MADHYA PRADESH ELECTRICITY REGULATORY COMMISSION

5th Floor, "Metro Plaza", Bittan Market, Bhopal - 462 016

Petition No. 12 of 2010

PRESENT:

Rakesh Sahni, Chairman

K.K. Garg, Member

C.S. Sharma, Member

IN THE MATTER OF:

Provisional approval of Generation tariff for FY2009-10 to FY2011-12 in respect of MP's 57% share of power in Sardar Sarovar Project (6x200+5x50 MW) under Section 62 of the Electricity Act, 2003 and clause 31 of MPERC (Conduct of Business) Regulations, 2004.

Narmada Valley Development Authority, Bhopal — **PETITIONER**

Vs.

1. **M.P. State Electricity Board, Rampur, Jabalpur**
2. **M.P. Power Trading Company Ltd., Rampur, Jabalpur**
3. **M.P. Poorv Kshetra Vidyut Vitaran Company Ltd., Jabalpur**
4. **MP Madhya Kshetra Vidyut Vitaran Company Ltd., Bhopal**
5. **MP Paschim Kshetra Vidyut Vitaran Company Ltd., Indore**

RESPONDENTS

ORDER

(Passed on this day of 7th February, 2011)

1 This petition has been filed by Narmada Valley Development Authority (hereinafter called "the petitioner" or "NVDA") for provisional approval of generation tariff for FY2009-10 to FY2011-12 in respect of MP's 57% share of power in Sardar Sarovar Project (6x200+5x50 MW) based on the Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for determination of Generation Tariff) Regulations, 2009 (hereinafter referred to as "Regulations, 2009").

2 Sardar Sarovar Project is a joint interstate project of four States namely, Madhya Pradesh, Maharashtra, Gujarat and Rajasthan. The generating station comprises of 6 units of 200 MW each River Bed Power House (hereinafter called RBPH) and 5 units of 50 MW each Canal Head Power House (hereinafter called CHPH). The capital cost of the Sardar Sarovar head works chargeable to power portion (component) during construction and thereafter operation and maintenance costs thereof etc. is to be contributed by three Beneficiary States - Madhya Pradesh, Maharashtra and Gujarat- in the ratio of 57:27:16 and are entitled to get the power available from its River Bed Power House and Canal Head Power House in the same ratio. The entitlement of power applies both to availability of machine capacity for peak loads and to the total energy produced in any day.

3 The provisional annual capacity (fixed) charges for the generation of power from Sardar Sarovar Project for the period FY2009-10 to FY2011-12 as filed by the petitioner is given below:

Sr. No.	Particulars	Unit	FY09-10	FY10-11	FY11-12
1.	Capacity of GoMP's Share	MW	826.50	826.50	826.50
2.	Gross Gen. (Design Energy)	MU's	2193.36*	2193.36*	2193.36*
3.	Capital Cost	Rs.Cr.	2737.65**	2737.65**	2737.65**
4.	Return on Equity	Rs.Cr.	127.30	127.30	127.30
5.	Interest & Finance Charges	Rs.Cr.	176.51	176.51	176.51
6.	Depreciation	Rs.Cr.	116.62	116.62	116.62
7.	O&M Expenses	Rs.Cr.	49.26	49.26	49.26
8.	Interest Charges on Work. Cap	Rs.Cr.	11.23	11.14	11.06
	Total Fixed Cost	**Rs.Cr.**	**480.93**	**472.65**	**464.54**

* **Design Energy as filed in petition.**

****Capital Cost of Rs. 2737.65 Cr. filed in petition which was reduced to Rs.2243.59 Cr. by petitioner in supplementary submission.**

The petitioner has also filed water charges, Cess on auxiliary consumption and fee payable to MPERC separately under other charges in the petition.

4 The petitioner has prayed for approval of the following:

i. Provisional Annual Fixed Charges (AFC) /Tariff rates for the FY10 –FY12 as per Annexure-XI, Payable by MPSEB/MP Tradeco to GoMP NVDD/NVDA for supply of its 57% share of energy from SSP.

ii. Design energy at reservoir level of 121.92 mtrs as 1393.34 MU may be considered.

iii. Till the order of Hon'ble Commission on this petition is issued, the petitioner may be allowed to raise the bills to respondent as per previous order already issued by the Hon'ble Commission

5 The Madhya Pradesh Electricity Regulatory Commission (hereinafter called "the Commission" or "MPERC") having gone through the petition submitted by NVDA for determination of provisional tariff and having heard the petitioner admitted the petition on 16th September, 2010. The gist of petition was published by the petitioner on 11th December, 2010 for inviting comments/suggestions from stakeholders. The Commission received written comments from M.P. Madhya Kshetra Vidyut Vitaran Co. Ltd. Bhopal, M.P. Paschim Kshetra Vidyut Vitaran Co. Ltd. Indore, M.P. Power Trading Co. Ltd. Jabalpur and Narmada Control Authority Indore. The Commission conducted the public hearing in the subject petition on 12rd January, 2011.

6 The Commission after detailed examination of the petition and based on the Regulations, 2009 has reworked various components of tariff as per detailed Order attached to this Order. The Commission vide this Order has determined the Annual Fixed Cost as given below.

Annual Fixed Cost determined in this order					
Sr. No.	**Particular**	**Unit**	**FY10**	**FY11**	**FY12**
1	Capacity of GoMP's Share	MW	826.50	826.50	826.50
2	Gross Gen. (Design Energy)	MU's	2193.36	2193.36	2193.36
3	Capital Cost considered	Rs.Cr.	2065.07	2065.07	2065.07
4	Return on equity	Rs.Cr.	96.03	96.03	96.03
5	Depreciation	Rs.Cr.	93.01	93.01	93.01
6	O&M Charges	Rs.Cr.	49.26	52.15	55.21
7	Interest and finance charges	Rs.Cr.	97.81	90.68	83.54
8	Interest on working capital	Rs.Cr.	8.44	8.44	8.44
	Total fixed cost (3 – 7)	**Rs.Cr.**	**344.55**	**340.30**	**336.23**

7 The petitioner is allowed to recover capacity charge and energy charge on the basis of 95% of the Annual Fixed Cost determined in this order on provisional basis subject to retrospective adjustment on determination of final tariff. The petitioner is also allowed to recover the fee paid by the petitioner to MPERC for determination of generation tariff, water charges on usages of water for hydro power station and duty and cess, if any, on auxiliary power consumption levied by the Statutory Authorities from the beneficiaries in

accordance with the provisions of Regulations, 2009.

8 The Commission, in exercise of the powers vested in it under Section 64 of the Electricity Act, 2003, directs that the tariff provisionally determined by this order shall be applicable from 1st April, 2009 and will continue to be operative till 31st March, 2012 under multi year tariff principles. Till March, 2011, NVDA shall continue to bill the beneficiaries at the same tariff as was applicable during FY 2008-09. The petitioner (NVDA) shall bill the difference of tariff applicable for FY 2009-10 and FY 2010-11 with reference to FY 2008-09 during FY 2011-13 in equal monthly instalments along with the current charges. No interest on unbilled amount of FY 2009-10 and FY 2010-11 is being allowed in view of the fact that tariff determination got delayed on account of inordinate delay in filing the tariff proposal by NVDA and submission of the requisite data. The petitioner must take steps to implement the Order after giving public notice in accordance with clause 1.30 of MPERC (Details to be furnished and fee payable by licensee or generating company for determination of tariff and manner of making application) Regulations, 2004 and its amendments and must also provide information to the Commission in support of having complied with this order.

9 The petitioner is also directed to expedite updation of their records and annual accounts and ensure filing of petition for final tariff at the earliest with full justification for the time over run and consequential cost over run.

10 Ordered as above read with attached detailed reasons and grounds.

(C. S. Sharma)	**(K. K. Garg)**	**(Rakesh Sahni)**
Member (Eco.)	**Member (Engg)**	**Chairman**

Date: 7th February, 2011
Place: Bhopal

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CHAPTER 1

1 Back Ground of the order

1.1 This order relates to the petition bearing number 12 of 2010 filed by the Narmada Valley Development Authority (NVDA) on 06.03.2010 for provisional approval of the generation tariff of MP's 57% share of power in Sardar Sarovar Project for the period FY2009-10 to FY2011-12 based on the Regulation, 2009.

1.2 The Commission vide its order dated 18th January, 2008 issued provisional order for generation tariff for MP's 57% on petition number 3 of 2007 filed by NVDA and that order was applicable for last control period i.e. up to 31st March, 2009.The annual capacity (fixed) charges approved by the Commission in aforementioned order is given below:-

Provisional Annual Capacity (Fixed) Charges for Generation of SSP Power (MP's Share) for period upto March, 2009				
SI. No.	**Particulars (MP Share Only)**			**Unit**
1	Installed Capacity	57% of 1450 MW	826.50	MW
2	Energy Generation(Firm Power)	Design Energy	2193.36	MUs
3	Capita] Cost	Undisputed	2065.07	Rs. Crore
4	Normative Loan	70%	1445.55	Rs. Crore
5	Normative Equity	30%	619.52	Rs. Crore
6	Auxiliary Consumption	0.50%	10.97	MUs
7	Transformation Losses	0.50%	10.97	MUs
8	Energy Available		2171.43	MUs
9	Working Capital			
(i)	O&M	One Month	2.58	Rs. Crore
(ii)	Receivable	2 Months	48.29	Rs. Crore
(iii)	Spares	1%	20.65	Rs. Crore
	Working Capital requirement		71.53	Rs. Crore
10	Cost Computation			
(i)	Interest on Loan	7.6742%	110.93	Rs. Crore
(ii)	Depreciation	2.57%	53.07	Rs. Crore
(iii)	O&M	1.50%	30.98	Rs. Crore
(iv)	Return On Equity	14%	86.73	Rs. Crore
(v)	Interest on Working Capital	11.25%	8.05	Rs. Crore
11	**Annual Capacity Fixed Charges)**		**289.76**	**Rs. Crore**

1.3 The Commission allowed recovery to the extent of 95% of full provisional annual capacity charges. In Para 3.22 of the aforementioned order, the Commission directed the petitioner to file appropriate petition(s), based on the actual audited accounts for approval of final tariff in accordance with the terms and conditions notified by the Commission from time to time.

1.4 The petitioner has not filed the petition for determination of final tariff based on audited capital cost on account of the reasons mentioned in Para 1.10 of this order and filed this petition for provisional approval of generation tariff for the new control period i.e. FY2009-10 to FY2011-12.

1.5 It is also worthwhile to mention that the petitioner had also filed a review petition No.38/2008 on 22nd May, 2008 to review the order dated 18th January, 2008 for approval of the following :

i. Energy generated after COD of individual unit may be treated as firm energy.
ii. Design energy at various reservoir levels may be considered based on the capacity curve of the dam.
iii. AFC may be allowed on COD of individual unit in proportion of P1/P where P1 is peak power available as on COD and P is maximum peaking power available on completion of project i.e. installed capacity.
iv. Till the order of Hon'ble Commission on review petition, the petitioner may be allowed to raise the bill to respondent as per previous rate allowed by the Commission.

1.6 The Commission, on scrutiny of above review petition amended its order dated 18th January, 2008 to the following extent :

(i) *The recovery of design energy from 16th August 2004 to 31st March 2007 and provisional FC (Fixed Cost) as following for the period mentioned against each unit. The provisional FC is determined based on the ratio of installed capacity of unit (s), which achieved COD to the total installed capacity i.e. 1450 MW.*

(ii) *During the period from 16th August 2004 to 31st March 2008, energy generated from the project was 5728.370 MU, against Design Energy of 5524.684 MU. However year on year basis, the generated energy is less than design energy during FY 2004-05 and 2005-06. Since the tariff determined is provisional and the total energy generated from the project upto 31st March 2008 exceeds design energy, the Commission has not considered any relief to the petitioner towards full recovery of FC in this review petition. For period upto FY 2007-08, this provisional order shall continue till final tariff is determined. However for period after FY 2007-08 and before determination of final tariff, if for reasons beyond control of the petitioner, they are unable to recover full fixed charges, they may approach the Commission for appropriate relief.*

(Design Energy allowed)

From	*To*	*Design Energy*
16 Aug. 2004	*31 March 2005*	*229.76*
01 April 2005	*31 March 2006*	*1208.08*
01 April 2006	*31 March 2007*	*1915.41*
01 April 2007	*31 March 2008*	*2171.43*

<u>Fixed charge allowed in review petition No.38/2008</u>

CHPH ***RBPH***	***Unit Wise COD***		***Capacity***	***Calculation of Fixed Cost***		***P1/P***	*Fixed charge* ***(Rs. in Cr.)***
	Unit No	***COD***		***From***	***To***		
CHPH	*2*	*16-Aug-04*	*50*	*16 Aug.04*	*31-Aug-04*	*0.034*	*0.438*
	3	*01 Sep-04*	*100*	*01 Sept.04*	*02 Sept. 04*	*0.069*	*0.109*
	4	*03 Sep- 04*	*150*	*03 Sept.04*	*03Oct. 04*	*0.103*	*2.546*
	1	*04 Oct- 04*	*200*	*04 Oct. 04*	*14-Dec-04*	*0.138*	*7.884*
CHPH	*5*	*15 Dec. 04*	*250*	*15 Dec. 04*	*13 Feb. 05*	*0.172*	*8.349*
RBPH	*1*	*14 Feb. 05*	*450*	*14 Feb. 05*	*31 Mar. 05*	*0.310*	*11.333*
	-	*-*	*450*	*01 Apr. 05*	*13 Jun. 05*	*0.310*	*18.231*
	2	*14 June. 05*	*650*	*14 Jun. 05*	*05 Sept. 05*	*0.448*	*29.893*
	3	*06 Sept.05*	*850*	*06 Sept. 05*	*29 Oct. 05*	*0.586*	*25.130*
	4	*30 Oct. 05*	*1050*	*30 Oct. 05*	*31 Mar. 06*	*0.724*	*87.955*
			1050	*01 Apr. 06*	*26 Jun. 06*	*0.724*	*50.013*
	6	*27 Jun. 06*	*1250*	*27 Jun. 06*	*11 Nov. 06*	*0.862*	*94.442*
	5	*12 Nov. 06*	*1450*	*12 Nov. 06*	*31 Mar. 07*	*1.000*	*111.141*

1.7 The subject petition was filed by NVDA on 6th March, 2010. On preliminary scrutiny of the petition, following information gaps/requirement of additional information were communicated to the petitioner on 8th June, 2010 :

(i) *"The petitioner should submit the audited balance sheets for all the financial years of the last control period along with the reasons for not having filed the petition for determination of final tariff for the last control period. Since the petitioner has now considered the undisputed capital cost of Rs.2737.65 crores instead of undisputed capital cost of Rs.2065.07 crores provisionally admitted by the Commission in its tariff order dated 18th January, 2008, the petitioner is required to submit full justification of the increase in undisputed capital cost by Rs.672.58 crores along with all relevant documents and the approvals of the competent authorities in this regard.*

(ii) *The petitioner is also required to provide the following details recorded for capitalization in light of the Regulation 19 of the Terms & Conditions of the Generation Tariff Regulations, 2009 :*

a) *Whether the addition of asset is on account of (a) to (f) of the reasons in clause 19 of the Regulation.*

b) *Whether the petitioner has taken due care in writing off the gross value of the original asset from the original cost in case of any expenditure on replacement of old asset.*

c) *Whether the effect of writing off the gross value of the original asset from the original cost on replacement of the old asset has been considered in the asset registers.*

(iii) The petitioner should submit the asset records indicating the value and commissioning of each asset along with yearly and cumulative depreciation. The break-up of the cost pertaining to civil works and also plant and machinery be filed along with the working based on which the weighted average rate of depreciation has been derived by the petitioner.

(iv) Detailed project report of the hydro power station and basis of calculating the design energy of the project be submitted to the Commission.

(v) Details of the undisputed capital cost of 57% share clearly indicating the year-wise expenditure on civil work, plant and machinery etc. and audited from statutory auditor be also filed with the Commission.

(vi) Details of the actual loans drawn from different agencies along with loan agreements and terms and conditions of each loan should be submitted.

(vii) Year-wise details of actual equity invested in the project for 57% GoMP share be filed with the Commission.

(viii) A copy of PPA with procurer be filed."

1.8 The NVDA vide letter dated 29.06.2010 requested the Commission to allow submission of above information by end July, 2010. The Commission vide letter dated 2nd July, 2010 allowed a time extension up to 25th July, 2010 for submission of additional information.

1.9 The petitioner filed the reply on affidavit on 9th August, 2010 wherein the undisputed capital cost as on March, 2009 was changed from Rs.2737.65 crores to Rs.2243.59 crores. The petitioner mentioned that the undisputed share cost of GoMP is Rs.2065.07 crores upto March, 2007, Rs.2149.58 crores upto March, 2008 and Rs.2243.59 crores upto March, 2009. The petitioner also stated that the increase in undisputed capital cost from Rs.2065.07 crores (already admitted by the Commission) to Rs.2243.59 crores is due to booking of actual expenditure paid for respective components. It was observed that the petitioner filed no justification or documents in support of contended increase in the undisputed capital cost, as required under Regulation 20 of MPERC (Terms and Conditions for determination of Generation Tariff) Regulation, 2009. The petitioner in the same reply mentioned that the normative debt-equity ratio has been considered by the petitioner in the petition however, the payment of GoMP share has been made through budgetary support and no detail of loan component is available with the petitioner. The petitioner also mentioned that the information of actual year-wise equity invested in the project is not available with the petitioner.

1.10 In reference to the issue of filing petition for final tariff, the petitioner mentioned following in its reply on 9th August, 2010 :

"The project is still under construction. The Dam is considered upto crest level 121.92 mtrs. in December, 2006 and yet to be constructed upto to FRL 138.68 mtr. hence the expenditure on Dam (Unit-I) is yet to be freezed and therefore its 56.1% share chargeable

to power (Unit-II) is also not freezed. The petitioner has further submitted that since the SSP Dam is still under construction, it will be treated as substantially completed only when the Dam upto FRL 138.68 mtrs. and other component, are completely constructed. Hence petition for determination of final tariff for last control period could not be filed."

1.11 On perusal of the written submission filed by the petitioner, the Commission observed that this project has been inordinately delayed and has huge cost over run. The Commission also noted lack of clarity and inadequacy of information in the petition even after filing additional submission by the petitioner. In view of the above, the Commission fixed the motion hearing on 14th September, 2010.

1.12 During the course of hearing held on 14th September, 2010, the petitioner submitted that the project executing body is the Sardar Sarovar Narmada Nigam Limited (SSNNL) and the petitioner tried to obtain maximum information from SSNNL but was able to obtain the limited information only. The representative of the petitioner requested the Commission to grant 15 days more time to file the requisite details in support of increased undisputed capital cost of the project.

1.13 The Commission vide order sheet dated 16th September,2010 admitted the petition and directed the petitioner to file all requisite details along with justification and supporting documents in respect of increase in undisputed capital cost in accordance with the provisions under Regulation 20 of MPERC (Terms and Conditions for determination of generation tariff) Regulation,2009 by 30th September,2010.. The Commission further directed the petitioner that ultimate beneficiaries of power – three Distribution Companies of the State should also be made respondents and that they be served a copy of the petition. The next hearing was fixed by the Commission on 5th October, 2010. On request of the petitioner, the Commission adjourned the hearing to 9th November, 2010.

1.14 The petitioner vide its letter dated 20th October, 2010 submitted its response to the issues raised by the Commission vide order-sheet dated 16th September, 2010. The petitioner in its afore-mentioned reply almost repeated its contention already filed in earlier submission except a few additions.

1.15 The Commission vide order dated 15th November, 2010 directed the petitioner to file a gist of petition to be published in newspapers for inviting comments/suggestions from stakeholders. Accordingly, NVDA filed a draft gist of petition for public notice to be published in newspapers, for approval of the Commission. The Commission vide letter dated 4th December, 2010 directed the petitioner to publish the public notice in Hindi and English newspapers for inviting comments/suggestions from various stakeholders.

Public Hearing

1.16 A public notice on the gist of subject petition was published by NVDA in various news papers on 11th December, 2010 for inviting comments/suggestions from various stakeholders. The comments from following stakeholders were received by the Commission:

i. M.P. Madhya Kshetra Vidyut Vitaran Co. Ltd., Bhopal
ii. M.P. Paschim Kshetra Vidyut Vitaran Co. Ltd., Indore

iii. M.P. Power Trading Co. Ltd., Jabalpur
iv. Narmada Control Authority, Indore
v. Nagrik Adhikar Association, Satna

The issues raised by above stakeholders are discussed separately in chapter-V of this Order.

1.17 The public hearing in the subject petition was held on 12th January, 2011 wherein the representatives of the petitioner and respondent No.4 namely, MP Madhya Kshetra Vidyut Vitaran Co. Ltd., Bhopal appeared. The petitioner submitted that Narmada Control Authority (NCA) raised their objection to the issue of court stay on construction activities of the dam mentioned in the public notice issued by NVDA on 11th December, 2010 mentioning that there is no stay on the construction of the dam by any order of the court hence, the position regarding court stay is factually not correct in the public notice. The petitioner further stated that the objection raised by NCA is correct because there is factually no court stay in the matter. However, the petitioner actually intended to express the fact in the petition and the public notice that the construction work of dam could not be completed in absence of permission from NCA pursuant to certain directions of the court.

CHAPTER 2

2 Brief description of the project filed by the petitioner :

2.1 Narmada Valley Development Authority (NVDA) was constituted vide GoMP resolution No. 500-2-NVD-XXVII-83 of July 16, 1985. The petitioner is an organization of the GoMP associated with planning of water resource development in Narmada River Basin with the following main objectives :

(a) To prepare a detailed plan for exploitation of the water resources of the Narmada River and its tributaries and to undertake all necessary engineering works for harnessing of the potential available on the Narmada & its tributaries in the Narmada Basin for the purpose of irrigation, power, navigation and other development.

(b) To undertake power generation and sale of bulk power to MPSEB

2.2 The Narmada is an Inter-State river flowing through the states of Madhya Pradesh, Gujarat and Maharashtra. The question of sharing of water of Narmada was examined by the Narmada Water Disputes Tribunal (NWDT) which was constituted in October 1969. The NWDT gave its award in December 1979.

2.3 Sardar Sarovar Project (SSP) is a joint Interstate project of four states (Madhya Pradesh, Maharashtra, Gujarat and Rajasthan) of Western Region of India. As per the award of NWDT, the power houses and appurtenant works including the machinery and all installations as well as the transmission lines in Gujarat State were to be constructed, maintained and operated by Gujarat State or an authority nominated by the State. The Govt. of Gujarat on 11.04.1988 set up Sardar Sarovar Narmada Nigam Limited (SSNNL), a corporate body under the Companies Act to expedite implementation of the project. Narmada Control Authority (NCA) is the superviosary body constituted by the Govt. of India.

2.4 Techno-Economic Clearance (TEC) of power project was accorded by the Central Electricity Authority on 10th January, 1984. The proposed CoD of all the units of the project as per TEC was in FY1995-96. The different level of reservoir as indicated in the TEC is given below:

i.	Full reservoir level:	138.68 Mtrs.
ii.	Maximum water level:	140.21 Mtrs.
iii.	Crest level:	121.99 Mtrs.
iv.	Minimum draw down level:	110.64 Mtrs.
v.	Irrigation Sluice:	91.45 Mtrs.

In the Techno-Economic Clearance of the project, it is indicated that the total annual firm energy of the dam is 3810 MU's which is at full reservoir level of 138.68 Mtrs.

2.5 As per the NWT Award, the capital cost of the Sardar Sarovar Head works chargeable to power portion (component) during construction and thereafter the operation and maintenance costs thereof etc. is to be contributed by three Beneficiary States – Madhya Pradesh, Maharashtra and Gujarat- in the ratio of 57:27:16 and they are entitled to get the power available from its 6x200 MW River Bed Power House (RBPH) and 5X50 MW Canal Head Power House (CHPH) , at bus-bar of SSP in the 400KV switchyard in the same ratio. The entitlement applies both to availability of machine capacity for peak loads and to the total energy produced in any day.

2.6 As per the NWDT Award, the capital cost of the power portion of the Sardar Sarovar head-works comprises of the following:-

(a) Full cost of Unit-III electrical works and control works pertaining thereto upto and including the switchyard.
(b) Full cost of transmission lines in Gujarat State constructed for supplying power to Madhya Pradesh and Maharashtra.
(c) 56.1 percent of the net cost of common facilities such as Dam and Appurtenant works i.e. Unit-I of SSP, after allowing for credits, if any.
(d) 56.1 percent of the credit given to Madhya Pradesh for the downstream benefits derived from Narmada (Indira) Sagar Dam.

2.7 As per the NWDT award, the amount towards 57 % of the capital cost of the power portion of the Sardar Sarovar head-works have to be paid by Madhya Pradesh to Gujarat in annual instalments until the capital works are completed. Each instalment has been worked out on the basis of the budgeted figures of the concerned works at the commencement of each financial year and shall be set off and adjusted against actual figures at the end of the financial year. In addition to the payments above, Madhya Pradesh has also been required to pay to Gujarat 57 % of the operation and maintenance cost of the SSP Complex each year. These payments are also to be based on budgeted figures at the commencement of each financial year and adjusted against actual cost at the end of the year.

2.8 The Operation & Maintenance of SSP Power Complex is to be done by Gujarat Electricity Board (GEB). For this purpose the SSNNL has entered into an agreement with GEB on September 17, 2004. As per provision of O&M agreement, GoMP has to make an advance payment on quarterly basis towards 57% of O&M cost of Sardar Sarovar Power Complex.

2.9 SSNNL has constructed the Dam upto it's MDDL–110.64 mtr. in June, 2004. After getting permission from Narmada Control Authority in March 2006 to raise the Dam upto 121.92 Mtr, SSNNL has constructed the Dam upto 119 mtr in Jun–2006 and up to 121.92 mtr in Dec. 2006. All the 5 Units of CHPH were commissioned during Aug. 2004 to Dec. 2004, after completion of successful continuously 72 hours running, their unit wise commercial operation dates as communicated by SSNNL/NCA are as given below:

Unit No.	RBPH		CHPH	
	Capacity in MW	**COD**	**Capacity in MW**	**COD**
1	200	14.02.05	50	04.10.04
2	200	14.06.05	50	16.08.04
3	200	06.09.05	50	01.09.04
4	200	30.10.05	50	03.09.04
5	200	12.11.06	50	15.12.04
6	200	27.06.05	-	-

2.10 From the above, it may be observed that the commissioning of the project was delayed approximately by 10-years which adversely affected the rate of energy generation. The petitioner mentioned that the power is being generated with effect from 16.08.2004 by available units of CHPH and RBPH as per available releases from upstream Indira Sagar Project.

CHAPTER 3

Analysis of the petition

3 Capital Cost

Petitioner's Submission:

3.1 The petitioner in its petition has submitted that the Planning Commission, Govt. of India has given investment clearance for SSP at the estimated cost of Rs.6406.04 Crs. Sardar Sarovar Narmada Nigam Ltd., Gandhi Nagar, Gujarat has intimated estimated cost as per 2000-01 price level furnished by Govt. of Gujarat as approved by Sardar Sarovar Construction Advisory Committee (SSCAC) in its 71st meeting held on 6th Oct. 2004.

A	Unit-I Dam & Appt. work	6036.78 Crs.
B	Unit-III Hydro Power	2782.07 Cr.
C	Share cost 56.1% of Unit-I Dam & Appt. work	3386.633 Crs.
D	Hydro power unit-III	2782.07 Crs.
E	Total cost of unit-III power share cost (57% of E) payable by GoMP	3516.16 Crs.

3.2 The petitioner in its petition has filed the undisputed capital cost of Rs.2737.65 Crores as on March, 2009 payable by GoMP.The updated expenditure up to March, 2009 as filed by the petitioner is as follows:

i)	Share cost 56.1% of Unit I as Chargeable to Unit-III -	Rs.2512.62 Crs.
ii)	Unit –III Hydro Power	Rs.2290.29 Crs.
iii)	Total cost of Unit –III Hydro Power	Rs.4802.91 Crs.
Share cost (57% of iii) payable by GoMP upto March'09		**Rs.2737.65 Crs.**

3.3 The petitioner also mentioned that allocation of (57% GoMP's share) expenditure on disputed items up to March 2009 is towards:

a) R&R works as Rs.624.33 Crs.
b) Dyke & link channels as Rs.12.32 Crs.
c) Interest on market borrowing Rs.1434.12 Crs.

The petitioner has submitted that the total amount of disputed items works out to Rs.2070.77 Crs. Hence revised expenditure for 57% share of GoMP with disputed cost works out to be about 4808.42 Crs

3.4 In response to the queries raised by the Commission, the petitioner in its additional submission dated 26th July, 2010 revised the undisputed (share) capital cost as Rs.2243.59 Cr. The petitioner has mentioned that the total undisputed Share cost of GoMP is Rs.2065.07 crs up to March 07, Rs.2149.58 crs up to March 08 and up to March'09 **Rs.2243.59 crs**. It is communicated that the total undisputed cost due from GoMP as on 31-03-10 is Rs.2309.84 crore (excluding O&M Charges) and GoMP has paid Rs.2065.07 crore against the same and Rs.244.77 crore(excluding O&M Charges) still remain unpaid. Total undisputed cost as on 31-03-09 has increased by Rs.178.52 Crore due to the booking of actual expenditure paid for the respective components.

Provisions in Regulation

3.5 Clause 19 of MPERC regulation 2009 provides as follows:

Capital cost for a Project shall include:

(a) the Expenditure Incurred or Projected to be incurred on original scope of work, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the Date of Commercial operation of the Project, as admitted by the Commission, after prudent check shall form the basis for determination of Tariff.

(b) capitalized initial spares subject to the ceiling norms as specified below:

(i) Coal-based/lignite-fired thermal generating stations - 2.5% of original Project Cost.

(ii) Hydro generating stations - 1.5% of original Project Cost.

Provided that where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost under first proviso to 17.2, such norms shall apply to the exclusion of the norms specified herein.

(c) additional capital expenditure determined under Regulation 20.

1.1. Subject to prudent check, the capital cost admitted by the Commission shall form the basis for determination of Tariff:

Provided that, prudent check of capital cost may be carried out based on the benchmark norms to be specified by the Central Commission from time to time :

Provided further that in cases where benchmark norms have not been specified by the Central Commission, prudent check may include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of Tariff :

Provided also that the Commission may issue guidelines for vetting of capital cost of hydro-electric Projects by independent agency or expert and in that event the capital cost as vetted by such agency or expert may be considered by the Commission while determining the Tariff for the hydro generating station :

Provided also that the Commission may issue guidelines for scrutiny and approval of Commissioning schedule of the hydro-electric Projects of a developer, not being a

State controlled or owned company as envisaged in the Tariff policy as amended vide Government of India Resolution No 23/2/2005-R&R (Vol. IV) dated 31st March 2008:

Provided also that in case the site of a Hydro generating station is awarded to a developer (not being a State controlled or owned Company), by a State Government by following a two stage transparent process of bidding, any Expenditure Incurred or committed to be incurred by the Project developer for getting the Project site allotted shall not be included in the capital cost :

Provided also that the capital cost in case of such hydro generating station shall include:

(a) cost of approved rehabilitation and resettlement (R&R) plan of the Project in conformity with National R&R Policy and R&R package as approved; and

(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) Project in the affected area :

Provided also that where the power purchase agreement entered into between the Generating Company and the Beneficiaries or the implementation agreement provide for ceiling of actual expenditure, the capital expenditure admitted by the Commission shall take into consideration such ceiling for determination of Tariff :

Provided also that in case of the existing Projects, the capital cost admitted by the Commission prior to 1.4.2009 and the additional capital expenditure Projected to be incurred for the respective Year of the Tariff period during 2009-12, as may be admitted by the Commission, shall form the basis for determination of Tariff.

Commission's Analysis

3.6 It is observed from the petition and documents furnished by the petitioner that the Techno-Economic Clearance of Sardar Sarovar Project was issued by CEA on 10th January, 1984 at an estimated cost of Rs.1063.37 Crore. The CEA vide letter dated 27th March,1990 revised the cost estimate and approved the total project cost of the project as Rs.1703.75 Crore without IDC and Rs.2430.39 Crore with IDC considering some factors like price escalation, change in design, inadequate provision and new provisions. A comparison of the estimated cost approved by the CEA at FY1983 price level and revised project cost at FY1989 price level may be seen as given below:

Amount in Rs. Crore.

Particular	**Original Project cost approved by CEA at FY1983 price level**	**Revised Project cost approved by CEA at FY1990 price level**
Unit-I Chargeable to power	407.18	624.08
Unit-III Power house, Electrical and Civil work.	612.67	1037.84
Transmission lines	43.52	41.83
Sub total	**1063.37**	**1703.75**
IDC	Not-considered	726.64
Total	1063.37	2430.39

3.7 In the Techno-Economic Clearance of the project it is mentioned that the power component of the Sardar Sarovar Project would include 56.1% of the cost of the dam and appurtenant works (including 17.63% of the cost of the Narmada Sagar Dam) and full cost of unit-III (Civil, Electrical and Transmission lines in Gujarat up to border of Madhya Pradesh and Maharashtra). The break-up of revised project cost approved by the CEA at June 1989 price level is reproduced as follows:

Amount in Rs. Crore.

Particular		**Total amount**	**Chargeable to power**
Unit-I Dam and Appurtenant work	Sardar Sarovar	965.71	**624.08** (56.1% of the cost of unit-I)
	17.63% cost of Narmada Sagar	145.74	
	Sub total	**1112.45**	
Unit-III	Civil work	260.45	**1079.67**
	Electrical work	777.39	
	Transmission Lines	41.83	
	Sub total	**1079.67,**	
Total			**1703.75**

3.8 The petitioner in the petition has filed the capital cost of Rs.2737.65 Cr whereas in the response to the queries raised by the Commission, the petitioner has mentioned that the undisputed (share) capital cost is Rs.2243.59 Cr. The undisputed capital cost for GoMP share has been increased by Rs.178.52 Cr. In support of the capital cost the petitioner has submitted the year wise statement of expenditure provided by the SSNNL is summarized as follows:

Total Year wise Undisputed Share Cost of GoMP

Up to March, 2007	Rs.2065.07 Cr.
Up to March, 2008	Rs.2149.58 Cr.
Up to March, 2009	Rs.2243.59 Cr.

3.9 The petitioner in its additional written submission has also filed the break up of the undisputed capital cost of Rs. 2243.59 Cr. is as follows:

1	Power component of Dam and App.work being 56.1% of Unit 1	Rs.1504.28 crs
	Undisputed share cost (57 % of 1)of GoMP	Rs. 857.44 crs
2	Cost of Power House	Rs.2431.86 crs
	Undisputed share cost (57 % of 2) of of GoMP	Rs.1386.16 crs
	Total undisputed Share of GoMP	**Rs.2243.60 crs**

3.10 The original Commissioning schedule of the project was during FY 1995-96, where as the actual CoD of the project during FY2004 to 06. Similarly the original project cost approved by the CEA was Rs.1063.37 Cr. This had been subsequently revised to Rs.1703.75 Cr. with out IDC and Rs.2430.39 Cr. with IDC at 1989 price level. The petitioner had not submitted any satisfactory reasons for the time over run and cost over run. The Commission is of the view that the revision of capital cost at this stage is not as per the Regulation, 2009 because the Commission has already admitted the undisputed capital cost as on date of commercial operation in provisional order dated 18th January, 2008. The claim of the petitioner for revision of capital cost would be looked into only in the order for final tariff.

3.11 The Commission in order dated 18th January, 2008 for Sardar Sarovar Project in petition No.3 of 2007, had considered the undisputed capital cost of the project up to CoD as Rs.2065.07 Crore for determination of provisional tariff. The petitioner in its written submission has also mentioned that the out of total undisputed capital cost of Rs.2309.84 as on 31st March,2010 GoMP has actually paid Rs.2065.07 Crore and Rs.244.77 Crore still remain unpaid.

3.12 In view of the above, the capital cost of Rs.2065.07 Crore as on CoD which has been actually paid by the Company and provisionally admitted by the Commission in the last order is considered by the Commission for determination of provisional tariff for the control period from FY2009-10 to FY2011-12. The break-up of the undisputed capital cost for GoMP share considered by the Commission is as follows:

Capital Cost as on CoD considered in this order			
Sr. No.	**Particular**	**Unit**	**Amount as on 31st March, 2007**
1	Cost of Civil work chargeable to power	Rs.Cr.	826.05
2	Cost of E&M works chargeable to power	Rs.Cr.	1239.02
3	Total	Rs.Cr.	2065.07
4	**Total Project cost up to CoD**	**Rs.Cr.**	**2065.07**
5	Loan component up to CoD	Rs.Cr.	1445.55
6	Equity component up to CoD	Rs.Cr.	619.52

Initial spares:

3.13 As per the clause 17 of the MPERC Regulation, 2009, the tariff of a generating station shall be determined based on the admitted capital expenditure up to CoD of the station and shall include initial capital spares subject to ceiling norm for hydel power station of 1.5% of the original project cost. The petitioner has not filed the details indicating the cost of initial spares to be included in the capital cost as on the date of commercial operation, hence not considered in this order.

Design Energy:

3.14 The Central Electricity Authority had accorded the Techno-Economic clearance (TEC) for the Sardar Sarovar Project. The annual firm energy generation in MU's at initial stage as per TEC, from RBPH and CHPH is as given below:

Particular	**RBPH**	**CHPH**	**Total**
Annual firm energy in MU's	3635	213	3848
Annual firm energy for MP's share	2072	121	2193

3.15 The petitioner in subject petition and also in additional submission requested the Commission for revision of design energy at crest level in place of FRL since the height of the dam has not been raised upto FRL. The petitioner had filed the same arguments in petition No.38/2008 for review of Commission's order dated 18th January, 2008 for provisional tariff approval by the Commission. The Commission in its review order on afore-mentioned petition discussed this issue in Para 2.9 and stated that,

> "*As per the latest submission of relevant data, the petitioner could not satisfy the Commission that the reasons for not achieving the FRL were beyond its control. The respondent opined that the non-achievement of FRL was due to the negligence of SSNNL and the petitioner and FRL could not be achieved due to lack of timely rehabilitation initiatives.* ***Hence, downward correction of design energy may not be allowed against this petition (emphasis supplied).*** *The Commission agreed to the argument put forth by the respondent and decided not to allow design energy at the Reservoir level. However, the Commission accepted the staggered COD of different units and allowed NVDA to claim the Fixed Charges (FC) considering individual COD of different units.*"

3.16 During the course of public hearing in subject petition, the petitioner stated that the time line by which the height of dam will be raised up to Full reservoir level (FRL) is unpredictable at present. The Commission has noted that the petitioner (NVDA) achieved actual generation of 3600 MUs and 4435 MUs in FY 2006-07 and FY 2007-08 respectively which were much above the design energy of 2193.36 MUs. In view of afore-mentioned situation and the fact that the Narmada Control Authority is in the process of further raising of height of dam after following due procedures, as stipulated in the Court's order, the Commission is not convinced with the arguments put forth by the petitioner for downward revision in Design Energy. Accordingly, the Commission has considered the same design energy 2193.36 MUs for GoMP's share in this order also for recovery of fixed cost by NVDA from beneficiaries.

Additional Capitalization:

Petitioner's Submission:

3.17 The petitioner has filed the undisputed capital cost of Rs.2737.65 Crore payable by GoMP up to March, 2009, while in the response to the queries raised by the Commission, the petitioner has mentioned that the undisputed (share) capital cost is Rs.2243.59 Cr. In its additional written submission, the petitioner stated that the undisputed capital cost for GoMP share has increased by Rs.178.52 Crore.

Provisions in Regulation

3.18 Clause 20 of MPERC Regulation, 2009 provides as follows:

> *(20.1) The capital Expenditure Incurred or projected to be Incurred, on the following counts within the original scope of work, after the Date of Commercial operation and may be admitted by the Commission, subject to prudent check:*

(a) Undischarged liabilities

(b) Works deferred for execution

(c) liabilities to meet award of arbitration or for compliance of order or decree of a court,

(d) Change in Law,

(e) Procurement of initial capital spares within the original scope of work, subject to the provisions of Regulation 17.1(b)

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and works deferred for execution shall be submitted along with the application for Tariff.

(20.2) *The capital Expenditure Incurred on the following counts after the Cut off date may, in its discretion, be admitted by the Commission, subject to prudent check:*

(a) liabilities to meet award of arbitration or for compliance of the order or decree of a court;

(b) Change in Law.

(c) Deferred works relating to ash pond or ash handling system in the original scope of work;

(d) In case of Hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the Generating Company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and Expenditure Incurred due to any additional work which has become necessary for successful and efficient plant operation :

Provided that in respect sub-clauses (d) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for Additional Capitalization for determination of Tariff for the Tariff period under these Regulations.

Commission's Analysis

3.19 The Commission vide letter dated 8th June, 2010 asked the petitioner to provide the required details for additional capitalization in light of the Regulation 20 of MPERC (Terms & Conditions for determination of Generation Tariff) Regulations, 2009. In response to the Commission's queries, the petitioner vide letter dated 26th July, 2010 submitted the following :

"As on 31st March 2009, Dam height was 121.92 meters and same is still to be constructed to the FRL of 138.64 meters. Further, hydro power project consist of two main components viz. the dam and the power houses. Generation of power is dependent on the reservoir capacity which is determined by the height of dam and the dam is yet to be raised to its full

height of 138.64 meters. As a result, the total capacity is still to be built up and tested for satisfactory working on regular and full capacity basis. Thus as on 31-03-2009, project was still to be sustantially completed. M/s SSNNL adopted the policy for non-capitalisation and non preparation of profit and loss account and therfore expenditure on project including power house is included under capital work in progress only.

3.20 During the course of motion hearing on 14th September, 2010 the Commission directed the petitioner to file all requisite details along with justification and supporting documents in respect of increase in undisputed capital cost in accordance with the provisions under Regulation 20 of the Terms & Conditions of Generation Tariff Regulations, 2009.

3.21 In response to the Commission's directives, the petitioner in its additional submission dated 20th October, 2010 could not file the required details and justification with supporting documents as per Regulations in respect of increase in undisputed capital cost. The petitioner only confirmed that the increase in undisputed capital cost is due to work differed for execution as conveyed by SSNL. The Commission has noted that no asset other than land & buildings have been capitalized in audited accounts of FY2008-09 filed by NVDA for whole project. It is also observed by the Commission that the petitioner could not file any justification or document either in petition or in any additional submission for increase in the undisputed capital cost, as required under Regulation 20 of MPERC (Terms & Conditions for determination of generation tariff) Regulations, 2009.

3.22 In view of the above the Commission has not considered the claim of the petitioner for additional capitalization and considered the capital cost of Rs.2065.07 Crore as admitted by the Commission in last order for provisional tariff dated 18th January, 2008.

Debt-equity ratio:

Provisions in Regulation

3.23 Clause 21 of MPERC Regulation, 2009 provides as follows:

"*In case of the generating station declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31.3.2009 shall be considered. For the purpose of determination of Tariff of new generating station Commissioned or capacity expanded on or after 01.04.2009, debt-equity ratio as on the Date of Commercial operation shall be 70:30. The debt-equity amount arrived in accordance with this clause shall be used for calculation of interest on loan, return on equity and foreign exchange rate variation.*

Where equity actually employed is in excess of 30%, the amount of equity for the purpose of Tariff shall be limited to 30% and the balance amount shall be considered as loan. The interest rate applicable on the equity in excess of 30% treated as loan has been specified in Regulation 23. Where actual equity employed is less than 30%, the actual equity shall be considered."

Commission's Analysis

3.24 The Commission in earlier provisional tariff order dated 18th January, 2008 for Sardar Sarovar Project in petition No.3 of 2007 considered Rs.2065.07 crores as the capital cost of the project up to CoD for determination of provisional tariff. The Commission in para 3.9 of aforementioned order mentioned that the petitioner had not indicated any thing about the loan availed by the GoMP / NVDA to pay the capital cost and also about the equity employed in the project. Accordingly, the Commission considered the normative debt-equity ratio of 70:30 for the project.

3.25 While processing the subject petition, the Commission vide letter dated 8th June, 2010 asked the petitioner to submit actual loans drawn from different agencies along with loan agreements and terms and conditioners of each loan. The Commission also sought the details of the actual equity invested in the project for GoMP share.

3.26 In response, the petitioner vide letter dated 20th October, 2010 submitted that the payments for capital expenditure is made through budgetory support only. The petitioner had also confirmed the same during the course of motion hearing on 14th September, 2010. The petitioner had further mentioned that the information of actual year-wise equity invested in the project is not available with the petitioner.

3.27 Considering that in earlier provisional tariff determination, 30% of capital cost was taken as equity, the Commission allows the same percentage to continue in this tariff order. The equity so being taken is the maximum allowable for earning returns as per Regulation. In final tariff determination, the Commission intends to limit this to actual equity infusion subject to ceiling of 30%. Accordingly, the equity invested as on date of commercial operation is provisionally being considered as 30% of the capital cost.

Sr. No.	Particular	Amount in (Rs. Crore)
1	Debt	1445.55
2	Equity	619.52
3	Total Capital Cost	2065.07
4	**Debt- equity ratio**	**70:30**

4 Annual Fixed Cost:

Petitioner's submission

3.28 The Tariff for supply of electricity from a hydro power generating station shall comprise of capacity charge and energy charge to be derived in the manner specified in the Regulation 50 of "Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2009. {RG-26 (I) of 2009}"

The annual Capacity (fixed) Charges consists of :

(a) Return on Equity;

(b) Interest and Financing Charges on Loan Capital;

(c) Depreciation;

(d) Operation and Maintenance Expenses;

(e) Interest Charges on Working Capital;

(a) Return on Equity:

3.29 The petitioner has filed that the Return on Equity at the base rate of 15.5% on pre-tax basis is to be computed and to be grossed up as per the Regulation 22.3 of Regulation, 2009. The petitioner has filed equity of Rs.821.30 crores on the capital cost of Rs.2737 crores as on 1st April, 2009. Based on afore-mentioned equity, the petitioner has filed the following return on equity :

Return on Equity as filed in the petition: *Amount in Cr Rs.*

FY 09-10	FY 10-11	FY 11-12
127.30	127.30	127.30

The petitioner has not considered the grossing up of the base rate and mentioned that the grossing up of the base rate with the actual tax rate applicable if any, shall be filed in the true-up petition.

Provisions in Regulation

3.30 Clause 22 of MPERC Regulation, 2009 provides as follows:

Return on equity shall be computed in rupee terms, on the paid up equity capital determined in accordance with Regulation 21.

Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per Regulation 22.3 of this Regulation:

*Provided that in case of Projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in **Appendix-I** :*

Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever.

The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate for the Year 2008-09 applicable to the Generating Company:

Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective Year during the Tariff period shall be trued up separately.

Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)
Where t is the applicable tax rate in accordance with Regulation 22.3 of this Regulation.

Commission's Analysis

3.31 The Commission vide letter dated 8th June, 2010 asked the petitioner to submit year wise details of actual equity invested in the project for 57% GoMP share. In response to the Commission's queries, the petitioner in its written submission dated 26th July, 2010 submitted that the details regarding actual year-wise equity invested in the project is not available with the petitioner.

3.32 Since the Commission has considered Rs.2065.07 crores as the undisputed GoMP share of capital cost as on CoD as considered in earlier tariff order dated 18th January, 2008, therefore the same normative equity of Rs.619.52 crore is considered as opening equity in this order.

3.33 The return on equity is worked out @ 15.5% per annum on the normative equity as given below :

Annual Return on equity allowed in this order					
Sr. No.	**Particular**	**Unit**	**FY09-10**	**FY10-11**	**FY11-12**
1	Total project cost up to CoD	Rs.Cr.	2065.07	2065.07	2065.07
2	Loan component up to CoD	Rs.Cr.	1445.55	1445.55	1445.55
3	Equity up to CoD	Rs.Cr.	619.52	619.52	619.521
4	Rate of return	%	15.50	15.50	15.50
5	**Return on equity**	**Rs.Cr.**	**96.03**	**96.03**	**96.03**

(b) Interest and Finance charges on Loan Capital:

Petitioner's Submission

3.34 The petitioner has submitted that the Commission in earlier order dated 18th January, 2008 has considered a rate of interest of 7.67% per annum as considered by CERC in petition no 64/2004 for Indira Sagar Project. The petitioner has further mentioned that M/s NHDC Bhopal refinanced the loan for Indira Sagar Multipurpose Project at floating rate of 9.50% per annum. Hence the petitioner has considered a rate of interest of 9.5% on normative loan of Rs.1916.36 crs for calculation of AFC in this petition. The petitioner has filed the following interest charges :

Interest Charges filed in the petition*:* ***Amount in Crs.***

Sl. No.	Particulars	FY 10	FY11	FY12
1	Loan balances opening	As on 1-Apr-09 1916.36	As on 1-Apr-10 1799.74	As on-Apr-11 1683.12
2	Repayment for the Yr	116.62	116.62	116.62
3	Closing balance	1799.74	1683.12	1566.50
4	Average loan for the Yr	1858.05	1741.43	1624.81
5	**Interest charges**	**176.51**	**165.43**	**154.35**

Provisions in Regulation

3.35 Clause 23 of MPERC Regulation, 2009 provides as follows:

The loans arrived at in the manner indicated in Regulation 21 shall be considered as gross normative loan for calculation of interest on loan.

The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

The repayment for the Year of the Tariff period 2009-12 shall be deemed to be equal to the depreciation allowed for that Year.

Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first Year of commercial operation of the Project and shall be equal to the annual depreciation allowed.

The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each Year applicable to the Project:

Provided that if there is no actual loan for a particular Year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.

Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered.

The interest on loan shall be calculated on the normative average loan of the Year by applying the weighted average rate of interest.

The Generating Company shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the Beneficiaries and the net savings shall be shared between the Beneficiaries and the Generating Company, in the ratio of 2:1. The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing………..

Commission's Analysis

3.36 The Commission vide letter dated 8th June, 2010 asked the petitioner to file the details of actual loans drawn from different agencies along with loan agreements and terms and conditions of each loan. In response, NVDA vide letter on affidavit dated 9th August, 2010 submitted that NVDA has not taken loan from any outside agency. However, the payment of GoMP's share has been made through budgetory support and details of loan component is not available with the company.

3.37 As per the MPERC (Terms and Conditions for determination of generation tariff) regulations, 2005, the opening gross normative loan as on CoD of the project is considered and repayment of loan equal to the depreciation of each year for the control period FY06-07 to FY08-09 has been considered. Accordingly, the loan balances as on 31.03.2009 is worked out as follows:

Loan details		
Sr. No.	**Particular**	**Amount in Rs. Cr.**
1	Opening balance of loan as on CoD of last unit	1445.55
2	Annual depreciation as per Commission's order dated 18th Jan. 2008	53.07
3	Repayment considered (equal to dep.) for November 06 to March 07 on pro-rata basis.	17.69
4	Closing balance of loan as on 31st March, 2007	1427.86
5	Opening balance of loan for FY07-08	1427.86
6	Repayment considered for FY07-08 (equal to dep.)	53.07
7	Closing balance for FY07-08	1374.79
8	Opening balance for FY08-09	1374.79
9	Repayment considered for FY08-09 (equal to dep.)	53.07
10	Closing balance of loan for FY08-09	**1321.72**

3.38 The petitioner has not indicated the actual rate of interest for the loan availed because no loan has been taken from outside agency. Since the Commission in order dated 18th

January, 2008 had considered the rate of the interest as considered by CERC for Indira Sagar projects, hence the rate of interest as considered by CERC for Indra Sagar Project in their order dated 20th October, 2009 for additional capitalization is considered for normative loan in this order.

3.39 As per the Regulation,2009 the opening balance as on 1st april,2009 as worked out above is considered and repayment of loan for the tariff period 2009-12 equal to the depreciation allowed for that year in **Para 3.43** of this order is considered. The interest on loan has been worked out by the Commission as below.

Interest and finance charges					
Sr. No.	**Particular**	**Unit**	**FY10**	**FY11**	**FY12**
1	Opening balance of loan	Rs.Cr.	1321.72	1228.71	1135.70
2	Repayment Amount	Rs.Cr.	93.01	93.01	93.01
3	Drawal during the year	Rs.Cr.	0.00	0.00	0.00
4	Closing balance	Rs.Cr.	1228.71	1135.70	1042.69
5	Average loan	Rs.Cr.	1275.21	1182.20	1089.19
6	Rate of interest	%	7.67	7.67	7.67
7	**Interest amount**	**Rs.Cr.**	**97.81**	**90.68**	**83.54**

(c) Depreciation:

Petitioner's submission

3.40 The petitioner has submitted that as per MPERC Regulation, 2009 Appendix II Depreciation rate of 3.34% is considered for "Land, building and civil engineering works". Depreciation rate of 5.28% is specified for "plant and machinery in generating station.The weightage rate of Depreciation considering civil and machinery component respectively comes to 4.26%. The same is considered in the petition for computation of amount of depreciation as given below :

Depreciation:

Amount in Crs

Sl. No	**Particulars**	**FY10**	**FY11**	**FY12**
1	Capital cost	2737.65	2737.65	2737.65
2	Rate of Depreciation	4.26%	4.26%	4.26%
3	**Depreciation allowable**	**116.62**	**116.62**	**116.62**

Provisions in Regulation

3.41 Clause 23 of MPERC Regulation, 2009 provides for computation of depreciation in the following manner:

The value base for the purpose of depreciation shall be the capital cost of the assets as admitted by the Commission

The approved/accepted cost shall include foreign currency funding converted to equivalent rupee at the exchange rate prevalent on the date of foreign currency actually availed.

The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

> *Provided that in case of Hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site.*
>
> *Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under Long-term power purchase agreement at regulated Tariff.*

Land other than land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

*Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in **Appendix-II** to these Regulations for the assets of the generating station:*

> *Provided that, the remaining depreciable value as on 31st March of the Year closing after a period of 12 Years from the Date of Commercial operation shall be spread over the balance Useful life of the assets.*

*In case of the existing Projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation including Advance Against Depreciation as admitted by the Commission upto 31.3.2009 from the gross depreciable value of the assets. The rate of Depreciation shall be continued to be charged at the rate specified in **Appendix-II** till cumulative depreciation reaches 70%. Thereafter the remaining depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%.*

Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis.

Commission's Analysis

3.42 The petitioner has claimed depreciation at the weighted average rate of 4.26% on the capital cost claimed in the petition. Since the Commission has considered the capital cost of Rs.2065.07 provisionally admitted as on CoD, therefore the weighted average rate of depreciation on the admitted capital cost based on the component wise break-up filed by the petitioner in its additional written submission is worked out as follows:

i.	Cost of Civil work chargeable to power	Rs.826.05 Cr.
ii.	Cost of E& M work chargeable to power	Rs.1239.02 Cr.
iii.	Rate of depreciation for building and civil work	3.34 %
iv.	Rate of depreciation for plant and machinery	5.28 %
v.	Weighted average rate of depreciation works out	4.50 %

3.43 In terms of the above, considering the weighted average rate of depreciation of 4.50% during the respective years of the tariff period, the amount of depreciation is worked out as under:

Depreciation allowed in this order					
Sr. No.	**Particular**	**Unit**	**FY09-10**	**FY10-11**	**FY11-12**
1	Total project cost up to CoD	Rs.Cr.	2065.07	2065.07	2065.07
2	Annual rate of depreciation	%	4.50	4.50	4.50
3	**Annual Depreciation amount**	**Rs.Cr.**	**93.01**	**93.01**	**93.01**
4	**Total cumulative depreciation since CoD (including cumulative depreciation of Rs.123.83 cr. allowed upto 31st March, 2009)**	**Rs.Cr.**	**216.84**	**309.85**	**402.86**

(d) Operation & Maintenance Expenses:

Petitioner's Submission

3.44 The petitioner has submitted that the O&M expenses admissible to existing Hydro Power Stations as per Regulation, 2009 comprising employee cost, Repair and Maintenance cost Administrative and general cost. The Generating Company shall claim the taxes payable to GoMP and fee to be paid to MPERC separately as actual. The petitioner has computed O&M Charges considering GoMP's share in the project as 826.50 MW, and as per rate approved by Commission for different years are tabulated below:

O&M Charges: ***Amount in Cr Rs.***

FY 09-10	**FY 10-11**	**FY 11-12**
49.26	52.15	55.21

Provisions in Regulation

3.45 Clause 47 of MPERC Regulation, 2009 provides the operation and maintenance expenses for Hydro Power Station as follows:

"The Operation and Maintenance Expenses admissible to existing Hydro power stations comprise of employee cost, Repair & Maintenance (R&M) cost and Administrative and General (A&G) cost . These norms exclude pension, terminal benefits and incentives to be paid to employees, taxes payable to the Government, MPSEB expenses and fees payable to MPERC. The Generating Company shall claim the taxes payable to the Government and fees to be paid to MPERC separately as actuals. The claim of Pension and Terminal Benefits shall be dealt as per Regulation 26".

O&M Norms for Hydel Power Stations

Year	O&M Expenses in Rs. in lakh/MW
FY 09-10	5.96
FY 10-11	6.31
FY 11-12	6.68

Commission's Analysis

3.46 The Commission, while considering the GoMP share of MW capacity of the units as on CoD, has worked out the normative O&M expenses as per the above mentioned norms prescribed in the Regulation for hydro power stations as follows:

O & M Charges allowed by the Commission					
Sr. No.	**Particular**	**Unit**	**FY09-10**	**FY10-11**	**FY11-12**
1	Per MW O&M Expenses	Rs. Lakhs	5.96	6.31	6.68
2	Total Capacity in MW	MW	826.5	826.5	826.5
3	**Total O&M expenses**	**Rs. Cr.**	**49.26**	**52.15**	**55.21**

(e) Interest on Working Capital:

Petitioner's Submission

3.47 The petitioner has submitted that the working capital has been calculated in the petition as per Regulation, 2009. The petitioner has further submitted that **a**s per the Regulation, rate of interest on working capital is to be computed on the normative basis and equal to the short term prime lending rate of State Bank of India prevailing as on April 09. The short term PLR of SBI as on April 09 is 12.25%and the same is considered for calculation of interest on working capital. The interest on working capital claimed by the petitioner is as given below:

INTEREST ON WORKING CAPITAL: ***Amount in Cr Rs.***

FY 09-10	FY 10-11	FY 11-12
11.23	11.14	11.06

Provisions in Regulation

3.48 In accordance with clause 48.1 of Regulation, 2009, working capital in case of hydro generating stations shall cover:

(i) *Maintenance spares @ 15% of normative O&M expenses;*

(ii) *Receivables equivalent to two months of fixed cost; and*

(iii) *Operation and Maintenance Expenses for one month.*

3.49 The Commission has issued the first amendment of MPERC (Terms and Conditions for determination of Generation Tariff) Regulation, 2009 on 3rd December, 2010. The clause 27 of the Regulation for interest on working capital has been amended as follows:

"Rate of interest on working capital to be computed as provided subsequently in these Regulations shall be on normative basis and shall be equal to the State Bank Base Rate as on 1st of April of that year plus 4.00%. The interest on working capital shall be payable on normative basis notwithstanding that the Generating Company has not taken working capital loan from any outside agency or has exceeded the working capital loan compared to the working capital required on the normative basis."

Commission's Analysis

3.50 Working Capital has been calculated considering the following elements:

a. Receivables: In terms of the provisions of the Regulations, receivables equivalent to two months of annual fixed cost, considered for the purpose of tariff is as follows:

Amount in Rs. Crore

Particular	FY09-10	FY10-11	FY11-12
Annual fixed cost	344.55	340.30	336.23
Receivables for two months	57.42	56.72	56.04

b. Maintenance Spares: In terms of the provisions of the above Regulations, Maintenance spares considered for the purpose tariff is as under:

Amount in Rs. Crore

Particular	FY09-10	FY10-11	FY11-12
Annual normative O&M expenses	49.26	52.15	55.20
Maintenance spares 15% of O& M expenses	7.39	7.82	8.28

c. **Operation & Maintenance Expenses:** In terms of the provisions of the Regulations, the operation and maintenance expenses for one month considered for the purpose of tariff is as under

Amount in Rs. Crore

Particular	FY09-10	FY10-11	FY11-12
Annual O&M expenses	49.26	52.15	55.20
O& M expenses for one month	4.10	4.35	4.60

3.51 The rate of interest on working capital during the tariff period in accordance with the provision of the Regulation has been considered as 12.25% for the control period. Interest on working capital worked out by the Commission is as given below:

Interest on working capital allowed by the Commission					
Sr. No.	**Particular**	**Unit**	**FY10**	**FY11**	**FY12**
1	O&M charges for one month	Rs.Cr.	4.10	4.35	4.60
2	Maint. Spares 15% of O&M expenses	Rs.Cr.	7.39	7.82	8.28
3	Receivables of 2-Months	Rs.Cr.	57.42	56.72	56.04
4	**Working capital**	**Rs.Cr.**	**68.92**	**68.89**	**68.92**
5	Interest rate (PLR)	%	12.25	12.25	12.25
6	**Interest on working capital**	**Rs.Cr.**	**8.44**	**8.44**	**8.44**

Recovery of annual fixed cost:

3.52 Recovery of annual fixed cost in terms of Capacity Charges and Energy Charges shall be made by the petitioner in accordance with clause 50 of the Regulations, 2009. The petitioner is allowed to recover above charges on the basis of 95% of the annual fixed cost determined in this order on provisional basis subject to retrospective adjustment on determination of final tariff.

3.53 The total annual fixed cost provisionally determined by the Commission for the control period FY2009-10 to FY2011-12 is given below:-

Annual Fixed Cost					
Sr. No.	**Particular**	**Unit**	**FY10**	**FY11**	**FY12**
1	Return on equity	Rs.Cr.	96.03	96.03	96.03
2	Depreciation	Rs.Cr.	93.01	93.01	93.01
3	O&M Charges	Rs.Cr.	49.26	52.15	55.21
4	Interest and finance charges	Rs.Cr.	97.81	90.68	83.54
5	Interest on working capital	Rs.Cr.	8.44	8.44	8.44
6	Total fixed cost	Rs.Cr.	344.55	340.30	336.23
7	95% of the annual fixed cost	Rs.Cr.	327.32	323.29	319.42

Other Charges:

3.54 The petitioner has also claimed MPERC fee, Cess on auxiliary consumption and water charges in the petition. The petitioner is allowed to recover the fee paid by the petitioner to MPERC for determination of generation tariff, water charges on usages of water for hydro power station and E.D. and cess on auxiliary power consumption levied by the Statutory Authorities from the beneficiaries on pro-rata basis in accordance with the provisions of Regulations, 2009.

CHAPTER 4

Objections and Comments on NVDA's Proposal

5.1 The Commission has also noted that the Madhya Pradesh Madhya Kshetra Vidyut Vitaran Co. Ltd Bhopal, Madhya Pradesh Paschim Kshetra Vidyut Vitaran Co. Ltd Indore and Madhya Pradesh Power Trading Co. Ltd. Jabalpur being respondents in the subject petition have filed their written objections/comments.

5.2 Madhya Pradesh Madhya Kshetra Vidyut Vitaran Co. Ltd Bhopal and Madhya Pradesh Paschim Kshetra Vidyut Vitaran Co. Ltd Indore have broadly raised following issues**:**

a. *Sardar Sarovar (6x200+5x50 MW) is an existing project. C.O.D. of last unit of this project is stated as 12.11.2006. The application for tariff for existing project should be based on admitted capital cost. Admitted capital cost provisions available in Regulation RG 26(I) of 2009 are as follows :*

   (i) Capital expenditure made upto C.O.D. as per audited account.
   (ii) Any additional capital expenditure incurred on 6 counts as given in Regulation 20.1.
   (iii) Capital expenditure incurred on 4 counts after cut-off date should only be admitted as per Regulation 20.2.

b. *In the instant petition, C.O.D. of last unit is 12.11.2006. Accordingly, expenditure incurred upto this date should only be allowed as Capital Expenditure. After this date, additional Capitalization as per Regulation 20.1 & 20.2 on counts (a) to (e) & (a) to (d), should only be allowed. The cut-off date of project is calculated as 31.03.2009. Hence, final Capital Cost including additional Capitalization should first be fixed as on 31.03.2009, which incidentally falls under previous control period.*

c. *It is prayed that petitioner may be directed to prepare fresh petition*

   (i) For control period ending on 31.03.2009 taking final Capital Expenditure as per Regulation applicable at that time 0-26 of 2005
   (ii) For control period 10-12 as per RG-31(I) of 2009 taking final cost as arrived above. Also, it is prayed that provisional tariff as requested by petitioner now should not be allowed and petition be rejected summarily.

d. *The design energy (GoMP's share) 2193 MU's on 121.92 mtrs has been achieved by the petitioner in the year 2006-07 (3600MU's) & 2007-08 (4435 MU's). The same is given on page 8 of the petition. Hence it justifies up-ward revision of design energy on 121.92 meters & not down-ward revision as prayed by petitioner.*

5.3 Madhya Pradesh Power Trading Co. Ltd. Jabalpur has also raised similar issues raised by the two Distribution Companies. However, MP Tradeco has raised the following additional issues :

a. *The petitioner has not incorporated the details of capital employed or projected to be employed in the project, details of the actual equity employed in the project, details of the rate of interest on loan and finance charges and information regarding the assets and depreciation chargeable in its petition.*
b. *The petitioner may be directed to provide the details of actual operation and maintenance expenses paid by GoMP to SSNNL. The normative O&M expenses or actual O&M expenses, whichever is less shall only be allowed.*
c. *The petitioner has not submitted any details of actual loan portfolio and claimed 9.50% interest rate on loan capital without any basis. The Commission in its tariff order dtd. 18.01.2008 for tariff upto FY 2008-09 considered the 7.6742% rate of interest on loan, on the basis of rate of interest allowed by the CERC in the provisional tariff for Indira Sagar Project. The Hon'ble Commission is requested to consider the same rate of interest for this tariff period also.*

5.4 Narmada Control Authority (NCA), have submitted their objection on the issue of court stay on the construction activities of the dam as mentioned in public notice. The NCA in its written submission have stated that:

a. *Following lines regarding court stay are not factually correct since there is no stay on the construction of Dam by any order of court.*
b. *NCA is in process of consideration for further construction of dam after following due procedures, as stipulated in the court orders.*
c. *Some of the project affected persons including Narmada Bachao Andolan approached the court against further construction works on the Sardar Sarovar Dam but there is no stay by any court of law.*

5.5 Nagrik Adhikar Association, Satna have also filed their written submission on the subject petition. Nagrik Adhikar Association has not offered any specific comment on the petition.