

**Application for**  
**Annual performance Review (FY09-10)**  
**&**  
**Tariff Petition**  
**For**  
FY 2011-2012  
**For**  
**Mahi Hydel Power Station**

Submitted to

Rajasthan Electricity Regulatory Commission  
Jaipur

By

Rajasthan Rajya Vidyut Utpadan Nigam Limited  
Vidyut Bhavan, Janpath, Jaipur

**November-2010**

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## DEFINITIONS

<b>Act</b>	The Electricity Act, 2003
<b>Application</b>	This Petition for APR FY-08-09 and Tariff for FY-10-11 for Rajasthan Rajya Vidyut Utpadan Nigam Limited, Jaipur
<b>Auxiliary Consumption (Aux. Con.)</b>	Auxiliary Consumption in relation to a period means the quantum of energy consumed by auxiliary equipment of the generating station and transformer losses within the generating station, and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station
<b>Availability</b>	Availability shall have the same meaning as defined in Section 1(7) of the RERC Tariff Regulations 2009.
<b>Distribution Company / Discoms</b>	Discoms or Distribution Company shall mean a company engaged primarily in the business of distribution & supply of electricity in its area of supply including Jaipur Vidyut Vitran Nigam Ltd. (JVVN), Ajmer Vidyut Vitran Nigam Ltd. (AVVN) and Jodhpur Vidyut Vitran Nigam Ltd. (JdVVN).
<b>Gross Calorific Value (GCV)</b>	Gross Calorific Value in relation to a thermal power generating station means the heat produced in kCal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be.
<b>Regulation</b>	The Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2009 notified by RERC on Jan-23, 2009
<b>State</b>	The State of Rajasthan.
<b>Gross Station Heat Rate</b>	Station Heat Rate (SHR) means the heat energy input in kCal required to generate one kWh of electrical energy at generator terminals.
<b>Unit</b>	Unit in relation to a generating station means electric generator, its prime mover and auxiliaries and in relation to a combined cycle thermal power generating station includes combustion turbine – generators, associated waste heat recovery boilers, connected steam turbine-generator and auxiliaries

## ABBREVIATIONS

ABT	Availability Based Tariff
ARR	Aggregate Revenue Requirement
Ajmer Discom	Ajmer Vidyut Vitran Nigam Limited
CERC	Central Electricity Regulatory Commission
FRP	Financial Restructuring Plan
FY	Financial Year
FY – 10	Financial Year 2009-2010
FY – 11	Financial Year 2010-2011
FY – 12	Financial Year 2011-2012
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
GoI	Government of India
GoR	Government of Rajasthan
Jaipur Discom	Jaipur Vidyut Vitran Nigam Limited
Jodhpur Discom	Jodhpur Vidyut Vitran Nigam Limited
KWh	Kilo Watt Hour or Unit
MU	Million Units
MW	Megawatts
NRLDC	Northern Regional Load Despatch Centre
PLF	Plant Load Factor
PPA	Power Purchase Agreement
R&M	Repairs and Maintenance
RERC/ Commission	Rajasthan Electricity Regulatory Commission
RVUN	Rajasthan Rajya Vidyut Utpadan Nigam Limited
RVPN	Rajasthan Rajya Vidyut Prasaran Nigam Limited
Rs.	Indian Rupees
SHR	Station Heat Rate
Transfer Scheme	The Rajasthan Power Sector Reforms Transfer Scheme, 2000

## A1: BACKGROUND

- 1.1 Rajasthan Rajya Vidyut Utpadan Nigam Ltd (RVUN) was incorporated under the Companies Act 1956, as one of the five successor companies of erstwhile Rajasthan State Electricity Board (RSEB) to take over the electricity generation business in the state of Rajasthan. The existing power stations and those under commissioning in the state sector were transferred to RVUN as per the Rajasthan Power Sector Reforms Transfer Scheme, 2000 notified by State Government provisionally on 19th July 2000 and finally on 18th January 2002.
- 1.2 RVUN had entered into a Power Purchase Agreement (PPA) with RVPN on 20<sup>th</sup> October 2001. As per the provisions of the PPA, the RVPN was responsible for purchase of all the generation from RVUN plants. The PPA was for the period upto 31.03.2003 with a provision to extend the same with mutual agreement.
- 1.3 From 1st April 2004 onwards, RVPN is no longer responsible for the bulk purchase of power in Rajasthan. The capacity allocated to RVPN from RVUN generating stations has been reallocated to the three Discoms (Jaipur, Ajmer and Jodhpur) in the ratio of 38:31:31 or as modified by competent authority from time to time. RVUN has entered into Long Term Power supply-Purchase Agreements (PPA) in respect of existing and future power projects for 25 Years with the three Discoms on 28.09.06, 07.06.2007 and further supplementary PPA was signed on dt 18.5.10 which includes Mahi Hydrel power station (140).
- 1.4 The Commission passed tariff regulation 2009 MYT for the period FY09-10 to FY2013-14 on dated 23.1.09 .As per clause no.8 of tariff regulation2009, RVUN should have to file the petition for Annual performance Review for 2009-10 and/or determination of tariff for 2011-12 of RVUN power station by 30.11.10. Accordingly, this petition is being submitted for Mahi hydrel power station Units to RERC for tariff determination.

## A2: GENERATION FORECAST

- 2.1 The installed capacity of Mahi Hydrel power Station is 140 MW as on 31.10.10 .The Actual figures / estimated figures of Gross generation , PLF & net energy sale to three Discoms from Mahi Hydrel power Station of RVUN for the period FY10, FY11 and FY12 are as shown in table below:

**Table 1:** Gross generation, PLF & Ex-bus energy sale from Mahi Hydrel power Station

Particular	FY 09-10		FY 10-11		FY 11-12
	As per tariff order	Actual	As per tariff order	Estimated	estimated
Capacity (MW)			140	140	140
PLF (%)				5	10
Gross Generation (MU)			218	60.013	120
Aux Cons. (%)				2.06	2
Ex-Bus Generation(MU)				58.77	117.6

- 2.2 The fixed cost elements as detailed hereunder for Mahi Hydrel power Station for the period FY10, FY11 and FY12 are as below.

## **FIXED CHARGES**

- Depreciation
- Interest on Working Capital
- Operation & Maintenance Expenses
- Recovery of ARR & Tariff Petition Fees
- Inter Unit Account Balance Written off
- Unfunded liability of pension and gratuity

### **A3: MAHI HYDEL POWER STATION FIXED CHARGE**

. The details of various components of the fixed cost areas under:

#### **Depreciation:-**

Depreciation of MAHI, for period FY11 and FY12 have been claimed according to tariff order for FY-11 and MYT tariff order passed by the commission and the are summarised in Table below.

Table 2: Depreciation

(Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
MAHI	As per tariff order	Actual (audited)	As per tariff order	Estimated	Estimated
			618	618	618

#### **Interest on working Capital**

3.3 The requirement of working capital loan has been computed on the norms defined under clause No.49 of RERC Tariff regulation 2009 and rate of interest on WLC has taken equal to the short interest prime landing of SBI as on 1.4.10.

3.4 Estimated figures for the period FY11 and FY12 are summarised in Table below:

Table 03: Interest on working Capital

(Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
MAHI	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
			54	54	62

#### **Operation & Maintenance Expenses**

3.5 The Operation & Maintenance Expenses have been computed as per the norms prescribed under RERC tariff Regulation 2009.

3.6 Estimated figures for the period FY11 and FY12 are summarised in Table below.

Table 04: O & M Expenses (Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
MAHI	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
			1110	1110	1174

### Recovery of ARR & Tariff Petition Fees

3.7 The Hon'ble Commission vide order dated 10.03.08 has allowed to pass through the fees levied for filling up of ARR & tariff petition, as expenses in the ARR. Accordingly, RVUN has claim the fee for FY 12 as under. The Commission may consider and allow the same.

3.8 The ARR & Tariff Petition Fees for FY11 and FY12 are summarised in Table below.

Table 05: Recovery of ARR & Tariff Petition Fees (Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
MAHI	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
			1.4	1.4	1.4

### Inter Unit account Balance Written Off

3.9 The BOD of RVUN in its 137th Meeting held on 13.05.08 accorded approval to carry out the adjustment for write-off of the balance under the head " Inter Unit Transaction" pertaining to erstwhile RSEB period received as opening balance of FRP in five equal instalments wef FY 08-09, aggregating to Rs. 78.83 Crores. Similarly, RVPN is also writing off the debit balance of Rs. 81.96 Crores in five Aggregate instalments wef FY 03-04.

3.10 The BOD further accorded its approval to allow for inclusion of the above adjustment in the tariff petition to be filed for year FY 08-09 and onwards with the Hon'ble Commission for allowing the increase in cost of generation consequent upon such adjustments. Accordingly, an amount of Rs. 15.77 Crores has been considered written off during the FY 11 and FY12.

3.11 The station wise figures for FY 11 and FY12 are summarised in Table below.

Table 06: Inter Unit account Balance Written Off (Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
MAHI	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
			32	32	32

### Unfunded Liability of Pension and Gratuity

3.12 Estimated figures for the period FY 2010-11 and FY 2011-12 are summarised in Table below.

Table 7: Unfunded Liability of Pension and Gratuity (Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
MAHI			195	195	195

**A4: NON-TARIFF INCOME**

4.1 The following are the main head of accounts of Non tariff income:

- a) Sale of Scrap
- b) Interest on FD/ Staff Loans
- c) Miscellaneous receipts (rebates etc)

Estimated figures of Non Tariff Income for the Period FY-11 and FY12 are summarised in Table below.

Table 08: Non-Tariff Income (Rs. in Lakhs)

Station	FY 09-10		FY 10-11		FY 11-12
	As per tariff order	Actual (audited)	As per tariff order	Estimated	estimated
MAHI			50	50	30

As per the RERC Regulations 2009, the non-tariff income has been deducted from the fixed charges computed and only the net fixed charges are to be recovered from the three Discoms.

**Late Payment Surcharge**

4.1 The late payment Surcharge liveable to Discoms has not been included, as we cannot anticipate future delay in payment of energy bill by Discoms.

**A5: MAHI ACTUAL /ESTIMATED CAPACITY CHARGES (FIXED) FOR FY10, FY 11 AND FY12**

The net fixed charges are computed for FY10, FY 11 and FY12 in Table 11.

Table09: Net Capacity Charges for FY10, FY 11 and FY12 (Rs. in Lakhs)

Particular	FY 09-10		FY 10-11		FY 11-12
	As per tariff order	Actual (audited)	As per tariff order	Estimated	Estimated
Dep.			618	618	618
Int. on Working Cap.			54	54	62
O&M Exp.			1110	1110	1174
Inter-unit account balance written off			32	32	32
Recovery of ARR & Tariff Petition Fees			1.4	1.4	1.4
Unfunded Liability of Pension and Gratuity			195	195	195
Gross Fixed charge			2010	2010	2082
Less Non-Tariff Income			50	50	30
Net Fixed. Charges			1960	1960	2052

**A6: ACTUAL/ ESTIMATED AGGREGATE REVENUE REQUIREMENT FOR FY09, FY10AND FY12**

**THE RECOVERY OF ARR PROPOSED FOR MAHI IS SUMMARISED IN TABLE BELOW**

- 6.1 RVUN proposes a two part tariff for Mahi Hydel station as per Commission's Regulations. The Capacity Charges and Primary Energy Charge @ 25 p/kWh shall be recovered. The estimated energy generation from Mahi Hydel during FY 12 is 174.48 MU and the estimated primary energy charge works out to be Rs. 436.2Lakhs.
- 6.2 RVUN requests Commission to allow the recovery of fixed and variable charges Mahi Hydel Power Station as monthly capacity charges.

TABLE10: MAHI HYDEL STATIONS ESTIMATED TARIFF (RS. IN LAKHS)

Parameter	2008-09		FY2010-11		FY-2011-12
	As per tariff order	Actual (audited)	As per tariff order	Estimated	Estimated
Monthly Cap Charges (Rs. in Lakhs) Estimated			117.91	151.09	134.65
Annual Capacity Charges (Rs. In Lakhs)			1415	1813.08	1615.8
Primary Energy Charge @ 25 p/k Wh)			545	146.925	436.2
Total Fixed Charges (Rs. In Lakhs)			1960	1960	2052
Rate of sale of energy(Rs. /kwh)			0.8992	3.3353	1.7448

**A7: INCENTIVE**

- 7.1 The Regulations also allow incentive to be paid to Hydel stations as per following formula:  
Incentive =  $0.65 \times \text{Annual Fixed Charge} \times (\text{CIA} - \text{CIN})/100$   
(If incentive is negative, it shall be set to zero.)

Where, CIA is the Capacity Index achieved and CIN is the normative capacity index whose values are 90% for purely run of the river hydro stations and 85% for pondage/storage type hydro generating stations.

- 7.2 RVUN proposes recovery of incentive as per the Regulations.

## **A8: MVARH TARIFF**

8.1 The Commission has provided that MVARH generation at the power stations shall be as per directions of SLDC. The tariff for MVARh generation was allowed. 5.75 paise /kVARh for FY 2009-10 escalated at 0.25paise/kVARh aggregately in subsequent years, unless otherwise revised by Commission. It is however submitted that RVUN has been declaring its day ahead capacity both in terms of MW and MVAR as well as MU/MVARh. However SLDC is not including reactive generation in its day ahead generation schedules. In absence of such directives from SLDC, the machines are allowed to float and adapt the system voltage conditions. The reactive generation as a consequence of such conditions is being charged by the power stations as per rates allowed by the commission. The Discoms are disallowing such claims on the pretext of absence of reactive generation scheduling by SLDC. The commission may impart suitable directions in the matter while allowing MVARh tariff.

## **A9: PETITION FOR ANNUAL PERFORMANCE REVIEW/TRUING UP OF ARR/ TARIFF FOR FY 10:-**

9.1 The data for Annual performance review/truing up of ARR/tariff for FY10 will be filed as supplementary petition after actual/audited figures of account are finalized.

## **A10: RESPONDENTS:-**

10.1 All the three Discom's (i.e JVNL/AVNL/ Jd.VNL) Jaipur/ Ajmer/ Jodhpur are respondents for the above petition.

## **A11: PRAYER**

RVUN humbly requests the Hon'ble Commission to:

- ◆ Approval of Annual Performance review / truing up of ARR/tariff for FY-2009-10 on the basis of Audited data to be submitted in supplementary petition.
- ◆ Approval of ARR & tariff for FY-2011-12.
- ◆ To allow provisional tariff w.e.f 1.4.11 for FY2011-12 till final tariff order is issued as proposed in the petition.
- ◆ And pass such other further orders as are deemed fit and proper in the facts and Circumstances of the case.

(S.K.Rajpurawala)  
Chief Accounts Officer (W&M)

(A. K. Purohit)  
Chief Engineer (PPM&C)