

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

*** **

Present : Shri D. C. Sahoo, Chairperson
Shri B. C. Jena, Member
Shri S.K. Jena, Member

CASE NO.48 of 2005

DATE OF HEARING : 27.01.2006

DATE OF ORDER : 23.03.2006

IN THE MATTER OF : Application for approval of Annual Revenue Requirement and Tariff for the FY 2005-06 & 2006-07 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 it's different power stations for the financial year 2005-06 & 2006-07.

1 PROCEDURAL HISTORY

- 1.1 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 the 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 came into force and promulgation of Government of Orissa Transfer Scheme, 2005, the GRIDCO as a Deemed Licensee is 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 M/s GRIDCO is evacuating the powers from the OHPC's dedicated generating stations and delivering it at Distribution Licensee's end.
- 1.2 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. Under Sec. 86(1)(b) of the Electricity Act, 2003, the Commission is competent to regulate the “purchase and procurement process of Distribution Licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State”.

- 1.3 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 30.11.2005 OHPC as a generating company has filed its Annual Revenue Requirement (ARR) and fixation of tariff application before the Commission for the year FY 2005-06 & 2006-07.
- 1.4 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 were 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 commission received objections from the following persons/institutions.

(1) M/s Grid Corporation of Orissa, Bhubaneswar (2) M/s. NESCO, Januganj, Balasore (3) Shri, Jayadev Mishra, Nayapalli, Bhubaneswar (4) Sri R.P. Mohapatra, Jayadev Vihar, Bhubaneswar (5) National Institute of Indian Labour, Bhubaneswar.
- 1.5 Date of hearing was fixed and it was duly notified in the leading and widely circulated newspapers mentioning the list of objectors. 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.
- 1.6 In its consultative process, the Commission conducted a public hearing at its hearing hall on 27.01.2006 and heard the applicant, objectors and the representative of the Government. The proposal of the OHPC was also discussed in the specially convened State Advisory Committee (SAC) meeting of the Commission held on 08.02.2006.

2 SUBMISSION OF OHPC

- 2.1 The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) is 1896 MW as on 1st of April 2004 including Orissa share of Machkund. The details of installed capacity and design energy of the old stations and UIHEP are presented in the table below.

Table : 1
Installed Capacity and Design Energy of Hydro Stations

Sl. No.	Name of the HE Project	Installed Capacity (MW)	Design Energy (MU)
1.	Hirakud (Burla & Chiplima)	331.5	1174.00
2.	Balimela	360	1183.00
3.	Rengali	250	525.00
4.	Upper Kolab	320	832.00
5.	UIHEP	600	1962.00
6.	Machhkund (Orissa Share)	34.35	262.50
	Total Hydro	1896.00	5938.50

2.2 The Annual Revenue Requirement proposed by OHPC for the FY 2005-06 and 2006-07 is based on the directives issued vide DOE notification dated 29.01.2003.

2.3 As per the directives of the Commission, in order dated 10.06.05 in case no. 153 of 2004, OHPC has submitted 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 CERC in its notification dated 26.03.2004 have issued Regulations with regard to the terms and conditions for determination of generation tariff. The fixed assets are based on the historical cost as on 01.04.96 plus additions made after this date as per the order of the Hon'ble Commission dated 10.06.05. The ROE on the equity portion has been taken @ 14% as per the current CERC Regulations for the FY 2006-07.

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 2006-07 shall accordingly undergo change.

The detailed particulars of the proposal are as under.

OHPC Old Station:

- (1) ROE in respect of RM&U of Unit-I&II of Burla and Unit-I of Chiplima was allowed by the Commission @12% on the equity component of R&M expenditure of Rs.20.46 crore for the FY 2005-06 whereas OHPC has proposed the same @ 14% on a revised equity component of Rs.144.16 crore for the FY 2006-07.
- (2) For the FY 2006-07, the O&M expenses have been arrived at Rs.78.33 crore assuming escalation of 4% over and above the corresponding approved figure for 2005-06 of Rs.75.31crore.
- (3) ED @ 20 paise on auxiliary consumption of 0.5% of design energy.

UIHEP:

- (1) ROE was allowed by the Commission @12% on the equity component of Rs.298.70 crore for the FY 2005-06. But OHPC has proposed @14% on the same equity component for the FY 2006-07.
- (2) Major repairs of rotor poles of all 4 units at a cost of Rs.16 crores have been taken up by OHPC. This expense is spread over a period of 3 years i.e. 2005-06 to 2007-08. Accordingly, the Commission have allowed Rs. 5 crores in the tariff of 2005-06. As such, the O&M expenses of Rs. 37.25 cr. for the FY 2005-06 were approved. OHPC has escalated O&M expenses @4% for the FY 2006-07 along with a provision of Rs. 5 crore towards repair of rotor pole.
- (3) ED @20 paise on auxiliary consumption of 0.5% of design energy.

2.4 The proposal is summarised in the table below:

**Table : 2
FY 2005-06**

Particulars	OHPC Old Station				Rs. in lakhs
	Rengali	Upper Kolab	Balimela	Hirakud	UIHEP
Depreciation	90	106	114	1249	3207
Interest on Loan	62	74	146	1291	1751
Return on Equity	0	0	0	246	3584
Advance against Depreciation	0	0	0	0	0
Interest on working capital	40	27	56	133	246
O&M Expenses	1436	915	1956	3224	3725
Electricity Duty	5	8	12	12	20
Total	1633	1130	2284	6155	12533

**Table : 3
FY 2006-07**

Particulars	OHPC Old Station				Rs. in lakhs
	Rengali	Upper Kolab	Balimela	Hirakud	UIHEP
Depreciation	241	280	301	1969	3207
Interest on Loan	53	64	135	1207	1212
Return on Equity	328	382	410	899	4182
Advance against Depreciation	0	0	0	0	0
Interest on working capital	55	43	73	164	248
O&M Expenses	1494	952	2034	3353	3854
Electricity Duty	5	8	12	12	20
Total	2176	1729	2965	7604	12723

3 OBJECTIONS AND SUGGESTIONS RECEIVED

1. GRIDCO

- i) **Revalued cost of Projects** - GRIDCO has submitted that the revalued cost of different power stations as per interim PPA executed between OHPC and GRIDCO for 1997-98 is Rs.1196.86 crores as per the details given below:

Hirakud	-	Rs.234 Crs.
Rengali	-	Rs.406 Crs.
Upper Kolab	-	Rs.435.5 Crs.
Balimela	-	<u>Rs. 121.30 Crs.</u>
Total		Rs.1196.80 Crs.

In the current tariff filing, OHPC have submitted station wise cost different from the above mentioned cost as detailed below:

Hirakud	-	Rs.295.17 Crs.
Rengali	-	Rs.259.01 Crs.
Upper Kolab	-	Rs.307.96 Crs.
Balimela	-	<u>Rs. 334.66 Crs.</u>
Total		Rs.1196.80 Crs.

The reason for such deviation and the basis of the present cost should be furnished by OHPC.

- ii) **Peaking Hours** - OHPC in its filing have indicated the number of peaking hours to be not less than 3 hours. In Orissa, the peaking period is around 8 hours. Keeping this factor in view, both OHPC and GRIDCO have agreed for peaking period to be not less than 6 hours in a day and accordingly, it was incorporated in the Rengali PPA.
- iii) **Sale of power to MPSEB** - OHPC has been supplying 16.6 MU of energy per year to MPSEB towards their share from Hirakud Power House at a rate of 48 p/u. The revenue earned from the above sale has not been taken into account while submitting the ARR of HPS. OHPC should furnish anticipated sale of energy and revenue so earned during 2005-06 and 2006-07 from the above sale to MPSEB.
- iv) **Additional Capitalisation** – OHPC have not furnished the detailed particulars of additional expenditure incurred during 2005-06 to the tune of

114.10 crore. OHPC should furnish the details indicating (a) year of expenditure, (b) purpose of expenditure and (c) the norm based on which the additional capitalization has been claimed.

During 2005-06, interest aggregating Rs.5.52 Cr pertaining to PFC loan for R.M & U of No.3 & 4 of Burla Power House was allowed in tariff. Since the interest has already been allowed, the same should not be included in IDC for capitalization. Similarly, the interest of APDP loan allowed in tariff during previous years should not be included in IDC.

- v) **Operation and Maintenance Expenditure** – OHPC have furnished station wise tariff wherein it has claimed 4% escalation over the expenditure allowed by OERC during 2004-05. OHPC should furnish the actual O&M expenditure incurred during 2004-05 to compute the O&M for 2006-07 in the light of CERC norm.
- vi) **Design Energy** – OHPC may furnish the progress and the present status of review of design energy. Further, the contribution towards increase of primary energy due to up rating of Burla Power House (from 37.5 MW to 49.5 MW) may also be indicated by OHPC.
- vii) Deduction of expenditure on account of capitalization of R, M & U cost of unit No.1 and 2 of Burla P.H. and Unit No.1 of Chiplima P.H. based on the norm adopted by OHPC earlier should be considered while calculating capital cost of HPS.
- viii) **UIHEP:**
- a) **Depreciation:** In the tariff calculation, the rate of depreciation is shown at 3.6%. As per CERC norm depreciation is to be calculated based on straight line method. Hence, the rate of depreciation should be computed based on CERC norm of 2.57% per year.
- b) **O & M Expenditure:** In the tariff calculation OHPC has claimed 4% escalation per year over the O&M expenditure allowed during 2004-05 and have added Rs. 5 cr towards repair of rotor poles. Since the plant has not completed 5 years of it's operation with respect to base year, O & M expenditure as detailed below should only be allowed in tariff.
- | | |
|--|---------------------|
| Capital cost of project excluding cost of infirm power | - Rs.1194.79 crores |
| O & M for 2001-02
(1.5% of capital cost) | - Rs.17.92 crores |
| O & M cost for 2005-06
(considering 4% escalation per year) | - Rs.20.97 crores |

O & M cost for 2006-07 - Rs.21.80 crores
(4% escalation)

Adding Rs.5 crores towards repair of rotor poles O&M expenditure during 2006-07 comes to Rs. 26.80 crores.

- c) **Return on Equity:** OHPC have claimed 14% ROE in the tariff calculation of 2006-07. Keeping in view the interest of consumers, OERC may allow 12% ROE as allowed in previous years.
- d) **Project Cost:** OHPC should furnish the revised capital cost of UIHEP, if any.

2. NESCO

- i) NESCO believes that there is scope for further reduction in tariff of OHPC.
- ii) **Compliance with OERC directives:** The status of compliance by OHPC with directives of the OERC with regard to determination of design energy, capital cost of upper Indravati, pricing of secondary energy and auxiliary consumption needs to be ascertained.
- iii) NESCO has conducted indepth analysis of ARR application as under:
 - a) **O&M Expenses:** The licensee has adopted the principle of the CERC in calculating the O&M for FY 2006-07. OHPC has applied a 4% escalation per annum on the base figure of Rs 53.81 cr for FY 01 for old OHPC Stations. In case of UIHEP, it has applied 4% escalation on approved cost along with the Rs 5 cr towards rotor cost as per the directive of the Hon'ble Commission in order dated 10.6.2005. Thus, NESCO submits to consider O&M cost of Rs.86.75 cr in the ARR.
 - b) **Interest on Loan:** NESCO submits that the Commission should separately advise the Govt. to keep the effect of the up valuation of assets in abeyance and other measures as approved vide Govt. of Orissa letter dated 21.01.03 to be extended for a period of 5 years beyond 2005-06 for the sector to fully turn around. In case the corrective is adopted, the interest on loans for OHPC old stations will come down to 8.09 crore from 15.73 crore as projected by OHPC for the year 2005-06. Similarly for the year 2006-07 the interest on loan would be Rs.7.73 crore instead of Rs. 12.06 crore as proposed by OHPC.
 - c) **Proposed ARR:** Computed with reference to O & M expenditure and interest on loan as above, NESCO submits that there is a fit case for reduction in tariff of old power stations and Upper Indravati as mentioned below.

Table – 4

	FY 2005-06				FY 2006-07			
	Old Stations		UIHEP		Old Stations		UIHEP	
	OHPC PROP	NESCO PROP	OHPC PROP	NESCO PROP	OHPC PROP	NESCO PROP	OHPC PROP	NESCO PROP
Tariff (P/U)	30.47	27.24	64.46	64.46	38.68	30.09	65.61	62.43

- iv) **Other issues:** NESCO submits that the interest on guarantee commission as calculated by OHPC is on the higher side. The interest on guarantee commission ought to be calculated on the reduced loan amount.
- v) **Pricing of Secondary Energy:** NESCO maintains that as old stations and UIHEP are solely dedicated to the State on account of which full fixed charges are paid irrespective of the energy generated, the secondary energy should not be priced separately. Hence, the commission should reject the proposal of OHPC to make the secondary energy rate equal to the primary energy rate.
- vi) **Swapping of High Cost Loans:** NESCO requests OERC that OHPC may be directed to swap its high cost loans or approach the Govt. of Orissa for a reduction in interest rate on the loan of Rs.19 crore which OHPC is availing at a rate of 13.5%.

3. Jayadev Mishra

- i) The present application of OHPC does not conform to certain issues already settled in the OERC order dated 10.06.2005.
- ii) The basis for station wise cost break up as given in ARR of FY 2005-06 and the source from which it is taken may be indicated.
- iii) Although Rengali PPA was approved by the Commission in its order dated 13th January, 2005, the individual PPA for different stations has not yet been submitted for approval of the Commission. He has suggested that in each of the PPAs, the technical chapter on capacity availability at varying heads, secondary energy availability, particularly in case of Hirakud and Rengali at these varying heads on 10 day- basis be indicated to monitor the satisfactory availability of capacity and secondary energy to be provided by OHPC. GRIDCO may provide a certain percentage of ABT gains to OHPC as a year end adjustment to encourage OHPC to maintain maximum availability.
- iv) Two separate PPAs showing design energy and secondary energy may be prepared for Hirakud and Chiplima power stations.

- v) A second concrete lined channel of 15,000 Cusec capacity be constructed in parallel to the existing power channel of Chiplima.
- vi) Renovation of Chiplima units may be expedited with a firm completion schedule to be got approved by OERC. It is understood that two units are down for a long time while only one unit is under renovation.
- vii) The status of creation of the hydro development fund with sale proceeds from secondary energy and amount deposited therein may be indicated for FY-2005-06 and 2006-07. The ARR shows only self proceeds of design energy at all stations without considering the proceeds from sale of secondary energy.
- viii) No return on equity of Rs.300 crore created an account of asset revaluation of old OHPC stations be allowed in both FY 2005-06 and 2006-07 as per Commission's order dated 10.06.2005.
- ix) Auxiliary consumption for Hirakud, Chiplima and Balimela units may be limited to 0.2% as approved by the Commission instead of 0.5% proposed in ARR.
- x) OHPC may indicate the action taken to swap high interest bearing loans with low interest bearing ones. If some past loans are carrying high interest charges, these can be paid off early.
- xi) The Commission may advise GRIDCO to pay the full power purchase bills of OHPC within 7 days of presentation. As such, OHPC may not need any working capital and hence, no working capital loans would be required.
- xii) OHPC may agree for 12% ROE for 2006-07 as in 2005-06.
- xiii) OHPC as the sole hydro-generator in the State and under State Government ownership may examine if certain pump storage projects can be taken up at Upper Indravati and Upper Kolab where both off stream reservoir and tail race reservoir exist. They can also examine if they can take up Chiplima-B Station to harness additional primary and secondary energy.
- xiv) If the correctives as suggested above are made applicable, the ARR of OHPC will reduce and hydro-tariff for OHPC stations will remain at the same level as in FY 2004-05, if not lower.

4. R.P. Mohapatra

- i) The increase in tariff projected for the year 2006-07 is based on the projected tariff for the year 2005-06 which itself needs review.
- ii) Though the Commission has directed OHPC to carry out certain exercises which have a direct bearing on the tariff, the applicant is avoiding to execute the same.

- iii) OHPC may be asked to furnish certain vital information in respect of old stations and UIHEP which are required for approval of the present ARR application. In case of old stations, data regarding the actual capacity index achieved since 01.04.2001, reassessment of design energy, conformation to the proposals for renovation and modernization as directed by OERC order dtd. 10.06.2005, reasons for lower projection of generation of energy of Rengali H.E. projects the up-to-date audited accounts etc. need to be submitted before finalization of tariff and approval of ARR. Similarly, in case of UIHEP steps taken for determining the capital cost of the project, the actual capacity index achieved since inception and the status of implementation of two part tariff are required to be submitted before the Commission.
- iv) He has further submitted that the Commission may prescribe a two part tariff with capacity charges and primary energy charges for recovering the full fixed cost. The generator should not be allowed to recover the cost unless it meets the minimum standards of efficiency.
- v) The applicant has not indicated as to whether a separate account has been maintained to keep the funds earned out of secondary energy.
- vi) He has stated that the decision of the Commission to charge secondary energy equal to primary energy needs to be reviewed, taking into account the special nature of Hydro Power Stations which have very high installed capacity meeting the peak demand not only of Orissa but of the Eastern region. If the secondary energy charges are made equal to the primary energy charges, the consumers have to bear the cost of high capital investment a second time. On the other hand, the applicant does not have to incur any additional expenditure for generation of secondary energy and has only to make the machines “available” which he is anyway mandated to do so.
- vii) The applicant may be given an incentive for secondary energy generation to motivate him to maintain 100% machine availability during monsoon or at the time of higher inflow. This may be 5 p/u as recommended by the K.P.Rao Committee.
- viii) It is prayed that the Commission may determine the ARR and tariff based on the above submissions and on receipt of the additional data from the applicant.

5. National Institute of Indian Labour.

- i) The OHPC is functioning under the direct control of Government of Orissa and violating the corporatization agreement between OHPC and Government of Orissa.
- ii) The Government of Orissa being the owner of the Company is not implementing and violating the necessary recommendations of the expert committee i.e. Soven Kanungo Committee Report.

- iii) The Board of Directors appointed by Government of Orissa is not in conformity with the memorandum of Association of the company because of which the company is sustaining heavy losses during last few years.
- iv) During rainy season, OHPC has to generate higher quantum of electricity keeping their machinery intact. But during the last year, the company is sustaining heavy losses for not generating power at HPS, Burla, Chiplima, Indravati, Upper Kolab, and Balimela in the name of fault of machinery.

4 REPLIES MADE BY OHPC

4.1 OHPC had observed that the query raised by various objectors and valued suggestions made by them relating to tariff and operation of their power stations were of common nature. These issues have been addressed by OHPC as summarised below.

4.1.1 **The basis of calculation of tariff & details of financial parameters:** The ARR of OHPC old Power Stations is based on historical project cost/ book value of the projects as on 01.04.96. However, in case the Govt. does not set aside the up valuation of old Power Stations, the ARR shall change accordingly.

(i) Interest on loans :

(a) Old power stations :

- (i) Interest on loan of Rs. 766.20 cr relating to up-valuation of assets has not been taken into account.
- (ii) PFC loans of Rs. 83.50 cr are based on outstanding loans of Unit 1&2, Burla and estimated outstanding as on 01.04.2006 in respect of Unit 3&4, Burla.
- (iii) Deemed loan of Rs. 15.41 crs is the carried over balance of previous year and related to Unit 1&2, Burla. Interest at PLR 10.25% has been considered on this loan.
- (iv) Interest @9.8% on the outstanding loan of Rs. 23.64 Cr. (out of total loan of Rs. 39.20 Cr.) has been provided and apportioned to each Power Station based on the historical cost as at 01.04.96.

(b) UIHEP :

Interest @ 8.75% on the outstanding PFC loan of Rs. 128.22 cr has been considered.

(ii) Depreciation :

(a) Old power stations :

Depreciation at 2.57% on the book value of fixed assets as on 01.04.1996 plus additions made between 1996-97 to 2005-06 has been provided for all units except HPS. In case of HPS, the installment of principal payable in 2006-07 has been considered as depreciation as it is more than the depreciation @ 2.57%.

(b) UIHEP :

Depreciation limited to principal repayment of Rs. 32.15 Crs.

(iii) **Return on Equity :**

(a) **Old Power Stations :**

For Financial Year 2006-07, RoE @ 14% has been proposed as per CERC guidelines on the Equity of 25% of the historical cost of assets as on 01.04.96 plus the additions made thereafter. The RoE on the equity component of the R, M & U cost of unit – 3 & 4 of Burla has not been claimed, pending decision of the State Govt.

(b) **UIHEP**

For the year 2006-07, RoE @14% as per CERC norm has been proposed on the equity component of Rs. 298.70 Cr.

(iv) **O&M expenses**

(a) **Old Power Stations :**

The O&M expenses during 2004-05 were Rs. 72.32 cr. as against Rs. 72.42 cr allowed in the tariff. The O&M expenses passed in the tariff of 2005-06 plus 4% increase ie. Rs. 78.33 cr have been claimed for the year 2006-07.

(b) **UIHEP:**

The approved level of O & M expenditure of Rs. 31.01 cr for FY 2004-05 has been escalated by 4% in the subsequent years i.e. 2005-06 and 2006-07. Further, Rs. 5 cr has been added in these two financial years towards rotor pole repair works.

(v) **Interest on Working Capital**

The working capital requirement is assessed as per the CERC guidelines in case of both old Power Stations & UIHEP. Interest on working capital has been taken at the SBI PLR rate of 10.25%.

4.1.2 **Present Status of Reassessment of Design Energy:** As per the directions of the Commission to reassess the design energy of power stations by engaging independent group of consultants under the auspices of the Commission, OHPC moved W/R Department, CWC, NRSA etc. for collection of the required data. Subsequently, the Commission took stock of the development in collection of data and advised OHPC to put forth the issue before their Board for necessary action.

To have a broad understanding and discussion regarding reassessment of the design energy, OHPC sent some officers to CEA. During the discussion, CEA made it clear that OHPC should move to do this job by an independent agency and later submitted the result to OERC for approval. An expression of interest was floated for collection of data and reassessment of design energy in response to which 3 agencies had submitted their bids. It was proposed to award the work on turn key basis to WAPCOS, a Govt. of India Organization. The board suggested to have detailed examination of the proposal at appropriate level.

4.1.3 **Capital cost of UIHEP:** The Commission vide its order dtd. 10.06.2005 in case no. 153 of 2004 have directed OHPC to complete the evaluation of capital cost of the project early. OHPC in turn has submitted that the original capital cost of UIHEP amounted to Rs. 208.14 crore at 1975-76 price level.

The project cost was then revised at different periods. With the formation of OHPC the hydro-electric projects along with UIHEP were transferred to OHPC w.e.f. 01.04.1996. OHPC revised the project cost to Rs. 1107.10 crore excluding interest during construction, detailed particulars of which are as under.

a) State Govt. Loan	Rs. 630.00 crores(Transfer value of assets)
b) PFC loan	Rs. 320.00 crores
c) Payment by DOWR for Dam	Rs. 100.00 crores
d) OHPC Internal Resources	Rs. 57.10 crores
Total	Rs. 1107.10 crores (excluding IDC)

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

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

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 crore. Therefore the total project cost including IDC was estimated at Rs. 1427.10 crore. Setting aside the share of DOWR (Rs. 231.68 crore) and the value of sale of energy during trial run (Rs. 0.63 crore), the capital cost of the project for tariff purpose was taken at Rs. 1194.79 crore. The brake up of equity and loan being 25% i.e.Rs. 298.70 crore and loan 75% i.e.Rs.896.09 crore.

- 4.1.4 The State Government in the DOE letter no. 23314 dtd. 27.12.1996 moved the CEA for approval of the revised project cost of Rs. 1107.10 crore excluding IDC, in response to which CEA intimated that since expenditure in excess of the sanctioned estimates has already been incurred and there is no major change in the scope, it would not be possible for CEA to examine such fait accompli Revised Cost Estimates and as such CMD, OHPC/ Head of Department should satisfy himself about the reasonableness of the revised cost estimates.
- 4.1.5 The details of expenditure incurred for this Project has been submitted to the Hon'ble Commission in compliance with their directives. As a matter of fact, the actual expenditure of the project is on the figure stated above, DOWR is yet to disburse Rs. 75 Cr. towards their share of the dam cost. The revised project cost has been duly audited and authenticated by the statutory auditors and C & AG.
- 4.1.6 In view of above, OHPC has requested the Commission to retain the capital cost of UIHEP at Rs. 1195.42 crores for the tariff purpose.
- 4.1.7 **Equity:** OHPC has submitted that in case of old power stations 25% of the total project cost amounting to Rs.144.16 crore is being treated as equity. No

equity has been considered in respect of the estimated additions of Rs.114.10 crore for units 3 and 4 Burla.

- 4.1.8 Regarding higher depreciation claimed for the year 2006-07 OHPC has furnished the details of the loan repayment including Rs. 19.69 crore on account of loan repayment of HPS.

Table - 5

Units	Fixed assets	2.57%	Loan repayment	Depreciation claimed
Rengali	93.58	2.41	0.90	2.41
Upper Kolab	109.14	2.80	1.06	2.80
Balimela	117.13	3.01	1.14	3.01
HPS	370.87 *	9.53	19.69 *	19.69
Total				27.91

N.B.: * HPS includes Rs. 114.10 crores for unit 3 and 4.

- 4.1.9 **Revalued cost of projects:** GRIDCO has disputed apportionment of project cost of Rs. 1196.80 crore among the individual old power stations as projected by the tariff application of OHPC. According to GRIDCO, the station wise project cost should confirm to the decision of the Chairman, C & F Working Group is detailed below:-

HPS	-	Rs. 258.01 Crore
BHEP	-	Rs. 133.80 Crore
RHEP	-	Rs. 447.75 Crore
UKHEP	-	Rs. 480.44 Crore

Total		Rs. 1320.00 Crore

Govt. of Orissa, Department of Energy vide order dtd. 01.04.96 vested the assets aggregating Rs. 1196.80 crore for old power stations with OHPC and further vide memo no. 3698 dtd. 21.03.98, directed OHPC to get the transferred assets valued by an approved valuer. In pursuance of Government's directive, OHPC engaged M/s MECON for valuation of its four old power stations. The value of the assets was assessed as Rs. 1557.95 crore by M/s MECON. Further OHPC allocated the total cost of the project among the individual power stations by adopting the proportion formula devised by M/s MECON as given below.

HPS	RHEP	UKHEP	BHEP	TOTAL
295.17	259.01	307.96	334.66	1196.80

The above value of assets have been taken in the books of accounts, audited & reviewed by the C & AG and the Government has accepted the same.

- 4.1.10 **Peaking Hours:** As per CERC tariff regulations, for the purpose of computation of daily capacity Index of the power station, Declared Capacity (MW) and Maximum Available Capacity (MW) of the stations are to be declared for the next day and for this purpose, the peaking hours shall not be

less than 3 hours within a 24 hour period. OHPC has agreed for the peaking hours to be not less than 6 hours subject to certain conditions.

- 4.1.11 **Sale of Power to MPSEB:** In the tariff calculation of HPS, for the year 2006-07, the ARR has been projected as Rs. 76.04 crore and unit rate is 65.42 p/u based on the energy of 1162.26 MU around 16.6 MU of energy per year is being sold to MPSEB towards their share @ 18 p/u earning an amount of Rs. 0.7968 crore. If this is deducted from the ARR of Rs. 76.04 crore of HPS unit rate comes to 65.68 p/u. As such there is hardly any impact on the tariff, for which this has not been considered separately.
- 4.1.12 **Additional Capitalization:** The estimated capitalized cost of units 3 and 4 Burla as on 1.04.2006 has been considered at Rs. 114.10 crore. After actual capitalization the adjustments will be made in the ARR for the year 2007-08. The interest on APDP loan was not considered in the project cost of units 3 and 4, as it was claimed earlier and allowed in the tariff.
- 4.1.13 **Design Energy:** To the query of GRIDCO to indicate the increase of primary energy after up rating of units 1, 2, 3 and 4 of Burla Power House, OHPC has stated that design energy has been evaluated at the time of construction of the project taking into account various factors. This can be changed only after the reassessment is done which is under process. The up rating of the machines which utilise more water for more generation could only help to meet the peak demand of the system during peaking hours and to avoid more spillage of water during rainy season. The additional energy benefit, if any could contribute towards secondary energy.
- 4.1.14 Regarding deductions consequent upon capitalization of R, M & U cost of unit 1 and 2 Burla and unit 1 of Chiplima, OHPC has replied that this cost was capitalized on 01.07.1998. As CERC notification was not there and guidelines of Govt. of India were not available with respect to the capitalization in R & M of units, the terms and conditions for capitalization were mutually settled between OHPC and GRIDCO. After such a long period GRIDCO should not raise such objections.
- 4.1.15 **Individual PPA:** Rengali PPA was approved by the Hon'ble Commission vide their order dt. 13.01.2005 with the directives to submit the revised PPA after incorporating the observations of the Commission. Accordingly, OHPC has furnished the revised PPA of RHEP to GRIDCO vide OHPC ltr. no. 1716 dt. 07.02.2005 for their concurrence. The PPAs of other units viz: UKHEP, BHEP and HPS have already been sent to GRIDCO vide OHPC letters dt. 30.04.05, 24.06.2005 and 22.10.2005 respectively. In the meantime, GRIDCO had filed a review petition before the Commission against the said order which has been heard by the Commission on 10.01.2006. On receipt of the Commission's order, separate PPA of the individual power stations shall be finalized by both the parties.

- 4.1.16 **Separate PPAs for Hirakud and Chiplima power Stations:** 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, 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.
- 4.1.17 **Renovation of Chiplima Units:** At present, unit – I of CPH is in running condition whereas unit – 2 is under R & M programme. Unit – 3 is under forced outage. Generation from Unit – I has been pegged down to 15 MW due to persistent weeds problem. OHPC is in the process of finalizing a proposal to construct a mechanical bridge-cum-trash rack system across the power channel to counter the long standing weed menace. As assured by the CMD, BHEL has proposed to re-commission the unit by June 2006. As the service bay is now available, steps are being taken to construct the unit 3 which is expected to be completed by June 2006.
- 4.1.18 **Renovation of old units:** OHPC has furnished a comprehensive report on renovation and modernization programme of the generating units of old stations to the Commission vide its letter no. 10906 dtd. 17.08.2005.
- 4.1.19 **Hydro-development Fund:** The Commission in its order dtd. 22.10.2005 have clarified that “the revenue 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”. Further OHPC does not anticipate generation of any secondary energy during the year 2005-06 and 2006-07 considering the present reservoir levels. Further there has been no flow of funds from GRIDCO on account of sale of secondary energy during 2004-05.
- 4.1.20 **Auxiliary Consumption:** OHPC has submitted that during R, M & U of unit 1 to 4 of Burla and unit-1 Chiplima, the excitation system has been converted to static excitation system and also unit-2 of Chiplima which is under R & M, the excitation is being changed to static excitation system. Similarly, for units 5 and 6, Burla it has been proposed to change the excitation system to static excitation during the R & M at an early date. At Balimela, the generating units and its auxiliary equipment are very old which have already completed 30 years of operation. Further, due to dispatch instruction of SLDC and implementation of FGMO, the machines run at low load and sometimes no load to meet the VAR component of the GRID. When the generation is very low, the auxiliary consumption such as power house and switchyard lighting, consumption towards O & M, air compressor unit etc. have to be run. These factors contributes to extra auxiliary consumption.

Thus OHPC submits that due to above factors, the Commission may consider the auxiliary consumption as 0.5% of the generation for determination of tariff of HPS and Balimela Power Stations.

- 4.1.21 **Swapping of Loans:** All the high interest bearing loans taken for UIHEP and HPS have been restructured. The 13.5% Govt. loan of Rs. 19 crore has been fully repaid.
- 4.1.22 **Interest on Working Capital:** In the CERC guidelines, interest on working capital has been provided considering the payment of energy charges through LC. But till date there has been huge outstanding against GRIDCO. Further, the impact of interest on working capital in the tariff is very nominal.
- 4.1.23 **ROE for Upper Indravati:** Like other power generators, the ROE should be at par with CERC guidelines i.e. 14%.
- 4.1.24 **Growth of Hydro power in the State:** The revised detailed project reports for Sindol – 1, 2 & 3 with a lower head of the reservoir are under preparation by M/s WAPCOS. The reports are expected by 25.04.06. The projects like Hirakud – B and Chiplima – B have been abandoned by the Govt. as they has been abandoned found to be neither feasible nor viable.
- 4.1.25 **Availability of Power Stations:**

a) UIHEP: The capacity index has not been computed as two part tariff was not implemented up to the year 2004-05. However, the availability of the power station is given below.

2001-02	-	83.29%
2002-03	-	88.55%
2003-04	-	70.46%
2004-05	-	90.27%
2005-06	-	86.38%
(upto Sept'05)		

b) Old Stations: Similarly, in case of old power stations, since the percentage of availability has been computed as given below.

Table - 6

YEAR	RHEP	UKKEP	BHEP	BURLA	CHIPLIMA
2001-02	76.22	94.23	89.56	72.99	57.80
2002-03	76.61	95.27	92.37	67.98	24.11
2003-04	89.67	94.95	91.76	72.34	56.80
2004-05	88.77	93.90	86.60	78.76	50.91
2005-06 (uptoSept'05)	95.76	84.97	85.94	62.34	48.19

4.1.26 In two part tariff, the Annual Fixed Charges are to be approved by the Hon'ble Commission in conformity with CERC guidelines. As per the CERC guidelines, when the scheduled primary energy in each and every month of the year is exactly equal to the design energy of the corresponding month then,

Annual Primary energy charges (X) = 1942.38 MU X Primary Energy Rate.
Annual Capacity Charges = AFC – Annual Primary Energy Charges

But in practice when monthly billing is made as per the above formula both primary energy charges and capacity charges shall vary, the total AFC remaining same.

4.1.27 Two part tariff has been implemented at UIHEP from the year 2005-06 as per the CERC guidelines and as approved by OERC. The primary energy rate is Rs. 0.4638 per/kwh. The ARR for 2005-06 is Rs.125.33 crore of which primary energy charge is Rs. 90.88 crore and capacity charges is Rs. 35.242 crore.

4.1.28 OHPC has stated that in the pre-hearing discussion on the draft regulations, the issue of pricing of the secondary energy had been discussed adequately and CERC is also 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. The OERC has clarified that the rate of secondary energy shall be equal to the rate of primary energy.

4.2 Apart from the above written rejoinder made by OHPC, the Director Finance OHPC responded to the specific objections and suggestions raised during the hearing on 27.01.06. He pleaded before the Commission for considering the financial and operational parameters as proposed in the filing while determining tariff for 2006-07.

4.2.1 Substantial Improvement in the Performance of OHPC:

- (a) There has been overall improvement in the availability of machines, as well as physical and financial performance of OHPC. The availability of machines in Burla has increased to 79% in 2004-05 as compared to 73% in the year 2003-04 & 68% in the year 2002-03. In case of other units like Rengali, Upper Kolab, Balimela & Upper Indravati, it is more than the normative value of 85% during the last two years. However, at Chiplima, due to major problems on account of aging of machines & weeds problem, the availability of machines is low as compared to the normative value. Steps have been taken to expedite the completion of R & M of Unit-2, repair of Unit-3 of Chiplima Power House & remedial measures to tackle the menace weeds.
- (b) There was record generation of 7234 MU of OHPC during 2004-05. Balimela Power Station alone generated 1526 MU, which is the second highest since its inception.
- (c) The renovation, modernization and uprating of units 3 & 4 of Burla commenced in July'2002 has been completed in about 3½ years as against 5

years for the R, M & U of units 1 & 2 Burla and R&M of Unit 1 of Chiplima.

- (d) The high interest bearing loans obtained for the R, M & U projects of Burla & UIHEP aggregating Rs.234.80 Crs have been restructured resulting in reduction of interest rates varying between 14.5 to 16% to 8.75% to 10%.
- (e) On receipt of permission of the State Govt., 13.5% interest bearing APDP loan of Rs. 19 Crore for R, M & U of Units – 3 & 4 of Burla, has been repaid to Govt. in Jan'2006.
- (f) Despite the huge defaults in payment by GRIDCO, the statutory dues & dues of the PFC have been paid in time.

5 COMMISSION'S OBSERVATION AND ANALYSIS OF OHPC'S PROPOSAL:

- 5.1 The Commission has thoroughly analysed the proposal of OHPC and examined the valuable written and oral submissions of the objectors which have served as vital inputs for deciding the tariff. The Commission passes this order with reasons as detailed hereafter.
- 5.2 OHPC while requesting for approval of the annual revenue requirement and tariff for the FY 2005-06 & 2006-07 has submitted separate calculation as per the direction of the Commission dt.10.06.05 in respect of OHPC old stations such as Rengali, Upper Kolab, Balimela and Hirakud Power Stations. A separate ARR calculation for UIHEP has also been submitted for these two years. The tariff proposal contains the 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 UIHEP. The station wise apportionment of capital cost in respect of all these stations has also been provided along with tariff calculations.
- 5.3 The PPA in respect of Rengali Hydro Electric Project (RHEP) was approved by the Commission vide order dtd. 13.01.2005. The Commission directed that the same PPA would serve as a guideline for preparation of PPA in respect of other old stations. Subsequently, GRIDCO has filed a review petition against the said order which was admitted for hearing as case no. 53/2005. The hearing was concluded on 10.01.2006 and the order is reserved. We would like to clarify that even while determining the tariff for the OHPC old stations, the principles and procedures set out in CERC Regulations have been followed with deviations, wherever required with reasons.
- 5.4 During the course of public hearing, certain specific issues were raised by the objectors. We do not consider it necessary to address to each and every issue raised during the course of the hearing. Only the issues considered relevant are addressed hereafter.
 - a. Determination of Design Energy
 - b. Power Procurement from OHPC

- c. Revalued cost of Projects of Old Stations
- d. Capital cost of UIHEP
- e. 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
- f. Primary Energy charges
- g. Secondary energy charges
- h. Auxiliary consumption
- i. Machhkund Hydro Electric Project
- j. Renovation and modernization of old power stations
- k. Growth of hydro power
- l. Up-valuation of assets
- a. Determination of Design Energy**

As per the directives made 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 rejoinder, it is evident that OHPC has already floated the expression of interest for collection of data and reassessment of design energy and is in the process of engagement of a consultant to undertake this job. OHPC shall continue to appraise the Commission about the progress at an interval of two months till finalization of design energy.

Thus, for the purpose of determination of tariff for 2005-06 & 2006-07, the figure of 3714 MU is accepted as design energy of old power stations in terms of Commission's order dtd. 09.07.2001.

b. Power Procurement from OHPC

The installed capacity of various Hydro Stations owned by Orissa Hydro Power Corporation (OHPC) is 1896 MW as on 1st of April 2004 including Orissa share of Machhkund. The details of drawl approved by the Commission for 2005-06 and the projections made by OHPC for 2006-07 are presented in the following table.

Table : 7
Hydro Drawl and Projections For 2006-07

Sl. No.	Name of the HE Project	Installed Capacity (MW)	Design Energy (MU)	Commission's Approval for 2005-06 (MU)	Proposed Drawl by GRIDCO for 2006-07 (MU)
1	Hirakud (Burla & Chiplima)	331.50	1174.00	1162.26	1089.23
2.	Balimela	360	1183.00	1171.17	1104.84
3.	Rengali	250	525.00	519.75	761.31
4.	Upper Kolab	320	832.00	823.68	496.98
	Total	1261.50	3714.00	3676.86	3452.36
5.	UIHEP	600	1962.00	1942.38	1942.38
	Total Hydro	1861.50	5676.00	5619.24	5394.74

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 upto the design energy on at 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 transmission loss.

As indicated in the above table, the annual energy generated by OHPC 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. The Commission had approved the same quantity as the net energy for the year 2002-03.

The tentative monthly generation programme has been furnished by different units of OHPC considering the inflow trends from April 2005 to March 2006. The same has been furnished by OHPC to GRIDCO in regard to generation during 2006-07. GRIDCO has projected the power purchase from OHPC stations based on the latest generation plan submitted by OHPC during October 2005. OHPC had projected lower availability during 2006-07 than the design energy due to unusual and low rainfall in these catchment areas

and also considering the irrigation requirement in these command areas. The same had been communicated to GRIDCO for necessary consideration. In support of the proposed drawl, GRIDCO has furnished the details of drawl from different stations from 2001-02 to 2005-06 as shown in the table below.

Table : 8
Drawls from OHPC in the Past Years

Station	(In MU)				
	2001-02	2002-03	2003-04	2004-05	2005-06 (up to November)
Hirakud	925.16	615.806	903.041	803.59	683.30
Rengali	772.178	620.974	1028.058	731.261	550.417
U Kolab	640.179	472.649	639.841	866.701	395.441
Balimela	1049.47	525.955	1118.226	149.119	528.183
U Indiravati	2920.470	790.033	2109.863	2826.5	1105.667
Total	6307.457	3025.417	5799.029	6721.13	3262.908

As per the programme furnished by OHPC, the generation from December 2005 to March 2006 is only 1893 MU. The total energy from OHPC stations during 2005-06 comes to 5156 MU (3292.908 + 1893 =5155.908 MU rounded to 5156 MU). GRIDCO has accepted the proposal furnished by OHPC.

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, there is absolutely no justification for adopting a figure lower than the design energy for the ensuing year. 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 2006-07.

Machkund: 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 262.50 MU for the FY 2006-07.

The Commission approves 265 MU to be drawn from this station during 2006-07 based on the drawl during the previous year.

The Commission's approval for 2006-07 for various stations of OHPC are given in the table below.

Table : 9
Drawl From Hydro Stations (2006-07)

Source of Generation	GRIDCO Proposal (2006-07)	Commission's Approval (2006-07)
OHPC (Old stations)	3452.36	3676.86
Upper Indravati	1942.38	1942.38
Machkund	265.00	265.00
Total Hydro	5659.74	5884.24

c. Revalued cost of Projects of Old Stations

As per transfer notification no. 5207 dt.01.04.96 issued by the Govt. of Orissa, net fixed asset of Rs.356.60 crore was revalued to Rs.1196.80 crore. The State Government had transferred the fixed assets of OHPC old power stations with a total value of Rs. 1196.80 crore as on 01.04.1996 without any breakup for individual power stations. As per the directives of the State Government OHPC had engaged M/s MECON for the valuation of individual power projects and as per their report the value of the assets was assessed at Rs. 1557.95 crore. Thereafter, OHPC allocated the total cost of the project among the individual power stations by adopting the proportion formula devised by MECON. This issue is dealt at length in para 4.1.9 of this order.

The Commission has examined the facts and figures submitted by OHPC and come to the conclusion that since the value of assets has been duly accounted for, audited and reviewed by C & AG, now it is not justifiable to re-examine the figures already adopted in the books of accounts. Hence, the total value of Rs. 1196.80 crore is accepted and approved in the manner proposed by OHPC as presented below.

HPS	RHEP	UKHEP	BHEP	TOTAL
295.17	259.01	307.96	334.66	1196.80

For the purpose of determination of tariff for 2005-06 and 2006-07, the capital cost of old OHPC stations has been determined on the basis of their historical cost as on 01.04.1996 of Rs.472.00 crore with subsequent addition on account of R&M of unit 1 & 2, Burla Rs. 81.84 crore, both totaling to Rs. 553.84 crore as on 31.03.2003 as stated in our order dtd.10.06.2005.

d. Capital cost of UIHEP

Some objectors have raised the issue of determination of capital cost of UIHEP in their submissions and also during public hearings. 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 is 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 by Government of Orissa. OHPC, on the other hand, 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 is 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/Deptt of Energy should satisfy itself about the reasonableness of the revised cost estimate. To the directive of the Commission, that OHPC

should complete the evaluation of capital cost of UIHEP early, OHPC's response is already dealt with paragraphs 4.1.3, 4.1.4, 4.1.5 and 4.1.6 of this order. OHPC has requested the Commission to retain the capital cost of UIHEP at Rs. 1195.42 crore for the purpose of tariff.

The matter requires further scrutiny at the Commission's end. The tariff for 2005-06 & 2006-07 shall be determined on the basis of the provisional project cost of Rs. 1195.42 crore.

e. Annual Fixed Charges:

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.

- i) **Interest on Loan:** 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 01.04.2005 are summarized in the table below.

Table : 10
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 start from 2001-02. The repayment of principal amount of Rs.3.89 crore/annum has been allowed by the Commission during 2001-02 and 2002-03. The same loan stands at Rs.27.53 crore as on 01.04.2005 and Rs.23.64 crore as on 1.04.2006 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 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.

Another loan of Rs.19.00 crore @ interest of 13.5 % under the APDP scheme was availed for extension of Unit 3 & 4 of Burla Power Station which is being passed on to tariff. The interest impact of this loan comes to Rs.2.37 crore during the year 2005-06. However there is no impact on tariff during FY 06-07 as the loan has been repaid during January, 2006.

As far as the PFC loans are concerned, the loan position and repayment made there against in subsequent years are summarized in the table below:

Table: 11
Status of PFC Loans

		(Rs. in Crore)							
Sl.No.		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
1	Project – Chipilima								
	Opening Balance	22.134	20.511	15.953	11.395	6.837	2.279	-	-
	(+) Additions	2.538	-	-	-	-	-	-	-
	(-) Repayment	4.161	4.558	4.558	4.558	4.558	2.279	-	-
	Closing Balance	20.511	15.953	11.395	6.837	2.279	0.00	0.00	0.00
	Interest for the year	3.287	3.024	2.307	1.598	0.881	0.180	-	-
2	Project – Burla	-	-	-	-	-	-	-	-
	Opening Balance	52.676	68.602	70.964	64.633	57.466	49.804	42.142	34.480
	(+) Addition	15.926	5.842	1.206	0.466	-	-	-	-
	(-) Repayment	-	3.480	7.537	7.633	7.662	7.662	7.662	7.662
	Closing Balance	68.602	70.964	64.633	57.466	49.804	42.142	34.480	26.818
	Interest for the year	7.860	10.785	10.768	9.940	7.467	7.487	6.291	5.738
3	Project – UIHEP	-	-	-	-	-	-	-	-
	Opening Balance	-	57.432	122.562	234.632	306.127	288.657	256.584	256.584
	(+) Addition	57.432	65.130	112.070	71.495	13.873	-	-	-
	(-) Repayment	-	-	-	-	31.343	32.073	2.073	32.073
	Closing Balance	57.432	122.562	234.632	306.127	288.657	256.584	224.511	192.438
	Interest for the year	-	15.063	20.514	33.390	35.582	31.224	26.332	22.627
4	Project - Hirakud III & IV	-	-	-	-	-	-	-	-
	Opening Balance	-	-	-	-	-	-	-	-
	(+) Addition	-	-	-	-	-	-	-	55.005
	(-) Repayment	-	-	-	-	-	-	-	-
	Closing Balance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.005
	Interest for the year	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	274.261

The PFC loans were obtained in connection with projects like Chiplima, Burla and Upper Indravati. The outstanding loan amount as on 01.04.2005 & 01.04.2006 comes to Rs. 243.45 crore & Rs.204.41 crore respectively as portrayed in the table below.

Table – 12
PFC Loan Outstanding
(Rs. in Crore)

	As on 01.04.2005	As on 01.04.2006
Unit 1 & 2 Burla	19.16	11.50
(b) Unit 3 & 4 Burla	63.93	64.69
(c) UIHEP	160.36	128.22
Total	243.45	204.41

For OHPC old stations, interest on loan including guarantee commission aggregates Rs.15.73 crore and Rs. 12.28 crore and in case of UIHEP it comes to Rs.17.51 crore and Rs. 12.12 crore for the years 2005-06 & 2006-07 respectively as given in the table below:

Table – 13
Statement of OHPC Loans and Interest on Loan
(Rs. in Crore)

Source of Loan	Loan Outstanding		Interest on Loan	
	As on 01.04.2005	As on 1.04.2006	2005-06	2006-07
Govt. loan @ 9.8%	27.53	23.64	2.70	2.32
APDP Loan @ 13.5%	19.00	NIL	2.37	NIL
PFC Loan for 1 & 2 Burla	19.16	11.50	1.72	0.96
PFC Loan for 3 & 4 Burla	63.93	64.69	5.52	5.94
Deemed loan (10.25%)	18.97	15.41	1.94	1.58
Govt. Guarantee Commission	-	-	1.48	1.48
Sub total (Old Stations)	148.59	115.24	15.73	12.28
UIHEP (PFC Loan)	160.36	128.46	17.51	12.12

- ii) **Depreciation including Advance Against Depreciation:** 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 than 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 depreciation was calculated by the Commission limiting to principal repayment during a year.

For the purpose of determination of Annual Fixed Charges, the Commission in its tariff order 2005-06 has considered depreciation equal to the loan repayments during the year under consideration. The details of repayment of loan as submitted by OHPC for old stations is as under:

Table – 14
Statement of Repayment of Loans

	2005-06
Repayment of loan to PFC	Rs. 7.66 crore
Repayment of State Government loan (9.8%)	Rs. 3.89 crore
Repayment of APDP loan	Rs. 0.48 crore
Repayment of deemed loan	Rs. 3.56 crore
Total	Rs. 15.59 crore

For the year 2006-07, depreciation is claimed in the tariff applying 2.57% in case of RHEP, UKHEP & BHEP whereas for HPS the actual loan repayment requirement is considered for calculation of depreciation. This is summarized in the table below.

Table – 15

Name of the Power Station	Depreciation (Rs. Crore)	Remark
RHEP	2.41	2.57(%)
Upper Kolab	2.80	2.57(%)
Balimela	3.01	2.57(%)
HPS Burla	19.21*	Equal to loan repayment
Total	27.43	

*Calculated @2.57% on assets is Rs. 9.53 crore.

It may be observed that there has been substantial increase in loan repayment during 2006-07 as compared to 2005-06 on account of loan repayment required for Unit 3 & 4 Burla. The project is complete and has started commercial operation since 1st January 2006. The capitalization up to 31.12.2005 is under process. The evidential documents furnished by OHPC reveal that the loan repayment is to start from April 2006. The difference between the loan repayment requirement of Rs. 27.43 crore and the permitted depreciation applying the rate of 2.57% as per CERC norms i.e. Rs. 17.75 crore equals to Rs. 9.68 crore which shall be treated as advance against depreciation (AAD) for 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 2005-06 and 2006-07 which is being passed on to tariff.

iii) **Return on Equity:**

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 vide para 6.4.2 through para 6.4.21. The relevant extract of the said order is reproduced below:

6.4.2 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.

i) 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

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

6.4.4 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 bond to continue for a further period of five years or more depending on sectoral turn around.

6.4.5 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 sectoral turn around.

6.4.6 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 the subsequent notification dtd.29.01.2003 of the Government of Orissa, the Return on Equity for the

year 2004-05 was allowed to OHPC. 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. 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 @ 12% on OHPC's own investment of Rs.20.46 crore which comes to Rs.2.46 crore in line with the tariff order of 2004-05.
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 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 hydro power 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.

iv) **O&M Expenses:**

In our tariff order dated 10.01.2005 in case No.153/2004, while determining the ARR of OHPC for FY 2004-05, we have given elaborate reasoning with regard to annual escalation of O&M expenses to be adopted @4%. The same factor of escalation is adopted for 2005-06 as well as 2006-07.

The actual O&M expenses incurred during the year 2004-05 as submitted by OHPC is as follows.

Table – 16

(Rs. Crore)

Particulars	RHEP	BHEP	UKHEP	HPS	Sub Total	UIHEP	Total
O & M Expenses	12.83	17.48	8.18	28.80	67.29	23.72	91.01
C O Expenses	0.48	0.98	0.57	0.53	2.56	3.73	6.29
Prior Period	-0.95	1.97	0.13	1.32	2.47	0.08	2.55
Total O & M Expenses	12.36	20.43	8.88	30.65	72.32	27.53	99.85

The Commission had allowed an expenditure of Rs.72.42 crore for old stations in the tariff order of 2004-05. The Commission examined the details submitted by OHPC and approves an expenditure of Rs.75.31 crore for 2005-06 considering annual escalation @ 4%. On the same analogy the approved O&M expenditure for 2006-07 for old stations is Rs.78.33 crore.

OHPC has submitted that the actual expenditure of UIHEP for O&M is less than the figure approved by the Commission in 2004-05 due to unpredictable cash flows from GRIDCO. The Commission has already accepted an expenditure of Rs.16 crore for repair of rotor poles of UIHEP @Rs.5 crore per annum for a period of 3 years starting from FY 2005-06 to 2007-08 and Rs.1 crore in 2008-09 while approving the tariff order for GRIDCO in Case

No.147/2004. Accordingly, for the year 2005-06, O&M expenses approved is Rs. 37.25 crore after considering annual escalation @ 4% over FY 2004-05 and allowing Rs.5 crore towards major repair of rotor poles.

For FY 2006-07 following the same norm and allowing Rs.5 crore towards rotor pole repair, the O&M Expenses allowed is Rs.38.54 crore. The total O&M expenses approved for the years 2005-06 and 2006-07 are presented in the table below :

Table - 17

(Rs. in crore)

Name of the Stations	2005-06	2006-07
Old Stations	75.31	78.33
UIHEP	37.25	38.54
Total	112.56	116.87

v) **Interest on Working Capital:**

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 as on 01.04.2004 as all OHPC power stations are under commercial operation prior to this date. In accordance with CERC guideline, the interest on working capital shall be payable on normative basis.

Table : 18

Interest on Working Capital

(Rs. in crore)

	2005-06	2006-07
O&M expenses for OHPC old stations for one month	6.27	6.53
O&M expenses for UIHEP for one month	2.69	2.79
Receivables for two months OHPC old stations	18.67	20.64
Receivables for two month for UIHEP	20.89	20.37
Maintenance of Spares for old stations	0.00	2.00
Maintenance of Spares for UIHEP	0.00	1.00
Total working capital	48.54	53.33
Interest on working capital calculated @ 10.25%	4.97	5.47

Total Annual Fixed Charges

Based on the above parameters the station-wise ARR and tariff calculated for the years 2005-06 and 2006-07 are portrayed in the table below:

Table – 19

(Rs. in crore)

STATION-WISE TARIFF APPROVED FOR 2005-06 AND 2006-07										
Details of expenses	2005-06					2006-07				
	RHEP	UKHEP	BHEP	HPS	UIHEP	RHEP	UKHEP	BHEP	HPS	UIHEP
Interest on loan	0.62	0.74	1.46	12.91	17.51	0.53	0.64	1.35	9.76	12.12
Return on Equity	0	0	0	2.46	35.84	0	0	0	2.46	41.82
O&M expenses	14.36	9.15	19.56	32.24	37.25	14.94	9.52	20.34	33.53	38.54
Depreciation	0.9	1.06	1.14	12.49	32.07	2.41	2.8	3.01	19.21	32.07
interest on working capital	0.4	0.27	0.56	1.33	2.46	0.55	0.43	0.73	1.28	2.48
ED @ 20 P/U	0.05	0.08	0.12	0.12	0.2	0.05	0.08	0.12	0.12	0.20
Total ARR (Rs.crore)	16.33	11.3	22.84	61.55	125.33	18.48	13.47	25.55	66.36	127.23
Average Tariff (P/U)	31.42	13.72	19.5	52.96	64.53	35.56	16.35	21.82	57.10	65.50

f. Primary Energy Charges

According to CERC notification, "Rate of Primary Energy for the generating station shall be equal to the lowest variable charges of the central sector thermal power generating station of the concerned region. The primary energy charges shall be computed based on primary energy rate and saleable primary energy of the project.

Primary Energy Charges = Primary Saleable Energy (ex-bus) x Primary Energy Rate.

Provided that in case the primary energy charge recoverable by applying the above primary energy rate for such generating station shall be calculated by the following formula.

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

Table – 20

	2005-06		2006-07	
	Old Stations	UIHEP	Old Stations	UIHEP
Annual fixed charges(Rs. Cr.)	112.02	125.33	123.86	127.23
Saleable primary energy(MU)	3676.86	1942.38	3676.86	1942.38
Primary energy rate(P/U)	30.47	64.53	33.69	65.50

Since the lowest variable cost of the central sector thermal generating stations in the Eastern Region for 2004-05 as approved in OERC order dtd. 26.02.2005 in case no. 146/2004 is 46.38 p/u, the amount recoverable by applying this rate will exceed the annual fixed charges of the old stations. Hence, the primary energy rate for these stations is determined by the formula stated above.

Accordingly, the primary energy rate for the old OHPC stations for the FY 2005-06 and 2006-07 is approved as 30.47 paise/unit and 33.69 paise/unit respectively.

As directed by the Commission in Case No.153/2004 two-part tariff in respect of UIHEP i.e. capacity charge and primary energy rate have already been implemented since FY 05-06. The same principle shall be made applicable for FY 2006-07.

On the basis of the ARR now determined the generation tariff for electricity generated in Balimela, Rengali, Hirakud Power System, Upper Kolab and Upper Indravati Hydro Electric Projects (UIHEP) are given as under:

SCHEDULE OF GENERATION TARIFF FOR FY 2006-07 (w.e.f. 01.04.2006)

Table - 21

Name of the Power Stations	Paise/Unit
Rengali HEP	35.56
Upper Kolab HEP	16.35
Balimela HEP	21.82
Hirakud Power System	57.10
Upper Indravati HEP	46.38 p/u and Rs.37.14 crore towards annual capacity charges

The Commission has also approved the ARR and Tariff for **FY 2005-06 w.e.f. 01.04.2005** of the OHPC as under:

Table - 22

Name of the Power Stations	Paise/Unit
Rengali HEP	31.42
Upper Kolab HEP	13.72
Balimela HEP	19.50
Hirakud Power System	52.96
Upper Indravati HEP	64.53

g. Secondary Energy Charges:

Rate of Secondary Energy shall be equal to Primary Energy rate.

Secondary Energy Charge:

Secondary Energy Charges = (Secondary Saleable Energy (ex-bus) x Secondary Energy Rate) (views of GRIDCO is that the rate of secondary energy shall be zero)

OHPC has stated that as per the CERC notification, the rate of secondary energy shall be equal to the primary energy rate, which is devised to encourage generators.

The Commission has examined the suggestions given by the objectors with regard to pricing of secondary energy. The Commission's order passed in Case No.153/2004 dtd.10.06.2005 approving secondary energy charges 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."

For this purpose, the quantum of energy to be generated shall be fixed station-wise after reassessment of design energy.

h. Auxiliary Energy Consumption

OHPC has submitted that during R, M & U of unit I to IV of Burla and unit-1 Chiplima the excitation system has been converted to static excitation system. Also in unit -II of Chiplima, which is under R & M, the excitation is being changed to static excitation system. Similarly, for unit V and VI of Burla, there is proposal for changing the excitation system to static excitation during the R & M, which is being taken up shortly.

At Balimela, the generating unit and its auxiliary equipments are very old and have already completed 30 years of operation. Further, due to dispatch instruction of SLDC and implementation of Free Governor Mode of Operation (FGMO), the machines run at low load and sometimes at no load to meet the reactive power requirement of the grid. Further, when the generation is very low the auxiliary consumption such as power house and switch yard lighting, consumption towards operation and maintenance, drainage and d-watering pumps, Air Compressor Unit etc., have to be run.

These factors cause the percentage of auxiliary consumption more than the normative value i.e. 0.5%. In view of these reasons OHPC submitted to consider auxiliary consumption at 0.5% for both HPS and Balimela Power Stations instead of 0.2% the Commission had approved in order dtd. 10.06.2005. Realizing the practical operational conditions of these stations the Commission approves auxiliary consumption @ 0.5% for HPS and Balimela Power Stations. In respect of other power stations namely Rengali, Upper Kolab and UIHEP auxiliary consumption shall be calculated @ 0.5% of gross generation as has been already existing.

i. Machhkund Hydro Electric Project

OHPC had furnished a rate @19.47 paise/unit for Machhkund Power Station for the year 2006-07 inclusive of the arrear O&M charges based on energy drawl of 265 MU. On scrutiny of the calculation, the following observations are made:

- i) Orissa share of actual O&M expenditure during 2004-05 was Rs.3.95 crore as indicated in the tariff calculation.
- ii) OHPC has claimed O&M escalation @ 4% as per CERC norms.

The Commission has taken into consideration the net share payable by Orissa towards O&M expenses for the year 2004-05 (actual) to the tune of Rs.3.95 crore. Allowing an escalation of 4% per annum for the year 2005-06 and subsequently for 2006-07, O&M expenses come to Rs.4.27 crore and the rate per unit comes to 19.47 paise for the year 2006-07. Accordingly, the procurement cost works out to Rs.5.16 crore for an approved energy drawl of 265 MU.

j. Renovation and modernization of old power stations

As per the directives of the Commission, OHPC has submitted a report on renovation and modernization programme of the generating units and a comprehensive plan for efficient operation of the units. OHPC shall keep the Commission informed about the periodical development about the renovation and modernization of generating units of OHPC.

Table : 23

Sl. No.	Name of the HE Project	Units	Locations	
1.	Hirakud-I	2x49.5 MW 3x37.5 MW 2x24 MW	Burla/Sambalpur	Unit-1 to Unit-6 05.58 to 08.63 Unit-7 in 09.90
2.	Hirakud-II	3x24 MW	Chiplima/Sambalpur	Unit-1 to Unit-3 07.62 to 02.64
3.	Rengali	5x50 MW	Rengali/Angul	Unit-1 to 5 08.85 to 08.92
4.	Balimela	5x60 MW	Balimela/Malkanagiri	Unit-1 to Unit-6 08.73 to 01.77

5.	Upper Kolab	4x80 MW	Bariniput/Koraput	Unit-1 to Unit-4 03.88 to 01.93
6.	Upper Indravati	4x150	Mukhiguda/Kalahandi	Unit-1 to Unit-4 09.99 to 04.2001
7.	Machhkund	3x17 MW + 3x21.25 MW	Onkudelli Koraput	1955

Renovation Plan and Programme:

Hirakud – I: Unit 1 and 2 were commissioned on 05/58 and 11/57 with installed capacity of 37.5 MW each. After R, M & U in 1998 the capacity of each unit was enhanced to 49.5 MW.

Unit 3 and 4 were commissioned on 12/56 and 05/57 respectively with installed capacity of 24 MW each. The capacity of each unit will be enhanced to 32 MW each after R, M & U which is already completed in January 2006.

Unit 5 and 6 were commissioned on 04/62 and 08/63 respectively with installed capacity of 37.5 MW each. The R, M & U work is under process.

Unit 7 - The installed capacity is 37.5 MW and has not yet completed 30 years of operation since it was commissioned on 13.09.1990.

Hirakud – II : Unit 1 and 2 R & M work has been completed.

Unit 3 is expected to be taken for R & M by March 2006 and shall take 18 months for completion.

Balimela: Balimela extension project unit 7 and 8 (2*75MW) is under execution and scheduled to be completed by 08/06 and 10/06 respectively.

Rengali: The 5 units have not completed 30 years of their operation. Hence, there is no plan for renovation of these units in near future.

Upper Kolab: The 4 nos. of generating units with capacity of 80 MW each have not completed 30 years of their operation. Hence, there is no plan for renovation of these units.

UIHEP: The 5 units have not completed 4-6 years of their operation. Hence, there is no plan for renovation of these units in near future.

k. Growth of Hydro Power in the state

The Commission during the last tariff hearing had enquired about the growth of hydro power in the state to which OHPC has submitted the revised detailed report for Sindol – 1, 2 and 3 with a lower head of the reservoir are under preparation by M/s.WAPCOS. The reports are likely to be submitted by M/s WAPCOS on 25.04.2006. The Commission may be apprised of the development in this regard.

1. **Up-valuation of Assets**

The Deptt. of Energy Notification No.1068/E dated 29.01.03 envisages that “The effect of up-valuation of assets of OHPC and GRIDCO indicated in notification No.52010 dated 01.04.96 and No.5207 dt.01.04.1996 would be kept in abeyance from the financial year 2001-02 prospectively till 2005-06 or the sector turns around, whichever is earlier to avoid re-determination of tariff for past years and also re-determination of asset of various DISTCOs. For this purpose, depreciation would be calculated at pre-92 norms notified by the GOI.” As such, the depreciation shall be calculated for the assets at pre-1992 norms.

The Commission in its letter No.460 dtd.22.03.2005 had advised the state Govt. in terms of section 86 of the Electricity Act, 2003 to keep in abeyance the up-valuation of assets of OHPC and GRIDCO as well as moratorium on debt servicing by GRIDCO and OHPC to the state government for a period of another five years beyond FY 2005-06 i.e. till FY 2010-11 as the sector has not so far turned around. The Govt. was reminded the matter vide Commission’s letter No.1968 dt.16.12.2005 to accept its recommendations to avoid a tariff shock to the consumers. The projected additional liability on this account could have an adverse impact on the consumer tariff. Till date, the Govt’s decision has not been received. The Govt. representative during the course of public hearing indicated that at least return on equity on 25% of the asset of old OHPC stations and the principal on loans taken by the OHPC for construction of UIHEP may be considered by the Commission as a pass through.

The objectors submitted that as there has been no sectoral turn around and the CERC regulations do not permit such recovery, effect of up-valuation should not be considered while determining tariff for FY 2006-07.

The CERC (Terms and Conditions of Tariff) Regulations, 2004 notified on 26th March 2004 at para 56(II)(a)(I) stipulates that the value base for the purpose of depreciation shall be the historical cost of the asset. In OERC regulation, it has also been prescribed for the purpose of tariff determination and the rate of depreciation could be linked to the useful life of the asset, calculated on straight-line method. This is in line with the CERC Regulation also. In view of this, the Commission has approved calculation of depreciation on the basis of historical cost.

6. **With regard to GRIDCO’s application for determination of Bulk Supply Price for the FY 2006-07 (Case No. 42/2005); the Hon’ble High Court of Orissa, on 31.01.2006, has passed interim order in Misc. Case No. 114/2006 (arising out of WP(C) No.165/2006), as follows:-**

“As an interim measure, we direct that the proceeding in case No. 42 of 2005 shall continue but the order passed therein shall be subject to the result of the writ application.”

The Commission has applied the integrated approach for deciding the tariff/price for various licensees/generating company/utility simultaneously. So, if the result of the above writ application have any impact on GRIDCO's Bulk Supply price, it may have some direct/indirect impact on others. Hence, the Commission is of the considered view that this generation tariff order for OHPC shall be subject to the result of the aforesaid writ application.

The application of OHPC for approval of its Annual Revenue Requirement and fixation of generation tariff for the financial year 2005-06 and 2006-07 is disposed off.

**Sd/-
(S.K. JENA)
MEMBER**

**Sd/-
(B.C. JENA)
MEMBER**

**Sd/-
(D.C. SAHOO)
CHAIRPERSON**