Before the

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

World Trade Centre, Centre No.1, 13th Floor, Cuffe Parade, Mumbai 400 005

Tel. No. 022 22163964/65/69 – Fax 022 22163976

E-mail mercindia@mercindia.com

Website: www.mercindia.com

Case No. 27 of 2008

In the matter of

Dodson-Lindblom Hydro Power Pvt. Ltd.'s Petition for determination of tariff for Bhandardara Hydro Power Project-II (34 MW).

Shri V.P. Raja, Chairman
Shri A. Velayutham, Member
Shri S.B. Kulkarni, Member

ORDER

Dated: July 08, 2009

M/s. Dodson-Lindblom Hydro Power Pvt. Ltd. (DLHPPL) submitted a Petition under affidavit before the Maharashtra Electricity Regulatory Commission (hereinafter referred to as 'MERC' or 'the Commission') on May 28, 2008, seeking determination of tariff for its Bhandardara Hydro Power Project (Phase II).

2. DLHPPL under its Petition has prayed as under:

"

1. *The Hon'ble Commission to kindly consider the present petition that is filed as a consequence of the factual background considered by the Hon'ble Commission in Case No. 1 of 2005 in the matter of purchase of power from Bhandardara Hydro Electric Project (Phase II);*
2. *The Hon'ble Commission to kindly take into account the revised nature of the Bhandardara Power House Project II due to the elevation of the Nilwande Dam to 610/613 meters and taking the same into account to initiate the appropriate proceedings in order to revise the tariff that was adopted in the Order dated 10th April, 2006 by treating the Bhandardara Power House Project II with Small Hydro Power Projects (i.e. upto 25MW);*

3. *The Hon'ble Commission to kindly revise the tariff for BHEP-II by considering this as peaking plant, once the dam height is raised till 610 m/613 m and pass an Order accordingly."*

3. It is averred in the Petition that the Government of Maharashtra - Irrigation Department (subsequently renamed as Water Resource Department) invited bids from private entrepreneurs for operation of Bhandardara Hydro Electric Project Power House-II (BHEP-II) on Advance Lease, Operate and Transfer Basis for a period of 30 years. DLHPPL, in its Petition, submitted that the objective of the Government of Maharashtra's Water Resource Department (GoMWRD) was to utilise the amount received from the successful bidder for raising the height of Nilwande Dam (located at downstream of BHEP-II) upto Reservoir Level (RL) of 610 M (Overflow section)/613 M (Non-overflow section), so that BHEP-II could be operated at optimum capacity.

4. DLHPPL submitted that the Bid Document also stipulated that intended bidders will have two options for offering the Price Bid amount, as under:
   i. Payment of Rs. 92.00 Crore or more in one instalment, payable upon execution of Agreement;
   ii. Payment of Rs. 60.00 Crore or more payable upon execution of Agreement and further payment of yearly instalments during lease period of 30 years to serve as revenue source to GoMWRD.

5. DLHPPL submitted the bid to GoMWRD giving the price bid with option (ii) i.e., Rs. 60.00 Crore payable upon execution of Agreement and further Rs. 262.70 Crore to be paid during lease period of 30 years. The Net Present Value (NPV) of the payments with 10% discount rate as stipulated in the Bid Document amounted to Rs. 92.01 Crore (as required by GoMWRD).

6. GOMWRD selected DLHPPL as the successful bidder for BHEP-II on Advance Lease, Operate, Maintain and Transfer Basis with a lease period of 30 years, vide its Letter of Award dated December 31, 2004.

7. DLHPPL submitted its proposal vide letter dated January 7, 2005 to the erstwhile Maharashtra State Electricity Board (MSEB) to supply power from BHEP-II at a mutually agreed rate and to enter into a Power Purchase Agreement (PPA).

8. The erstwhile MSEB submitted a proposal to the Commission vide its letter dated March 24, 2005, for approval of tariff from BHEP-II. In its application, MSEB stipulated that DLHPPL intends to sell energy from BHEP-II by entering into a long-term PPA for 30 years, and that MSEB desires to purchase this power. MSEB also submitted a report

prepared by M/s CRISIL, which recommended the price for purchase of power from BHEP-II at Rs. 3.05 per kWh with an annual increase of 5%.

9. The Commission admitted the application of MSEB (numbered as Case No. 1 of 2005), and in its Order dated April 10, 2006 on the said Petition observed that the design energy associated with this project (BHEP-II) is expected to undergo significant change due to increase in the height of Nilwande Dam.

10. DLHPPL submitted that the Commission, considering the similarities between BHEP-II Project (as the project would be constrained to be operated as 'run of the river' hydel generation project with capacity in the range of 14 MW to 18 MW) and Small Hydro Power Projects (i.e., upto 25 MW) approved the tariff for BHEP-II Project equivalent to tariff for Small Hydel Projects, till the height of Nilwande dam was raised to 610 / 613 meters.

11. DLHPPL further submitted that the Commission, in its Order dated April 10, 2006 in Case No. 1 of 2005, opined that the determination of tariff for 30 years would not be appropriate given the fact that the project could not operate at full capacity and stipulated as follows:

> *"4.22 Considering the above the Commission finds merit in treating the project as similar to a Small Hydro Power project till the height of Nilwande dam is raised till 610 / 613 meters.*
>
> *4.23 Therefore till the Nilwande dam height is raised till 610 / 613 meters, the Commission approves the SHP tariff (as provided in the Order on Determination of Tariff for SHP Projects within Maharashtra dated 9th November, 2005) for this project from the date of approval of this order. The tariff applicable on the date of approval of this order shall be as per the first year of the SHP tariff.*
>
> *4.24 The above tariff shall be applicable for BHEP-II during phase-I of the project (i.e. until height of Nilwande dam reaches 610 M). Further, the developer can approach the Commission for revision of tariff once the dam height is raised till 610 M / 613 M.*
>
> *4.26 This Order shall be applicable for supply of electricity from Bhandardara Hydro Electric Project II to the Distribution Licensees in the State of Maharashtra till the Nilwande dam height is raised till 610 / 613 meters."*

12. DLHPPL submitted that it has filed this Petition for determination of tariff, as Nilwande dam height has been raised to 610/615 meters and the same has been communicated to them by the Chief Engineer of GoMWRD, North Maharashtra Region, Nasik, vide letter dated July 7, 2008.

13. DLHPPL submitted that with the completion of Nilwande dam upto 610/613 M, BHEP-II is now capable of operating at its full capacity of 34 MW and therefore, there is need for a revision of tariff in accordance with the Commission's Order dated April 10, 2006.

14. The Commission scheduled a Technical Validation Session ("TVS") on the Petition filed by DLHPPL on July 16, 2008 in the presence of Consumer Representatives authorised on a standing basis under Section 94(3) of the Electricity Act, 2003 ("EA 2003"). Notices were issued accordingly.

15. During the TVS, DLHPPL submitted the salient features of the Petition for approval of peak power tariff for BHEP-II hydro power project.

16. The Commission enquired about impact of increase in height of Nilwande dam on operational parameters. DLHPPL responded that BHEP-II is primarily an irrigation based project and can be run only based on water release during the irrigation cycle (typically 5-6 cycles a year with 20-22 days of each cycle). DLHPPL also submitted that during the irrigation cycle, Power Station-1 will act as a base load station and Power Station-2 will act as a peak load station.

17. The Commission observed that a modified proposal or new tariff proposal needs to be filed clearly specifying the completed cost of the project, justification of the cost incurred and the proposed tariff for the project. The Commission also observed that the Commission has already fixed peaking tariff for hydro generating stations in the State. The Commission directed DLHPPL to specify the reasons for seeking a different tariff other than the peak tariff determined by the Commission as a part of the Petition in case the Petitioner desires to seek approval for peaking tariff. The Commission also directed DLHPPL to justify its request for approval of peaking tariff, since a peaking station has to be designed to generate power at will at any point in time, and the same can be scheduled for despatch purposes.

18. DLHPPL submitted the revised Petition on October 10, 2008, for determination of tariff for BHEP-II, in accordance with the directions of the Commission. The Commission scheduled the second TVS on December 17, 2008 in the presence of Consumer Representatives authorised on a standing basis under Section 94(3) of the EA 2003. Notices were issued accordingly. During the second TVS in the matter for determination

of Peak Power Tariff for BHEP-II, DLHPPL submitted the salient features of the revised Petition for approval of tariff for BHEP-II.

19. The Commission enquired of DLHPPL about the bidding process adopted for selection of private sector bidder in respect of BHEP-II. DLHPPL submitted that GoM-WRD invited bids for operation of BHEP-II on advance lease, operate and transfer basis for 30 years. The Commission enquired of DLHPPL whether single or multiple bidders had submitted the bid for the project. DLHPPL submitted that the Bid Documents were purchased by 6 prospective bidders, however, only DLHPPL finally submitted the price bid for the project. DLHPL stated that it had submitted the bid by quoting the price bid option of Rs. 60 Crore as upfront payment on execution of Agreement and further Rs. 262 crore during the lease period of 30 years.

20. DLHPPL submitted that the Bid Documents issued by GoM-WRD stipulated that MSEB or its successor entity may or may not purchase electricity generated from BHEP-II and the bidder has the freedom to sell electricity to any consumer. The bid document also stipulated that the tariff for sale of energy from BHEP-II shall be regulated by the Commission.

21. DLHPPL further submitted that it has filed the revised Petition and has sought the approval of the tariff for BHEP-II in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005 (hereinafter referred to as "MERC Tariff Regulations") and has accordingly projected the Annual Fixed Charges (AFC) in accordance with the MERC Tariff Regulations for a period of 30 years starting from FY 2006-07. DLHPPL, submitted the details of the various elements for computation of the AFC:

(i) <u>Capital Cost</u>:

DLHPPL submitted that it has considered the final project cost as on March 1999 as Rs. 93.28 Crore (as stipulated at Para 3.9 of the MERC Order dated April 10, 2006 in Case No. 1 of 2005). This project cost has been considered for computation of Operation & Maintenance (O&M) cost. DLHPPL further submitted that it has considered the upfront initial payment of Rs. 60 Crore to GoMWRD and pre-operative expenses of Rs. 9.75 Crore as part of the project cost.

(ii) <u>Debt: Equity</u>:

The normative debt equity ratio of 70:30 has been considered.

(iii) <u>Renovation and Modernisation (R&M)</u>:

DLHPPL submitted that GoMWRD handed over the project on 'as is where is' basis. Subsequent to taking over the project, a detailed investigation of the plant revealed that there is a need to carry R&M works. A report on the R&M works to be carried out has been attached with the Petition. The Commission enquired of DLHPPL whether it has sought prior approval of the Commission for such R&M scheme. DLHPPL submitted that through this Petition, it was seeking the approval of such R&M scheme.

(iv) Income Tax:

DLHPPL submitted that as the project assets have been handed over to DLHPPL on lease basis and are not in its books of accounts, the income tax benefit may not be applicable for BHEP-II. Accordingly, DLHPPL requested the Commission to allow the applicable income tax as a pass through. The Commission directed DLHPPL that it should assess the income tax for future years and should provide its computation for the same in the Petition. The Commission further suggested that DLHPPL should make best efforts to avail the tax benefits.

(v) Interest on loan:

DLHPPL submitted that the project has been financed by various financial institutions and applicable interest rates have been considered for working the interest computations. DLHPPL submitted that loan agreement was signed in December 2005 and the loan was drawn in December 2006. DLHPPL submitted that it has swapped the Euro loan with Rupee loan as a measure for hedging to prevent currency variation impact. The Commission suggested to DLHPPL that the impact of swapping the loan twice, i.e., first swapping from Euro loan to Dollar loan and then from Dollar loan to Rupee loan, should be shown in the Petition along with the detailed assumptions and justification.

(vi) Operation and Maintenance (O&M) Expenses:

DLHPPL submitted that it has considered the O&M expenses for first year of operation at 1.5% of completed cost of the project as submitted by GoMWRD in March 1999 and for subsequent years, the O&M expenses have been escalated at 4% as per the provisions of the MERC Tariff Regulations.

(vii) Interest on Working Capital:

DLHPPL submitted that it has considered the provisions of the MERC Tariff Regulations, 2005 for computation of interest on working capital.

(viii) Depreciation and Advance against Depreciation (AAD):
DLHPPL submitted that no depreciation has been considered on the lease amount as the leased assets are not in its Books of Accounts and depreciation on 90% of R&M expense has only been considered for the remaining lease period.

(ix) Amortisation of Pre-Operative expenses and initial payment to GoMWRD:
DLHPPL submitted that it has amortised the pre-operative expenses of Rs. 9.75 Crore over the first 5 years and the initial lease payment of Rs. 60 Crore over 13 years. The Commission enquired of DLHPPL regarding the Regulations under which it has considered the amortisation of pre-operative expenses and initial lease payment as a part of Annual Fixed Charges.

(x) DLHPPL submitted that the Design Energy as stipulated in the Order dated April 10, 2006 in Case No 1 of 2005 has been considered.

22. The Commission advised DLHPPL to include the detailed computation of the tariff strictly based on the MERC Tariff Regulations as a part of the main Petition. DLHPPL further submitted that following charges also need to be included in the tariff computations:

- Lease rent of Rs. 34000 for Government land in the first year, to be escalated afterwards by change in Wholesale Price Index (WPI);
- Water royalty of Rs 0.05 per kWh of generation, to be escalated by WPI;
- Maintenance of intake structure to the extent of Rs 0.06 per kWh of generation, to be escalated by WPI.

23. The Petitioner, in its revised Petition submitted on October 10, 2008, had included Prayer No. II as under, i.e.,

> *'The Honorable Commission may kindly be pleased to waive the requirement for filing such of the information as DLHPPL is unable to provide at this stage'.*

The Commission opined that such a prayer is not in accordance with the requirements of the regulatory process for tariff determination, and advised DLHPPL tomodify or remove such a prayer.

24. The Petitioner, in its revised Petition submitted on October 10, 2008, had included Prayer No. V as under, i.e.,

'The Honourable Commission may kindly be pleased to take in to account its earlier order dated 10th April 2006 (Case No 1 of 2005) based on which the Petitioner signed the PPA with MSEDCL. The Order was applicable only till Nilwande dam height is raised to 610/ 613 M, which has now occurred and hence the PPA signed with MSEDCL will no more be valid, unless tariff is revised and effect to its continuation is given."

and Prayer No. VI, i.e.,

'The Honourable Commission may kindly be pleased to pass an order permitting the Petitioner to sell entire electricity to third parties or to electricity traders (other than MSEDCL) in case mutually acceptable tariff cannot be worked out, by directing the provision of open access as per the Act and MERC (Distribution Open Access) Regulations, and MERC (Transmission Open Access) Regulations.'

In this context, the Commission observed that the present Petition submitted before the Commission is only for determination of tariff for BHEP-II in accordance with Sections 61 and 62 of the EA 2003, and the issues of validity of Energy Purchase Agreement (EPA), and interpretations or disputes, if any, are separate issues, which need to be addressed through separate regulatory process. Accordingly, the present Petition for tariff determination needs to be amended by deleting the above Prayer No.s V and VI.

25. The Commission's Regulatory Expert, Shri. Ajit Pandit submitted that in accordance with the provisions of the MERC Tariff Regulations, hydro tariff is a two part tariff, viz., capacity charge and energy charge. Accordingly, DLHPPL would need to submit the Petition for proposed tariff determination comprising capacity charge and energy charge in accordance with the MERC Tariff Regulations.

26. Shri. Ajit Pandit further submitted that DLHPPL should clarify whether it has proposed the tariff to be levied for 30 years from October 2008 (i.e., when Nilawande dam height is raised to 610/613 M) or from the date of acquisition of BHEP-II by DLHPPL. He further pointed out that the financial statements and computations in the Petition have been presented for a period of 30 years from FY 2006-07 to FY 2036-37.

27. DLHPPL submitted that a mechanism similar to that adopted by Central Electricity Regulatory Commission (CERC) should be adopted, which stipulates an incentive equal to energy rate for secondary energy generation, i.e., generation over and above the Design Energy. The Commission suggested that DLHPPL may include such a request in its Prayer as well, and the same could be addressed in accordance with the provisions of the MERC Tariff Regulations.

28. As regards DLHPPL's proposal for tariff determination, the Commission observed that DLHPPL has now sought approval for tariff of BHEP-II in accordance with the provisions of MERC Tariff Regulations as stipulated for run of the river hydel project with storage. The Commission further observed that this in turns means that DLHPL has not sought approval for peaking tariff. DLHPL clarified that it has not sought approval for peaking tariff and has only sought approval of tariff in accordance with the provisions of MERC Tariff Regulations.

29. Subsequently, DLHPPL submitted its amended Petition for determination of tariff on January 30, 2009. DLHPPL, in its amended Petition, submitted that the Petition was being filed in accordance with the Regulations as specified in Part E of the MERC Tariff Regulations, and quoted Regulation 26.1 of MERC Tariff Regulations, which stipulates as under:

> "*The regulations specified in this Part E shall apply in determining the tariff for supply of electricity to a Distribution License from conventional sources of generation*."

30. **Components of tariff**

DLHPPL submitted that the tariff for BHEP-II should comprise two parts, namely, Annual Capacity Charge and Energy Charge, as under:

Annual Capacity Charge = Annual Fixed Charge – Energy Charge
Provided that Energy Charge shall not exceed Annual Fixed Charge (AFC).

31. DLHPPL submitted that Annual Fixed Charge consists of recovery of the following elements:

a) Return on Equity capital;
b) Income Tax;
c) Interest on loan capital;
d) Depreciation including AAD and amortization of intangible assets;
e) O&M expenses and;
f) Interest on Working Capital.

32. **Energy Charges**

DLHPPL submitted that the Energy Rate for a hydro power plant should be such rate as may be notified by the Commission from time to time, based on the price/variable of the least-cost available alternative source of power if such hydro power generating station is not to be despatched in accordance with the final despatch schedule of the State Load Despatch Centre (SLDC).

The Energy Charge shall be:
Energy Charge = Saleable Energy x Energy Rate.

DLHPPL further submitted that since 'Saleable Energy' has not been defined under the MERC Tariff Regulations, the Commission may consider Primary Energy (i.e., Design Energy) as saleable energy as stipulated in CERC (Terms and Conditions of Tariff) Regulations, 2004.

33. **Secondary Energy Charges**

DLHPPL submitted that in addition to the recovery of AFC, the CERC (Terms and Conditions of Tariff) Regulations, 2004, provide for recovery of Secondary Energy Charges as an incentive, for the energy supplied over and above Design Energy. Rate of Secondary energy is same as the Energy Rate.

Secondary Energy Charge = Secondary Energy x Energy Rate
DLHPPL submitted that this incentive is essential and beneficial for both the generator and Distribution Licensee to make available the additional energy over and above the Design Energy at the lowest rate.

34. DLHPPL further submitted that the following provisions of the MERC Tariff Regulations will be applicable:
    - (i) Charges for unscheduled interchange;
    - (ii) Incentive for capacity index;
    - (iii) Rebate/late payment surcharge
    - (iv) Billing and payment charges;
    - (v) Demonstration of declared capacity;
    - (vi) Deemed generation.

35. **Calculations of Annual Fixed Charges**

    (i) **Capital Cost of the Project**
      - a. GoMWRD Cost
      - b. Petitioner's Capital Cost

a. GoMWRD Cost

DLHPPL submitted that GoMWRD during the proceedings in Case No. 1 of 2005 submitted the details of the project cost to the Commission, and quoted the following extract of the Order dated April 10, 2006 in Case No. 1 of 2005:

"A5: <u>APPENDIX – A</u>

Year of commissioning – May 1999	
Expenditure on the project works upto March 2003	*– Rs.8457.75 Lakhs*
Add Establishment Charges (Actual)	*- Rs. 1580.35 Lakhs*
Total upto March 2003	*- Rs. 10038.10 Lakhs*

3.10:… Project completion cost in 1999 – Rs.93.2899 Crores…"

DLHPPL submitted that the year-wise capital expenditure for the period from FY 1984-85 till FY 2002-03 has been obtained, which confirms the above mentioned project cost upto FY 1999-2000 as Rs. 93.28 Crore and that upto FY 2002-03 as Rs. 100.38 Crore.

DLHPPL submitted that the above project cost is without Interest during Construction (IDC) and referred to the Commission's Order in Case No. 17 of 2007 dated October 21, 2008 (in the matter of MSPGCL's Petition for Approval of Lease Rent of Hydel Stations owned by GoM leased to MSPGCL for operation and maintenance) for computation of IDC. DLHPPL referred to the following paragraphs of the Order:

> *"72...the Commission has computed the IDC till COD on the loan portion of the Capital Expenditure considering the approved means of finance in this Order."*
>
> …
>
> *"76... the Commission has computed the interest expenses considering the interest rate of 8.5% and loan repayment period of 10 years."*

DLHPPL submitted that with the above consideration, IDC on loan portion (i.e., 70%) at an interest rate of 8.5% per annum works out to Rs. 41.67 Crore. Therefore, the project cost upto Commercial Operation Date (COD) is estimated at Rs. 134.96 Crore. DLHPPL submitted that this cost has been considered for computation of O&M expenses (i.e., 1.5% of Rs. 134.96 crore) while determining the tariff as proposed in the Petition.

b. Capital Cost for DLHPPL

Option-I

DLHPPL submitted that under this option it has considered the upfront payment of Rs. 60.00 Crore to GoMWRD as Capital Cost. Further, DLHPPL has to make a total payment of Rs. 262.70 Crore to GoMWRD in yearly instalments during the lease period of 30 years to serve as revenue source to GoMWRD. DLHPPL has considered these payments as revenue expenditure in the respective years.

Option-II

DLHPPL submitted that under this option it has considered the upfront payment of Rs. 60.00 Crore to GoMWRD as Capital Cost at the start of the operation of the project. DLHPPL further submitted that in the letter of award for the project, the payment of yearly instalments amounting to Rs. 262.70 Crore have been spread in such a way that the NPV of the payments in the first year along with first instalment after considering a discount rate of 10%, amounts to Rs 92.01 Crore as stipulated in the Bid Document of GoMWRD. DLHPPL submitted that this means that the choice was to either pay Rs. 92 Crore as upfront amount (i.e., Rs. 60 Crore + Rs. 32 Crore) or pay Rs. 60 crore upfront and pay yearly instalments for the balance amount such that NPV of balance amount (at 10% discount rate) in April 2009 works out to Rs. 42.61 Crore. DLHPPL submitted that for tariff computation under this option, it has also considered the amount of Rs. 42.61 Crore in FY 2009-10 (over and above of Rs. 60 Crore) considering a normative debt:equity ratio of 70:30.

(ii) **Pre-Operative Expenses**

DLHPPL submitted that it has incurred a pre-operative expenditure of Rs. 9.75 Crore comprising:

- Technical and Management fees of Rs. 4.587 Crore,
- Financing and Legal Fees of Rs. 3.56 Crore,
- Administration Expenses of Rs. 1.03 Crore,
- Machinery, Tools and Equipments of Rs. 0.57 Crore and,
- Furniture & Fixtures of Rs. 0.001 Crore.

DLHPPL submitted that the pre-operative expenditure of Rs. 9.75 Crore has been amortized in the first 5 years in accordance with Regulation 34.4.3 of the MERC Tariff Regulations.

(iii)**Debt: Equity Ratio**

DLHPPL submitted that it has considered the normative Debt to Equity Ratio of 70:30. DLHPPL submitted that for BHEP-II, the equity has been financed in Foreign Currency (US Dollar) by its parent company, Indian Hydropower Development Company, LLC, Delaware (A subsidiary of DLZ Corporation, USA). DLHPPL further submitted that though the equity has been financed in foreign currency, it has not claimed any foreign exchange variation in the tariff.
DLHPPL submitted that the Debt has been financed by International Finance Corporation (IFC), Deutsche Investitions - und Entwicklingsgescellschaft mBH (DEG) and State Bank of India (SBI). The total euro loan availed for the Project is Rs. 15.89 Crore (Euro 2.68 Million). DLHPPL added that out of this, 40% of Euro Loan has been swapped with Indian Rupee loan.

DLHPPL further submitted that it has not claimed any Foreign Exchange variation in the tariff, even though 60% Euro loan repayment and interest has been serviced in foreign exchange.

The summary of the capital cost, debt and equity as considered by DLHPPL under various options of tariff computations is shown in the Table below:

Rs. Crore

Particulars	GoMWRD	Petitioner capital cost Rs. 60 crore and subsequent instalment payable to GoM as Revenue expenditure	Petitioner capital cost Rs. 60 crore and NPV of Rs. 42.61 crore
Capital Cost$	138.75	69.75	69.75*
Debt	97.12	48.83	48.83
Equity	41.62	20.93	20.93

Note: $ Capital Cost at the start of taking over the project, i.e., in FY 2006-07

*DLHPPL has further considered the NPV of Rs. 42.61 Crore as capital cost in FY 2009-10, therefore, the capital cost under this option would increase by Rs. 42.61 Crore in FY 2009-10.

(iv)**Renovation & Modernization (R&M) Cost**

DLHPPL submitted that in accordance with the Bid conditions, GoMWRD handed over the project on “AS IS WHERE IS” basis. Further, Clause 2.21.2 of the Bid Document specifies that any expenditure incurred by the successful bidder for better performance, maintenance, repairs, etc., shall be at the risk and cost of the successful bidder.

DLHPPL appointed Canadian Hydro expert, Shri Erskin Flook of M/s Samat Resources Canada to assess the condition of the plant in December 2003. According to his report, an extensive repair/refurbishment work was required with an estimated expenditure of Rs. 10.00 Crore.

DLHPPL further submitted that at the time of taking over the project, the plant availability was about 50%. A detailed inspection of the plant was carried out in December 2006, which revealed that there was a need to carry out repair works immediately so that plant breakdown is reduced and the availability is improved.

DLHPPL further submitted the summary of the year-wise cost of R&M works as under:

Year	**Cost (Rs.Cr)**	**Status**
2006-2007	0.575	completed and capitalized
2007-2008	0.611	completed and capitalized
2008-2009	0.582	in progress / estimate

2009-2010	0.545	estimate
2010-2011	3.250	estimate
2011-2012	4.500	estimate

DLHPPL submitted that R&M expenses incurred from FY 2007-08 onwards are assumed to be financed at a normative Debt: Equity ratio of 70:30 in accordance with Regulation 30.3 of MERC Tariff Regulations, which stipulates:

> "*The Capital Expenditure of the following nature actually incurred after the cut-off date may be allowed by the Commission for inclusion in the Original Cost of the project subject to the prudence check.*
>
> (iv) *Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost''.*

DLHPPL submitted that through this Petition, it has requested the Commission to approve the R&M works, which are essentially required.

(v) **Return on Equity (RoE)**

DLHPPL submitted that it has computed the RoE at 14% on the equity portion in accordance with the MERC Tariff Regulations.

(vi) **Income Tax**

As regards the income tax, DLHPPL submitted that tax holiday may not be applicable for the generation project which, has been acquired on lease, accordingly, DLHPPL has considered the income tax rate of 33.99%. DLHPPL submitted that however, efforts would be made to avail the tax holiday. DLHPPL further submitted that the income tax should be treated as pass through.

(vii) **Interest on Loan Capital**

As mentioned earlier, the project has been financed by IFC, DEG and SBI. The summary of the loan amount and interest rates is given below:

(Rs. Crore)

Financial Institutions	Amount of Loan	Interest Rate
IFC	36.79	10.945% - Fixed for 10 years
DEG	15.89	10.61% - Euro loan linked with Libor, (Hedging added)
		After 2 years 11% considered.
SBI	1.94	8.75% - Fixed for 2 years, afterwards 15.75% (2% above PLR considered)
Total	54.62	Weighted Average Interest rate 10.77 %; After 2 years Weighted Average Interest Rate considered as 11.03%

DLHPPL submitted that the loan agreement has been signed in December 2005 and the loan has been drawn in December 2006. The tenure of the loan is 13 years with 3 years moratorium. Accordingly, the loan repayment towards these loans starts from April 2009 and continues upto October 2018.

(viii) **Depreciation including Advance against Depreciation**

DLHPPL submitted that the depreciation has been considered upto 90% of the capital cost and the R&M cost, for the remaining lease period. DLHPPL added that as the project has been commissioned in FY 1999-00 and normal life has been considered as 35 years (MSPGCL's Petition in Case No. l7 of 2007) therefore, the life of the project will be completed in FY 2034-35. Considering the fact that the lease period expires in FY 2036-37, DLHPPL has considered the period of the lease as the life of the plant for computing depreciation.

DLHPPL further submitted that the Advance Against Depreciation (AAD) has been computed in accordance with Regulation 32.3 and 34.4.2 of the MERC Tariff Regulations.

(ix) **Operation & Maintenance (O&M) Expenses**

DLHPPL submitted that O&M expenses have been considered at 1.5% of the capital cost at COD in accordance with the MERC Tariff Regulations. Considering IDC, the capital cost at COD amounts to Rs.134.96 Crore and accordingly, the O&M expenses have been considered as Rs. 202.44 Lakh for FY 2000-01. For subsequent years, DLHPPL has considered annual escalation of 4% in accordance with the MERC Tariff Regulations.

(x) **Interest on Working Capital**

For computing the working capital requirement, DLHPPL has considered the following components:

a. O&M expense for one month;
b. Maintenance spares as l% of historical cost, i.e., Rs. 134.96 Crore to be escalated at 6% annually;
c. Receivables for 2 months.

DLHPPL has considered the rate of interest on working capital as 13.75%, which is the State Bank of India Prime Lending Rate (SBI PLR), in accordance with the MERC Tariff Regulations.

(xi) **Design Energy of the Project**

DLHPPL submitted that the Design Energy as stipulated in the Order dated April 10, 2006 in Case No 1 of 2005 has been considered, which is based on the recommendations of the technical consultant appointed by the Commission, Shri VVRK Rao, Ex-Chairman, Central Electricity Authority (CEA) and Hydro Expert. The summary of the Design Energy as considered by DLHPPL is given below:

a) Pre Nilwande Phase : 34.10 MU
b) Post Nilwande Dam (+ 613 M) : 43.40 MU (w.e.f. October 2009).
c) Post Nilwande Dam (+ 648 M) : 36.26 MU (w.e.f. April 2012).

DLHPPL submitted that the benefits of Nilwande dam (+613 M) for optimizing power generation had been available from October 2008, however, due to pending works of river crossing bridge and intake gate, the ponding work would be done during the monsoon of FY 2009-10 and generation will be optimized from October 2009. The construction of Nilwande Dam upto 648 M is expected to get completed by March 2012. DLHPPL submitted that it has considered above Design Energy in tariff computations.

(xii) **Auxiliary Energy Consumption and Transformation Losses**

BHEP-II, being underground generating station with static excitation system, the norms for auxiliary energy consumption and transformation losses are 0.7% and 0.5%, respectively, in accordance with the MERC Tariff Regulations.

DLHPPL submitted that the last two years' record of gross energy and export energy measurement taken jointly with MSEDCL and Maharashtra State Electricity Transmission Company Ltd. (MSETCL) indicates that the actual auxiliary energy consumption including transformation losses are 1.44%. Accordingly, DLHPPL has considered the auxiliary consumption as 1.44%.

(xiii) **Charges payable to GoMWRD as per Bid Document**

a) Lease Rent of Rs. 34,000 for Government land in the first year and afterwards to be escalated by change in WPI.
b) Water Royalty of Rs. 0.05 per kWh of generation in the first year to be escalated as per WPI.
c) Maintenance charges of intake structure of Rs.0.06 per kWh of generation to be escalated as per WPI.

36. **Calculation of Tariff**

DLHPPL has computed the tariff taking into consideration the above factors of tariff determination as elaborated below:

(i) **GoMWRD Capital Cost**

DLHPPL has considered the capital cost of Rs 138.75 Crore as discussed in earlier paragraphs and considered an interest rate of 8.5% per annum with repayment period of 10 years. In this approach, DLHPPL has not considered the pre-operative expenses. Rest of the factors have been considered as detailed above.

(ii) **Petitioner's Capital Cost of Rs. 60 Crore and subsequent instalments as revenue expenditure**

Under this approach, DLHPPL has considered the upfront payment of Rs.60 Crore to GoMWRD as Capital Cost and subsequent instalments to be paid to GoM have been considered as revenue expenditure in that year. All other factors considered are as detailed in the above paragraphs.

(iii) **Petitioner's Capital Cost of Rs.60 Crore plus NPV of Subsequent Instalments**

Under this approach, DLHPPL has considered Rs. 60 Crore upfront payment to GoMWRD as Capital Cost. NPV of further instalments to be paid to GoMWRD has been computed as Rs. 42.61 Crore in March 2009. DLHPPL has considered this amount as Capital Investment in April 2009, with normative Debt: Equity ratio of 70:30.

37. Considering the above factors, the Annual Fixed Charges for three options of Capital Cost as worked out by DLHPPL are shown below:

Particulars	**GoMWRD**	**Petitioner capital cost Rs. 60 crore and subsequent instalment payable to GoM as Revenue expenditure**	**Petitioner capital cost Rs. 60 crore and NPV of Rs. 42.61 crore**
NPV of AFC for 30 Years (Rs. Lakh)	18,384	17,436	18,206
Levelised Tariff for 30 Years (Rs/kWh)	5.99	5.42	5.60

DLHPPL submitted that with the tariff computation as shown above, if GoMWRD would operate the plant for the project life time and sell the power to the MSEDCL, it would get AFC as calculated considering the capital cost of GoMWRD. If it is compared with DLHPPL's tariff computation, in both the cases, DLHPPL would be receiving less amount from MSEDCL, which means lesser burden on the consumers.

DLHPPL submitted that the tariff computation considering the capital cost as Rs. 60 Crore and NPV of Rs. 42.61 crore shown above is the most appropriate and also in accordance with MERC Tariff Regulations.

i. **Energy Charge and Annual Capacity Charge**

DLHPPL has considered the energy rate as Rs.1.91/kWh, which is the lowest variable cost of Chandrapur thermal power stations. Energy Charge has been computed considering energy rate and Design Energy and year-wise Annual Capacity Charge (ACC) has been computed in accordance with the MERC Tariff Regulations, i.e.,

Annual Capacity Charge = Annual Fixed Charges – Revenue from Energy Charges.

ii. **Payment Mechanism**

ACC as computed shall be payable in that particular year. DLHPPL proposed to recover ACC on monthly basis equivalent to one twelfth (1/12) of ACC. Energy charges has been proposed to be recovered as per actual energy rate declared by the Commission for that year/month, for the energy upto Design Energy delivered to MSEDCL as per Joint Meter Readings taken at the end of each month.

DLHPPL proposed that the charges for energy delivered over and above Design Energy shall also be payable at the same rate as that of Primary Energy as an incentive termed as "Incentive for Secondary Energy Charges".

iii. **Charges for unscheduled interchange**

DLHPPL submitted that the charges for unscheduled interchange are not applicable for BHEP-II since it is a must run type irrigation release based power plant and cannot be considered for scheduling.

iv. **Incentive**

DLHPPL proposed that incentive is payable when the Capacity Index exceeds 85% in accordance with the MERC Tariff Regulations, which stipulates:

Incentive = 0.65 x AFC x ($CI_A – CI_N$) / 100
CI_A = Capacity Index Achieved
CI_N = Normative Capacity Index (i.e., 85%)

The incentive for Capacity Index shall be payable based on the Declared Capacity in accordance with the MERC Tariff Regulations.

v. **Incentive for Secondary Energy**

DLHPPL submitted that the Secondary Energy Charge is essential to maximize the generation in Hydro Projects, and this incentive has been proposed in accordance with the principles laid down by CERC in its Tariff Regulations. The Secondary Energy is the generation over and above Design Energy and the rate for Secondary Energy is same as Energy Rate.

vi. **Rebate / Late payment surcharge**

DLHPPL proposed to levy rebate/late payment surcharge in accordance with the provisions of the MERC Tariff Regulations, which stipulates as follows:

a) Rebate for payment of bills through Letter of Credit- Rebate to be mutually agreed (maximum upto 2%)
b) Rebate for payment within one week - Rebate to be mutually agreed (Maximum upto 1.25%)

c) Late payment surcharge- At the rate of 1.25% per month in case the payment is delayed beyond a period of two months from the date of billing.

vii. **Billing and payment of charges**

DLHPPL submitted that the billing and payment of capacity charge and energy charge shall be done on monthly basis.

viii. **Demonstration of Declared Capacity**

DLHPPL submitted that it will demonstrate the Declared Capacity, provided full quantity of water as required to run at Declared Capacity is made available by GoMWRD. The penalty as provided in Regulation 40.2 of the MERC Tariff Regulations will be applicable for false declaration, i.e., if declared capacity is not proved even after water is made available.

ix. **Deemed generation**

DLHPPL submitted that in case of reduction in generation on account of reasons beyond the control of DLHPPL or on the account of non availability of transmission lines or backing down instructions from the State Load Despatch Centre resulting in spillage of water, the energy charges on account of such spillages shall be payable to DLHPPL in accordance with Regulations 41.1 and 41.2 of the MERC Tariff Regulations.

38. The revised Petition submitted by DLHPPL was admitted by the Commission on March 13, 2009 and the Commission directed DLHPPL to publish the Public Notice for inviting suggestions and objections on the Petition from the stakeholders. The Public Notice inviting objections and suggestions/comments was issued in Maharashtra Times (Marathi), Loksatta (Marathi), The Times of India (Mumbai Edition), and Indian Express (Mumbai Edition) on March 19, 2009.

39. The Public Hearing in the matter was held on Thursday, April 16, 2009, at 11:00 hours at the Commission's Office at 13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai-400 005. Shri. N. Ponrathnam, an objector, submitted that the power plants in Maharashtra have been taken over by the Government post independence. The Electricity (Supply) Act, 1948 mandated the creation of a State Electricity Board, which has the responsibility of arranging the supply of electricity in the State. He also submitted that the power plants belong to the public as per the Constitution, and the State Government is

empowered to supply electricity to the public by making law as 'Electricity' is a concurrent subject at entry No. 38 in the List III of the Seventh Schedule of the Constitution of India. He further submitted that as per the Preamble of the Constitution of India, we, the people of India cannot lease out our own property to our self. The GoM, Commission, and GoMWRD (Public Organisation/Government) has to act in the interest of the public and not as a profit centre. The alternative of leasing the power plant to any private company amounts to the Government running away from its responsibility. He further submitted that the Commission does not have any authority to decide the lease rent payable by any Generating Company as per the EA 2003. He requested that no amount should be considered in the ARR on the basis of lease rent paid to GoM.

40. Shri Ponrathnam submitted that GoMWRD is the sole authority in charge of water supply, and dams are built for irrigation purposes with generation of electricity being a by-product, and quoted examples of certain organisations, which generate electricity as a by-product. He further added that the money required for building the dam is to be funded by GoM in accordance with the Constitution of India. He further submitted that the amount required for building the dam should not be paid by MSEDCL as it is forced to maintain a low tariff.

41. As regards the lease rent, Shri. Ponrathnam submitted that HT consumers throughout the country are being charged Rs.374/kW/month as demand charges and the charges paid here are Re1/kW/year. Rs. 34000 taken as lease for one year is the amount recoverable from the power plant in 20 minutes if operated at full capacity.

42. Shri Ponrathnam submitted that there was a single bidder during the final bidding process. He added that certain activities have to be performed in-house, such as defence (army, navy and air force) and safety should not be handed over to any multinational company, only because it has submitted the lowest bid.

43. As regards the objector's contention regarding violation of statutes, DLHPPL submitted that the Electricity (Supply) Act, 1948, and the provisions thereof, has been repealed with the enactment of the EA 2003 and all the provisions of the EA 2003 are valid as on date. DLHPPL further submitted that the decision of leasing out BHEP-II to the private entity has been taken by the GoM and any further clarification may be obtained from GoMWRD and not the Commission.

44. As regards the objector's contention regarding handing over the project to a private company, DLHPPL submitted that the decision of leasing out BHEP-II project to a private entity has been taken by the GoM. Further, comments are to be clarified by the GoMWRD. As regards the bidding process, DLHPPL submitted that though the bidding

documents were purchased by many parties, only DLHPPL submitted the price bid. Price offered by DLHPPL is the minimum acceptable price, so that the tariff is kept low. DLHPPL submitted that the safety aspect of the power project has been addressed in the EA 2003.

45. As regards the lease rent, DLHPPL submitted that the demand charges paid by the consumers are different and cannot be equated to the lease rent for land charged by GoMWRD. Lease rent for land charged at Rs. 1/kW/year is as per the Policy of the State Government for construction of power project facility. It further submitted that in case of BHEP-II, in addition to land lease rent, DLHPPL has to give upfront premium of Rs. 60 Crore and further payment of Rs. 262.70 Crore over a period of 30 years, towards the project leased out to DLHPPL.

Commission's views on Objections raised

46. As regards the objector's contention that as the power plant belongs to the public as per the Constitution, the State Government is empowered to supply electricity to the public by law being enumerated in the concurrent list, the Commission is of the view that this objection has no relevance under the regulatory process being undertaken to determine the tariff for BHEP-II, as GoM has already handed over the project to DLHPPL after a competitive bidding process.

47. As regards the objector's contention regarding the treatment of power generation by BHEP-II as a by-product, the Commission holds that the investments have been made specifically towards creation of the generation facility and the electricity so generated is being sold to MSEDCL and accordingly, tariff has to be determined.

48. As regards the objector's contention regarding comparison of demand charges of HT consumers with lease rent charged for land by the GoM, the Commission feels that the demand charges cannot be compared with lease rent charged for land, as the demand charges levied on the consumers are determined considering the various expenses of the Distribution Licensee.

49. As regards the objector's contention regarding the decision of the GoM to hand over the project to a private company, the Commission is of the view that this objection has no relevance to the present regulatory process being undertaken to determine the tariff for BHEP-II.

Commission's Analysis and Ruling

50. Having heard the Parties and after considering the materials placed on record, the Commission is of the view as under.

51. On analysis of the details submitted in the Petition, including matters like proposed additional R&M costs, energy generation at various stages of construction of the Nilwande Dam, etc., it was found that the subject required detailed technical study as well. For this purpose, the Commission appointed Shri. VVRK Rao, ex-Chairman CEA and an expert in hydro electric generation projects, to carry out the detailed technical analysis. After analysing the information, Shri VVRK Rao submitted a preliminary report to the Commission on his findings on May 21, 2009 and May 31, 2009.

52. The Commission held detailed discussions with Shri VVRK Rao at the Commission's Office on June 6, 2009, after which, Shri VVRK Rao submitted the final report on his findings.

53. The Commission, in its Order dated April 10, 2006 in Case No. 1 of 2005 had approved the tariff considering the BHEP-II project as a Small Hydro Power Project till the height of Nilwande dam is raised to 610/613 meters. Further, the Commission in its Order stipulated that DLHPPL can approach the Commission for revision of tariff once the dam height is raised to 610/613 metres. In view of the fact that the construction of Nilwande dam has been completed upto RL 610/613 metres in overflow/non-over-flow section, the Commission has admitted the Petition filed by DLHPPL for determination of tariff for BHEP-II under Section 62(1)(a) read with Section 86(1)(a) of EA 2003. The Commission's ruling on various aspects affecting the tariff determination of this project are discussed below:

I. Capital Cost

The Capital Cost for any hydel project is the cost incurred for setting up the project over a period of time and the cost includes land and site development cost, engineering cost, works cost including cost of equipments and construction cost, pre-development expenses and financing costs. However, this is a different case where the project completion activities were completed by GoM and after 7 years, the project has been handed over to DLHPPL through competitive bidding. Therefore, in this case, the cost incurred for acquiring the project would form the basis for allowing the capital recovery costs, i.e., depreciation, interest on loan and return on equity.

54. As regards the capital cost for computation for tariff, Regulation 30.1 of the MERC Tariff Regulations stipulates as under:

"Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of the original cost of project. The original cost of project shall be determined based on the approved capital expenditure actually incurred up to the date of commissioning of the generating station and shall include capitalised initial spares subject to following ceiling norms as a percentage of the original cost as on the cut-off date:"

The actual cost incurred by the GoM on completion of the Project till the date of commissioning is Rs 93.29 Crore. However, in this case, the project has been awarded through competitive bidding process and an upfront payment of Rs. 60 Crore has been made to GoM.

The actual cost of the project incurred for acquiring this project is Rs 60 Crore as the fair commercial price, in its own business judgment by DLHPPL. Therefore, in this case it will not be appropriate to consider the actual capital cost incurred by the GoM as it has not been actually incurred by DLHPPL who will operate the project and recover its cost through the tariff.

The Commission also does not accept the request to consider the IDC on the project cost incurred by GoM, sought by DLHPPL in line with Case No. 17 of 2007, i.e., Determination of Lease Rent for hydel stations owned by Government and given on lease to MSPGCL, as this is not a case of lease rent determination, and the two Cases are not comparable. It will not be proper to take one element of one case to be applied to another case with other parameters being completely different. Accordingly, the Commission has considered the amount of Rs. 60 Crore paid upfront by the party to GoM as the actual cost for the BHEP-II for determination of tariff for capital expenditure related expenses like interest, depreciation and return on equity. As regards annual payments to be made to GoM as per the Agreement, the Commission has considered the same fully as part of AFC in the respective years as stipulated in the Letter of Award issued by GoM.

As regards the O&M expenses as a percentage of capital cost, it is clarified that the Capital Cost considered by the Commission for computing the interest on loan and return on equity is Rs 60 Crore as the Project has been acquired by making upfront payment of Rs 60 Crore. Further, the annual payments to be made for acquiring the Project has been considered by the Commission in respective years as part of AFC. Therefore, the total acquisition cost considered by the Commission is upfront payment of Rs 60 Crore on which the Commission has allowed the depreciation and capital recovery costs in terms of interest on loan and return on equity and the annual payments to be made by DLHPPL to GoM. As such, it will be appropriate to consider the O&M expenses as percentage of acquisition costs. The Commission has therefore considered the O&M expenses @ 2% of the actual capital cost of the Project incurred by GoM till COD i.e., Rs. 93.29 Crore

<u>II. Pre-Operative Expenses</u>

55. As regards pre-operative expenses, the Commission feels that the same has to be related to setting up of the project which is not the case here and has not accepted the pre-operative expenses of Rs 9.75 Crore. Moreover, the Bid Documents also do not specify any recovery of such expenses incurred for and prior to submitting the bids for the project. The Commission is of the view such costs incurred were towards the bidding for the project and cannot be a part of the capital cost of the project. The Commission therefore does not accept the request for considering the amortisation of the pre-operative expenses for computing AFC.

<u>III. Renovation, Modernisation and Replacement Expenses</u>

56. As regards the Renovation & Modernisation expenses incurred, the technical expert, Shri VVRK Rao has opined that the identified "R&M Works" are based on inspection report prepared in December 2004 by the consultant Mr. Erskine L. Flook. The works proposed are categorized as Maintenance, Rehabilitation and Upgrades (Rs. 3.15 Crore), Automation (Rs. 2.6 Crore) and long-term works (Rs. 4.25 Crore) to be carried out within 10 years. Shri Rao opined that normally, R&M works may become necessary and are taken up when substantial part of the normal life of the plant has elapsed and performance of the plant is impaired. The items covered are more of the nature of normal maintenance works and cannot be considered as Renovation & Modernisation activities. Moreover, the provision in the Bid Document also stipulates that any expenditure incurred by the bidder for better performance, maintenance, repairs, etc., shall be at the risk and cost of successful bidder.

57. Shri Rao further opined that under the long-term works, DLHPPL has proposed to procure a spare runner at a cost of Rs. 4.0 Crore on the basis of the inspection report. In this regard, the consultant has expressed some concern regarding the quality of repair work on the turbine runner and recommended further inspection after one year of service, which has perhaps, not been done. Further, the inspection report recommends that the runner replacement could be considered when Nilwande dam is raised to its final level. At that stage, as per the consultant <u>*"opportunity exists to alter the design to improve operation at the higher tail water levels as well as increase the output of the generating*</u>

unit at future reduced heads". Shri Rao suggested that a spare runner is not warranted at this stage of the project. DLHPPL could approach the Commission at an appropriate future date with data on how much higher output could be realized with the proposed change of runner and the cost economics. The rehabilitation work of the draft tube gate hoist could also be considered at that time.

58. Shri Rao further opined that the works proposed under "maintenance and rehabilitation and upgrades" are of routine nature and mostly form part of normal maintenance and not of capital nature. They also do not come under the category of "not included in the original project cost" as laid down in Regulation 30.3 of the MERC Tariff Regulations.

59. Considering the views of the technical expert, Shri VVRK Rao, the Commission has not considered any expenses towards the R&M works. DLHPPL may, if necessary approach the Commission later for prior approval of additional capital expenditure with appropriate justification addressing the comments of technical expert and with proper cost-benefit analysis. The Commission may consider the additional capital expenditure based on the prudence check of the same and approve the adjustment to the tariff approved in this Order.

IV. Means of Finance

60. In accordance with the MERC Tariff Regulations, the normative debt:equity ratio is 70:30 or actual debt if the same is higher than 70%. As submitted in the Petition that the project has been financed by loan availed from IFC, DEG and SBI. The Commission asked DLHPPL to confirm whether the entire loan availed from the above mentioned sources have been utilised to fund the project, i.e., upfront payment of Rs. 60 Crore. DLHPPL, in its reply, has submitted that out of the total loan availed from IFC, DEG and SBI, the loan availed for BHEP-II is Rs. 54.62 Crore and this amount has been utilised for payment of upfront premium of Rs. 60 Crore.

61. In accordance with the provisions of the MERC Tariff Regulations, the Commission has considered the actual debt of Rs. 54.62 crore, and remaining amount of the capital cost i.e., Rs. 5.38 Crore, has been considered as equity, for funding the total capital cost of Rs. 60 crore.

V. Period for Tariff Determination

Considering the fact that the period of contract with DLHPPL as specified in the Letter of Award issued by GoM is 30 years, the Commission has considered the life of BHEP-II for tariff determination as 30 years.

VI. Depreciation and Advance Against Depreciation

62. In accordance with Regulation 34.4.1 of the MERC Tariff Regulations, the Commission has allowed depreciation @ 3% till 90% of total capital cost of Rs 60 Crore. Further, in accordance with Regulation 34.4.2 read with Regulation 32.2 of the MERC Tariff Regulations, the Commission has also considered Advance Against Depreciation (AAD) of Rs. 34.46 crore for nine years, i.e., from FY 2010-2011 till FY 2018-19 to meet the shortfall in repayment obligations. The summary of the year-wise repayment and AAD as computed by the Commission is shown in the Table below:

(Rs. Crore)

Particulars	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2019-20
Depreciation	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
Repayment	5.46	5.46	5.46	5.46	5.46	5.46	5.46	5.46	5.46
AAD	3.27	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.04

VII. Interest Rate and Repayment of the Loan

63. As stipulated earlier, the project has been financed by IFC, DEG and SBI. The summary of the loan amount and interest rates is shown below:

Financial Institutions	Amount of Loan	Interest Rate
IFC	36.79	10.945% - Fixed for 10 years
DEG	15.89	10.61% - Euro loan linked with Libor, (Hedging added)
		After 2 years 11% considered.
SBI	1.94	8.75% - Fixed for 2 years, afterwards 15.75% (2% above PLR considered)
Total	54.62	Weighted Average Interest rate 10.77 %; After 2 years Weighted Average Interest Rate considered as 11.03%

The tenure of the loan is 13 years with 3 years moratorium. Accordingly, the loan repayment towards these loans starts from April 2009 and continues upto October 2018.

64. The Commission asked DLHPPL to submit the basis for considering the interest rate of 11% towards the loan availed from DEG. DLHPPL submitted that the total loan availed from DEG is 4.8 million Euros. The interest on DEG loan is variable and priced at Euribor +2.75% and out of total loan, 1.92 million Euros have been hedged/swapped for Rupee loan of Rs. 11.03 Crore at fixed interest rate of 11.85%. For the balance un-hedged Euro of 0.076 million (Rs. 4.51 Crore), which has been utilised for BHEP-II, the interest rate applicable is 7.501% and an increase of 1% has been projected by DLHPPL. Accordingly, DLHPPL has computed the weighted average interest rate of 11% towards loan availed from DEG. As regards the interest rate towards the loan availed from IFC and DEG, the Commission finds the interest rate of 10.495% towards the loan availed from IFC and weighted average interest rate of 11% for the loan availed from DEG as reasonable and has considered the same.

65. The Commission further asked DLHPPL to submit the basis for considering the interest rate of 15.75% (2% above PLR) towards the loan availed from SBI and asked to submit the supporting documents in this regard. DLHPPL submitted that the SBI PLR at the time of filing the Petition was 13.75%. The loan availed from SBI stipulates the fixed interest rate of 8.75% for first two years to be reset thereafter. DLHPPL submitted that from April 2008 onwards SBI has reset the interest rate and linked to PLR with 200 basis points above PLR. DLHPPL, in its computations, has hence, considered the interest rate of 15.75%.

66. As regards the interest rate for the loan availed from SBI, the Commission observes that the documentary evidence submitted with the Petition indicates that the interest rate on the term loan would be 2% above the PLR effective from April 1, 2008 and minimum rate would be 14.75%. The Commission observes that Clause 5.1.1 of the Loan Agreement of SBI stipulates that the borrower shall pay interest on the loan amount outstanding for the time being and from time to time at the interest rate of 8.75% p.a. (the 'Applicable Interest Rate') with monthly rests on the interest payment date to be reset every 2 years till the loan is unconditionally discharged and irrevocably repaid in full. The Commission further observes that the SBI PLR (also known as SBI Benchmark Advance Rate - SBAR) has been revised from June 29, 2009 to 11.75%. However, considering the fact that SBAR would vary from time to time, the Commission has considered the interest rate of 14% towards the loan availed from SBI for the period from April 1, 2008 to March 2010 and for subsequent periods has considered an interest rate of 12% as reasonable.

VIII. Return on Equity

67. In accordance with Regulation 34.1 of MERC Tariff Regulations, the Commission has adopted the applicable return on equity of 14% per annum in Indian Rupee terms on the equity portion as approved in the Order.

IX. Interest on Working Capital

68. In accordance with Regulation 34.5 of MERC Tariff Regulations, the Commission has considered the following elements for determining the working capital requirement:

    a. O&M expenses for 1 month

    b. Maintenance spares at 1% of the historical costs

    c. Receivables for sale of electricity equivalent to 2 months of the AFC as computed for each year

    Further, while computing the interest on working capital, the Commission has considered the interest rate of 13.75% considering the prevalent SBI PLR on the date of filing of the Petition for determination of tariff.

X. O&M Expenses

69. The Commission has considered the base O&M expenses as 1.5% of the capital cost of Rs. 93.29 Crore from the date of COD of the project and has escalated the same @ 4% in accordance with Regulation 34.6.2 (b) of the MERC Tariff Regulations for future years.

70. As regards the expense of Rs. 0.06/kWh of generation towards maintenance of intake structure, to be escalated by WPI, the technical expert, Shri VVRK Rao, opined that the normative O&M expenses for any hydel power plant includes the maintenance of intake structure and as the O&M expenses for first year is approved as percentage of Project Cost, this may not be considered separately. He further submitted that if the amount towards the maintenance of intake structure is considered as part of AFC then this amount would have to be deducted in the O&M cost as may be determined by the Commission. Alternatively, the capital cost of works whose O&M cost is covered in the payment to GoMWRD could be separated to work out the permissible O&M cost for the project. Accordingly, the Commission rules that any payment to GoM towards the maintenance expenses for intake structure should be provided from the O&M expenses allowed under this Order.

XI. Other Payments to GoM

71. The Commission has considered a lease rent for Government land of Rs. 34000 in the first year as stipulated in the letter of award. However, on account of change in WPI, the additional amount if any, may be recovered from MSEDCL through additional billing.

72. The letter of award issued by GoM for the project specifies the payment of the water royalty of Rs. 0.05/kWh of generation, to be escalated by WPI. The Commission has considered the same while determining the AFC. Further, in case of any change in the mechanism for water royalty payment including due to Judgment by any competent authority or otherwise, DLHPPL may approach the Commission for suitable adjustment in the tariff.

XI. Income Tax

73. The Commission has examined the provisions of Section 80 IA of the Income Tax Act, 1961, and the relevant text of Section 80 IA is reproduced below:

"(1) Where the gross total income of an assessee includes any profits and gains derived by an undertaking or an enterprise from any business referred to in sub-section (4) (such business being hereinafter referred to as the eligible business), there shall, in accordance with and subject to the provisions of this section, be allowed, in computing the total income of the assessee, a deduction of an amount equal to hundred per cent of profits and gains derived from such business for ten consecutive assessment years.

(2) The deduction specified in sub-section (1) may, at the option of the assessee, be claimed by him for any ten consecutive assessment years out of fifteen years beginning from the year in which the undertaking or the enterprise develops and begins to operate any infrastructure facility or starts providing telecommunication service or develops an industrial park or develops or develops and operates or maintains and operates a special economic zone referred to in clause (iii) of sub-section (4) or generates power or commences transmission or distribution of power:

…(iv) an undertaking which,-

(a) is set up in any part of India for the generation or generation and distribution of power if it begins to generate power at any time during the period beginning on the 1st day of April, 1993 and ending on the 31st day of March, 2010;"

74. As per provisions of the Income Tax Act, 1961, the Section 80 IA benefit is available to any undertaking set up in any part of India for the generation of power irrespective of ownership of the assets. The Commission is of the opinion that Section 80 IA benefit will be available to DLHPPL for this project and has accordingly considered the same while determining the tariff. However, in case DLHPPL does not get the Section 80 IA benefit, it may approach the Commission for appropriate adjustment in tariff along with the requisite documentary evidence obtained from the Income Tax authorities.

XI. Design Energy, Primary Energy and Secondary Energy

75. The Commission has considered the Design Energy as stipulated in the Order dated April 10, 2006 in Case No. 1 of 2005 as listed below:

    i. Pre Nilwande Phase – 34.10 MU
    ii. Post Nilwande Dam (+ 613 M) – 43.40 MU (w.e.f. October 2009).
    iii. Post Nilwande Dam (+ 648 M) – 36.26 MU (w.e.f. April 2012).

    Further, the Commission has considered the dates for the increase in the height as submitted in Petition in the present case.

76. As regards Secondary Energy, the Commission has not accepted the request of DLHPPL for considering incentive for Secondary Energy (over and above the Primary Energy) in accordance with the provisions of the CERC Tariff Regulations, 2004, and has relied on the MERC Tariff Regulations, which stipulates the recovery of the AFC in two parts, i.e., Annual Capacity Charge and Energy Charge. Regulations 28.2 and 35.2 of MERC Tariff Regulations stipulates as under:

    "28.2 Tariff for sale of electricity from a hydro power generating station shall comprise of two-parts, namely, recovery of annual capacity charge and energy charges.

    Provided that the annual capacity charges for a hydro power generating station shall be computed in accordance with the following formula:

    Annual Capacity Charges = (Annual Fixed Charge- Energy Charge)

    Provided further that the Energy Charge shall not exceed the Annual Fixed Charge under these Regulations"

"35.2 Energy Charges

(a) Energy charges shall be worked out on the basis of paise per kWh rate on exbus
energy scheduled to be sent out from the hydro power generating station.

(b) The energy rate for a hydro power generating station shall be such rate as may be notified by the Commission from time to time, based on the price variable cost of the least-cost available alternative source of power if such hydro power generating station was not to be despatched in accordance with the final despatch schedule of the State Load Despatch Centre.

(c) The energy charge shall be computed in accordance with the following formula
Energy Charge = Saleable Energy x Energy Rate"

The MERC Tariff Regulations do not differentiate between primary energy and secondary energy, and energy charges are to be computed based on entire saleable energy. Thus, the entire revenue recovered from Energy Charges should be deducted from Annual Fixed Charges for determining Annual Capacity Charges.

XII. Auxiliary Consumption

77. As regards the Auxiliary Consumption, the Commission has not considered DLHPPL's submissions to consider at 1.44% and has considered the normative auxiliary energy consumption and transformation losses as 0.7% and 0.5%, respectively, in accordance with the MERC Tariff Regulations.

XIII. Effective Date of Tariff Revision and Treatment of Under-Recovery/Over-Recovery

78. The Commission has computed the year-wise Annual Fixed charges for BHEP-II from the date of taking over of the project by DLHPPL. The Commission has considered the details of the revenue received as submitted by it for the period from FY 2006-07 to FY 2008-09. As the Commission has approved the AFC from FY 2009-10 onwards, the Commission has considered the under-recovery or over-recovery of AFC from the year of taking over till the end of FY 2008-09 as shown in Table below and has amortised the

same in equal instalments along with carrying cost of 6% per annum from FY 2009-10 onwards over the remaining period of lease of BHEP-II. The Commission clarifies that the revision in AFC as approved by the Commission will be effective only prospectively i.e., with effect from July 1, 2009, and any difference between the approved AFC for FY 2009-10 and total revenue recovered during FY 2009-10, should be adjusted at the end of FY 2009-10.

Rs. Crore

Particular	FY 2006-07	FY 2007-08	FY 2008-09
Computed AFC	**2.67**	**10.93**	**11.12**
Revenue Received from MSEDCL	**3.40**	**20.19**	**14.78**
Under/(Over) Recovery	**(0.73)**	**(9.26)**	**(3.66)**
Carrying cost on Under/(Over) Recovery	**(0.04)**	**(0.56)**	**(0.22)**
Total Carrying Cost till FY 2009			**(0.82)**
Under/(Over) Recovery with carrying cost to be amortised			**(14.47)**

XIV. Approved Annual Fixed Charges (AFC) and Tariff Mechanism

79. Based on these principles, the AFC as approved for BHEP-II from FY 2009-10 onwards is given at **Annexure-1** and the summary of year-wise total AFC is shown in the Table below:

Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Computed AFC (Rs Crore)	11.43	14.24	14.37	13.81	13.55	13.04	12.53	12.03	11.61	12.62
Under-recovery Amortisation + Carrying Cost (Rs Crore)	(1.37)	(1.34)	(1.31)	(1.28)	(1.25)	(1.21)	(1.18)	(1.15)	(1.12)	(1.09)
Total AFC including Amortisation and Carrying Cost (Rs Crore)	10.06	12.90	13.06	12.54	12.31	11.83	11.35	10.88	10.49	11.53

Year	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Computed AFC (Rs Crore)	7.48	7.60	7.73	7.86	17.21	22.47	22.62	22.77	23.14	26.17
Under-recovery Amortisation + Carrying Cost (Rs Crore)	(1.06)	(1.03)	(1.00)	(0.97)	(0.94)	(0.90)	(0.87)	(0.84)	(0.81)	(0.78)
Total AFC including Amortisation and Carrying Cost (Rs Crore)	6.42	6.57	6.73	6.89	16.27	21.56	21.74	21.93	22.33	25.39

Year	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37
Computed AFC (Rs Crore)	26.34	26.53	26.71	26.91	27.11	27.33	27.55	7.26
Under-recovery Amortisation + Carrying Cost (Rs Crore)	(0.75)	(0.72)	(0.69)	(0.66)	(0.63)	(0.59)	(0.56)	(0.53)
Total AFC including Amortisation and Carrying Cost (Rs Crore)	25.60	25.81	26.03	26.25	26.49	26.73	26.98	6.73

80. In accordance with the MERC Tariff Regulations, the Commission approves the levy of two part tariff comprising Energy Charges and Annual Capacity Charges. The rate of Energy Charge for particular financial year shall be equivalent to Energy Charge of thermal generating station in the State having lowest energy charge in that particular financial year. The entire revenue recovered from Energy Charges shall be deducted from Annual Fixed Charges for arriving at Annual Capacity Charges payable. In case of over/under recovery in any particular year with respect to Annual Fixed Charges approved for the respective year, the same will be adjusted in Annual Capacity Charge for the subsequent year.

81. Based on the above approved fixed charges, the levelised per unit energy rate in Rs/kWh as approved by the Commission and as proposed by DLHPPL is given in the Table below:

Particulars	**DLHPPL**	**Commission**
Levelised Tariff for 30 Years (Rs./kWh)	5.60	3.73

XV Incentive

82. DLHPPL shall be eligible for an incentive payable in accordance with Regulation 37.2 of MERC Tariff Regulations. DHPPL shall compute the incentive on the basis of the actual performance and shall bill the same as an additional charge, payable at the end of the year. There shall be pro-rata reduction in recovery of Annual Fixed Charges in case the generating station achieves capacity index below the prescribed normative levels.

XV Other Issues

83. The other issues raised such as Charges for Unscheduled Interchange, Billing and Payment Mechanism, Rebate/Late Payment Surcharge, Demonstration of Declared Capacity and Deemed Generation shall be governed by the respective Regulations of the Commission.

With the above Order, DLHPPL's Petition in Case No. 27 of 2008 stands disposed of.

Sd/-	Sd/-	Sd/-
(S.B. Kulkarni)	(A. Velayutham)	(V. P. Raja)
Member	Member	Chairman

(P. B. Patil)
Secretary, MERC

Annexure-1- AFC for BHEP-II

All Figures inRs. Crore	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*	*2021-22*	*2022-23*
Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*
	for 3 mths																
Interest on Loan Capital	1.47	5.88	5.99	5.69	5.06	4.46	3.87	3.27	2.68	2.08	1.49	0.89	0.30	(0.00)	(0.00)	(0.00)	(0.00)
Depreciation	0.45	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	-	-	-	-
Amortisation of pre-op cost																	
Amortisation of intitial payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AAD	-	-	-	-	3.27	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.04	-	-	-	-
ROE	0.19	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
O&M Expenses	0.44	1.84	1.92	1.99	2.07	2.15	2.24	2.33	2.42	2.52	2.62	2.73	2.83	2.95	3.07	3.19	3.32
Interest on Working Capital	0.05	0.40	0.41	0.41	0.48	0.48	0.47	0.47	0.45	0.44	0.43	0.43	0.45	0.33	0.34	0.34	0.35
Lease Rent towards Govt. Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
GOMID lease payment	-	-	-	0.50	0.50	0.75	0.75	1.00	1.00	1.00	1.00	1.00	3.00	3.00	3.00	3.00	3.00
Sub-Total	**2.61**	**10.68**	**10.87**	**11.15**	**13.94**	**14.07**	**13.55**	**13.29**	**12.78**	**12.27**	**11.76**	**11.26**	**12.18**	**7.04**	**7.16**	**7.29**	**7.42**
Water Royalty	0.04	0.17	0.17	0.19	0.21	0.21	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Maintenance Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Tax	0.02	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.17	0.26	0.26	0.26	0.26	0.26
Annual Fixed Charges	**2.67**	**10.93**	**11.12**	**11.43**	**14.24**	**14.37**	**13.81**	**13.55**	**13.04**	**12.53**	**12.03**	**11.61**	**12.62**	**7.48**	**7.60**	**7.73**	**7.86**
Undercovery Amortisation+Carrying Cost				**(1.37)**	**(1.34)**	**(1.31)**	**(1.28)**	**(1.25)**	**(1.21)**	**(1.18)**	**(1.15)**	**(1.12)**	**(1.09)**	**(1.06)**	**(1.03)**	**(1.00)**	**(0.97)**
Total AFC including Amortisation and CC				**10.06**	**12.90**	**13.06**	**12.54**	**12.31**	**11.83**	**11.35**	**10.88**	**10.49**	**11.53**	**6.42**	**6.57**	**6.73**	**6.89**

All Figures inRs. Crore	*2023-24*	*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*	*2029-30*	*2030-31*	*2031-32*	*2032-33*	*2033-34*	*2034-35*	*2035-36*	*2036-37*
Year	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*
														for 9 mths
Interest on Loan Capital	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortisation of pre-op cost														
Amortisation of intitial payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROE	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
O&M Expenses	3.45	3.59	3.73	3.88	4.03	4.20	4.36	4.54	4.72	4.91	5.11	5.31	5.52	5.74
Interest on Working Capital	0.56	0.68	0.69	0.69	0.70	0.78	0.78	0.79	0.79	0.80	0.81	0.82	0.82	0.36
Lease Rent towards Govt. Land	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
GOMID lease payment	12.00	17.00	17.00	17.00	17.20	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	-
Sub-Total	**16.77**	**22.03**	**22.18**	**22.34**	**22.70**	**25.74**	**25.91**	**26.09**	**26.28**	**26.48**	**26.68**	**26.89**	**27.11**	**6.87**
Water Royalty	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.13
Maintenance Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Tax	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Annual Fixed Charges	**17.21**	**22.47**	**22.62**	**22.77**	**23.14**	**26.17**	**26.34**	**26.53**	**26.71**	**26.91**	**27.11**	**27.33**	**27.55**	**7.26**
Undercovery Amortisation+Carrying Cost	**(0.94)**	**(0.90)**	**(0.87)**	**(0.84)**	**(0.81)**	**(0.78)**	**(0.75)**	**(0.72)**	**(0.69)**	**(0.66)**	**(0.63)**	**(0.59)**	**(0.56)**	**(0.53)**
Total AFC including Amortisation and CC	**16.27**	**21.56**	**21.74**	**21.93**	**22.33**	**25.39**	**25.60**	**25.81**	**26.03**	**26.25**	**26.49**	**26.73**	**26.98**	**6.73**