is issued by the state Govt. for setting aside the ROE on OHPC assets after FY 2005-06.
- (iii) As per prevailing norms Interest on working capital is to be recovered through tariff. Further, as far as part profits are concerned, there is a huge outstanding against GRIDCO till date.

(b) **Individual PPAs**

The draft PPAs of old power stations are pending with GRIDCO for certain modifications in view of separation of GRIDCO & OPTCL and changes in laws & guidelines on power sectors which will be executed shortly.

Regarding separation of Burla & Chipilima, last year OHPC had submitted before the commission that Burla & Chipilima power stations are considered as one unit for administrative, O & M, stores & inventories, accounting & performance purposes, since the inception of these projects from 1950. Further, their dispatch system is clubbed together by connecting two Buses and as such the design energy is also clubbed together. Chipilima power station utilize the discharge water of Burla Power House. As such the operation of Chipilima power Station is fully dependent upon the generation of Burla Power Station. Hence, separation of Burla & Chipilima Power station is not feasible. Considering the above, Hon'ble commission in their order dated 22.03.2007 have approved the stand of OHPC for a single PPA for HPS.

Construction of a separate channel at Chipilima may not eradicate the weeds problem. This matter has been studied by the Govt. & OHPC and this is considered not feasible due to same procedural & Technical prohibitions. However, OHPC has planned to construct a bridge-cum-trashrack system at the upstream of forebay pond to arrest the weeds and take up regular weed-cutting till the permanent trash-rack system is commissioned.

The Unit –II of Chipilima, which is under R & M, has already been commissioned and after test synchronization of the unit, the COD shall be declared shortly.

- (i) Annual fixed charges for each power stations of OHPC alongwith the capacity charges & primary energy charges have been computed as per the present CERC guidelines.
- (ii) The direction of the state Govt. being followed by OHPC for infrastructure & peripheral development of local area. The bridge on Hati-River is being taken up by NH Department.

Further, as required by the petitioner, the unit-wise generation of Burla & Chipilima for the last five years are given here under:

Table - 10**Figures in MU**

Unit. No / FY	2002-03	2003-04	2004-05	2005-06	2006-07
Burla					
#1	165.410	271.52	203.923	223.637	136.422
#2	51.389	150.045	181.603	129.147	83.122
#3	42.084	0	0	80.183	83.093
#4	24.802	0	0	42.812	114.883
#5	118.887	201.506	119.511	123.264	78.463
#6	106.885	44.672	80.089	121.516	112.583
#7	58.769	175.657	123.453	66.427	138.166
Chipilima					
#1	73.465	91.022	119.883	121.924	106.737
#2	0	0	0	0	0
#3	5.741	21.115	11.238	0	8.875

(c) Prospective plan for Hydro development

OHPC in its 79th Board Meeting held on 15.12.2006 has decided for developing the Sindol - I, II & III projects through NHPC. The same has been moved to Govt. of Orissa for necessary action vide this office letter no.876 dt. 05.02.07. Meanwhile OHPC had requested NHPC / WAPCOS to submit DPR. NHPC has denied preliminary offer has been received from WAPCOS. After the study of their reports, the views of OHPC have been intimated to them & reply awaited. Regarding Chipilima-B and Hirakud-B, the projects were dropped for high cost of generation.

Apart from the above, Govt. of Orissa have constituted an “Inter – Departmental Technical Co-ordination Committee with the members from WR Dept. & Energy Dept. to sort out the issues relating to the implementation of the following nine nos of newly identified hydro projects.

- 1) Middle Kolab H. E. Project
- 2) Tel Integrated Project
- 3) Lower Vansadhara Project
- 4) Balijori H.E. Project
- 5) Salki H.E. Project
- 6) Khadago Project
- 7) Uttel & Roul Integrated Project
- 8) Mahanadi-Brahmani River Link
- 9) Barmul H.E. Project

The said three member committee consisting of (1) E.I.C, P & D, W.R.Dept. (Chairman), (2) Director (Operation), OHPC, Energy Deptt. (Member) and (3) C.E, Project Planning & Formulation, W.R.Deptt. (Member Conveners), have met on 05.11.2007 & 11.11.2007 to discuss & review the progress made for implementation of the said identified H.E. Projects. In the meeting, it has been agreed that the preparation of DPR of the projects (Sl.No. 1 to 3) will be made by W.R.Dept. through WAPCOS after receiving clearance from the Govt. of Orissa and the multi-purpose projects shall be developed jointly by W.R.Deptt. and OHPC Ltd.

Further, the committee has suggested to take up the survey, investigation and preparation of DPR of the projects (Sl.No. 4 to 7) through outsourcing in line with the first three projects. The last two projects (Sl.No. 8 & 9) needs further study to finalize the hydrology on basis of sharing of water by co-basis states.

(d) **Pumped Storage & River Link Project**

At Para – 3 to 5 of the suggestions the petitioner is concerned about the development of Pumped Storage & River – Link projects at different locations in Orissa. At present, these are not under consideration by OHPC. However OHPC may put forth the scheme before state Govt., if viable.

66. Compliance to the Objections / Suggestions raised by Sri K.C.Mohapatra, on ARR Application of OHPC for the FY 2008-09.

(a) In Para – 1 to 3 & in Para – 5 of the objection, the petitioner is concerned about the development of new hydro power projects in the state.

It is to mention here that the Govt. of Orissa have formed a committee for clearance of the feasible projects, the details of which has been explained at Para – 3 of the compliance to the suggestions of Sri Jayadev Mishra.

(b) At Para – 4 the petition, the petitioner is concerned about the R & M of Machhkund (Jt.) H.E.project. It is to mention here that discussions are going between Govt. of Orissa & Govt. of AP for the cost sharing of the proposed R & M at Machhkund project on 50:50 basis in order to have 50% share of power from the project instead of existing 30% share.

- (c) On Para – 6 of the objection, it is to mention that OPTCL is entrusted for development of transmission networks for evacuation of power & the power developers should co-ordinate with OPTCL for the purpose.
 - (d) On Para – 7 of the objection, it is to submit that the reason for low generation at Chipilima is mainly on account of weed problems. OHPC has initiated action for construction of a bridge-cum-trashrack in the intake pool in order to avoid this long standing problem.
67. Compliance to the Objections / Suggestions raised by Sri Ramesh Ch. Satpathy, on the ARR Application of OHPC for the FY 2008-09.
- (a) In compliance to Para – 2 of the petition, it is to mention that the relevant information with supporting documents has been submitted before the Commission as & when required.
 - (b) OHPC has no comments on para – 3 & 4 of the petition, as it has no relation for determination of hydro tariff.
 - (c) In compliance to para – 5 of the petition, it is to mention that the delay in completion of R & M works of unit – 2 of Chipilima was due to various constraints. However, now the machine has already been commissioned and under test synchronization.
 - (d) In complying with the para – 6 of the petition, it is to mention that test synchronization of the extension unit -7 at BHEP has been done on 05.01.08 and now it is under commissioning tests, which is expected to be completed by February'2008. The commissioning of unit – 8 is expected by March'2008.
 - (e) In complying with the para – 7 of the petition, it is to mention that sometimes there is a reduction in generation at UIHEP as per the direction of the Kalahandi District Authority due to flood in Hati River, which is a forcemajeure situation. The reduction in generation as computed is around 139 MU during the FY 2006-07 & 88 MU during FY 2007-08. However, in the said years the generation at UIHEP is more than design energy & there is no wastage of water as it is a carry over reservoir.
 - (f) In complying with para – 8 of the petition, it is to mention that the said bridge on Hati river is being taken up by NH Department.
 - (g) OHPC has no comments on para – 9 & 10 of the petition, as it has no relation for determination of tariff of hydro generating stations.

68. Compliance to the Suggestions / Objections raised by Sri G.N.Agarwal, Convenor-cum-Secretary, Sambalpur District Consumer Federation.

The petitioner has filed a consolidated petition in the matter of the ARR application filed by all the power utilities in Orissa & the distribution licensee M/s WESCO. OHPC has no comments on the suggestions raised by the petitioner, as it has no bearing on determination tariff of OHPC power stations.

However, on the issue of utilization of funds for up-gradation & repair of old generating units, it is to comply that in spite of a huge outstanding against GRIDCO, OHPC has taken necessary steps for Renovation, Modernisation & Upgradation of the generating units at Burla & Chiplima and extension of 7th & 8th units at Balimela and major repairs of the old generating units at other power stations, with the available resources.

69. Compliance to the Suggestions / Objections raised by Mr. M. V. Rao, Chairman, Power Committee, Utkal Chamber of Commerce & Industry (UCCI)

The petitioner, in their petition is mainly concerned about the increase in the proposed tariff of old power stations of OHPC (specifically in case of RHEP & UKHEP) for the FY 2008-09. The reasons for such tariff proposal are explained in para-1 of the compliance to the objections raised by Sri R.P.Mohapatra.

Queries raised by Director (Tariff) on application for approval of ARR & Tariff of OHPC for FY 2008-09.

70. During hearing on 31.01.2008, Director (Tariff) raised the following queries on tariff application of OHPC for FY 2008-09:
- (a) Execution of individual PPAs, OHPC should expedite the process of signing of PPAs in respect of Balimela, Hirakud & Upper Kolab Power Stations in line with Rengali PPA which has already been approved by the OERC. OHPC should submit the modified version of Rengali PPA.
 - (b) Reassessment of design energy for existing Power Stations:
OHPC has stated that the above work has been entrusted to M/s SPARC, Bhubaneswar on turn-key basis and the Agency has submitted the report. The final report on the reassessment of design energy may be got approved by the OHPC Board and submitted to the Commission at the earliest.

- (c) Status of Potteru Small Hydro Project:
Although the project belongs to OHPC, the status of same has not been reflected in the ARR application for 2008-09. The latest status indicating the expenditure incurred on the same, reason for delay on execution of the project etc. may be submitted.
- (d) Machkund HE project:
Steps taken by OHPC for revival of the Machkund HEP consequent upon the recent accident/break down of the generating units may be stated.
- (e) Expenditure on SCADA/Communication equipments:
OHPC is asked to clarify, why expenditure on the communication equipment has not been treated as capital expenditure.
- (f) Details of arrear Electricity Bills as claimed (Rengali & U.K. in the ARR etc. stations) may be submitted to OERC along with supporting documents.
- (g) Status of Renovation and Modernization schemes relating to HPS, RPS, UKPS, BPS including Machkund (Joint) Power Station may be furnished.
- (h) OHPC may indicate the action taken for development of new hydro projects in the state since acute shortage of power in the state is being foreseen in very near future.

Reply to observations and queries of the objectors and Director (Tariff) by OHPC at the hearing on 31.01.2008. (Para 71 – 93):

- 71. Reply of OHPC to the issues raised during hearing on 31.01.2008 on application for approval of ARR & Tariff for FY 2008-09 is briefly stated as under:

Performance of OHPC

- 72. During last few years, there has been a substantial improvement in the availability of the machines of OHPC power stations along with a sound generation performance. The R, M & U of units 3 & 4 of Burla P.H. has been successfully completed inspite of several technical constraints. Though delayed due to various reasons, the R & M works of Unit - II of Chipilima has already been completed and now it is under test synchronization. Similarly, the 7th unit of Balimela extension project is completed and under commissioning tests, and 8th unit is expected to be synchronized with the Grid by the end of March, 2008.

Further, some major repairs of the old generating units at Rengali and Upper Kolab have been carried out successfully with least possible time for optimum utilization of water resources. Now almost all generating units of OHPC are available for generation except one at HPS. In the last year and also in the current year, OHPC has performed a record generation in its history by making available the generating units to the maximum possible extent and responding to the good hydrology condition. The analysis of revenue allowed to OHPC reveals that, there is no scope for OHPC to earn profits. ROE has not been allowed to old generating stations. The depreciation on assets has been allowed to the extent of loan repayment only. Further more, in spite of huge outstanding of revenue with GRIDCO, OHPC has been repaying its loan in time and also restructured its high interest bearing loans borrowed for UIHEP, R M & U and extension projects, which has a positive impact on ARR of OHPC. There has been a constant drive to minimize all kinds of expenses so that impact on tariff be insignificant.

O&M Expenses

73. It may be appreciated that the old generating units have almost been operating for more than 20 years. In order to keep the machines available for optimum generation and to meet the quick requirement of the Grid, it is necessary that adequate preventive maintenance and annual overhauling be done diligently. This necessitates increase in the O & M expenses, but it is considered to propose the same in manner so that impact on tariff be the minimum. In the proposed ARR computation, the O&M expenses have been calculated based on the audited accounts of 2006-07 with an escalation of 4% per annum for the year 2007-08 and further 4% for the year 2008-09. In addition, the following O & M expenses are considered in the ARR and it is proposed to spread such expenditure over 2 to 3 years through tariff, though OHPC shall be incurring such expenditure in the year 2008-09. The same principle has been followed in last year and have been approved by the Hon'ble Commission.
- (a) Rupees One Crore each at UKHEP & RHEP has been added in O&M expenses for the year 2008- 09 for installation of SCADA System for two generating units at each power station. This is for improvement of data acquisition system, which is essential for the system control in the present system of operation and billing. As it is not going to add to life or the capacity of the plants, it is required to be taken as the O&M expenses.

- (b) Rupees One Crore for each generating station has been proposed in O&M expenses for the year 2008-09 for infrastructure and peripheral development of the power system and associated colonies to meet the basic requirement of the employees. This is particularly aimed at motivating the employees to stay in the distant places & work in difficult environmental conditions, particularly in Balimela & Indravati, which account for about 75% of the total generation of OHPC.
- (c) The arrear electricity charges of Rs. 2.50 Crs. for the period 3/97 to 1/98 at RHEP & Rs. 3.14 Crs. for the period 7/01 to 12/03 at UKHEP was not paid. However, after reconciliation, the same will be paid to the respective utilities and hence included in the ARR of 2008-09. This shall also be the income of the distribution utilities & hence may not affect the retail tariff.
- (d) For procurement of spare runner blades at RHEP, the total estimated cost is Rs. 5.00 Crs. Out of which, only one crore has been included in O&M expenses for the year 2008-09 and balance Rs. 4 Crs will be included in the ARR of next two years. Since it is a major repair work to be carried out, it is considered in the O&M expenses additionally. The turbine blades have been repaired by OHPC to successfully run the machine in monsoon and one set of spare of runner blades are the minimum requirement.
- (e) Similarly, for procurement of a new stator for Unit-4 of UKHEP as a spare, out of total estimate of Rs. 10 Crs., only Rs. 5 Crs. has been included in the O&M expenses in the year 2008-09 & balance amount shall be proposed in the next year i.e.2009-10. As per the suggestions of the manufacturer M/s BHEL, one spare stator for unit – 4 is required as it is running with a repaired stator. This repair was also done to keep the machine running till a new stator is procured.
- (f) Further, at UIHEP, Rs. 7 Crs. has been included in the O&M expenses for the year 2008-09, (out of total estimated amount of Rs. 14 crs.), for procurement of two nos. of new Digital Governor & DVR for two generating units. The existing analog Governor & AVR at UIHEP has become obsolete and spares of the system are not available. This is also required for quick response to the load variation in the Grid and has been advised to be procured as decided in the review meeting of OHPC. The replaced old equipment will remain as spares for other two generating units.

- (g) The expenditure mentioned at above para (a) to (f) are included additionally, in line with the approval of the Commission for rotor pole repair at UIHEP, Mukhiguda. The expenditure included in (iv) and (v) above are as per the norms of CERC in the definition of O & M expenses.

Additional Capitalization

74. Capital addition of Rs. 2.80 Crs. at UKHEP is on account of development of drinking water supply system. to the colonies, which is a basic minimum requirement and not done earlier.
Capitalization of Rs. 2 Crs. at HPS is towards addition of assets on account of R,M&U of Unit-3 & 4 of Burla Power House.

Return on Equity

75. Govt. of Orissa notification dated 29.01.03, for excluding ROE on old assets was valid upto the FY 2005-06. Hence, as per the existing norms, ROE @ 14% has been proposed on the historical cost of old assets in the ARR application for the FY 2008-09.

Interest on Deemed Loan

76. Deemed Loan is the own investment of OHPC. The alternative with OHPC is to borrow from a financing institution to meet the required expenditure. But the interest on the deemed loan has not been proposed @14% as that for equity, because it is the excess amount invested beyond the normative equity component. As agreed between OHPC & GRIDCO in the year 2002 the interest on deemed loan has been taken at SBI, PLR from FY 1998-99 onwards till date & approved by the Commission. Hence, interest on deemed loan @12% i.e. the present PLR of SBI has been considered in the ARR calculation. for the year 2008-09.

Interest on working capital

77. As per the existing norms, interest on working capital has been computed at PLR of SBI, which is 12% at present and this has been consistently followed.

Misc. Income

78. Misc. income is non-recurring in nature and mostly relates to the prudential financial management. Such incomes do not find place in CERC norms and not considered in the tariff proposal.

Truing up

79. In the past years' single part tariff regime, it is only possible to recover the ARR through tariff, if the generation is equal to or more than the design energy. Only in very few years in the past, OHPC has generated more than D.E. and in many years the generation is less than D.E. due to poor hydrology. Further, as per the directives of the Commission the revenue from secondary energy shall be utilized to replenish the shortfall in revenue due to less generation by OHPC in the years of hydrology failure. Hence, in absence of any norms / guidelines, truing up treatment may not be applicable to OHPC Power Stations.

Pricing of Secondary energy

80. This issue has already been discussed at CERC and also at OERC during last few years. The OERC have already clarified in their previous orders that the rate of secondary energy shall be equal to the rate of primary energy with the view of encouraging growth of hydro power in the state.

7th & 8th Units of BHEP Extension Project

81. Due to some unavoidable circumstances, the 7th & 8th units of BHEP could not be commissioned by March' 2007. Test synchronization of unit-7 has been done on 05.01.2008 and now it is under commissioning test, which is expected to be completed by February,2008. and the commissioning of Unit-8 is expected by March,08.

Since, almost full capital expenditure had been incurred in the project by March,2007 and with constant supervision, OHPC has made other units available for generation and generated much more than the design energy till Dec'07, there should not be reduction in ARR of BHEP for the year 2007-08.

Project cost of UIHEP

82. After long discussions & deliberations on the Project Cost of UIHEP during past years, The OERC, in their order dated 22.03.2007, have approved Rs. 1195.42 Crs. as the final capital cost of UIHEP for the purpose of determination of tariff. This cost is justified for a power station of 600 MW capacity. The tariff proposal of UIHEP for 2008-09 is based on this approved capital cost.

Electricity Duty on Auxiliary Consumption

83. As per the agreed PPA ED paid on Auxiliary Consumption (limited to 0.5% of the gross generation) shall be passed on to GRIDCO in the shape of supplementary bills raised by OHPC.

OHPC is of the view that ED on auxiliary consumption should be reimbursed as per actual payment to the Govt. of Orissa because of non-economic operation of generating units depending on the requirement of SLDC. More nos. of units are being operated at very low load to provide the var requirement of the grid, which could be generated with less number of units. This operation causes higher percentage of auxiliary consumption with respect to generation.

Separate fund

84. As per the order of the Hon'ble OERC, the revenue earned out of the sale of secondary energy may remain as part of normal fund of OHPC but shall be utilized to replenish the shortfall in revenue due to less generation by OHPC in years of hydrology failure. Due to huge outstanding against GRIDCO, there is no inflow of funds on account of sale of secondary energy. However, in a recent meeting, GRIDCO has expressed its willingness to pay the outstanding dues in a phased manner within a reasonable period though the same is yet to be decided.

Generation at Chiplima

85. Unit-II of Chiplima, which is under R&M, has already been commissioned & under test synchronization. After commercial operation of Unit-II, Unit-III shall be taken for R&M, for which tendering process has already been initiated.

OHPC has planned to construct a bridge-cum-trashrack system at the up-stream of the fore-bay pond to arrest the weeds and make the power house fully operational. Till completion of such bridge, the regular cutting of weeds up to 1.5 mtrs depth shall be taken for which order has already been placed with IDCO.

Status of Re-assessment of Design Energy

86. The draft reports on re-assessment of design energy of all the five hydro power stations of OHPC have been completed and it has been presented before the Commission on 30.01.2008. The commission have advised OHPC to place it before the OHPC Board for approval and then to submit it before the Commission for vetting.

Status of Separate PPAs of old power stations

87. The draft PPAs of the old power stations are pending with GRIDCO, for their concurrence & signature. In a recent discussion with GRIDCO, it was agreed that the same shall be submitted before the Commission soon with the views of both the parties on the disputed issues. However, as per the agreed clauses of the PPA in line with CERC norms, the computation of Capacity Index, incentive and disincentive in two part tariff are being presently followed for all the OHPC power stations.

Development of Hydro Power in the State

88. OHPC is taking up with the State Govt. & WAPCOS for preparation of revised DPR, for developing the Sindol - I, II & III Projects, starting with the first one with due consideration of minimum displacement & rehabilitation by reducing the dam height & reservoir capacity, which can make the project viable.

Further, Govt. of Orissa has constituted a Committee, with the Chairmanship of the EIC, P&D, WR Deptt., to sort out the issues relating to the implementation of nine nos. of newly identified hydro power projects. The Committee, in their last two meetings, has agreed for preparation of DPR of 3 nos. of projects and taking up survey, investigation & preparation of DPR of another 4 nos. of projects by WR Deptt. through WAPCOS, after receiving clearance from GoO. Apart from the above, OHPC is also diversifying its scope into Thermal Power Generation inside the state.

Machhkund (Jt.) H.E.Project

89. There was a Fire accident at Machhkund P.H. on 08.11.2007, resulting complete shut down of the P.H. The SGM (El), UKHEP visited the P.H. on 09.11.2007 and submitted a preliminary report. A group of engineers headed by Director (Operation), OHPC visited the accident site on 29.11.07 and submitted a report to Govt. In the joint discussion with the APGENCO authority at Machhkund, it was decided to bring at least one generator to grid with in the least possible time. Accordingly Unit No.2 was synchronized to Grid on 03.12.2007 and subsequently Unit No.1 & 4 were synchronized on 04.01.2008 & 09.01.08. Orissa is drawing its share of generation from Machhkund from 24.01.08 onwards. Regarding finalization of R M & U of the units, and sharing of Machhkund power in 50:50 ratio, the meeting between GOAP & GOO had been scheduled at Hyderabad on 11.01.2008 and 21.01.2008. The same has been finally held on 03.03.2008 at Hyderabad but the outcome of the decision is to be firmed up.

Potteru small H.E.Project

90. The Potteru small H. E. Project comprises of two power house of 3 MW each. With several technical & environmental constraints, the generating unit of PH – I was test run on 10.01.2008 and loaded up to 0.7 MW with the prevailing inflow of water & radial flow of load to the local area network. Thereafter, the testing team of the contractor M/s Best & Crompton left the site in view of the present law & order situation of the locality. However, later they have agreed to come & run the machine in day time only.

After completion of work of PH – II in 2002, when water was filled up, heavy leakage were observed through the fore bay dam and there was breach in the cannal embakment. Hence, the PH as well as intake of water was closed immediately. Govt. of Orissa formed a committee of enquiry and the committee observed that the problem was due to poor workmanship caused by antisocial activities and life threatening situation in that area and suggested for epoxy grouting of the fore bay dam to stop leakage. As decided in the meeting taken by Hon'ble Minister of Energy, GOO on 26.08.2004, M/s OCC prepared an estimate of Rs.33,08,400/-, which has been verified by DOWR. The OHPC Board has decided to carry out this job after successful commissioning of PH-I

Cost investment

91. The project was approved by the planning commission for an amount of Rs.546.00 lacs. OHPC has incurred an expenditure of 3609.47 Lakhs as on 31.07.2007 in the project.

Reasons for delay & problems encountered in execution of the project:

- (a) Frequent law and order problem disrupting works at site.
- (b) Frequent labour unrest hampering progress at site.
- (c) Poor workmanship and delay in Civil construction by Water Resources Deptt.
- (d) Damage of equipment due to fire and replacement.
- (e) Delay in erection and commissioning of units by the erector, M/s Best & Crompton Engineering Ltd. Chennai.
- (f) Frequent breaches of canal and weed problem.
- (g) Insufficient flow of water to run the machine at 3 MW load continuously.
- (h) Delay in obtaining forest clearance for construction of 33 KV line from PSHEP to Balimela Power House Switchyard for synchronization of unit to GRID. However at present, evacuation of power can be done on radial mode through Kalimela Sub-station.

Manpower Position of OHPC

93. On being enquired by the Commission, it was informed that 131 nos. of posts (around 26%) are vacant at present in entry level of executives. In non-executive category 344 nos. of posts (around 14%) are vacant. Steps are being taken to obtain Government approval for filling-up of the posts. Particularly in UIHEP & UKHEP maintenance work are being done by outsourcing. A core group is created in the power stations and supporting staffs are outsourced.

COMMISSION'S OBSERVATION AND ANALYSIS OF OHPC'S PROPOSAL: (Para 94 – 137)

94. The Commission is duty bound by statute to fix tariff for a generating company in respect of its supply of power to distribution licensees vide Section-62(1)(a) of the Act. The generating company, for this purpose, is legally liable to file its ARR & tariff application. The tariff so fixed would apply whenever a DISTCO purchases power directly from OHPC. The question that arises is whether the tariff so fixed is applicable when GRIDCO, a trader, purchases power from OHPC for the sole purpose of supplying to

some DISTCOs under a contractual obligation. This is essentially a question of extended applicability of the tariff set by the Commission and not a question of power of the Commission to set tariff for generating companies supplying electricity to DISTCOs. The question is whether applicability of the tariff so determined by the Commission can, in the special circumstances of a single-buyer model prevailing now, extend to a trader who under a contractual arrangement buys power from the generating company to the exclusion of all other buyers and sells power to only specified DISTCOs, and none others, so long as the requirement of such specified DISTCOs remains unfulfilled. Had there been no such contractual arrangement (PPAs and BSAs), the tariff determined by the Commission would not apply. But when such contractual arrangement exists, if the Commission does not apply this tariff, in respect of sales to GRIDCO, it would amount to allowing DISTCOs to obtain power at a price different from this tariff. DISTCOs would thus be circumventing this tariff. They would also be departing from the procurement price fixed by the Commission under law [Section-86(1)(b)] in the context of a single-buyer model. For this reason in these special circumstances of a single-buyer model which exists as a fact, a rate based on the tariff fixed for generating company qua DISTCOs has been thought necessary to be applied to purchases by GRIDCO functioning as the sole trader. Indeed GRIDCO is for the time being a single conduit for supply of power by the generating company to DISTCOs, such that in effect and substance the generating company is supplying power to DISTCOs. DISTCOs must not be free to depart from the Tariff set for supplies to them, by a generating company merely by reason of the technicality of the conduit of supply being a trader. The single-buyer model as prevailing in the State of Orissa is not repugnant to any provision of the Electricity Act, 2003. But if tariff determined by the Commission is not made applicable to the single-buyer it would frustrate the object of Section-62(1)(a) of the Act. It could not be the intention of the legislature that where the single-buyer model prevails the sale of power to DISTCOs should escape the tariff regime. Accordingly the tariff determined by the Commission shall be applicable for sale of power by OHPC to GRIDCO.

95. 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. While determining the tariff for the old stations of OHPC, the principles and procedures set out in CERC Regulations have been followed with deviations, wherever required with proper reasons.

96. The tariff proposal of OHPC contains technical parameters such as type of hydro stations, capacity index, potential of energy generation and financial details like loans, capital cost, calculation of depreciation, interest etc. OHPC has furnished the technical and financial details in respect of each of the old power stations as well as of UIHEP. The station-wise apportionment of capital cost in respect of all these stations has also been provided along with tariff calculations.
97. During the course of public hearing, the objectors had raised certain specific issues to which OHPC has already submitted its response. The Commission's analysis of the issues relevant for determination of tariff of OHPC is as discussed below:
- Review of Design Energy
 - Status of Individual Station wise PPA
 - Balimela Extension
 - Capital cost of UIHEP
 - Annual Fixed Charges which shall consist of
 - (i) Interest on loan capital
 - (ii) Depreciation
 - (iii) Return on Equity
 - (iv) Operation and Maintenance Expenses
 - (v) Interest on working capital
 - (vi) Income Tax
 - (vii) Electricity Duty
 - Primary energy charges
 - Secondary energy charges
 - Two-part Tariff
 - Machhkund Hydro Electric Project
 - Perspective Hydro Development in the State
 - Grant received under APDP scheme
 - Reservoir level and availability of water
 - Utilization of secondary Energy Reserve Fund
 - Truing up

Review of Design Energy:

98. As per the directives given by the Commission in its order dtd. 10.06.2005 at Para 6.5, OHPC has taken steps for reassessment of design energy, which was initiated earlier. The Commission is regularly monitoring the progress in respect of reassessment of design energy. OHPC has submitted the status on the matter in its rejoinder to the query raised by the Commission as well as the objectors. From the filing, it is evident that OHPC has already awarded the job of reassessment of design energy to the consultancy agency M/s SPARC, Bhubaneswar to carry out the job on a turnkey basis. The OHPC has informed the Commission that the Agency has already submitted the report. The Final Report is to be approved by OHPC Board and the approved report would be submitted to the Commission. For the purpose of determination of tariff for FY 2008-09, the figure of 5619.24 MU as proposed by OHPC is accepted as design energy of all power stations in terms of Commission's order dtd. 09.07.2001.

Status of Individual Station-wise PPA:

99. The Commission wanted to know the status of separate PPAs for each of the power stations of OHPC. In its reply, OHPC has submitted that the draft PPAs of old power stations are pending with GRIDCO for their concurrence and signature. In a recent discussion with GRIDCO, it was agreed that the same shall be submitted before the Commission soon with views of both the parties on the disputed issues. However, as per the agreed clauses of the PPA in line with CERC norms, the Computation of Capacity Index, incentive and disincentive in two part tariff are approved to be followed for all OHPC power stations.
100. Some objectors had raised the issue of separate PPA for Hiraakud & Chiplima Power Stations to which OHPC has replied that Burla and Chiplima Power Stations are considered as a single unit for administrative, O & M, Stores and Inventories, accounting and performance purposes, since their inception. Further their dispatch system is clubbed together by connecting two buses and as such, the total design energy has been assessed as 1174 MU. Chiplima Power Station utilizes the discharge water of Burla Power House. Thus, OHPC opines that the operation of Chiplima Power Station is fully dependent upon the generation of Burla Power Station. Hence separation of Burla and Chiplima P.S. is not feasible. Excavation of second power channel at Chiplima has been rejected by Govt. of Orissa due to procedural and technical difficulties.

OHPC has submitted that the construction of a separate channel at Chipilima may not eradicate the weeds problem. This matter has been studied by the Govt. & OHPC and this is considered not feasible due to some procedural & Technical prohibitions. OHPC has therefore planned to construct a bridge-cum-trashrack system at the upstream of forebay pond to arrest the weeds and take up regular weed-cutting till the permanent trash-rack system is commissioned.

OHPC has to find a technical solution to the problem of Chiplima power station so that full capacity of this power house is utilized. This is important because construction of a new power station is posing innumerable problems with regard to land acquisition and problem of rehabilitation. It is all the more important that OHPC take effective steps with the help and guidance of hydro experts available within and outside the country so that Chiplima power house runs to its full capacity.

The Commission vide order dated 22.03.2007 in Case No. 54 of 2006 has approved a two-part tariff structure for Hirakud power station. In that case OHPC will not be able to recover the full capacity charge unless they attain the desired capacity index due to non-functioning of Chiplima power station. In view of that the Commission approves the stand of OHPC for a single PPA for Hirakud power station.

Power Procurement from OHPC

101. The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) is 2062 MW as on 1st of April 2008 including Orissa share of Machhkund. The details of drawl approved by the Commission for 2007-08 and the projections made by OHPC for 2008-09 are presented in the following table:

Table - 11
Hydro Drawl and Projections For 2008-09

Sl. No.	Name of the HE Project	Installed Capacity (MW)	Design Energy (MU)	Commission's Approval for 2007-08 (MU)	Proposed Drawl by GRIDCO for 2008-09 (MU)
1	Hirakud (Burla & Chiplima)	347.50	1174.00	1162.26	1037.75
2.	Balimela	510	1183.00	1171.17	1168.20
3.	Rengali	250	525.00	519.75	693.00
4.	Upper Kolab	320	832.00	823.68	829.62
	Total	1277.50	3714.00	3676.86	3728.57
5.	UIHEP	600	1962.00	1942.38	1942.38
6.	Machhkund (Orissa Share)	34.50	262.50	265.00	265.00
	Total Hydro	2062	5938.50	5884.24	5935.95

102. 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 for determination of tariff applicable to generating companies. This has been suitably incorporated in the OERC (Terms and Conditions for determination of Tariff) Regulation, 2004. As per CERC regulation, "*primary energy means the quantum of energy generated up to the design energy on per year basis at the generating stations*". Auxiliary energy consumption for surface hydro Electric Power Generating Station 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.
103. As indicated in the above table, the annual energy generated by OHPC's old stations, in a year of normal hydrology, is 3714 MU. After deduction of auxiliary consumption and transformation loss, energy sent out to GRIDCO comes to 3676.86 MU. This was approved by the Commission in its order-dated 09.07.2001 in Case No.15/2000. 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.
104. Based on the inflow trends from April 2007 to March 2008, OHPC furnished the tentative monthly generation programme for its different units. The same has been furnished by OHPC to GRIDCO in regard to generation during 2008-09. GRIDCO has projected the power purchase from OHPC stations based on the latest generation plan submitted by OHPC for different stations. GRIDCO has considered 5690.75 MU of availability from OHPC hydro stations as per the generation plan submitted by OHPC after deduction of 16.60 MU allocation to CSEB from Hirakud Power Station and 0.5% auxiliary consumption and 0.5% transformation loss. OHPC has projected a lower availability during 2008-09 as compared to the design energy to which the Commission had raised a query to GRIDCO and sought necessary clarification. In support of the proposed drawl, GRIDCO has furnished the details of drawl from different stations from 2001-02 to 2006-07 as shown in the table below.

Table – 12

Drawls from OHPC in the Past Years

(In MU)

Station	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Hirakud	925	616	903	804	859	853.72
Rengali	772	621	1028	731	665	662.52
U Kolab	640	473	640	867	611	1016.21
Balimela	1049	526	1118	1495	1024	1605.17
U Indiravati	2920	790	2110	2826	1751	2989.19
Total	6307	3025	5799	6723	4911	7126.81

105. As indicated earlier, the design energy of OHPC old stations in a year of normal hydrology being 3676.86 MU, it is premature to predict the rainfall at this point of time and there is absolutely no justification for adopting a figure lower than the design energy for the ensuing year. Neither the Commission can accept a figure exceeding 7000 MU as suggested by some of the objectors based on the performance of the current year as the generation shall be dependent on the rainfall, MDDL of the reservoir and water use by other agencies. Acceptance of such a high figure would mean reduced drawl from high cost energy sources which in turn would affect the power purchase cost in case of reduced generation. As such, the Commission considers it appropriate to accept and approve a figure of 3676.86 MU as energy available from these stations and 1942.38 MU in case of UIHEP for the year 2008-09.

106. **Machhkund:** This hydro power station is a joint venture of Government of Orissa and Andhra Pradesh with an installed capacity of 114.5 MW. Based on the 50% share of GRIDCO the quantity comes to 262.50 MU. GRIDCO has projected drawl of 265 MU for the FY 2007-08. The Commission approves 265 MU to be drawn from this station during 2008-09 based on the drawl during the previous years.

107. The Commission's approval of power to be purchased by GRIDCO for 2008-09 from various stations of OHPC is given in the table below.

Table - 13
Drawl From Hydro Stations (2008-09) (In MU)

Source of Generation	Commission's Approval (2007-08)	GRIDCO Proposal (2008-09)	Commission's Approval (2008-09)
Hirakud (Burla & Chiplima)	1162.26	1037.75	1162.26
Balimela	1171.17	1168.20	1171.17
Rengali	519.75	693.00	519.75
Upper Kolab	823.68	829.62	823.68
OHPC (Old stations)	3676.86	3728.57	3676.86
Upper Indravati	1942.38	1942.38	1942.38
Machkund	265.00	265.00	265.00
Total Hydro	5884.24	5935.95	5884.24

Capital Cost of UIHEP:

108. Some objectors have raised the issue of determination of capital cost of UIHEP in their submissions and also during public hearing. With regard to the capital cost of UIHEP, the Commission in its order dt.12.02.2003 in case No.23 of 2000 had clarified that the estimated cost of Rs. 1195.42 crore was to be considered for determining the tariff of UIHEP as provisional. The Commission also directed in the said order that *"the actual capital cost incurred on completion of project for the purpose of determination of tariff should be got approved by CEA as per Section 42 A(2) of the Electricity (Supply) Act, 1948. If CEA refuses to do so, it can be determined by a group of independent experts in consultation with CEA."* Objections were raised during the course of hearing challenging the high cost of UIHEP on account of long gestation period and frequent revision of estimates during construction. Some other objectors were of the view that a project of 600 MW capacity with capital expenditure of Rs.1195.42 crs i.e. Rs 2 Cr /MW was lower compared to international standards.
109. OHPC contended that the project cost of Rs. 1195.42 crore as approved by the State Govt. for a 600 MW project at the current price level was reasonable and should be accepted for the purpose of determination of tariff. There was no change in the scope of the project for which CEA in its letter-dated 28.01.1997 stated that OHPC/Department of Energy should satisfy itself about the reasonableness of the revised cost estimate. OHPC has requested the Commission to retain the capital cost of UIHEP at Rs. 1195.42 crore for the purpose of tariff.

110. OHPC has submitted that the transferred value of assets of UIHEP as on 01.04.96 was Rs. 630 Crs. with a corresponding Govt. loan as the liability. OHPC negotiated with PFC for a long-term loan for the project with the revised project cost at Rs. 1107.10 Crs. excluding interest during construction. The PFC sanctioned a loan of Rs. 320Crs. for the project for which an agreement was executed on 01.07.97. The financing pattern for the project was as under:

Table - 14

(Rs. in Crore)

Financing Pattern	
State Govt. Loan	630.00 (Transfer value of Assets)
PFC Loan	320.00
Payment by DOWR for dams	100.00
OHPC Internal Resources	57.10
Total Project Cost (excluding IDC)	1107.10

The State Govt. loan of Rs. 630 Crs. comprises of two parts.

- (i) 13% interest bearing loan Rs. 497.86 Crs.
- (ii) 0% interest perpetual loan Rs. 132.14 Crs.

111. The interest accrued on the 13% interest bearing state Govt. loan till commercial operation of the project was to be capitalized. Further, the interest on the PFC loan during the construction period was to be paid by the OHPC and capitalized. The interest during construction was estimated at Rs. 320 Crs. Therefore, the total project cost including IDC was estimated at Rs. 1427.10 Crs. Setting aside the share of DOWR (Rs. 231.68 Crs.) & the value of sale of energy during trial run (Rs. 0.63 Crs.), **the capital cost of the project in the tariff was taken at Rs. 1194.79 Crs.** The break-up of equity and loan being equity 25% (Rs.298.70 Crs.) & loan 75% (Rs. 896.09 Crs.).

Date of commercial operation of the units:

112. There are 4 units each of 150 MW capacities in UIHEP. The dates of commissioning and commercial operation of the units are as under.

Table - 15

Units	Commissioning	Commercial operation
I	05.09.1999	19.09.1999
II	23.12.1999	28.12.1999
III	23.09.2000	04.10.2000
IV	16.04.2001	19.04.2001

Capitalized value of the project:

113. The capitalized value of the project as on the date of commercial operation 19.04.2001 amounted to Rs. 1331.87 crores. However, as on the date of commercial operation a number of bills of the contractors were not finalized and some capital works were pending to be completed/ carried out. As such the bills subsequently passed for payment & the work completed/carried out have been included in the capital cost of the project.

The break-up of capital cost under major heads of expenditure as at 19.04.2001, 31.03.2002 and 31.03.2006 (audited) are as follows:

Table - 16

(Rs. In cores)

Description of expenditure		As on 19.04.2001	As on 31.03.2002	As on 31.03.2005	As on 31.03.2006
1.	Land	59.52	66.44	76.73	77.51
2.	DOWR Civil Works	451.26	451.64	466.26	469.57
3.	Power House Building	83.58	85.16	85.30	85.30
4.	Power House Electro-Mech. Works	724.33	748.62	750.19	750.25
5	Other assets (including CWIP)	13.18	12.20	5.96	6.97
	Total	1331.87	1364.06	1384.44	1389.60

According to CERC guidelines dtd. 26.03.04 the capital cost would include capital spares subject to a ceiling of 1.5% of the project cost as on the cut-off date.

The capital cost including the capital spares amounts to:

Table - 17

(Rs. In cores)

Description of expenditure		As on 19.04.2001	As on 31.03.2002	As on 31.03.2005	As on 31.03.2006
1.	Project Cost	1331.87	1364.06	1384.44	1389.60
2.	1.5% Capital spares	19.98	20.46	20.77	20.84 [#]
3.	Total	1351.85	1384.52	1405.21	1410.64
4.	Less:Share of DOWR*	156.68	156.68	156.68	156.68
5	Project cost for tariff purpose	1195.17	1227.84	1248.53	1253.96

* Out of the share of Rs. 231.68 Cr of DOWR, Rs.75 Crs. has not yet been released by the DOWR and therefore, the share of DOWR has been taken at Rs.156.68 Crs.

Actual stores & spares, as on 31.03.06 was Rs. 19.65 Crs.

114. It may be mentioned here that the construction of the project was started during 1983 and the 4th unit was commissioned in April'2001 i.e. after a gap of 18 years. There are still a number of claims on account of escalation, extra work done, revision in rates pertaining to the period prior **to transfer of the project to OHPC** which are lying in different fora & yet to be resolved. Even land acquisition and rehabilitation & resettlement claims of the displaced persons of UIHEP are being settled now. Some of the claims have been referred to arbitration. The claims that would be settled shall be added to the capital cost of the project.

Thus, OHPC has prayed that in view of the facts & figures stated above, the capital cost of Upper Indravati H.E. Project may be approved at Rs.1195.42 Crs for the purpose of determination of tariff.

115. The Commission had provisionally allowed the project cost of UIHEP at Rs. 1195.42 crores in the tariff of earlier years. After giving a credit of Rs. 0.63 crores towards cost of in firm power, OHPC has been taking the project cost at Rs. 1194.79 crores for tariff purpose.
116. The Commission has examined and noted that the audited Capitalized cost as on 19th April, 2001 i.e. the date of commercial operation of the last unit of UIHEP as submitted by OHPC is Rs. 1195.17 crores which is slightly higher than Rs. 1194.79 crores (Rs. 1195.42 cr. Less in firm power 0.63 cores) taken in the tariff of UIHEP in the earlier years.

117. Having taken into consideration the diverse views expressed in the matter of determination of the project cost, the Commission agrees with the views that OHPC cannot be held responsible for the delay in execution of the project prior to the transfer to OHPCV on 01.04.1996. The cost structure now submitted to us is based on the audited report of the Accountant General of Orissa. In accordance with CERC Regulation (No.33) on determination of tariff dated 26.03.2004 “subject to the prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff.” In view of the above, the Commission approved **Rs.1195.42 crores** as the final capital cost of UIHEP for the purpose of determination of tariff.

Annual Fixed Charges:

118. For the purpose of computation of Annual Fixed Charges as per CERC Regulation, a detailed analysis of the following components has been made in the succeeding paragraphs.

Interest on Loan:

119. The loan liabilities of OHPC form two parts viz., 1) State Govt. loans and 2) PFC loans. The loan liabilities of OHPC outstanding as on 01.04.2006 are summarized in the table below.

Table - 18
Statement of State Government Loans
(Rs. In Crore)

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
8	13.5% APDP loan	0

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 to starting from 2001-02. The Commission during 2001-02 and 2002-03 has allowed the repayment of principal amount of Rs.3.89 crore/annum. The same loan stands at Rs.15.86 crores as on 01.04.2008 after adjustment of repayments towards principal.

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 accordance with this notification, the interest impact of all other State Government loans excepting the above-mentioned Rs.39.20 crore is not considered for the purpose of tariff.

The PFC loans were obtained in connection with projects like Chiplima, Burla and Upper Indravati. In addition to this for extension of units 7 & 8 of Balimela loans have been obtained from PFC. The outstanding loan amount as on 01.04.2008 comes to Rs. 202.69 crores as compared to Rs 254.26 crores as on 1.4.2007, which is indicated in the table below:

Table - 19
PFC Loan Outstanding
(Rs. in Crores)

	As on 01.04.2007	As on 01.04.2008
(a) Unit 1 & 2 Burla	3.84	Nil
(b) Unit 3 & 4 Burla	58.20	52.14
(c) Unit 7 & 8 Balimela	96.00	86.40
(d) UIHEP	96.22	64.15
Total	254.26	202.69

For OHPC old stations, interest on loan including guarantee Commission aggregates to Rs.18.95 crores and in case of UIHEP it comes to Rs.5.70 crores for the years 2008-09 in comparison to Rs. 21.78 Cr. and 9.32 crores for old stations and UIHEP respectively in 2007-08 as summarized in the table below:

Table – 20
Statement of OHPC Loans and Interest on Loan

(Rs. in Crore)

Source of Loan	Loan Outstanding		Interest on Loan	
	As on 1.04.2007	As on 1.04.2008	2007-08	2008-09
Govt. loan @ 9.8%	19.75	15.86	1.94	1.55
APDP Loan @ 13.5%	NIL	Nil	-	Nil
PFC Loan for 1 & 2 Burla	3.84	Nil	0.20	Nil
PFC Loan for 3 & 4 Burla	58.20	52.14	4.76	4.21
PFC Loan for Balimela 7 & 8	96.00	86.40	8.80	7.88
Deemed loan (10.25%)	11.85	8.29	1.30	0.99
Deemed loan for Balimela	30.00	27.00	3.30	3.24
Govt. Guarantee Commission	-	-	1.48	1.08
Sub total (Old Stations)	219.64	189.69	21.78	18.95
UIHEP (PFC Loan)	96.22	64.15	9.32	5.70

As such the Commission approves interest payment of Rs.18.95 crore for OHPC old stations and Rs.5.70 crore for UIHEP for the FY 2008-09.

Depreciation includes Advance Against Depreciation:

120. 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 revalued nearly 3 times of its historical cost. Hitherto, the Commission has been calculating depreciation on prevalent norms i.e. post'94 rate which has substantially raised the revenue requirement due to upfront loading. This principle was followed upto FY 2000-01. Since 2001-02, as a part of corrective measures, depreciation was limited to the principal repayment during a particular year. However, during 2003-04, as per the directions of the Hon'ble High Court, 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 Charges, depreciation is computed @ 2.57% on the project cost considered for FY 2008-09 in case of Rengali and Upper-Kolab Hydro projects. However, in case of Hirakud Power systems and Balimela where loan repayment is more than the computed depreciation @ 2.57%, the differential amount have been taken in the calculation as Advance Against Depreciation for the FY 2008-09. The details of repayment of loan as submitted by OHPC for old stations is as under:

Table – 21
Statement of Repayment of Loans (Rs. in crores)

Power Stations	2007-08	2008-09
RHEP	1.05	1.05
UKHEP	1.25	1.25
BHEP	13.55	13.55
HPS	14.50	10.72
Total	30.35	26.57

It was vehemently objected to by some of the objectors on the ground that installation of units 7 & 8 at Balimela will not add to generation of units hence passing of this expenditure will raise the per unit cost only. It has been clarified by OHPC that these units are meant to support the peak demand of the state. It can get compensated through earning of UI if approved by the Commission. OHPC has stated that these two units will be capitalized by March/April 2008. The units 3 & 4 of Burla have already been capitalized during FY 2006-07 for which the audited capitalized cost has been arrived at Rs. 111.75 crores. Balimela extension units 7 & 8 are expected to be in operation by March, 08/April 08. The capitalization is under process.

For the year 2008-09, depreciation is claimed in the tariff applying 2.57% in case of RHEP, UKHEP whereas for BHEP & HPS the actual loan repayment requirement is considered for the purpose of depreciation. This is summarized in the table below.

Table – 22

Name of the Power Station	Depreciation (Rs. Crore)	Remark
RHEP	2.41	2.57(%)
Upper Kolab	2.88	2.57(%)
Balimela	7.65	Equal to loan repayment
HPS Burla	9.52	Equal to loan repayment
Total	22.47	

The evidential documents furnished by OHPC reveal that the loan repayment is to start from April 2008 in case of Balimela. The difference between the loan repayment requirement of Rs. 26.57 crores and the permitted depreciation applying the rate of 2.57% as per CERC norms i.e. Rs. 22.47 crore equals to Rs. 4.10 crores which shall be treated as advance against depreciation (AAD) for Balimela and HPS.

The principle of depreciation linked to loan repayments provided in the PPA for UIHEP has been approved. Following this principle, the amount to be recovered through depreciation is Rs.32.07 crore during the FY 2008-09 which is being passed on to tariff.

Return on Equity:

121. The CERC regulation provides that Return on Equity shall be computed on the equity base determined in accordance with Regulation 36 and shall be @ 14% per annum.

In this regard, the focus has to be on the quantification of equity base of OHPC which was already decided in Commissions' 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. The relevant extract of the said order is reproduced below:

“6.4.17 Thus, 5(i) para (B) and (ii) of the said notification should be replaced to state clearly that the break up of the provisional project cost of Rs.1195.42 Crore of UIHEP will be as under.

(j) Rs.320 Crore as loan from PFC

(ii) Rs.576.561 Crore as Government debt carrying no interest from 1 April 2000 onwards till sectoral turn around.

(iii) Rs.298.85 Crore as Government equity

6.4.18 These measures will go a long way in bringing down the cost of OHPC power.

6.4.19 The Zero Coupon Bonds issued to the State Government for Rs.400 Crore by GRIDCO against revaluation of assets was not to carry any interest for a period of five years. Suitable amendments may be made to the relevant provisions of the transfer scheme notification allowing zero coupon bonds to continue for a further period of five years or more depending on sectoral turn around.

6.4.20 *The Commission on its part would like to take the following decisions in the matter of approval of PPA between OHPC and GRIDCO in the public interest to bring down the cost of OHPC power and the cost of transmission and distribution by allowing no return on equity of Rs.300.00 Crore created on account of asset revaluation of old OHPC station until sector turn around.*

6.4.21 *However, the Commission will allow appropriate rate of return on OHPC's own investment in R&M equity of Rs.22.56 Crore and on the equity of Rs.298.70 Crore of UIHEP. Dividends, if any, payable for the first four years should be ploughed back as fresh loan to OHPC by Government of Orissa."*

Based on the contents of the above order and notification subsequent to dtd.29.01.2003 of the Government of Orissa, the Return on Equity for the year 2004-05 was allowed to OHPC on new investments only after 01.04.1996. In the meantime, the time frame notified by the Government to keep the effect of up-valuation in abeyance upto the financial year 05-06 or the time by which the sector turns around, has been completed. The Commission has advised the Government to keep in abeyance the up-valuation of assets upto 2010-11, as the sector has not yet turned around.

1. For old stations RoE is calculated @ 14% on OHPC's own investment of Rs.51.36Cr in case of HPS and Rs.54.70 Cr in case of Balimela. Thus RoE comes to Rs.7.19 Cr in case of HPS and Rs. 7.66 Cr in case of Balimela. The total RoE in case of OHPC old stations comes to Rs.15.13 Cr for FY 2008-09.
2. The proposal of OHPC to allow return on 25% of the original book value of asset is not approved by the Commission.
3. In case of UIHEP RoE is calculated @ 14% on Government equity of Rs.298.70 crore which comes to Rs. 41.82 crore. The Commission approves ROE @ 14% in line with 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 to OHPC as summarized in the table below:

Table – 23

(Rs. in Crores)

Name of the Power Station	Return on Equity 2007-08 (@ 14%)	Return on Equity 2008-09 (@ 14%)
RHEP	0.00	0.11
Upper Kolab	0.00	0.16
Balimela	7.56	7.66
HPS Burla	6.78	7.19
UIHEP (@ 14%)	41.82	41.82
Total	56.16	56.95

O&M Expenses:

122. OHPC has projected the O & M expenses for the FY 2008-09 in each of the power stations as follows:

Table – 24

(Rs. in Crs.)

Sl. No.	Particulars	HPS	BHEP	RHEP	UKHEP	UIHEP
1	Actual O & M Expenses for FY 2006-07 (Audited)	32.33	19.58	18.12	13.61	30.62*
2	O&M with 4% Escalation for FY 2007-08	33.62	20.36	18.85	14.16	31.84
3	Pension liability of 120 EPF pensioners of BHEP in the FY 2007-08	-	5.00	-	-	-
4	Total for FY 2007-08	33.62	25.36	18.85	14.16	31.84
5	O&M with 4% Escalation for FY 2008-09	34.97	26.37	19.60	14.73	33.12
6	Major repair of machines and procurement of SCADA equipments	-	-	2.00 ^s	6.00 [#]	8.00 ^{**}
7	Proposed for infrastructure and peripheral development	1.00	1.00	1.00	1.00	1.00
8	Arrear electricity charges for RHEP (3/97 to 01/98) and for UKHEP (07/01 to 12/03)	-	-	2.50	3.14	-
TOTAL(items 5+6+7+8)		35.97	27.37	25.10	24.87	42.12

Note:

- (i) * Rs. 30.62 Crs excludes Rs. 5.00 Crs, which was taken for the FY 2006-07 towards special repair of rotor poles at UIHEP.

- (ii) ** Rs. 8.00 Crs. includes Rs.1 Cr. towards repair of rotor poles at UIHEP as per the Commission's order dated 22.03.2006 and Rs. 7 Crs. towards proposed major repair of governor & excitation system of UIHEP machines (out of estimated Rs.14 Crs, only Rs. 7 Crs. has been considered in FY 2008-09 and balance Rs. 7 Crs. will be considered in the FY 2009-10).
- (iii) # Rs. 6.0 Crs. at UKHEP includes Rs.1 Cr. towards procurement of SCADA equipments and Rs.5 Cr towards procurement of stator of unit-4 (out of estimated Rs.10 Crs., only Rs.5 Crs. has been considered for the FY 2008-09 and balanced Rs.5 Crs. will be considered in the FY 2009-10).
- (iv) \$ Rs.2 Crs. at RHEP includes Rs.1 Cr. towards procurement of SCADA equipments and Rs.1 Crs. towards major repair of turbine (out of estimated Rs.3 Crs., only Rs.1 Cr. has been considered for the FY 2008-09 and balanced Rs.2 Crs. will be considered in the FY 2009-10).

OHPC has claimed annual escalation @ 4% on the actual O&M expenses incurred for 2006-07 to arrive at O&M expenditure required for 2008-09. OHPC has also claimed Rs.6.0 cr. for UKHEP which includes Rs.1.0 cr. towards procurement of SCADA equipments and Rs.5.0 cr. towards procurement of stator of unit-4. Similarly, OHPC has claimed Rs.1.0 cr. towards procurement of SCADA equipments for RHEP during FY 2008-09. Further OHPC has claimed Rs.1.0 cr. for each power station towards infrastructural and peripheral development.

During the hearing, the objectors opposed the proposal of OHPC to include the expenditure on SCADA equipments of UKHEP and RHEP and procurement of stator of unit-4 of UKHEP under O&M expenses and requested the Commission to treat such expenditure as capital expenditure. Similarly, the objectors protested on the proposal of OHPC to spend Rs.1.0 cr. for each power station against infrastructural and peripheral development under O&M expenses which OHPC should meet from its profit as a Corporate Social Responsibility (CSR).

Considering the aforesaid objections raised by the objectors, the total O&M expenses approved for FY 2008-09 is presented in the table below:

Table – 25
Approved O&M Expenses for FY 2008-09
(Rs. in crore)

Name of the Stations	OHPC proposal	Commission's approval
HPS	35.97	34.97
BHEP	27.37	26.37
RHEP	25.10	23.10
UKHEP	24.87	17.87
Old Stations	113.31	102.31
UIHEP	42.12	41.12
Total	155.43	143.43

The approved O&M expenses of Rs.143.43 Cr for FY 2008-09 include the cost of maintenance of residential buildings, roads, power house building and greening the surrounding area of the project.

Interest on Working Capital:

123. The basis for calculation of working capital shall include the following:
- (i) Operation and maintenance expenses for one month.
 - (ii) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation and
 - (iii) Receivables equivalent to two months of fixed charges for sale of electricity, calculated on normative capacity index.

The rate of interest on working capital shall be the short-term prime-lending rate of State Bank of India @ 12% for November 2007. In accordance with CERC guideline, the interest on working capital shall be payable on normative basis as shown in table below:

Table – 26
Interest on Working Capital for FY 2008-09
(Rs. in crore)

O&M expenses for one month for OHPC old stations	8.53
O&M expenses for UIHEP for one month	3.43
Receivables for two months OHPC old stations	28.04
Receivables for two month for UIHEP	21.78
Maintenance of Spares for old stations	2.80
Maintenance of Spares for UIHEP	1.00
Total working capital	65.58
Interest on working capital calculated @ 12%	7.87

Income Tax

124. In accordance with regulation 7 of tax on income streams of the generating company from its own business shall be computed as an expense and shall be recovered from the beneficiaries besides other terms and conditions. According to CERC regulation in respect of hydro generating stations, the rate of primary energy and secondary energy are taken as equal. Primary energy charge is calculated as a ratio of annual fixed cost to the design energy. As secondary energy is in excess of the design energy inclusion of income tax rate in primary energy would mean double recovery. The Commission has considered it and decided that for the purpose of computation of secondary energy charges the per unit charge shall exclude income tax paid by OHPC.

Total Annual Fixed Charges

125. Based on the above parameters the station-wise ARR and tariff calculated for the year 2008-09 is portrayed in the table below:

Table – 27

STATION-WISE TARIFF APPROVED FOR 2008-09

(Rs. in crore)

Details of expenses	RHEP	UKHEP	BHEP	HPS	Total of Old Stations	UIHEP
Saleable Design Energy (MU)	519.75	823.68	1171.17	1162.26	3676.86	1942.38
Interest on loan	0.41	0.49	12.13	5.92	18.95	5.70
Return on Equity	0.11	0.16	7.66	7.19	15.13	41.82
O&M expenses	23.10	17.87	26.37	34.97	102.31	41.12
Depreciation	1.05	1.25	13.55	10.72	26.57	32.07
Interest on working capital	0.83	0.67	1.58	1.64	4.72	3.14
ED @ 20 P/U	0.05	0.08	0.12	0.12	0.37	0.20
Income Tax (MAT)	0.00	0.00	0.21	0.00	0.21	6.63
Interest during construction @ 12%	0.12	0.72	-	-	0.84	-
Total ARR (Rs. crore)	25.68	21.26	61.62	60.56	169.12	130.68
Average cost (P/U)	49.40	25.82	52.61	52.11	46.00	67.28

The principles governing computation of the primary and secondary energy rates are enunciated in the CERC (Terms and Conditions of Tariff) Regulations, 2004 as amended from time to time. These principles are mentioned here under:

Primary Energy Charges

126. *"Rate of Primary Energy for all hydro electric power generating stations except for pumped storage stations shall be equal to average of the lowest variable charges of the central sector thermal power generating station of the concerned region for all months of the previous year. The primary energy charge shall be computed based on the primary energy rate and saleable scheduled primary energy of the station.*

Provided that in case the primary energy charge recoverable by applying the above primary energy rate exceeds the annual fixed charges of a generating station, the primary energy rate for such generating station shall be calculated by the following formula:

$$\text{Primary Energy rate} = \frac{\text{Annual Fixed Charge}}{\text{Saleable Design Energy}}$$

$$\text{Primary Energy Charge} = \text{Saleable Scheduled Primary Energy} \times \text{Primary Energy Rate.}$$

127. Since the average of the lowest variable cost of the central sector thermal generating stations in the Eastern Region for 2007-08 (considering 2008-09 as the tariff year) as approved in CERC Notification dtd. 09.05.2006 for approval of tariff of Talcher Super Thermal Power Station for the period from 01.4.2004 to 31.3.2009 is 41.10 p/u (excluding FPA & central transmission loss), the amount recoverable by applying this rate to the design energy will exceed the annual fixed charges in case of Rengali Hydro Electric Project and Upper Kolab Hydro Electric Project. However, in case of BHEP and HPS this rate of 41.10 p/u can be considered as the primary energy rate. After recovering the primary energy charges by applying this rate the balance will be recovered through capacity charges per month. The primary energy rate for RHEP and UKHEP is determined by the formula as stated in Para No.5.4.6.

128. Accordingly, the primary energy rate for each of the old OHPC stations for the FY 2008-09 is approved as mentioned in the table below:

Table – 28
Primary Energy Rates for FY 2008-09 (w.e.f. 01.04.2008)

Name of the Power Stations	Paise/Unit (2007-08)	Paise /Unit (2008-09)
Rengali HEP	35.17	41.10
Upper Kolab HEP	21.24	25.82
Balimela HEP	41.10	41.10
Hirakud Power System	41.10	41.10
Upper Indravati HEP	41.10	41.10

This rate shall be applicable for sale of power upto design energy. In addition to the above, capacity charge shall also be applicable for Balimela, Hirakud & UIHEP which is dealt under appropriate heading.

Secondary Energy Charges:

129. As per the CERC Regulation, the rate of secondary energy shall be equal to the rate of primary energy. Some objectors had stated that the secondary energy rate should not be equal to the rate of primary energy. The Commission has examined the suggestions given by the objectors with regard to pricing of secondary energy. The Commission's order in Case No.153/2004 dtd.10.06.2005 approving secondary energy rate equal to primary energy rate remains unaltered for the reasons already given in the aforesaid order. The Commission therein had directed to maintain a separate fund to deposit the revenue earnings out of sale of secondary energy. OHPC had come with a petition explaining the difficulties for maintenance of such a separate fund and requested that the amount so earned shall be earmarked and maintained as a part of OHPC's revenue. Accordingly, the Commission has issued a clarificatory order vide Case No.38/2005 dt.22.10.2005 confirming that *“the revenue out of the sale of secondary energy may remain as part of normal fund of OHPC but shall be utilised to replenish the shortfall in revenue due to less generation by OHPC in years of hydrological failure to provide necessary comfort to the consumers of the state in accordance with para 6.5(e) of our order dt.10.06.05.*

130. The Commission following the CERC Regulation has worked out the Rates of Secondary Energy which shall be equal to Primary Energy rate in case of BHEP, HPS and UIHEP. In respect of charges of RHEP and UKHEP the per unit cost of generation is lower than the lowest variable charges of the central sector thermal generating stations of the Eastern Region for all the months of 2007-08. Therefore, for the purpose of determination of secondary energy, the Commission accepts the average cost per unit less the income tax per unit payable to be the rate of secondary energy. Thus, the secondary energy rate is determined by taking annual fixed charges excluding income tax. Hence, the Commission approves the following secondary energy rates as mentioned in the table below:

Table – 29

Secondary Energy Rates for FY 2008-09 (w.e.f. 01.04.2008)

Name of the Power Stations	Paise/Unit
Rengali HEP	41.10
Upper Kolab HEP	25.82
Balimela HEP	41.10
Hirakud Power System	41.10
Upper Indravati HEP	41.10

Two-Part Tariff

131. The Commission had directed in Case No.153/2004 to implement two-part tariff in case of all power stations of OHPC. Subsequently OHPC had filed a petition for implementation of two-part tariff in respect of old stations of OHPC, and the Commission had admitted it as case No. 24/2006. The Commission heard the case on 11.8.2006 and the order was reserved. In the said hearing GRIDCO was the respondent and it agreed with the petition filed by OHPC. In case of UIHEP, already a two-part tariff structure i.e. capacity charge and primary energy rate have already been implemented since FY 05-06. The Commission directs to implement the same principle in case of all power stations of OHPC from FY 2007-08 onwards.

132. In this context reference may be made to Commission's observation relating to rate of primary energy in Case No. 88/2004. The extract of the said order is reproduced below for reference.

“The Commission would like to observe that according to Para 39 of the CERC notification dt.26.03.04, primary energy charges has to be worked out on the basis of paise per kwh and the rate of primary energy shall be equal to the lowest variable charges of the central sector thermal power generating station of the concerned region with a proviso that in case the primary energy charge recoverable by applying the above primary energy rate exceeds the annual fixed charge of a generating station, the annual fixed charge in respect of such a station has to be recovered from the saleable primary energy multiplied by the primary energy rate which could be lower than the lowest variable charge of the central sector thermal power generating station of the region. The Commission does not find any rationale for deviating from the norms fixed by the CERC. Besides, GRIDCO has not provided any calculation to indicate that the adoption of the concept of capacity charge and the energy charge as proposed by them will not exceed the per unit tariff calculated on the basis of norms specified in CERC regulation as stipulated in Para 11 of the notification. In view of this, the Commission accepts conditions mentioned in the PPA.”

Further, when GRIDCO came up with a review petition in the same matter the Commission had observed at Para 10 of the order dtd. 17.04.2006 in case No 53/2005 wherein that billing and payment of capacity charge would be done in accordance to the norms specified in CERC Regulation. The extract of the said order is given below:-

“In accordance with clause 37(1), capacity charge is to be determined after deducting primary energy charges from the annual fixed charges. In case of less generation when the generator is unable to recover the annual fixed charge, the gap between the AFC and the primary energy charge shall have to be treated as capacity charge. The method of recovery may be calculated in accordance with the CERC regulation for such a recovery. In the present scenario when the cost of generation of old OHPC stations is less than the lowest variable cost of the central generating station, the provision of penalty can not be implemented when the generation is equal to or more than the design energy. However, OHPC and GRIDCO should continue to calculate the capacity index as specified in the CERC regulations which can be utilized in case of shortfall in generation.”

133. On the basis of the ARR now determined the Commission approves the rate of primary energy, the rate of secondary energy and the capacity charges as summarized in the table below:

Table - 30
Primary Energy, Secondary Energy and Capacity Charges for 2008-09

Name of the Power Stations	Primary Energy P/U	Capacity Charge Rs. Cr.	Secondary Energy P/U
Rengali HEP	41.10	4.32	41.10
Upper Kolab HEP	25.82	-	25.82
Balimela HEP	41.10	13.48	41.10
Hirakud Power System	41.10	12.79	41.10
Upper Indravati HEP	41.10	50.85	41.10

Machhkund Hydro Electric Project

134. OHPC had furnished @25.30 paise/unit for Machhkund Power Station for the year 2008-09 based on energy drawl of 262.50 MU. The Commission has taken into consideration the net share payable by Orissa towards O&M expenses for the year 2006-07 (actual) which is to the tune of Rs.5.36 crore. Allowing an escalation of 4% per annum for the year 2006-07 and subsequently for 2007-08, O&M expenses come to Rs. 5.80 crores. The rate per unit comes to 25.09 paise for the year 2008-09 considering the procurement cost of Rs.6.65 crore for an approved energy drawl of 265.00 MU. The Commission approves the procurement cost of Rs.6.65 crores for payment for energy drawal of 265 MU from Machhkund HEP for FY 2008-09.

Perspective Hydro Development in the State

135. Objections have been raised with regard to installation of two additional units at Balimela whose impact has been a rise in OHPC tariff for FY 2008-09 due to its capitalization. Keeping the overall objective of the power sector, the Commission has allowed it as a pass through in OHPC tariff with a view that after introduction of Availability Based Tariff benefits could accrue to the Orissa power sector by means of unscheduled interchange. This will offset the additional burden of the consumers and the net impact would be beneficial for the consumers of the state as a whole.

136. Before we conclude we direct that OHPC shall take necessary action on the following matters: -
- (i) OHPC shall file the Final Report on determination of design energy of its power stations duly vetted by OHPC Board.
 - (ii) **Renovation and Modernization:** The Commission is very much conscious about the renovation and modernization of the OHPC power stations for which directions are being given in tariff orders of 2004-05, 2005-06, 2006-07 and 2007-08. The Commission has taken note of the submissions of OHPC from time to time. OHPC shall continue to keep the Commission informed regarding any major developments in renovation and modernization programs of its power stations.
 - (iii) During the course of public hearing, very eminent hydro experts of the state have given their valuable suggestions for development of the hydropower in the state, which is very relevant for the Power Sector in Orissa. The OHPC and Govt. of Orissa should give due importance to the suggestions made by the objectors as recorded in this order.
137. **The application of OHPC for approval of its Annual Revenue Requirement and fixation of generation tariff for the FY 2008-09 thus stands disposed.**

The Tariff now approved shall be operative from 01.04.2008 and continue until further order.

(K. C. BADU)
MEMBER

(S.K. JENA)
MEMBER

(B. K. DAS)
CHAIRPERSON

- Notes on OHPC Tariff at page -1-3/N.
- OHPC in its ARR filing for FY 2008-09 has proposed as under:

(Rs. in Crs.)

Particulars	HPS	BHEP	RHEP	UKHEP	UIHEP
Interest on Loan	5.92	12.13	0.41	0.49	5.70
Depreciation	10.72	13.55	2.41	2.88	32.07
Return on Equity	12.96	11.70	3.30	3.95	41.82
O & M Expenses	35.97	27.37	25.10	24.87	42.12
Interest on working capital	1.80	1.69	0.98	0.99	3.18
ED on Aux. Consumption @20 P/U	0.12	0.12	0.05	0.08	0.20
Income Tax (MAT) for the previous years	0.00	0.21	0.00	0.00	6.63
Total ARR / AFC	67.49	66.77	32.25	33.27	131.72
Average Tariff (P/U)	58.07	57.01	62.06	40.39	67.81

- This has been scrutinized with reference to the Commission's earlier Orders as well as the Order dtd.22.03.2007 on OHPC ARR and Tariff for FY 2007-08.
- The major deviation has been observed in the proposal of O&M expenses for FY 2008-09 submitted by OHPC which are as under:

(Rs. in Crs.)

Sl. No.	Particulars	HPS	BHEP	RHEP	UKHEP	UIHEP
1	Actual O & M Expenses for FY 2006-07 (Audited)	32.33	19.58	18.12	13.61	30.62*
2	O&M with 4% Escalation for FY 2007-08	33.62	20.36	18.85	14.16	31.84
3	Pension liability of 120 EPF pensioners of BHEP in the FY 2007-08	-	5.00	-	-	-
4	Total for FY 2007-08	33.62	25.36	18.85	14.16	31.84
5	O&M with 4% Escalation for FY 2008-09	34.97	26.37	19.60	14.73	33.12
6	Major repair of machines and procurement of SCADA equipments	-	-	2.00 \$	6.00 #	8.00 **
7	Proposed for infrastructure and peripheral development	1.00	1.00	1.00	1.00	1.00
8	Arrear electricity charges for RHEP (3/97 to 01/98) and for UKHEP (07/01 to 12/03)	-	-	2.50	3.14	-
TOTAL(items 5+6+7+8)		35.97	27.37	25.10	24.87	42.12

- OHPC has claimed annual escalation @ 4% on the actual O&M expenses incurred for 2006-07 to arrive at O&M expenditure required for 2008-09. OHPC has also claimed Rs.6.0 cr. for UKHEP which includes Rs.1.0 cr. towards procurement of SCADA equipments and Rs.5.0 cr. towards procurement of stator of unit-4. Similarly, OHPC has claimed Rs.1.0 cr. towards procurement of SCADA equipments for RHEP during FY 2008-09. Further OHPC has claimed Rs.1.0 cr. for each power station towards infrastructural and peripheral development.

6. During the hearing, the objectors opposed the proposal of OHPC to include the expenditure on SCADA equipments of UKHEP and RHEP and procurement of stator of unit-4 of UKHEP under O&M expenses and requested the Commission to treat such expenditure as capital expenditure. Similarly, the objectors protested on the proposal of OHPC to spend Rs.1.0 cr. for each power station against infrastructural and peripheral development under O&M expenses which OHPC should meet from its profit as a Corporate Social Responsibility (CSR).
7. Considering the aforesaid objections raised by the objectors, the total O&M expenses proposed to be approved for FY 2008-09 is presented in the table below:

Approved O&M Expenses for FY 2008-09

(Rs. in crore)

Name of the Stations	OHPC proposal	Commission's approval
HPS	35.97	34.97
BHEP	27.37	26.37
RHEP	25.10	23.10
UKHEP	24.87	17.87
Old Stations	113.31	102.31
UIHEP	42.12	41.12
Total	155.43	143.43

The approved O&M expenses of Rs.143.43cr for FY 2008-09 include the cost of maintenance of residential buildings, roads, power house building and greening the surrounding area of the project.

8. Hence, the final ARR and Tariff of OHPC for FY 2008-09 is proposed as under for approval of the Commission in case of OHPC old stations as well as that of UIHEP.

STATION-WISE TARIFF APPROVED FOR 2008-09

(Rs. in crore)

Details of expenses	RHEP	UKHEP	BHEP	HPS	Total of Old Stations	UIHEP
Saleable Design Energy (MU)	519.75	823.68	1171.17	1162.26	3676.86	1942.38
Interest on loan	0.41	0.49	12.13	5.92	18.95	5.70
Return on Equity	0.11	0.16	7.66	7.19	15.13	41.82
O&M expenses	23.10	17.87	26.37	34.97	102.31	41.12
Depreciation	1.05	1.25	13.55	10.72	26.57	32.07
Interest on working capital	0.83	0.67	1.58	1.64	4.72	3.14
ED @ 20 P/U	0.05	0.08	0.12	0.12	0.37	0.20
Income Tax (MAT)	0.00	0.00	0.21	0.00	0.21	6.63
Interest during construction @ 12%	0.12	0.72	-	-	0.84	-
Total ARR (Rs. crore)	25.68	21.26	61.62	60.56	169.12	130.68
Average cost (P/U)	49.40	25.82	52.61	52.11	46.00	67.28

9. Based on the above, the primary energy, second energy and capacity charges for 2008-09 have been computed as under:

Primary Energy, Secondary Energy and Capacity Charges for 2008-09

Name of the Power Stations	Primary Energy P/U	Capacity Charge Rs. Cr.	Secondary Energy P/U
Rengali HEP	41.10	4.32	41.10
Upper Kolab HEP	25.82	-	25.82
Balimela HEP	41.10	13.48	41.10
Hirakud Power System	41.10	12.79	41.10
Upper Indravati HEP	41.10	50.85	41.10

Machhkund Hydro Electric Project:

10. OHPC had furnished tariff @25.30 paise/unit for Machhkund Power Station for the year 2008-09 based on energy drawl of 262.50 MU. The Commission has taken into consideration the net share payable by Orissa towards O&M expenses for the year 2006-07 (actual) proposed by OHPC which is to the tune of Rs.5.36 crore. Allowing an escalation of 4% per annum for the year 2006-07 and subsequently for 2007-08, O&M expenses come to Rs. 5.80 crores for FY 2008-09. The rate per unit comes to 25.06 paise for the year 2008-09 considering the procurement cost of Rs.6.64 crore for an approved energy drawl of 265.00 MU. The Commission may approve the procurement cost of Rs.6.64 crores for FY 2008-09 for drawal of 265 MU from Machhkund HEP.

Put up draft Final Order on ARR & Tariff of OHPC for FY 2008-09 for kind perusal and approval of the Commission.

Sr. Consultant

Director (Engg.)

Member (B)

Member (SK)

Chairperson

OHPC's proposal on ARR and approval of Tariff for six hydel stations including that of Machkund Power House for FY 2008-09 has been scrutinized and the following six chapters of the Order have been prepared:-

- (a) Procedural History.
- (b) OHPC's application on ARR and approval of Tariff for six hydel stations for FY 2008-09.
- (c) Views of the objectors on Tariff proposal of OHPC.
- (d) Rejoinder of OHPC on views of objections on Tariff proposal.
- (e) Queries raised by Director (Tariff) on application for ARR of OHPC.
- (f) Reply of OHPC to observations and queries of objectors & Director (Tariff) during the hearing on 31.01.2008.

This is put up for kind perusal and approval of the Commission.

Sr. Consultant

Director (Tariff)

Member (B)

Member (SK)

Chairperson