

# TARIFF ORDER

## 2010-2011

For

**ELECTRICITY DEPARTMENT**  
**Government of Manipur**



**JOINT ELECTRICITY REGULATORY COMMISSION**  
**FOR MANIPUR AND MIZORAM**

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<b>Abbreviations</b>	<b>Description</b>
A&G	Administrative and General
AAD	Advance Against Depreciation
ARR	Aggregate Revenue Requirement
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CWIP	Capital Work in Progress
DPS	Delayed Payment Surcharge
EDM	Electricity Department, Manipur
EA	Electricity Act 2003
FSA	Fuel Surcharge Adjustment
FY	Financial Year
GFA	Gross Fixed Assets
GOI	Government of India
HEP	Hydro Electric Project
HT	High Tension
IEX	Indian Energy Exchange
kV	Kilovolt
Kva	Kilovolt-ampere
Kw	Kilowatt
kWh	Kilowatt-hour
LT	Low Tension
MDI	Maximum Demand Indicators
Mus	Million Units
NEEPCO	North Eastern Electric Power Corporation
NHPC	National Hydro Electric Power Corporation
NTI	Non-Tariff Income
O&M	Operations and Maintenance
PLF	Plant Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
PWW	Public Water Works
R&M	Repair and Maintenance
RoE	Return on Equity
T&D	Transmission and Distribution
UI	Unscheduled Interchange

**Before**

**The Joint Electricity Regulatory Commission (JERC) for  
Manipur and Mizoram, Aizawl**

**Present**

**Mr. C. Hmingthanzuala, Chairperson  
Mr. H. Bihari Singh, Member**

**Petition No. 01/2011**

**In the matter of**

**Aggregate Revenue Requirement (ARR) and Retail Tariff for the State of  
Manipur for the FY 2010-11**

**AND**

**In the matter of**

**Electricity Department  
Government of Manipur, Imphal  
Petitioner  
(herein referred to as EDM)**

**ORDER**

**Date: 15<sup>th</sup> March, 2011**

**1 Introduction**

**1.1 JERC for Manipur and Mizoram (JERC, M&M)**

In exercise of the powers conferred by the Electricity Act 2003, (hereinafter referred to as Act) the Government of India constituted a Joint Electricity Regulatory Commission for the States of Manipur and Mizoram to be known as "Joint Electricity Regulatory Commission for Manipur and Mizoram" vide GOI. Gazette (Extra Ordinary) Notification No. 23/3/2002 R&R dated 18/01/2005, (hereinafter referred to as Commission) as per the

authorisation given by the Government of Manipur and the Government of Mizoram vide Memorandum of Agreement dated 23/07/2004. The Commission constituted is a two member body designated to function as an autonomous authority responsible for regulation of the power sector in States of Manipur and Mizoram. The powers and functions of the Commission are as prescribed in the Act. The head office of the Commission is presently located at Aizawl, the capital town of Mizoram. The Commission became functional w.e.f. January 24<sup>th</sup>, 2008.

- (a) In accordance with the Act, the Commission discharges the following functions:
- (i) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:  
Provided that where open access has been permitted to a category of consumers under Section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
  - (ii) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
  - (iii) facilitate intra-State transmission and wheeling of electricity;
  - (iv) issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
  - (v) promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
  - (vi) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;



- (vii) levy fee for the purposes of this Act;
  - (viii) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section(1) of Section 79;
  - (ix) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
  - (x) fix the trading margin in the intra-State trading of electricity, if considered, necessary;
  - (xi) discharge such other functions as may be assigned to it under this Act.
- (b) Further, the Commission also advises the State Government on all or any of the following matters namely:
- (i) promotion of competition, efficiency and economy in activities of the electricity industry;
  - (ii) promotion of investment in electricity industry;
  - (iii) reorganization and restructuring of electricity industry in the State;
  - (iv) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.
    - (1) The State Commission ensures transparency while exercising its powers and in discharging its functions.
    - (2) In discharge of its functions, the State Commission is guided by the national Tariff Policy (NTP) as brought out by GOI in compliance to Section 3 of the Act. The objectives of the NTP are to:
      - ensure availability of electricity to consumers at reasonable and competitive rates;
      - ensure financial viability of the sector and attract investments;
      - promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
      - promote competition, efficiency in operations and improvement in quality of supply.

## **1.2 EDM, ARR and Tariff Petition.**

The Electricity Department, Government of Manipur (EDM), being an integrated utility, is responsible for generation, transmission & distribution and it also discharges trading functions of electricity in the State of Manipur. EDM is a deemed licensee.

As per the Joint Electricity Regulatory Commission, Manipur and Mizoram(Terms and Conditions for Determination of Tariff) Regulations 2010, the utility was required to submit the ARR and file the Tariff Petition in the Month of November, 2009 along with the requisite data for generation, transmission and distribution business separately in the prescribed formats for determination of respective tariffs (viz) generation, transmission and retail tariff for the next financial year 2010-11 for sale of energy within the state. However, the licensee has filed petition only for fixation of retail tariff for sale of energy within the state for the year 2010-11 on 7.12.2010.

At present, as the petitioner does not own any major generating plant and is not in a position to sell power to other licensees, the question of fixation of generation tariff may not arise. But transmission tariff is essential for providing open access to HT consumer and evacuation of power generated by IPPs through licensee's transmission network. Hence, it is necessary for the licensee to furnish data for fixation of transmission tariff along with the next ARR and Tariff petition. In the petition EDM, estimated an ARR of ₹16106 Lakhs for Distribution Sector and considered a tariff support of ₹ 5556 Lakhs from the Government of Manipur thereby showing a revenue gap of ₹ 3666 Lakhs.

## **1.3 Admission of Petition**

There is inordinate delay in filing of the ARR & tariff petition for the FY2010-11 and it is not pertinent to admit it at the fag end of the year. However, after careful consideration of the loss being incurred by the utility and the government as a result of non-revision of tariffs for the last 8 years, the distress caused to the consumers with the existing tariffs and consequences of further delay, the Commission considers it appropriate to admit the ARR and tariff petition for the FY2010-11 filed by the EDM.

While admitting the petition, the Commission also kept in mind that these tariffs are likely to be continued for the year 2011-12.

The Commission also observed that the ARR filed by the petitioner was incomplete and lacking critical and vital information required as specified in Commission's Regulations on Terms and Conditions for Determination of Tariff. No data for ensuing year were furnished. Therefore, EDM was asked to submit the required information vide Commission's letter No.H.20011/2/10-JERC dt 24.12.2010.

Pending receipt of additional information, the ARR and Tariff Petition was admitted on 04/01/2011 and marked as Petition No. 01/2011 to avoid delay in processing of ARR.

Subsequently, the EDM was asked to submit further information in addition to the information called for in the above reference vide Commission references listed below:

- (1) JERC letter no. H 20011/2/10 – JERC dated 10.01.2011, and letters of even number dated 27.01.2011, and dated 03/02/2011

The Electricity Department, Government of Manipur has submitted some data / information / clarifications etc vide its letters listed below.

- (1) ED/Manipur letter no. H 1/8/ JERC-R/2008/IPED/114164, Imphal, dated 14.01.2011
- (2) ED/Manipur letter no. H 1/8/ JERC-TR/2008/IPED/278-80, Imphal, dated 26.02.2011

## **1.4 Public Hearing Process**

The Commission directed the EDM, Manipur to publish the summary of the ARR and tariff proposal in the abridged form and manner as approved in accordance with Section 64 of the Electricity Act 2003 to ensure public participation.

The public notice was published by the Chief Engineer, EDM in the following newspapers. Through the public notice, the public were invited to forward their objections and suggestions on the petition on or before 25/02/2011.

Sl. No	Name of the Newspaper	Language	Date of Publication
1	The Sangai Express	English	12 <sup>th</sup> & 13 <sup>th</sup> January 2011
2	Poknapham	Manipur	12 <sup>th</sup> & 13 <sup>th</sup> January 2011

The Commission received one objection / suggestion by 25/02/2011 on the petition filed by EDM. The Commission passed on the objection received to EDM for communicating their response to the objections raised.

### 1.5 Notices for Public Hearing:

A Public Notice was again published in the following leading newspapers on 12<sup>th</sup> February 2011 giving due intimation to the general public, interested parties, objectors and the consumers about the public hearing to be held at Imphal on 25.02.2011.

S.No	Name of the news paper	Language	Date of Publication
1	The Sangai Express	English	12.02.2011

### 1.6 Public Hearing

The Public hearing was held as scheduled on 25.02.2011 at the Conference Hall of State Guest House, Imphal from 11.00AM onwards. During the public hearing, each objector was provided a time slot for presenting before the Commission his views on the petition of EDM. The main issues raised by the objectors during the public hearing and corresponding response of EDM are briefly narrated in Chapter-4.

### 1.7 Meeting of State Advisory Committee

The State Advisory Committee, which met on 15.01.2011, discussed the ARR & Tariff proposal for FY 2010-11 of EDM, Manipur. All the Members were also requested to participate in the Public Hearing and express their views and suggestions on the proposal. The minutes of the Advisory Committee meeting are given in Annexure-I.

## 2. Summary of ARR & Tariff Petition

### 2.1 Aggregate Revenue Requirement (ARR)

The Electricity Department, Government of Manipur, in its petition, has submitted the Aggregate Revenue Requirement for the year 2010-11 for meeting its expenses and the estimated revenue with the existing tariff. The proposed ARR and revenue gap are shown in Table 2.1 below.

**Table – 2.1**

#### **Aggregate Revenue Requirement for FY 2010-11**

(₹ in lakhs)

S.N	Particular	2008-09 (Actual)	2009-10 (Projected)	2010-11 (Projected)
1	Fuel Cost	62	306	366
2	Power Purchase Cost	7610	7996	5845
3	Operation & Maintenance Expenses			
3.1	Employee Cost	4809	4376	5469
3.2	Repair & Maintenance Expenses	968	1016	1117
3.3	Administration & General Expenses	47	37	87
4	Depreciation	315	533	624
5	Interest & Finance Charges	1032	1032	1030
6	Interest on Working Capital	138	140	132
7	Provision for bad debts	61	63	69
8	Sub Total	15042	15498	14738
9	Return on Equity	1230	1366	1561
10	Total Expenditure	16272	16864	16299
11	Less: Non Tariff Income	271	174	193
12	Aggregate Revenue Requirement	16002	16690	16106
13	Revenue from existing tariff	6078	6313	6884
14	Gap (12-13)	9924	10377	9222

The details of the purchase and sales of energy for the above ARR furnished by the petitioner are as detailed in Table 2.2 below.

**Table- 2.2**  
**Power Purchase and Energy Sales Projected by EDM**

<b>S.N</b>	<b>Particulars</b>	<b>2008-09 (A)</b>	<b>2008-10 (P)</b>	<b>2010-11 (P)</b>
<b>A</b>	<b>Sales</b>			
1	Energy sales(MU)	197.21	211.68	232.77
2	T&D Loss (MU)	293.05	236.74	190.46
3	T&D Loss (%)	59.78%	52.79%	45%
4	Total power Requirement(MU)	490.26	448.42	423.23
<b>B</b>	<b>Purchase</b>			
1	Energy purchase(MU)	609.93	513.83	555.18
2	Less inter State Transmission loss at 3.6%	21.93	18.36	19.81
3	Net energy purchase MU	587.26	495.47	535.37
4	Own Generation MU	0.64	3.91	4.83
5	Total Energy available MU	587.90	499.38	540.20
6	Less Energy Requirement MU	490.26	448.42	423.23
7	Surplus sold under UI MU	97.64	47.04	112.15

EDM has requested the Commission

- a) To condone the delay in filing ARR and Tariff Petition.
- b) To approve total recovery of ARR for 2010-11.
- c) To approve the category wise tariffs including fixed/demand charges submitted to meet the revenue requirement for 2010-11.
- d) To approve the capital expenditure as indicated in the petition.
- e) To create regulatory asset for any unmet gap remaining after tariff revision.
- f) To allow further submissions, additions and alterations to the petition as may be necessary from time to time.
- g) To pass such other order the Hon'ble Commission may deem fit and proper under the circumstances of the case and in the interest of justice.

### 3 Power Sector in Manipur

#### 3.1 Geographical Reality

The EDM is responsible for supply and distribution of electricity in the State of Manipur which has a total area of 22,347 Sq KM in its nine districts namely, Bishnupur, Churachandpur, Chandel, Imphal East, Imphal West, Senapati, Tamenglong, Thoubal and Ukhrul. Manipur occupies an area of great strategic importance in North East corner of India. Manipur is bounded by States of Nagaland in the North, Mizoram in the South, Assam in the West and sharing international boundary with Myanmar in the East. The total population of Manipur State is 22.94 lakhs as per 2001 census. EDM serves about 1.871 lakhs consumers of various categories.

#### 3.2 Power Supply

##### (a) Local Generation

The EDM has projected generation of 4.83 MU (Net) from its own generating plants for the year 2010-11, while the energy requirement is about 423.23MU. The total installed capacity of the State owned generating stations is 47.71 MW as detailed in Table 3.1 below.

**Table – 3.1  
Own Generation Plants (T. 1.1 of ARR)**

Sl. NO	Station	Installed Capacity (MW)				
		2006-07	2007-08	2008-09	2009-10	2010-11
<b>I</b>	<b>Hydel</b>	<b>3.20</b>	<b>3.20</b>	<b>3.20</b>	<b>3.20</b>	<b>3.20</b>
1	Leimakhong Stage-I	0.60	0.60	0.60	0.60	0.60
2	Leimakhong Stage-II	0.30	0.30	0.30	0.30	
3	Nungshangkong	1.50	1.50	1.5	1.5	1.5
4	Lokchao	0.4	0.4	0.4	0.4	0.4
5	Gelnel	0.4	0.4	0.4	0.4	0.4
<b>II</b>	<b>Diesel Gen. Set</b>	<b>6.52</b>	<b>6.37</b>	<b>5.63</b>	<b>8.51</b>	<b>8.51</b>
6	Imphal East & West	6.52	6.37	5.63	5.63	5.63
7	Others Districts Hospitals				2.88	2.88
<b>III</b>	<b>Heavy Fuel</b>	<b>36.00</b>	<b>36.00</b>	<b>36.00</b>	<b>36.00</b>	<b>36.00</b>
8	Leimakhong	36.00	36.00	36.00	36.00	36.00
	<b>Total</b>	<b>45.72</b>	<b>45.57</b>	<b>44.83</b>	<b>47.71</b>	<b>47.71</b>

The EDM further stated that the diesel generating sets with a total capacity of 8.51MW cater to the immediate requirement of Imphal Power House and

district hospitals. The heavy fuel plant of 36 MW (6X6MW) at Leimakhong is kept on stand by mode for the purpose of meeting emergency requirements in the State.

**(b) Power Purchase**

In the absence of meaningful generation of its own, the power supply requirement of the Manipur State is met from central generating stations located in different parts of the North Eastern Region. The total firm share from the Central Sector Generating Stations of NEEPCO and NHPC is 102MW. Apart from this, Manipur is getting additional 8.5% of the 15% reserved unallocated share. Therefore, the total allocation to the state of Manipur from firm and infirm share from central generating stations is 118 MW as depicted in the Table 3.2 below.

**Table – 3.2**

**Share from Central Generating Stations (CGS) (Table 1.2 of ARR)**

S.N	Name of the Station Firm Allocation	Installed Capacity (MW)	Share	
			%	MW
<b>I</b>	<b>NEEPCO</b>	<b>1130</b>		<b>76.34</b>
<b>A</b>	<b>Hydro</b>	<b>755</b>		<b>50.45</b>
1	Koppili I HEP	200	6.16	12.32
2	Koppili II HEP	25	6.00	1.50
3	Khandong HEP	50	5.34	2.67
4	Ranganadi HEP	405	7.15	28.96
5	Doyang HEP	75	6.67	5.00
<b>B</b>	<b>Gas based</b>	<b>375</b>		<b>25.89</b>
6	Assam Gas Based Projects	291	6.90	20.08
7	Agartala Gas Based Project	84	6.92	5.81
<b>II</b>	<b>NHPC</b>	<b>90</b>	<b>28.80</b>	<b>26.00</b>
8	Loktak HEP	90	28.89	26.00
<b>9</b>	<b>Total Firm Allocated Share</b>	<b>1220</b>	<b>8.39%</b>	<b>102.34</b>
<b>10</b>	<b>Infirm Allocation (15% on the Installed Capacity)</b>	<b>183</b>	<b>8.50%</b>	<b>15.56</b>
<b>III</b>	<b>Total (9+10)</b>	<b>1403</b>	<b>8.40%</b>	<b>117.90</b>

In addition EDM is also getting power to an extent of 6.25 MW from NEC funded Baramura Gas-based Thermal Power Plant in Tripura State.

The energy drawn from various central generating stations and Tripura during 2008-09, and 2009-10 and 2010-11 are given in Table 3.3 below.



**Table – 3.3**  
**Energy Drawals from Central Generating Stations & Tripura**  
**(Table 2.10 of ARR)**

(MU)				
S.N	Station	FY 2008-09	FY2009-10	FY 2010-11 (Projected)
<b>I</b>	<b>NEEPCO</b>			
<b>A</b>	<b>Hydro</b>			
1	Kopilli - I HEP (200 MW)	65.81	51.5	60.4
2	Kopilli - II HEP (25 MW)	5.71	5.65	5.71
3	Khandong HEP (50MW)	12.39	9.83	11.04
4	Ranganadi HEP (405MW)	131.56	85.34	105.67
5	Doyang HEP (75MW)	18	13.6	16.39
	<b>Total-A</b>	<b>233.47</b>	<b>165.92</b>	<b>199.21</b>
<b>B</b>	<b>Gas based</b>			
6	Assam Gas based Power Project (291MW)	140.22	138.91	134.09
7	Agartala Gas Turbine Power Project (84 MW)	51.96	52.34	48.85
	<b>Total-B</b>	<b>192.18</b>	<b>191.25</b>	<b>182.94</b>
	<b>Sub-Total-I(A+B)</b>	<b>425.65</b>	<b>357.17</b>	<b>382.15</b>
<b>II</b>	<b>NHPC</b>			
	<b>Loktak HEP(105 Mw)</b>			
8	Free Power Share	58.76	44.78	
9	Purchased	88.7	67.61	
	<b>Sub Total-II</b>	<b>147.46</b>	<b>112.39</b>	<b>129.93</b>
<b>III</b>	<b>Tripura</b>			
10	B'mura (5.25 MW)	36.08	40.36	38.27
	<b>Sub Total-III</b>	<b>36.08</b>	<b>40.36</b>	<b>38.27</b>
<b>IV</b>	<b>Total (I+II+III)</b>	<b>609.19</b>	<b>509.92</b>	<b>550.35</b>
11	Trading / UI	(97.64)	(47.04)	(112.15)
<b>V</b>	<b>Net Energy sale (within the state)</b>	<b>511.55</b>	<b>462.88</b>	<b>438.20</b>

### 3.3 Transmission and Distribution

For the purpose of drawing power from the Central Sector generating stations and other sources in the North Eastern Region, the EDM has utilized the service of 4 Nos single circuit 132kV inter state transmission lines, two being owned by PGCIL and two by ED, Manipur, as detailed below

#### Owned by ED, Manipur

- Leimatak-Ningthoukhong-Karong-Kohima-132 kV line
- Leimatak-Jiribam-132kV line

### Owned by PGCIL

- Leimatak – Imphal - Dimapur – 132 kV line
- Leimatak - Jiribam - 132kV line

Manipur, being a hilly State with its population unevenly dispersed and spread over remote corners, it is having large network of Sub-Transmission and Distribution system. The details of Transmission, Sub-Transmission and Distribution network, owned & operated by EDM as on 31/03/2010, are given in Table 3.4 below.

**Table – 3.4**  
**Transmission and Distribution Network**

S.N	Voltage	Transmission lines (cKt KM)	Sub-stations (Nos)	MVA
1	132kV	376.21	7	205
2	33kV	797.058	41	250
3	11kV lines	5379.35		
4	LT lines	6843.73		
5	Distribution transformers		3576	376.12

### 3.4 Transmission and Distribution (T&D) Losses

The Transmission and Distribution losses of EDM system are given as 59.78% during the year 2008-09 and as 52.79% during the year 2009-10 excluding external pool losses. The technical and commercial losses are not segregated.

### 3.5 Consumer Profile

The category wise consumer number and corresponding energy sales during the year 2009-10 are given in Table 3.5 below.

**Table – 3.5**  
**Consumer Profile and Energy Sales – 2009-10**

S.N	Consumer Category	2009-10	
		No. of Consumers	Energy Sales (MU)
<b>A</b>	<b>LT</b>		
1	Domestic	174,190 (93.12%)	126.65 (59.83%)
2	Commercial	9,691(5.2%)	15.64 (7.39%)
3	Public lighting	587 (0.3%)	4.19 (1.98%)
4	Irrigation & Agriculture	64 (0.03%)	0.61 (0.29%)
5	Public waterworks	129 (0.07%)	12.27 (5.79%)
<b>B</b>	<b>HT</b>		
6	Small Industry	1,562 (0.83%)	4.93 (2.33%)
7	Medium Industry	406 (0.22%)	2.41 (1.14%)
8	Large Industry	15 (0.01%)	1.42 (0.67%)
9	Bulk supply	422 (0.22%)	43.57 (20.58%)
	<b>Grant Total</b>	<b>187,066</b>	<b>211.69</b>

### **3.6 Demand**

The energy demand for the EDM is met by supply of power from own generation, central generating stations of North Eastern Region and Baramura Gas Based Plant in Tripura State. The annual energy requirement of the State as per the 17<sup>th</sup> Load Survey of Central Electricity Authority (CEA) during 2010-11 is 834 MU. The annual shortage is about 30%.

### **3.7 Energy Audit**

The EDM is not doing Energy Audit effectively- neither at the incoming to the State nor at the consumer end. At present, the EDM is arriving at the losses by taking the input at 11kV point and compare it with energy sales at consumer end and showing the difference as distribution loss and this exercise can not be termed as energy audit. The energy audit should be conducted Voltage wise and computed with standard norms.

Any abnormalities in loss level should be analysed and effective measures to be taken to bring down the losses to the permissible limits. To achieve this all the line feeders, transformer and consumers should be provided with standard meters.

### **3.8 Energy Metering**

Out of 187066 service connections as on 31.3.2009, 20689 connections are reportedly without meters. During the year 2009-10 alone, 2473 new service connections are released without meters. Added to this 27,651 service connections are with defective meters as on 31.3.2010. More than 70% of the meters are electromechanical type and these remain untested for several years. Metering of 33KV feeders, 11KV feeders are not completed and DTRs are without meters.

### **3.9 Continuity of Power Supply**

The Power supply in the state is in a very precarious condition. Nowhere in the state, barring a few privileged consumers, the power supply is continuous. Even at Imphal, the State capital, the power supply is not given for more than 6 hours a day.

## **4 Proceedings of Public Hearing**

### **4.1 Public Response to the Petition**

On admitting the ARR and Tariff Petition for 2010-11, the Commission directed the EDM to make available copies of the petition to the general public, post the petition on their website and also publish the same in newspapers in abridged form and invite comments/ objections from them.

### **4.2 Public Hearing**

In order to ensure transparency in the process of determination of tariff as envisaged in the Electricity Act, 2003, public hearing was held at Imphal on 25/2/2011 as scheduled.

### **4.3 Objections/ Suggestions and Response of EDM, Manipur**

During the public hearing, objector who submitted the objections in writing earlier presented the objections and suggestions personally before the Commission. Other participants from the general public, who did not submit written objections earlier, were also given as opportunity to offer their views in respect of the ARR and Tariff proposal of the EDM. The list of stakeholders who attended the public hearing is given in Annexure-II. The CE, EDM, who was present during the public hearing, responded to the issues raised by the objectors.

#### **(a) Objections & Suggestions:**

- (1) **Shrimati, S. Radhapyari Devi**, Secretary, Environment & Economic Management Association (EEMA), Manipur, pointed out that the irregular electric supply irritates the mind of every body and as such they do not like to make any payment. She suggested that –
  - (i) The Department may waive the surcharge off and allow the consumers to pay the bills in 3 monthly installments.
  - (ii) The Department may supply electricity regularly so as to enable people to work without any hindrance and complete important computer works in time.
  - (iii) The Department may serve the electric bill every month regularly.

- (2) **Shri Meihoubam Rakesh**, Director, Human Rights Law Network, Manipur. Shri Rakesh made a submission to the Commission to reject the proposed ARR and Tariff Petition and direct the Licensee to supply uninterrupted power for 24 hours a day and to admit thereafter the new petition, because of the following reasons –
- (i) There is heavy load shedding in Manipur with Supply available only for 4 to 5 hrs in a day, while neighbouring States are getting uninterrupted power supply.
  - (ii) The distribution losses are on high side and the calculations are not based on any energy audit, and there is rampant theft.
  - (iii) The cost of power purchase is on high side ranging from ₹ 10 to ₹ 11 crore per month.
  - (iv) The standard of performance is very poor by the Department and standard equipment is not used.
  - (v) The employee cost is very high and there are excess number of employees.
  - (vi) The data furnished are based on assumptions and therefore, these hypothetical data are not as per audited accounts.
  - (vii) The consumer contribution for capital investment is not reflected in the present ARR.
  - (viii) The current consumption bills are not served regularly and are given once in 3 to 4 months.
  - (ix) The Department terribly fails to comply with the stipulations on safety measures given the Regulations of the Regulatory Commission.
  - (x) The consumer is over burdened and the hike in tariff is not justified.
- (3) **Shri Basanta Wareppa**; Human Rights Alert, Manipur, stated that Electricity is an issue in Human Rights and wanted an overall improvement in the following aspects before the tariff is revised.
- (i) Delay/ Irregular in serving monthly bills.
  - (ii) Accumulation of Bills because of irregularity in serving bills.
  - (iii) Free access to Electricity Office/ Department for all matters related to consumers grievances.
  - (iv) Discrimination in billing.

- (4) **Shri Ksh Onil**, Human Right Alert, Manipur, wanted to know from the Department –
- (i) If it can assure regular and reliable power supply for 24 hrs to the consumers immediately after the outstanding arrear is cleared.
  - (ii) He also wanted a time frame and a white paper from the Department in this regard and
  - (iii) He further suggested that revision of tariff may be deferred till the time the Department assures a consumer friendly supply.
- (5) **Shri S. Chaothoi Singh**, Manipur Industries Union, suggested concessional tariff for a few categories of consumers like Domestic, Commercial, Agriculture and Small Scale Industries.
- (6) **Shri Jhaljit Singh**, of a NGO on Drugs & HIV, Nagamapal, stated that consumer service provided by the Department is really poor. Electricity is inadequate, and billing is irregular, and at the same time, the Department is asking the consumers to be regular in making payment. This is something beyond the expectations of the consumers and therefore, the tariff is not to be increased.
- (7) **Shri Y. Gunindro Singh**, Consumer, Kwakeithel, Imphal, contended that there is irrational manner of distribution of power and so also the billing. Addition of compound interest in the bill and refusal on payment of bills on installment basis, have been cited as the main reasons for accumulation of bills. Shri Gunindro wanted that the bills are prepared correctly based on actual consumption and appropriate tariff.
- (8) **Shri Y. Ranapratap Singh**, Vice President, MEEU, suggested that subsidized tariff may be determined for consumers belonging to BPL and Agriculture categories. He also stressed the importance for proper identification of BPL consumers.
- (9) **Shri E. Dolendra Singh**, Advocate, Advisor, All Manipur Power Consumers' Association (AMPCA), Imphal, stated that the Department has miserably failed to comply with the stipulations laid down in the Regulations notified by the Commission in respect of billing and other consumer's services. Instead, the Department has always made attempts to blame the consumers and treat them as criminals.

He also pointed out that preparation of bill for electricity consumption based on assumed connected load, may not be valid and further reminded that the stakeholders are required to act responsibly according to Citizens Charter Regulations of the Commission to strike balance of interests of all.

He also expressed dissatisfaction on the performance of the Department and wanted all the verbal commitments be transformed into ground reality.

In respect of revision of Tariff, Shri Dolendra stated that in the present economic situation, the existing tariff is already high. Therefore, he suggested to give a serious thought to the revision of the tariff.

(10) **Shri Salam Chingtam Luwang**, Manipur Industries Union, felt that filing of the Tariff Petition is already late and wanted it to be rejected.

(11) **Shri Sanasam Chaoba Singh**, President, AMPCA, stated that some privileged class of people have been provided with uninterrupted power supply (popularly known as VIP line) while others have been reeling under pro-rata load shedding. During the short duration when power supply is available, there are frequent interruptions that last sometimes more than an hour.

He also pointed out that –

(i) The Department has not followed the guidelines laid down in the JERC for M&M (Electricity Supply Code) Regulations, 2010, while dealing with the cases of defaulters and un-authorized connections.

(ii) The Department has introduced an illegal procedure for assessment of load.

(iii) The Department has denied payment of bill on installment basis.

(iv) The Department has imposed a complete ban on providing new service connection without specifying any reason.

(v) Consumers are denied access and connection to the CGRF & IGRC.

Shri Chaoba also advocated that most of the consumers in the State are economically backward. Therefore, he suggested that (i) a lesser tariff will be preferred for these consumers and (ii) a minimum charge may also be fixed based strictly on the duration of supply.

(12) **Shri Wahengbam Joykumer Singh**, Member, AMPCA pleaded that tariff must not be revised and increased more than what the Commission has

determined for the State of Mizoram, for the simple reason that the data or the assessment are based on assumptions only.

He further added that in case the Department feels it cannot survive without increasing the tariff, the concerned authority may initiate steps first to corporatise it.

- (13) **Col. K.A. Singh**, Senior Citizen, felt that the cost components indicated in the tariff petition are very much on the higher side and wanted it be reduced. He however, emphasized the need for revision of tariff considering the economic condition of consumers & rate of inflation.

**(b) Response of EDM:**

- (i) What has been found to be added in the bills is not the compound interest. It is the surcharge for late payment and it is not compounded. He clarified that, consumers with huge arrears are being permitted to pay in three equal monthly installments.
- (ii) Because of acute shortage of manpower in the Department, electric bills could not be served timely. The Department has requested the consumers to enquire about their bills in their concerned offices.
- (iii) The standards of performance are being maintained in the Department. Regarding procurement of materials, it is stated that the Department conducts inspection as per specifications before the materials are dispatched.
- (iv) Power Purchase Cost is high due to increase in demand and also increase in the cost of fuel for generation of electricity.
- (v) As consumers are not paying bills in time, there is an outstanding arrear of ₹ 263.30 crore. There is a drive for collection of arrears. A proposal is being worked out for introduction of prepayment meters in the Department.
- (vi) About the increase in the Bill amount in respect of a section of consumer, the Department asserted that the consumption of energy by the consumer is much more than what is billed for. Making it clear that the Department has no intention to charge more from consumer, the CE(P) further stated that the connected loads of all the consumers have increased substantially over the last couple of years without informing the Department and because of this fact the distribution



transformers are mostly overloaded. Thus he informed that load survey of the consumers was conducted and Bills are prepared based on the Consumers revised connected load and it differs from Consumer to Consumer.

(vii) In respect of irregular power supply, load shedding and poor quality power supply in the State, the Department narrated that it would require to complete a series of works sequentially as given below to fulfill the desire of the consumers.

(1) Loss reduction process which necessarily involves, 100 p.c. metering, energy audit, detection and registration of unauthorized and elimination of theft of power cases.

(2) 100 p.c. billing of the consumers which motivates economic use of electricity.

(3) Improvement of collection efficiency,

(4) Renovation and Augmentation of the Transmission, Transformation and Distribution capacities in the State with the financial assistance to the tune of ₹ 800 crores from the World Bank.

(5) Efforts are being made soon to streamline the management process and do away with the odds in the larger interest of all stakeholders. For that, Co-operation of the Consumers is always needed.

(viii) Citing the examples of price hike in all the essential items that always have a bearing with the cost of generation of electricity, the Chief Engineer (Power) emphasized the need for revision of electricity tariff which is long over due in the State and assured the consumers of better service and improved performance in near future.

#### **4.4 Commission's Observation**

The Commission has taken careful note of the objections, comments and suggestions made by the stakeholders/ members, public and has considered the same while analyzing and finalizing the components of ARR and tariff proposal. The Commission has also decided to give in the interest of stakeholders, appropriate directives to the Department in the Tariff Order.

## **5 Analysis of Aggregate Revenue Requirement**

### **5.1 Energy Sales**

Proper estimation of category wise energy sales is essential to determine the quantum of power purchase and the likely revenue. This section examines in detail the consumer category wise sales projected by the EDM in its petition for assessment of ARR.

### **5.2 Consumer Categories**

The EDM serves about 1.87 Lakh consumers in its licensed area and the consumers are categorized as under.

- (a) Domestic
- (b) Commercial
- (c) Public Lighting
- (d) Agricultural
- (e) Public water works
- (f) Cottage & Small industry
- (g) Medium industry
- (h) Large industry
- (i) Bulk supply

The EDM serves the consumers at different voltages according to the consumer's requirement. In almost all the categories, there are LT consumers as well as HT consumers. The Commission has considered to segregate the LT and HT categories.

### **5.3 Additional Information and Data**

The ARR and Tariff Petition for the year 2010-11 filed by EDM was incomplete as many of the specified formats required under JERC (Terms and Conditions for Determination of Tariff) Regulations, were not submitted. However, the EDM has submitted some additional data / information / clarifications etc through the following references.

- a) EDM letter No. 1/8/JERC-TR/2008/IPED/11464 dated 14/01/2011
- b) EDM letter No. 1/8/JERC-TR/2008/IPED/278-80 dated 26/02/2011

Additional information and revised / corrected data submitted by the EDM in the above references are taken into consideration while analyzing the ARR and determination of Tariff. In the petition, many information gaps still remain. However, this being the first ARR submitted by the EDM, the Commission has processed the same.

## 5.4 Growth of Consumers and Connected Load.

The EDM has projected the category wise growth of consumers and their connected load as detailed below.

### (a) Consumers

The EDM has projected the category wise number of consumers for the year 2010-11. The actual number of consumers during 2005-06 to 2009-10 and projected number of consumers for 2010-11 are given in Table 5.1 below.

**Table – 5.1**  
**Category wise Projected Growth of Consumers**

(Table 2.3 of ARR)

(Figure in Number)

No. of Consumers	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 (P)
Domestic	162763	166,761	168,523	171,250	174,190	184,641
Commercial	9084	9,216	9,329	9,511	9,691	10,176
Public Lighting	340	340	341	345	587	587
Irrigation & Agriculture	60	60	60	60	64	67
Public Water Works	119	121	121	124	129	135
Cottage & Small Industrial	1524	1527	1540	1582	1562	1640
Medium Industrial	405	407	411	412	406	414
Large Industrial	12	14	14	14	15	15
Bulk Supply	344	354	357	388	422	443
Total	174651	178800	180696	183686	187066	198118

### (b) Connected Load

The EDM has also furnished connected load of each category of consumers for the years 2008-09 to 2010-11 as given in Table 5.2 below:

**Table – 5.2**  
**Category wise Consumers and Connected Load**  
 (Table 2.4 of ARR)

(MW)

S.N	Category of Consumers	2008-09		2009-10		2010-11 (Projected)	
		No. of Consumers	Connected Load (KW)	No. of Consumers	Connected Load (KW)	No. of Consumer	Connected Load (KW)
1	Domestic	171250	107410	174190	109254	184641	115809
2	Commercial	9511	14871	9691	15152	10176	15911
3	Public Lighting	345	2463	587	4191	587	4191
4	Public Water Works	124	6025	129	6268	135	6559
5	Irrigation and Agriculture	60	655	64	699	67	731
6	Small Industry	1582	13279	1562	13111	1640	13766
7	Medium Industry	412	3458	406	3408	414	3475
8	Large Industry	14	118	15	126	15	126
9	Bulk Supply	388	38689	422	42079	443	44173
	<b>Total</b>	<b>183686</b>	<b>186968</b>	<b>187066</b>	<b>194288</b>	<b>198118</b>	<b>204741</b>

### Commission's Analysis

The average growth of consumers during the period from 2005-06 to 2009-10 is 1.73% only vide Table-5.1.

The EDM has projected the growth of consumers during 2010-11 over 2009-10 as 5.9%. The projected connected load during 2010-11 is 5.3% over 2009-10. Growth of both consumers and connected load does not follow any consistent trend. The Commission considers the growth rates are very low and total number of consumers is far below the number of households in the state. The actual number of consumers, as per electrification, must not be less than 3 lakhs and the total connected load must also be above 300 MW. The Commission has considered 10% hike over the projected figures of the EDM as the financial year is ending and there is not much time left for massive drive. Category wise number of consumers and the connected load for the year 2010-11, as proposed by the EDM and also as approved by Commission are given in Table 5.3 .

**Table- 5.3**  
**Category wise Consumers and Connected load**

S.N	Category	No. of Consumers		Connected Load(kw)	
		Proposal	Approved	Proposal	Approved
1	Domestic	184641	203105	115809	140128
2	Commercial	10176	11194	15911	19252
3	Public Lighting	587	645	4191	5071
4	Public Water Works	135	148	6559	7936
5	Irrigation & Agriculture	67	73	731	884
6	Small Industry (1-10 kw)	1640	1804	13766	16656
7	Medium Industry(10-50 kw)	414	455	3475	11375
8	Large Industry (above 50 kw)	15	16	126	5000
9	Bulk Supply	443	487	44173	53449
	<b>Total</b>	<b>198118</b>	<b>217927</b>	<b>204741</b>	<b>259751</b>

### 5.5 Overall Approach to Sales Projection

The EDM has projected the category wise energy sales for the year 2010-11 based on actual sales in the year 2009-10 which is taken as a base and the forecast is based on CAGR for different periods (5 years to 3 years and year on year). The EDM has also stated that from the past experience, historical trend method is found to be reasonably accurate and is a well-accepted method for estimating the load, number of consumers and energy consumption.

### 5.6 Projected Energy Sales 2010-11

The EDM has furnished the category wise sales during earlier years along with estimates for the year 2010-11. They are given in Table 5.4 to 5.6 below.

**Table – 5.4**  
**Historical Trend in Category-wise Energy Sales**

S N	Sales	(MU)				
		2005-06	2006-07	2007-08	2008-09	2009-10
1	Domestic	120.74	115.26	118.25	120.61	126.65
2	Commercial	12.66	12.63	12.67	14.22	15.64
3	Public Lighting	3.39	4.29	3.31	3.20	4.19
4	Public Water Works	9.57	9.99	10.01	9.64	12.27
5	Irrigation and Agriculture	0.49	0.10	0.09	0.12	0.61
6	Small Industry	4.26	4.31	4.62	4.85	4.93
7	Medium Industry	2.78	2.60	2.60	2.49	2.41
8	Large Industry	1.12	1.63	1.64	1.34	1.42
9	Bulk Supply	32.99	36.39	44.22	40.75	43.57
	<b>Total</b>	<b>188.00</b>	<b>187.20</b>	<b>197.41</b>	<b>197.22</b>	<b>211.69</b>

The break up of past sales and the CAGR for different periods (5 years to 3 years and year on year) thereof are given hereunder.

**Table – 5.5**  
**Category-wise Growth Rates of Units Sold**  
(Table 2.22 of ARR)

All figures are in (%)

Consumer Category	Sales Growth Rates					Growth Rate Considered for 2010-11
	5 years 2009-10 over 2005-06	4 years 2009-10 over 2006-07	3 years 2009-10 over 2007-08	2008-09 over 2007-08	2009-10 over 2008-09	
Domestic	1.20	3.19	3.49	2.00	5.01	10.00
Commercial	5.42	7.37	11.09	12.20	9.99	12.00
Public Lighting	5.39	-0.79	12.54	-3.25	30.89	12.00
Public Water Works	6.40	7.08	10.71	-3.73	27.32	15.00
Irrigation & Agricultural	5.44	83.76	154.36	28.66	402.84	15.00
small industry	3.69	4.55	3.25	5.03	1.50	8.00
Medium industry	-3.45	-2.49	-3.59	-4.30	-2.88	50.00
large Industry	6.28	-4.49	-6.88	-18.54	6.45	8.00
Bulk Supply	7.20	6.18	-0.74	-7.84	6.92	8.00
Total	3.01	4.18	3.55	-0.10	7.34	9.96

Based on the above growth rates for energy sold, the EDM has projected the category wise energy sales for the year 2010-11 as given in Table 5.6 below.

**Table – 5.6**  
**Projected Energy Sales in MU**

S.N	Sales	FY 2009-10	FY 2010-11
		(Provisional)	(Projected)
1	Domestic	126.65	139.31
2	Commercial	15.64	17.52
3	Public Lighting	4.19	4.69
4	Public Water Works	12.27	14.11
5	Irrigation and Agriculture	0.61	0.7
6	Small Industry	4.93	5.32
7	Medium Industry	2.41	2.53
8	Large Industry	1.42	1.54
9	Bulk Supply	43.57	47.05
	<b>Total</b>	<b>211.69</b>	<b>232.77</b>

## 5.7 Detailed Analysis of Energy Sales Projection

The EDM has projected the energy sales for different categories of consumers for FY 2010-11 as given in Table 5.6 above. As per the tariff schedule, medium / large industries, public water works, agricultural and bulk supply categories are mix of HT and LT categories and domestic, commercial, public lighting and cottage and small industries are under LT category. The proposed sales are based on past trend of restricted supply. The energy sales are not following any definite trend. The projection of EDM is based on the past trend of the unfulfilled demand for the last 5 years. Presently, the utility has been supplying power for only 6hrs a day. On the contrary, the EDM has declared that the state is energy surplus. However, by increasing the duration of power supply and optimizing the use and distribution of the available energy, the sale of energy in the state will be increased many fold. Keeping the above issues in view, the consumption by each category of consumers is discussed hereunder.

### (a) Domestic

Domestic is the main consumption category in Manipur, contributing about 60% of total sales of energy in the State. There is no definite trend in energy sales growth rate. The growth during 2009-10 over 2008-09 is about 5.01% compare to earlier growths of 2 to 3%. However, considering the general increase in per capita income levels and increased utilization of electrical appliances, the EDM expects a growth rate of 10 % in energy consumption for the year 2010-11 over the year 2009-10 under restricted demand. However, it is possible that the demand of the consumers could be met without restriction when both the availability of power and working conditions of the utility improve substantially. Therefore, a much higher sale of energy in the domestic category over the year 2009-10 is considered reasonable.

**Considering the improved power supply position and consumer growth, the Commission approves the energy sales to the domestic category at 158 MU for the year 2010-11 as against the projected sales of 139.31MU by EDM.**

**(b) Commercial**

The EDM projected energy sales of 17.52 MU for this category for the year 2010-11 at a growth of 12%. The growth of energy sales in commercial category has been 5.42% over the 5 year CAGR and it was 11% over the 3 year CAGR.

However, considering the past growth and improvement in availability of power, it is considered reasonable to assume the 3-year CAGR of 15 % for 2010-11 over 2009-10.

**The Commission approves the energy sales for commercial category at 18 MU for the year 2010-11 as against 17.52 MU projected by EDM.**

**(c) Public Lighting**

The EDM projected energy sales for this category at 4.69 MU during the year 2010-11. There is no definite trend in energy consumption for this category over the last six years. However, EDM has considered a growth of 12 % for sales projection for 2010-11 over FY 2009-10. It is observed that there is decreasing trend during the years 2007-08 & 2008-09 and an increase of 30.89 p.c in 2009-10 over 2008-09. The EDM has not explained the reason for such a wide fluctuation. Had the increase of 10 p.c per annum been considered over 2005-06, the sales for 2010-11 would have been 5.45MU. The sales considered are found to be reasonable in view of Power Supply Position and also the need for better Public lighting in all towns & Villages.

**The Commission approves the energy sales for Public lighting at 5.45 MU for the year 2010-11 as against 4.69MU projected by EDM.**

**(d) Irrigation & Agriculture**

There is no definite trend in energy consumption for this category. Decreased trend is observed during the period from 2006-07 to 2008-09 and in 2009-10 the consumption increased. The EDM has however, considered growth rate of 15% for FY 2010-11 over 2009-



10. This is considered reasonable in view of improved Power Supply and the projected consumption for Irrigation & Agriculture.

**The Commission approves the energy sales for irrigation & agricultural category at 0.70MU for the year 2010-11 as projected by EDM.**

**(e) Public Water Works**

The EDM has projected energy sales of 14.11 MU for this category for the year 2010-11. The three year CAGR for the period from 2006-07 to 2009-10 is about 10.71%. The year on year growth (2009-10 over 2008-09) is about 27.32%. Considering the growing demand, the EDM has considered an increase of 15 % over the sales in 2009-10 for the year 2010-11. The projection of 15% growth is apparently high, however, in view of growing need to provide potable water supply in all towns and villages, the growth of 15% proposed by EDM is accepted.

**The Commission approves the energy sales of 14.11 MU for public water works category for the year 2010-11 as projected by EDM.**

**(f) Cottage & Small industry**

The EDM has projected energy sales in this category at 5.32 MU for the year 2010-11. The sale is in a downward trend over the last few years. The EDM has considered a normal growth of 8%. It is also stated that the industry had picked up during the year 2008-09. The assumption of 8% growth over 2009-10 is based on the consumption where the supply is made available for 6 hrs a day. By increasing the duration of supply coupled with annual growth, the sale of Energy in this category will have a quantum jump.

**The Commission approves the energy sales of 7.00 MU for L.T. Industrial category for the year 2010-11 as against 5.32 MU projected by EDM.**

**(g) Medium industry**

The EDM has projected energy sales of 2.53 MU for 2010-11 for the category at a growth rate 4.97 % over 2009-10. There was negative growth in the earlier years. The assumption of 5% growth by the EDM is considered reasonable as the medium industry may be picking up with the improvement of law and order situation in the state.

**The Commission approves the energy sales of 2.53 MU for this category for the year 2010-11 as projected by EDM.**

**(h) Large industry**

The EDM has projected energy sales of this category at 1.54 MU for the year 2010-11 with a growth of 8.5% over 2009-10. There was negative growth during earlier years and in 2009-10 it is 6.45% over 2008-09. Hence, the assumption of 8% growth is considered reasonable.

**The Commission approves the energy sales of 1.54 MU for this category for the year 2010-11 as projected by the EDM.**

**(i) Bulk Supply**

The EDM projected energy sales of 47.05 MU for Bulk Supply category for the year 2010-11. The 3 year CAGR between 2007-08 and 2009-10 showed a growth rate of -0.74 %, whereas the growth rate between 2008-09 and 2009-10 was 6.92%. The EDM considered a relatively normalized growth rate of 8% for estimating sales for the year 2010-11. However, 12 % growth is considered more reasonable.

**The Commission approves the energy sales of 52.69 MU for the year 2010-11 as against 47.05 MU projected by EDM.**

## **5.8 Category wise Energy Sales Approved**

The category wise energy sales for the year 2010-11 as discussed above and approved by the Commission segregating kutir Jyoti, LT & HT categories as against the projected sales by the EDM are given in Table 5.7 below:

**Table – 5.7**  
**Category-Wise Energy Sales for 2010-11 in (MU)**

S.N	Name of Category	Energy Sales projected by EDM	Energy sales approved by Commission
1	<b>Domestic</b>	139.31	158.00
	(a) Kutir Jyoty		5.00
	(b) Domestic		153.00
2	<b>Commercial</b>	17.52	18.00
3	<b>Public Lighting</b>	4.69	5.45
4	<b>Public Water Works</b>	14.11	14.11
	(a) LT		5.00
	(b) HT		9.11
5	<b>Irrigation &amp; Agriculture</b>	<b>0.70</b>	<b>0.70</b>
	(a) LT		0.42
	(b) HT		0.28
6	<b>Industrial</b>	9.39	<b>11.07</b>
	(a) Cottage & Small Industry	5.32	7.00
	(b) Medium Industry (HT)	2.53	2.53
	(c) Large Industry (LT)	1.54	1.54
7	<b>Bulk Supply</b>	47.05	52.69
	(a) LT		4.50
	(b) HT		48.19
	<b>Total</b>	<b>232.77</b>	<b>260.02</b>

## 5.9 Reduction of T&D Losses

The EDM has submitted the T&D losses within the State for previous, current and ensuing years with a proposed plan for 7 to 8% reduction per annum as detailed in Table 5.8 below:

**Table – 5.8**  
**T&D Losses Projected by EDM**

Year	% loss
2008-09 (A)	59.78%
2009-10 (P)	52.79%
2010-11 (P)	45%

The EDM further stated that it is aggressively making initiatives to bring down the loss levels.

### Commission's Analysis

- (a) The EDM has considered a pool loss in regional network at 3.6%. The Regional Load Despatch Centre, Shillong has been contacted and the details of regional network losses have been obtained for the period 29<sup>th</sup> March 2010 to 6<sup>th</sup> December 2010 (37 weeks) during 2010-11. The data is

furnished in Annexure III. The loss is in the range of 2.77% to 3.94%, highest loss being 4.31% in April 2010. The average loss is about 3.21%. It is considered reasonable to adopt 3.5% towards regional transmission loss (pool loss) instead of adopting strictly the average of 3.21%.

**The regional pool loss level of 3.5% has, therefore been considered as against 3.6% proposed by EDM.**

- (b) The State's internal T&D Loss for the year 2010-11 projected by EDM at 45% is not correct for the simple reason that the actual T&D losses of earlier years furnished in the Annual Plans are not correct. So, with the actual power purchase and energy sales data furnished in the Annual Plans for the years 2005-06 to 2009-10, and the actual energy drawals by EDM during 4/2010 to 1/2011 obtained from REA for the year 2010-11, the T&D losses are worked out as detailed in Table 5.9 below

**Table- 5.9**  
**T&D Loss Calculation (2005-06 to 2010-11)**

S.N		Unit	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
1	Own generation	MU	1.09	3.13	1.71	.65	2.01	4.83
2	Free power	MU	68.96	55.33	70.77	58.76	44.79	51.77
3	Power Purchase	MU	520.99	441.22	572.03	550.43	465.12	553.01
4	Total power from CGS	MU	589.95	496.55	642.80	609.19	509.91	604.78
5	Less Inter State Tr. Loss @3.5%	MU	24.15	17.38	22.50	21.32	17.85	21.17
6	Net power purchase	MU	565.80	479.17	620.30	587.87	492.06	588.44
7	UI purchases	MU	-	-	4.40	6.75	24.47	11.97
8	Total Energy available	MU	566.89	482.30	626.41	595.27	518.54	600.41
9	Less UI sales	MU	122.15	40.03	137.56	104.40	70.34	109.91
10	Energy import	MU	444.74	442.27	488.85	490.87	448.20	490.50
11	Sales	MU	187.73	187.41	197.40	197.21	220.64	260.02
12	T & D Loss	MU	257.01	254.86	291.45	293.66	227.56	230.48
13	T & D Loss %		57.79	57.63	59.62	59.82	50.77	47

T & D Losses worked out in the Table 5.9 above and those furnished in Annual Plans for the years 2005-06 to 2010-11 are shown below.

Year	T&D losses Furnished in Annual Plans (%)	T & D Loss as per actual Calculation vide table 5.9 above (%)
2005-06	47.55	57.79
2006-07	51.07	57.63
2007-08	48.84/48.38	58.62
2008-09	51.08	59.82
2009-10	45.75	50.77
2010-11	40.00(RE)	47

In the Annual Plans, external transmissions losses are not taken into account. Hence, T&D Losses have not been derived correctly.

**The Commission approves the T&D loss within the state at 47% for FY 2010-11 as against 45% projected by EDM.**

The trajectory loss reductions for FY 2011-12 to 2013-14 are fixed as follows:

- |     |         |     |
|-----|---------|-----|
| (a) | 2011-12 | 42% |
| (b) | 2012-13 | 37% |
| (c) | 2013-14 | 32% |

This is subject to the study of the system. Based on the study, the loss levels will be re-fixed. The EDM shall complete the study by September 2011 duly conducting voltage wise energy audit and report.

**Segregation of Technical and Commercial losses shall also be completed by March 2013.**

## 5.10 Energy Requirement and Availability

The EDM has projected energy requirement as per its sale and availability as detailed in Table 5.10 below.

**Table – 5.10  
Energy Requirement**

S.N	Particulars	2008-09 (A)	2009-10 (P)	2010-11
	<b>Energy Sales</b>			
1	Total Energy Sales	197.21	211.68	232.77
2	Overall Distribution Losses (%)	59.78%	52.79%	45%
3	Overall Losses (MU)	293.06	236.74	190.45
4	Total Energy Requirement in the state	<b>490.27</b>	<b>448.42</b>	<b>423.23</b>

### Commission's Analysis

The Commission has analysed the energy requirement as per sale and availability in subsequent paras and indicated at Table 5.15 and 5.23

## 5.11 Sources of Power

### (a) Own generation

The EDM is having its own generation plants such as small hydel, diesel and HFO and their installed capacity and gross generation are detailed in Table 5.11 below-

**Table – 5.11**  
**Own Generation (2006-07 to 2010-11)**

S.N	Station	Installed Capacity (MW)	Net Generation (MU's)				2010-11 (Projected)
			2006-07	2007-08	2008-09	2009-10	
<b>I.</b>	<b>Hydel</b>						
1	Leimakhong Stage 1	0.60					
2	Leimakhong Stage 2	0.30					
3	Nungsang khong	1.50					
4	Lok Chao	0.40					
5	Gelnel	0.40					
	<b>Sub-Total for Hydel</b>	<b>3.20</b>	<b>0.140</b>	<b>0.25</b>	<b>0.20</b>	<b>0.91</b>	<b>1.00</b>
<b>II.</b>	<b>Diesel Gen Set</b>						
6	Imphal	5.63	0.34	0.39	0.45	0.86	3.83
7	District Hospitals	2.88					
	<b>Sub-Total for Diesel</b>	<b>8.51</b>					
<b>III.</b>	<b>Heavy Fuel</b>						
8	Leimakhong	36.00	2.62	1.07	0	0.64	
<b>IV</b>	<b>Total(I+II+III)</b>	<b>47.71</b>	<b>3.10</b>	<b>1.71</b>	<b>0.65</b>	<b>2.41</b>	<b>4.83</b>

Thus, the total energy from its own generation, as projected by the EDM for the year 2010-11 is 4.83MU.

### Commission's Analysis

From the data furnished by the EDM, it is clear that energy generation from states' own power plants are negligible. On query, it has come to know that all the hydro projects except Leimakhong Stage-I are non functional for many years. Diesel sets are also very old and derrated

**The Commission approves the own generation at 4.83MU (Net) for the year 2010-11 as projected by EDM.**

### (b) Purchase of Power from Central Generating Station.

The EDM has been allocated power from various central generating stations in North Eastern Region (viz. NEEPCO, NHPC etc) for power purchase under long term PPA basis, as detailed in Table 5.12 below.

**Table – 5.12**  
**Share from Central Generating Stations**

S.N	Name of the station	Installed Capacity (MW)	Share from firm allocation %	MW
<b>I</b>	<b>Firm allocation</b>			
<b>A</b>	<b>NEEPCO (HYDRO)</b>			
1	Koppili I HEP	200.00	6.16%	12.32
2	Koppili II HEP	25.00	6.00%	1.50
3	Khandong HEP	50.00	5.34%	2.67
4	Ranganadi HEP	405.00	7.15%	28.96
5	Doyang HEP	75.00	6.67%	5.00
	<b>Sub-total</b>	<b>755.00</b>		<b>50.45</b>
<b>B</b>	<b>NEEPCO(Gas based)</b>			
6	Assam Gas Based Projects	291.00	6.90%	20.08
7	Agartala Gas Based Project	84.00	6.92%	5.81
	<b>Sub-total(A+B)</b>	<b>375.00</b>		<b>25.89</b>
<b>8</b>	<b>NHPC: Loktak HEP</b>	<b>90.00</b>	<b>28.89%</b>	<b>26.00</b>
	<b>Total Firm allocation</b>	<b>1220.00</b>	<b>8.39%</b>	<b>102.34</b>
II	Infirm allocation (15% installed capacity)	183.00	8.50%	15.56
<b>III</b>	<b>Grand Total(I+II)</b>	<b>1403.00</b>	<b>8.40%</b>	<b>117.90</b>

Apart from this, EDM is also getting power to a tune of 6.25 MW from NEC funded Baramura Gas Based Power Plant stationed in Tripura State. Based on the above allocations, the EDM has estimated the energy entitled from CGS at 550.36 MU ex-bus for the year 2010-11. The summary of energy purchased from Central Generating Station and UI sale for the years 2008-09, 2009-10 and 2010-11(projected) as furnished by the EDM, are given in Table 5.13 below.

**Table – 5.13**  
**Energy Drawal Trend from Sources outside the State**  
(MU)

S.N	Station	FY 2008-09	FY2009-10	FY 2010-11 (Projected)
<b>I</b>	<b>NEEPCO</b>			
<b>A</b>	<b>Hydro</b>			
1	Kopilli - I HEP (200 MW)	65.81	51.50	60.40
2	Kopilli - II HEP (25 MW)	5.71	5.65	5.71
3	Khandong HEP (50MW)	12.39	9.83	11.04
4	Ranganadi HEP (405MW)	131.56	85.34	105.67
5	Doyang HEP (75MW)	18	13.6	16.39
	<b>Sub Total</b>	<b>233.47</b>	<b>165.92</b>	<b>199.21</b>

S.N	Station	FY 2008-09	FY2009-10	FY 2010-11 (Projected)
<b>B</b>	<b>Gas based</b>			
6	Assam Gas based Power Project (291MW)	140.22	138.91	134.09
7	Agartala Gas Turbine Power Project (84 MW)	51.96	52.34	48.85
		<b>192.18</b>	<b>191.25</b>	<b>182.94</b>
	<b>Sub Total-I</b>	<b>425.65</b>	<b>357.17</b>	<b>382.15</b>
<b>II</b>	<b>NHPC</b>			
	<b>Loktak HEP (105 MW)</b>			
8	Free Power Share	58.76	44.78	51.77
9	Purchased	88.7	67.61	78.16
	<b>Sub Total-II</b>	<b>147.46</b>	<b>112.39</b>	<b>129.93</b>
<b>III</b>	<b>Tripura</b>			
10	B'mura (5.25 MW)	36.08	40.36	38.27
	<b>Sub Total-III</b>	<b>36.08</b>	<b>40.36</b>	<b>38.27</b>
<b>IV</b>	<b>Total (I+II+III)</b>	<b>609.19</b>	<b>509.92</b>	<b>550.36</b>
<b>V</b>	Less Trading / UI	(97.64)	(47.04)	(112.15)
<b>VI</b>	<b>Net Power Requirement (within the state)</b>	<b>511.55</b>	<b>462.88</b>	<b>438.2</b>

### Commission's Analysis

Actual percentage allocation of power to the EDM from central generating stations of North Eastern Region has been taken from the latest monthly report of Energy Accounting of North Eastern Regional Power Committee. Transmission losses at 3.6% for all power purchased, whether from central generating stations or other sources out side the state has been considered. PGCIL and NER-ULDC charges, computed in proportion to the energy handled from out side the state, were escalated by 15% than the respective charges for FY 2009-10. UI rate has been considered on weighted average of preceding FY 2009-10



## 5.12 Energy Balance

The actual energy balance for the year 2008-09 & 2009-10 and projections for the year 2010-11 as furnished by EDM are shown in Table 5.14 below.

**Table – 5.14**  
**Energy Balance**  
(Table 2.6 of ARR)

Particular	(MU)		
	FY2008-09 (Actual)	FY 2009-10 (Provisional)	FY 2010-11 (Projected)
<b>ENERGY REQUIREMENT</b>			
<b>Energy Sales</b>			
Total Energy Sales	197.21	211.68	<b>232.77</b>
Overall Distribution Losses (%)	59.78%	52.79%	<b>45.00%</b>
Overall Losses (MU)	293.05	236.74	<b>190.46</b>
Total Energy Requirement	<b>490.27</b>	<b>448.42</b>	<b>423.23</b>
<b>Energy Availability</b>			
<b>Net Generation (A)</b>	<b>0.64</b>	<b>3.91</b>	<b>4.83</b>
- Hydel	0.19	0.96	<b>1.00</b>
Diesel / FO Based	0.45	2.95	<b>3.83</b>
<b>Power Purchase (B)</b>			
From NEEPCO	<b>425.64</b>	<b>357.16</b>	<b>382.16</b>
Hydel	233.46	165.91	199.22
Gas Based	192.18	191.25	182.94
From NHPC- Loktak	<b>147.47</b>	<b>112.39</b>	<b>129.93</b>
From Tripura	<b>36.08</b>	<b>40.36</b>	<b>38.27</b>
Total Power Purchase at Ex-bus generation	<b>609.19</b>	<b>509.91</b>	<b>550.36</b>
Less: Inter State Transmission Losses @ 3.60%	<b>21.93</b>	<b>18.36</b>	<b>19.81</b>
<b>Net Power Purchase at State Periphery (B)</b>	<b>587.26</b>	<b>491.55</b>	<b>530.55</b>
<b>Trading / UI (C)</b>	<b>-97.64</b>	<b>-47.04</b>	<b>-112.15</b>
<b>Total Energy Availability (A+B+C)</b>	<b>490.26</b>	<b>448.42</b>	<b>423.23</b>

### Commission's Analysis

The EDM has projected power purchase from central generating stations of North Eastern Region stating that it is actual percentage of allocation of power from CGS, as discussed in methodology adopted by EDM vide para 5.11.(b) ante. Station wise and month wise actual power drawn by the EDM up to 1/2011 have been obtained from REA. Based on the data, total

energy drawal by EDM from CGS has been estimated to be 604.78 MU for the year 2010-11 as detailed below.

S N	Generating Station	Energy Drawal during 2010-11 (MU)
1	Koppili 1	53.76
2	Koppili II	5.71
3	Khandong	11.04
4	Ranganadi	114.00
5	Dayang	19.34
6	AGBP	130.60
7	NHPC Loktak HEP	131.44
8	Free power from NHPC	51.77
9	Tripura-Baramura	38.27
	<b>Sub- Total</b>	<b>604.78</b>
10	UI purchases	11.97
	<b>Total</b>	<b>616.75</b>

As seen from the above data and Table 5.14, there are UI purchases as well as UI sales, but the EDM has clubbed both and deducted from total power purchase to arrive at the net power purchase which is not correct. Normally, UI purchase has to be accounted for under power purchase cost and the UI sales outside the state have to be accounted for under sale of power. Accordingly, the energy balance for the year 2010-11 is revised and approved as detailed in Table-5.15 below.

**Table-5.15**  
**Summary of Energy Balance Projected by**  
**EDM and Approved FY2010-11**

Particulars	As projected by EDM(MU)	As approved by the Commission(MU)
<b>Energy requirement</b>		
Energy sales	232.77	260.02
T&D losses	45%	47%
T&D losses (MU)	190.45	230.48
<b>Energy requirement</b>	<b>423.23</b>	<b>490.50</b>
<b>Energy availability</b>		
Own generation (Net)	4.83	4.83
Power purchase	550.36	604.78
Less External losses	3.6%	3.5%
	(-)19.81	(-)21.17
<b>UI purchase</b>	-	11.97
<b>Net power available at state periphery</b>	<b>535.38</b>	<b>600.41</b>
Energy requirement	423.23	490.60
<b>Energy surplus (UI Sale)</b>	<b>(112.15)</b>	<b>(109.91)</b>

The EDM shall draw its entire share from various sources and sell the surplus outside the state only after fulfilling the demand of its consumers.

The first priority is to meet the unrestricted demand of its consumers and the actual surplus arising due to excess generation and system constraints only, may be sold outside to generate additional revenue.

### 5.13 Gross Fixed Assets

The EDM has stated that in the absence of detailed information related to the past years, the gross fixed assets have been assessed by undertaking certain assumptions. In that course, the value of GFA as on 1.4.2007 has been taken as equivalent to the capital employed as on 1.4.2007. Considering this as the opening value of GFA for the year 2007-08, 50% of the total capital expenditure during the year 2007-08 has been added to arrive at GFA at the beginning of the year 2008-09 as detailed in Table 5.16 below

**Table – 5.16**  
**Computation of Opening GFA for FY 2008-09**

S.N	Particulars	₹. lakhs
1	Capital employed as on 01/04/2007	73760
2	Capital additions during 2007-08	7349
3	Opening GFA for FY 2008-09	81109

The same methodology has been adopted to arrive at year wise gross fixed assets up to the FY 2010-11 as detailed in Table 5.17 below.

**Table-5.17**  
**Gross Fixed Assets up to the FY 2010-11**

(₹ lakhs)	
GFA as on 01/04/2008	81109
Additions during the year 2008-09	12991
GFA as on 01/04/2009	94100
Additions during the year 2009-10	13621
GFA as on 01/04/2010	107721
Additions during the year 2010-11	20766
GFA as on 01/04/2011	128487

### Commission's Analysis

The GFA projected by EDM are based on assumptions only. The EDM stated that the additions during the year are 50% of the expenditure during that year. As per procedure in vogue, capitalization has to be

done when the assets are put to beneficial use. But the statement of EDM indicates that irrespective of the asset put to use, the amount of capital expenditure is brought into asset value which is not in order. Further, the entire capital expenditure has been funded by GOI / Government of Manipur through budgetary support, mostly by providing grants and subsidies. The EDM has not prepared any proforma accounts such as profit and loss account, balance sheet etc. The department has not maintained asset registers. Regulation 96 (2) of JERC for M&M (Terms and Conditions for determination of Tariff) Regulations, 2010 reads as follows

*“Investments made prior to and upto the year of the notification of these regulations shall be considered on the basis of audited accounts or approvals already granted by the Commission”.*

The EDM admitted that there is no detailed information related to the past years.

**In the absence of audited assets/depreciation registers and audited annual accounts, the gross block of assets projected by EDM with certain assumptions in the ARR and tariff petition and the subsequent submissions with reference to data gaps pointed out, can not be considered for the purpose of arriving depreciation, return on equity etc.**

The Commission directs the EDM to prepare and maintain asset/depreciation registers, the annual statement of accounts for regulatory business in complete shape and get them audited and submit the same to the Commission along with the next ARR.

#### **5.14 Capital Expenditure Plan for FY 2010-11**

The EDM has projected capital expenditure to a tune of ₹ 29575 lakhs for FY 2010-11 for generation, transmission and distribution functions mainly focusing on increasing generation capacity, augmenting existing generating plants, strengthening electricity network and augment new networks for ensuring reliable power to its consumers. Details of ongoing capital schemes are furnished hereunder.

**Major Capital Schemes:**

- (a) Loktak Down Stream Hydro Electric Project – 2X33MW
- (b) 132kV Substation at Jiribam
- (c) 132kV S/C line from Yurembam to Yaingangpokpi
- (d) 132/33kV Substation at Ukhrul with associated 132kV line
- (e) 132/33kV Substation at Chandel with associated 132kV line
- (f) Augmentation of various 33/11kV Substations at Yurembam, Mongsangei, Kongba, Keishampat, Lamphel, Iroisemba and Nilkuthi
- (g) Up-gradation of the installed capacities at 33/11kV and Distribution Substations
- (h) Improvement of Distribution System in greater Imphal and other towns

Apart from the above, the EDM has also undertaken large scale rural electrification and development, augmentation and improvement of infrastructure under RGGVY and RAPDRP respectively. Ongoing capital schemes being undertaken by the EDM are furnished in Table 5.18 below.

**Table -5.18**  
**Ongoing Capital Expenditure Schemes of EDM**  
(Table – 2.7 of ARR)

(₹. lakhs)					
S.N	Particulars	Cumulative Capex till 2007-08	2008-09 (P)	2009-10 (P)	2010-11 (P)
A	Normal Plan	12538	7287	13563	23075
1	Generation – Hydro	1101	-	584	3600
2	Transmission	1423	1682	5003	5150
3	Distribution –33kV system	2248	3142	1727	6055
4	Distribution – 11kV and LT System Improvement	2536	354	5799	5815
5	APDRP	2953	549	-	-
6	REC	1729	1231	87	1500
7	Miscellaneous Schemes	548	330	363	955
B	Special Plan Assistance / Reconstruction Plan	823	2774	1441	2700
C	Central Sponsored Schemes	1611	0	3274	3500
D	Central Plan Schemes	631	899	189	200
E	North Eastern Council	193	324	75	100
	<b>Total Capital Expenditure</b>	<b>15799</b>	<b>11284</b>	<b>18541</b>	<b>29575</b>

The scheme wise capital expenditure shown above are summarized in Table 5.19 below-

Table – 5.19  
**Capital Expenditure & Capitalization Summary**  
 (Table – 2.8 of ARR)

Particulars	(₹. lakhs)			
	Cumulative Capex till 2007-08	2008-09 (P)	2009-10 (P)	2010-11 (P)
Capital Expenditure during the FY	15799	11284	18541	29575
Asset Capitalization during the FY	7349	12991	13621	20766

### Commission's Analysis

As already discussed in para 5.13 ante, the EDM has taken the total value of capital employed as on 1.4.2007 in to GFA, the opening capital work in progress(CWIP) for the year 2007-08 is Nil. Hence, the amount of ₹.15799 lakhs stated to be commulative capex till FY 2007-08, is for the year 2007-08 only. Year wise capital expenditure and amount capitalised as furnished by EDM vide Table 5.19 above are depicted in the Table 5.20 below to arrive at year wise opening and closing CWIP.

Table-5.20  
**Year wise Capital Work in Progress up to 2010-11**

S.N	Particulars	(₹. lakhs)			
		2007-08	2008-09	2009-10	2010-11
1	Opening balance	-	8450	6743	11663
2	CWIP	15799	11284	18541	29575
3	Capitalized during the year	7349	12991	13621	20766
4	Closing balance	8450	6743	11663	20472

The Commission directs the EDM to reconcile the gross fixed assets in use with the year wise amount capitalized during the years 2007-08 to 2010-11 and confirm that the corresponding assets are brought into account. The Commission provisionally approves the CAPEX proposed by EDM for 2010-11.

### 5.15 Revenue Requirement for FY 2010-11

The EDM has projected a total ARR of ₹.16106 lakhs for the year 2010-11 as given in Table-5.21 below:

**Table –5.21**  
**Expenses Projected for FY 2010-11**

(₹. lakhs)

S.N	Particular	FY2008-09 (Actual)	FY2009-10 (Provisional)	FY2010-11 (Projection)
1	Fuel Cost	62	306	366
2	Power Purchase Cost	7610	7996	5845
3	Operation & Maintenance Expenses			
	a) Employee Cost	4809	4376	5469
	b) Repair & Maintenance Expenses	968	1016	1117
	c) Admin. & General Expenses	47	37	87
4	Depreciation	315	533	624
5	Interest & Finance Charges	1032	1032	1030
6	Interest on Working Capital	138	140	132
7	Provision for bad debts	61	63	69
8	Sub Total	15042	15498	14738
9	Return on Equity	1230	1366	1561
10	Total Expenditure	16272	16864	16299
11	Less: Non Tariff Income	271	174	193
12	Aggregate Revenue Requirement	16002	16690	16106
13	Revenue from existing tariff	6078	6313	6884
14	Gap (12-13)	9924	10377	9222

The expenses projected by EDM under each head and the Commission's analysis are discussed below.

#### 5.16 Fuel Cost

The EDM has projected fuel cost of ₹ 366 lakhs for the year 2010-11. As ascertained from EDM, no amount is spent on fuel cost so far in this year. A token amount of ₹ 166 lakhs is allowed to meet the fuel cost during the year 2010-11.

**The Commission accordingly approves the fuel cost of ₹ 166 lakhs for FY 2010-11 as against ₹ 366 lakhs projected by the EDM.**

### 5.17 Power Purchase Cost

The EDM has projected power purchase cost of ₹ 10758.94 lakhs for FY 2010-11 excluding transmission charges, to purchase 550.36 MU at an average cost of ₹ 1.96/kWh as detailed in Table-5.22 below.

**Table-5.22**

**Power Purchase Cost Projected by EDM for FY 2010-11**

(₹. lakhs)

S.N	Station	Purchase (MU)	External Losses (MU)	Energy Received (MU)	Annual Fixed Cost (₹)	State Share	Variable Charges (paise per kwh)	Total Fixed Charge (₹)	Total Energy Charge (₹)	Gross Total (₹ in Lakhs)
	<b>NEEPCO</b>									
<b>A</b>	<b>Hydro</b>									
1	Kopilli - I HEP (200 MW)	60.40	2.17	58.23	2883.69	8.39%	0.28	241.94	168.52	<b>410.46</b>
2	Kopilli - II HEP (25 MW)	5.71	0.21	5.50	647.56	8.21%	0.86	53.16	49.16	<b>102.33</b>
3	Khandong HEP (50MW)	11.04	0.40	10.64	981.64	7.46%	0.41	73.23	44.82	<b>118.05</b>
4	Ranganadi HEP(405MW)	105.67	3.80	101.87	10170.41	9.51%	0.77	967.21	816.83	<b>1784.04</b>
5	Doyang HEP (75MW)	16.39	0.59	15.80	2925.00	8.97%	1.48	262.37	242.08	<b>504.45</b>
<b>B</b>	<b>Gasbased</b>									
6	Assam Gas based Power Project (291 MW)	134.09	4.83	129.26	23359.00	8.16%	0.77	1906.09	1031.15	<b>2937.25</b>
7	Agartala Gas Turbine Power	48.85	1.76	47.09	5271.00	8.14%	0.95	429.06	461.63	<b>890.69</b>
8	NHPC Loktak HEP (105MW)	129.93	4.68	125.25	2501.77	20.59 %	0.64	515.11	500.22	<b>1015.34</b>
9	Free Power	51.77		51.77						
10	NHPC Loktak HEP (Net)	78.16	4.68	73.48						
9	Tripura Baramura (5.25 MW)	38.27	1.38	36.89			1.94	0.00	743.20	<b>743.20</b>
<b>11</b>	<b>Other Charges</b>									
	1)PGCILCharges								2252.68	<b>2252.68</b>
	2)ULDCCCharges									
<b>C</b>	<b>GrossTotal(SI No.1 to 10)</b>	<b>550.35</b>	<b>19.82</b>	<b>530.53</b>	<b>48740.07</b>	<b>0.79%</b>		<b>4448.18</b>	<b>6310.30</b>	<b>10758.49</b>
<b>D</b>	<b>UI/ Trading through IEX</b>	112.16	-	112.16			4.38		4912.52	4912.52
<b>E</b>	<b>Net Power Purchased (C- D)</b>	<b>438.21</b>	<b>19.82</b>	<b>418.37</b>					<b>1397.78</b>	<b>5845.97</b>

### Commission's Analysis

As already discussed in para 5.12 ante, the quantum of UI purchase of 11.97 MU are not accounted for in the power purchase cost, which are now taken into account. The EDM has deducted the UI sales from the power purchase cost. The purchase and the sale of energy are required to be accounted separately. The energy sales outside the state are considered and shown under sale of power. The energy drawals are also



revised based on the energy draws data obtained from REA as discussed in Para 5.12 ante. Accordingly, the power purchase cost is revised as detailed in Table 5.23 below.

**Table-5.23****Power Purchase Cost Approved by the Commission for FY 2010-11**

(Rs. lakhs)

S.N	Station	Purchase (MU)	External Losses (MU) (3.5%)	Energy Received (MU)	Annual Fixed Cost (₹)	State Share	Variable Charges (paise per kWh)	Total Fixed Charge (₹)	Total Energy Charge (₹)	Gross Total (₹ in Lakhs)
	<b>NEEPCO</b>									
<b>A</b>	<b>Hydro</b>									
1	Kopilli - I HEP (200 MW)	53.76	1.88	51.88	2883.69	8.39%	0.28	241.94	150.53	<b>392.47</b>
2	Kopilli - II HEP (25 MW)	5.71	0.20	5.51	647.56	8.21%	0.86	53.16	49.10	<b>102.26</b>
3	Khandong HEP (50MW)	11.04	0.39	10.65	981.64	7.46%	0.41	73.23	45.26	<b>118.49</b>
4	Ranganadi HEP(405MW)	114.00	4.00	110.00	10170.41	9.51%	0.77	967.21	877.80	<b>1845.01</b>
5	Doyang HEP (75MW)	19.34	0.68	18.66	2925.00	8.97%	1.48	262.37	286.23	<b>548.60</b>
<b>B</b>	<b>Gasbased</b>									
6	Assam Gas based Power Project (291 MW)	130.60	4.57	126.03	23359.00	8.16%	0.77	1906.09	1005.62	<b>2911.71</b>
7	Agartala Gas Turbine Power	48.85	1.71	47.14	5271.00	8.14%	0.95	429.06	464.08	<b>893.14</b>
8	NHPC Loktak HEP (105MW)	131.44	4.60	126.84	2501.77	20.59%	0.64	515.11	841.22	<b>1356.33</b>
9	Free Power	51.77	1.81	49.96						
10	Tripura Baramura (5.25 MW)	38.27	1.34	36.93			1.942	0.00	743.20	<b>743.20</b>
<b>11</b>	<b>Other Charges</b>									
	PGCILCharges								2252.68	<b>2252.68</b>
<b>C</b>	<b>GrossTotal (SI No.1 to 10)</b>	<b>604.78</b>	<b>21.18</b>	<b>583.60</b>	<b>48740.07</b>	<b>0.79%</b>		<b>4448.17</b>	<b>6715.72</b>	<b>11163.89</b>
<b>D</b>	<b>UI/ purchases</b>	11.97	-	11.97			4.38			524.29
<b>E</b>	<b>Total power purchase</b>	<b>616.75</b>	<b>21.18</b>	<b>595.57</b>						<b>11688.18</b>

The Commission accordingly approves the power purchase cost of ₹ 11688 lakhs for purchase of 616.75.MU (Gross) including 51.17 MU free power from Loktak HE Project, for the year 2010-11.

**5.18 Operation and Maintenance Expenses**

Operation and maintenance expenses comprise of employee cost, repairs & maintenance expenses and administrative & general expenses. Summary of O&M expenses projected by EDM are furnished in Table-5.24 below.

**Table – 5.24****O&M Expenses Projected by EDM**

(₹. in Lakhs)

S.N	Particulars	2008-09(A)	2009-10(P)	2010-11(P)
1	Employee costs	4809	4376	5469
2	R&M expenses	968	1016	1117
3	A&G expenses	47	37	87
	<b>Total O&amp;M expenses</b>	<b>5824</b>	<b>5428</b>	<b>6673</b>

The O&M expenses are analyzed head wise separately in the following paras.

**(a) Employee cost**

The EDM has projected employee cost at ₹ 5469 lakhs for the year 2010-11. Employee cost includes basic pay, dearness allowance, house rent allowances etc.

The EDM has stated that expenses related to medical treatment and domestic travel allowances also form part of the employee cost. The EDM further stated that it has not considered leave salary contribution, pension and terminal benefits of the employees and it reserves the right to approach the Hon'ble Commission at the appropriate stage for the above. The EDM has projected the employee cost based on its budgeted provision under plan and non-plan expenditure head. Year wise expenses furnished by the EDM for the FY 2008-09 to 2010-11 are detailed in Table-5.25 below.

**Table-5.25****Employee cost**

(₹. lakhs)

S.N	Particulars	2008-09(A)	2009-10	2010-11 (P)
1	Basic pay	1896	1737	2279
2	Dearness pay	948	868	1139
3	Dearness allowance	1337	1224	1607
4	House Rent Allowance	213	195	256
5	Other Allowance	415	351	188
	<b>Total Employee cost</b>	<b>4809</b>	<b>4376</b>	<b>5469</b>

Employee cadre strength for the years 2008-09, 2009-10 and 2010-11 are furnished in Table-5.26 below.

**Table - 5.26**  
**Number of employees**

S.N	Particulars	31/03/2008	31/03/2009	31/03/2010
1	Regular employees	3484	3256	3206
2	Works contract	391	389	389
3	Muster Roll	42	42	42
	<b>Total</b>	<b>3917</b>	<b>3687</b>	<b>3637</b>

### Commission's Analysis

To a query, EDM has furnished actual employee expenses for the years 2008-09, 2009-10 and 2010-11 (upto 10/2010) as detailed below vide its letter No. 1/8/JERC-TR/2008/IEDM/11464 dated 14/01/2011.

(₹ lakhs)	
2008-09	4692.40
2009-10	4753.48
2010-11	4495.66 (upto 10/2010)

The EDM has furnished actual employee costs for FY 2008-09, 2009-10 & 2010-11 (upto 10/2010) in lump sum without details such as pay, DA, allowances etc. To a further query, the EDM has furnished actuals from 04/2010 to 01/2011 amounting to ₹ 5866 lakhs. Based on this the monthly average, the projected employee cost for FY 2010-11 works out to ₹ 6399 lakhs.

**The Commission accordingly approves the employee cost of ₹ 6399 lakhs for the year 2010-11 as against the projection of ₹ 5469 lakhs by the EDM.**

### (b) Repairs and Maintenance expenses

The EDM has projected R&M expenses at ₹ 1117 lakhs for the year 2010-11. Year wise expenses for the year 2008-09, 2009-10 and 2010-11 are furnished in the Table-5.27 below.

**Table-5.27**  
**R&M Expenses**

(₹. lakhs)				
S.N	Particulars	2008-09(A)	2009-10(A)	2010-11 (P)
1	Major R&M works	958	1006	1106
2	Minor R&M works	10	10	11
	<b>Total R&amp;M expenses</b>	<b>968</b>	<b>1016</b>	<b>1117</b>

### Commission's Analysis

As the expenses furnished for the year 2008-09 and 2009-10 in the original petition are provisional, the EDM was requested to furnish actuals. The EDM has confirmed that the expenditure furnished for the years 2008-09 and 2009-10 are actuals. It is observed that the expenditure for the year 2009-10 is 5% over the expenditure of the year 2008-09. EDM has

projected an increase of 10% for the year 2010-11 over the year 2009-10. However, it is considered reasonable to allow an increase of 5% only over 2009-10 for the year 2010-11.

**The Commission accordingly approves ₹ 1067 lakhs towards R&M expenses for the year 2010-11 against EDM projection of ₹ 1117 lakhs.**

**(c) Administrative and General Expenses**

The EDM has projected A&G Expenses of ₹ 87 lakhs for the year 2010-11. A&G expenses include rent, rates, office expenses, advertisement and legal charges etc. EDM stated that while making projections, it has tentatively accounted for the fee payable to the Hon'ble Commission and to the consultants hired for implementation of various important activities. However, adjustment for actual expenses on fees payable to Hon'ble Commission and consultants etc will be undertaken at the time of truing up exercise for FY 2010-11. The details of expenses furnished by the EDM are shown in Table-5.28 below.

**Table-5.28  
A&G Expenses**

(₹. lakhs)

SN	Particulars	2008-09 (P)	2009-10 (P)	2010-11 (P)
1	Regulatory fee	-	9	14
2	Publication	1	0.05	1
3	Legal & consultancy fee	1	0.07	20
4	Miscellaneous			
	(a) Office expenses (OE)	23	12	24
	(b) Domestic Travel Expenses (DTE)	15	9	18
	(c) Other expenses	8	7	10
	<b>Total A&amp;G expenses</b>	<b>47</b>	<b>37</b>	<b>87</b>

**Commission's Analysis**

To a query, the EDM has furnished actual expenditure for the year 2008-09, 2009-10 and 2010-11 (upto 10/2010) as detailed in Table-5.29 below.

**Table-5.29  
A&G Expenses**

(₹. lakhs)

S.N	Particulars	2008-09 (A)	2009-10 (A)	2010-11 (Upto 10/2010)
1	Regulatory fee	-		
2	Legal & consultancy fee	-		11.86
3	Office expenses	6.98	16.25	9.50
4	Domestic travel expenses	15.66	8.92	6.00
	<b>Total</b>	<b>22.64</b>	<b>25.17</b>	<b>27.36</b>

As seen from the above, the normal expenditure is about ₹ 22 to ₹ 25 lakhs per annum. The additional expenditure anticipated during the year 2010-11 is towards regulatory fee and consultancy charges and publication charges amounting to ₹ 35 lakhs as projected by the EDM.

As such it is considered reasonable to allow ₹ 60 lakhs towards administrative and general expenses for the year 2010-11.

**The Commission accordingly approves ₹ 60 lakhs towards Administrative and General Expenses for the year 2010-11 as against the projection of ₹ 87 lakhs by the EDM.**

### 5.19 Depreciation

The EDM has projected depreciation at ₹ 624 lakhs for the year 2010-11. The EDM also stated that in the absence of detailed information related to the past years, the value of GFA has been ascertained by undertaking certain assumptions. The value of GFA as on 01/04/2007 has been taken as equivalent to the total capital employed as on 01/04/2007. Considering this as opening value of GFA as on 01/04/2007, 50% of the total capital expenditure incurred in the FY 2007-08 has been added to arrive at the GFA at the beginning of the FY 2008-09 as detailed in Table-5.30 below.

**Table-5.30**  
**Computation of Opening GFA for FY 2008-09**

(₹ lakhs)	
Capital employed as on 01/04/2007	73760
50% capital expenditure of ₹ 15799 during 2007-08 is considered as capital addition during the year.	7349
GFA as on 31/03/2008	81109

The same methodology is adopted for the FY 2008-09 to 2010-11. Depreciation for the year 2008-09 is calculated at 3.60% and at 5.28% for the years 2009-10 and 2010-11 as per CERC (Terms and Conditions for Determination of Tariff), Regulations 2009. The EDM further stated that the State of Manipur has been granted a special status similar to that of other North Eastern States. GOI provides special assistance for the development of infrastructure facilities in these States. Accordingly, the infrastructure projects of the State of Manipur including those of EDM are

being supported by issue of grants through various Central Government Ministries and Agencies like MOP through schemes of APDRP, RGGVY, MNRE, DONER and NEC. In majority of the cases, the quantum of grant is 90% of the total project cost. However, due to unavailability of complete data, the grants received by EDM for funding GFA are assumed at 90% of the total value of GFA. Accordingly, the proportionate amount to the extent of 90% of the total depreciation computed is deducted from the total depreciation chargeable to the ARR as detailed in Table-5.31 below.

Table-5.31  
Depreciation (Table - 2.18 of ARR)

(₹ lakhs)				
S.N	Particulars	2008-09(P)	2009-10(P)	2010-11(P)
1	Gross fixed assets in the beginning of FY	81109	94100	107721
2	Additions during the year	12991	13621	20766
3	Gross fixed assets at the end of FY	94100	107721	128487
4	Average fixed assets	87604	100911	118104
5	Average rate of depreciation	3.60%	5.28%	5.28%
6	Total depreciation for the FY	3154	5328	6236
7	Dep. on fixed assets presumed to be created out of grants (90% of 6)	2838	4795	5612
8	Net depreciation for the FY (6-7)	315	533	624

### Commission's Analysis

As per Regulation 98 (3) of JERC for MM (Terms and Conditions for Determination of Tariff) Regulations, 2010, the depreciation shall be computed on 90% of the historical cost of the assets including additional capitalization during the year at the CERC approved depreciation rates. The average rate of depreciation effective from 01/04/2009 is 5.28%.

**The EDM has admitted that in the absence of asset / depreciation registers the value of GFA is arrived based on certain assumptions. As such it is not proper to allow depreciation on assumed value of GFA. However the EDM has projected loan repayment of ₹ 600 lakhs during the year 2010-11, as such, the depreciation to the extent of loan repayment is allowed.**

**The Commission accordingly approves depreciation of ₹ 600 lakhs for the year 2010-11 as against ₹ 624 lakhs projected by EDM.**

## 5.20 Interest and Finance Charges

The EDM has projected the interest and finance charges at ₹ 1030 lakhs for FY 2010-11. It is stated that the EDM is availing various loans through State Government from REC to fund its capital schemes. The EDM further stated that the loans from REC under RGGVY schemes which are convertible into grants at a later date are subject to fulfillment of certain stipulations have not been included in the loans mentioned in the Table-5.32 below.

Table-5.32  
Interest and Finance Charges  
(₹ lakhs)

S.N	Particulars	2008-09(A)	2009-10 (A)	2010-11 (P)
1	Opening loan	8383	8260	8209
2	Loan additions	466	500	500
3	Repayment	588	551	600
4	Closing loan	8260	8209	8109
5	Average loan			8159
6	<b>Interest</b>	<b>1032</b>	<b>1032</b>	<b>1030</b>

### Commission's Analysis

As verified from Format-15, the EDM has availed loan from REC. However, the EDM has not furnished the rate of interest. As per the data furnished by the EDM, the average rate of interest works out to 12.62% for FY 2010-11 while the average rate of interest during the year 2008-09 (actuals) works out to 12.40%. To a query, EDM has stated that it availed loans from REC at 13% p.a. Meanwhile, the Annual Plans for the years 2006-07 to 2011-12 provided by EDM have been verified and found that there are no loan additions during 2008-09, 2009-10 and 2010-11. As such, the loan additions proposed during the above years are not allowed and interest charges have been recast as detailed in Table-5.33 below.

Table-5.33  
Interest and Finance Charges

(₹. lakhs)

S.N	Particulars	2008-09	2009-10	2010-11
1	Opening loan	8383	7795	7244
2	Loan additions	-	-	-
3	Repayment	588	551	600
4	Closing loan	7795	7244	6644
5	Average loan	8089	7520	6944
6	Rate of Interest	13%	13%	13%
7	<b>Interest amount</b>	<b>1052</b>	<b>978</b>	<b>903</b>

The Commission approves the interest charges of ₹ 903 lakhs for the year 2010-11 as against ₹ 1030 lakhs projected by the EDM.

### 5.21 Interest on Working Capital

The EDM has projected interest on working capital at ₹ 132 lakhs for FY 2010-11 on normative basis as detailed in Table-5.34 below as per the provisions of Regulation 98 (6) of the JERC (Terms and Conditions of Determination of Tariff), Regulations 2010,

Table-5.34

#### Interest on Working Capital

(₹. lakhs)				
S.N	Particulars	2008-09 (P)	2009-10 (P)	2010-11 (P)
1	Fuel cost (1 month)	5	26	31
2	Power purchase cost (1 month)	634	666	487
3	O&M expenses (1 month)	485	452	556
4	<b>Total working capital</b>	<b>1125</b>	<b>1144</b>	<b>1074</b>
5	Rate of interest on working capital	12.25%	12.25%	12.25%
	<b>Total interest on working capital</b>	<b>138</b>	<b>140</b>	<b>132</b>

#### Commission's Analysis

The EDM has stated that it has computed the interest on working capital for the year 2010-11 on normative basis as per the provisions of Regulation 98(6) of JERC (Terms and Conditions for Determination of Tariff) Regulations, 2010 and the rate at which the EDM has claimed the interest is 12.25%.

As per the Regulation 98 (6) (c) of Joint Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010, the rate of interest on working capital shall be equal to the Short Term Prime Lending Rate of SBI as on 1<sup>st</sup> April of the relevant year and the present rate of interest as on 1.4.2010 is 12.25%. The interest on working capital is recast on the revised approved costs as detailed in Table-5.35 below.

Table-5.35

#### Interest on Working Capital for the FY 2010-11

(₹. lakhs)				
S.N	Particulars	2008-09 (P)	2009-10 (P)	2010-11 (P)
1	Fuel cost (1 month)	5	26	14
2	Power purchase cost (1 month)	634	666	973
3	O&M expenses (1 month)	485	452	627
4	<b>Total working capital</b>	<b>1125</b>	<b>1144</b>	<b>1614</b>
5	Rate of interest on working capital	12.25%	12.25%	12.25%
	<b>Total interest on working capital</b>	<b>138</b>	<b>140</b>	<b>198</b>



**The Commission accordingly approves the Interest on Working Capital at ₹198 Lakhs for FY 2010-11 as against ₹132 lakhs proposed by the EDM**

### 5.22 Provision of Bad Debts

The EDM has projected the provision for bad debts at ₹ 69 lakhs for FY2010-11. The EDM has considered provision for bad debts at 1% of revenue from sale of power to retail consumers. But as per Regulation 98 (5) of the JERC (Terms and Conditions of Determination of Tariff), Regulations 2010 issued by the Commission allows a provision for bad debts upto 1% on audited receivables but not 1% on the revenue from sale of power.

To a query, the EDM has furnished Annual Plans. As per Annual Plan for FY 2010-11, arrears due from consumers as on 31/03/2010 are as follows:

#### Arrears due as on 31/03/2010:

S.N	Particular	(₹. lakhs)
1	Private and general public	20351
2	Government institutions	5640
3	Total	25691

The arrears of ₹ 20351 lakhs are too high and the EDM shall make special drive for recovery of the assets. 1% on such large arrears cannot be admitted. Since it is a default on the part of EDM in recovering the dues, a nominal amount of ₹ 15 lakhs is allowed towards bad debts.

**The Commission accordingly approves provision of bad debts at ₹ 15 lakhs for FY 2010-11.**

### 5.23 Return on Equity

The EDM has projected ₹ 1561 lakhs towards return on equity for FY 2010-11. The EDM has stated that fixed assets have been funded through various sources like contributions from State Government, grants in aid through financial institutions under various schemes like APDRP, RGGVY etc. the EDM further stated that owing to non availability of complete data of these grants received, it is assumed that 90% of total gross fixed assets are funded through grants. Thus the EDM has arrived at opening equity

component for the FY 2008-09 on normative basis as detailed in Table-5.36 below.

**Table –5.36  
Computation of Equity Capital for FY 2008-09**

(₹. Lakhs)		
S.N	Particulars	Amount
1	Total Gross Fixed Assets as on 01/04/2008	81109
2	Less: Loans availed by EDM till 01/04/2008	8383
3	Gross Fixed Assets as on 01/04/2008 funded by Grant & Equity (1-2)	72726
4	Grant of EDM Manipur for Fixed Assets (assumed at 90% of 3)	65454
5	<b>Balance considered as equity contributions as on 01/04/2008 (3-4)</b>	<b>7273</b>

Further, equity additions are computed deducting 90% of assumed grants on CWIP capitalized and loans availed during the year as detailed in Table-5.37 below.

**Table –5.37  
Computation of Equity Additions**

(₹. lakhs)				
S.N	Particulars	2008-09	2009-10	2010-11
1	CWIP capitalisation	12991	13621	20766
2	Less loan additions	466	500	500
3	Less grants assumed at 90% of the total capitalized	11692	12259	18690
4	Balance	834	862	1577
5	30% of CWIP capitalized (30% of 1)	3897	4086	6230
6	Equity presumed to be added (lower of 4 or 5)	834	862	1577

Finally, return on equity capital is claimed at 16% as detailed in Table-5.38 below.

**Table-5.38  
Return on Equity**

(₹. lakhs)				
SN	Particulars	2008-09 (9)	2009-10 (P)	2010-11 (P)
1	Opening equity	7273	8106	8968
2	Add: Equity additions	834	862	1577
3	closing equity	8106	8968	10545
4	Average equity	7689	8537	9757
5	Rate of return on equity	16%	16%	16%
6	<b>Total</b>	<b>1230</b>	<b>1366</b>	<b>1561</b>

### Commission's Analysis

The basic requirement for consideration for return on equity is the audited annual accounts, register of assets. The EDM has not prepared the statement of accounts (viz) profit and loss account, balance sheet etc., nor maintained the register of assets. In the absence of relevant data, the value of GFA arrived by EDM with certain assumptions can not be considered for arriving at equity and allowing return thereon.

## 5.24 Non-Tariff Income

The EDM has projected the non-tariff income at ₹ 193 lakhs for FY 2010-11. Non tariff income is in the form of meter rent, late payment charges, miscellaneous income such as interest on staff loans, cost of auctioned stores, rebate on timely payment of power purchase bills etc. The EDM has furnished details for the year 2008-09 and 2009-10 as detailed in Table-5.39 below.

**Table - 5.39**  
**Non-Tariff Income (Table 2.24 of ARR)**

		(₹. lakhs)	
S.N	Particulars	FY 2008-09(P)	FY 2009-10(P)
1	Rebate on power purchase	212.39	149.15
2	Water tax from NHPC Loktak	26.12	14.58
3	Departmental charges	32.00	10.00
4	Misc. Income	0.20	0.31
5	Total Non-tariff income	270.21	174.04

### Commission's Analysis

To a query EDM has furnished actual non tariff income from 4/2010 to 10/2010 at ₹ 196.81 lakhs. Based on this, the total non tariff income projected for the year 2010-11 works out to ₹ 347 lakhs.

**The Commission approves the non-tariff income of ₹ 347 lakhs for the year 2010-11 as against the projection of ₹ 193 lakhs by the EDM.**

## 5.25 Regulatory Asset

The EDM has proposed for creation of a regulatory asset of ₹ 1515 lakhs to avoid tariff shock considering the high losses and non-revision of tariff for the last 8 years as extraordinary circumstances.

### Commission's Analysis

The proposal of EDM is based on the outcome of their finding that the tariff increase will be unbearable to the consumers. As per their proposal, the average tariff without permitting the regulatory asset is ₹ 4.53/Unit which is 53% increase from the existing tariff. On the analysis of the tariff petition it has been observed that there is an increase of 23% in the average tariff. The Commission has allowed about 15% increase in this tariff revision and the balance of 8% has to be recovered by improving internal efficiencies of the Department. **Accordingly, the proposal for regulatory asset is not allowed.**

## 5.26 Aggregate Revenue Requirement

Based on the above analysis and approvals, the Aggregate Revenue Requirement projected by the EDM and approved by the Commission are furnished in Table-5.40 below.

**Table - 5.40**  
**Aggregate Revenue Requirement for FY 2010-11**

(₹. lakhs)

S.N	Items	Projected by EDM	Projected by EDM (Revised)	Approved by the Commission
1	Fuel cost	366	366	166
2	Power purchase cost	5845	10758	11688
3	O&M expenses			
	(a) Employee costs	5469	5469	6399
	(b) Repair & Maintenance expenses	1117	1117	1067
	(c) Adm. & Gen. Expenses	87	87	60
4	Depreciation	624	624	600
5	Interest & Finance Charges	1030	1030	903
6	Interest on Working Capital	132	132	198
7	Provision for bad debts	69	69	15
8	Return on Equity / ROR	1561	1561	-
9	Total expenditure	16299	21213	21096
10	Less: Non Tariff income	193	193	347
11	<b>Aggregate Revenue Requirement</b>	<b>16106</b>	<b>21020</b>	<b>20749</b>

## 5.27 Expected Revenue from Existing Tariff

The EDM has projected the revenue from existing tariff at ₹ 11798 lakhs for FY 2010-11 including the sales under UI as detailed in Table-5.41 below.

**Table - 5.41**  
**Revenue with Existing Tariff Projected by EDM for FY 2010-11**

(₹. lakhs)

S.N	Name of Category	Units	Average Revenue	Revenue
		(MU)	₹/ Unit	(₹ Lakh)
1	Domestic	139.31	2.52	3510
2	Commercial	17.52	3	526
3	Public Lighting	4.69	3.5	164
4	Public water works	14.11	3.6	508
5	Irrigation and water	0.07	2.7	19
6	Small Industry	5.32	2.85	152
7	Medium Industry	2.53	3	76
8	Large Industry	1.54	3.54	54
9	Bulk Supply	47.05	3.99	1877
	<b>Sub-Total(1 to 9)</b>	<b>232.77</b>	<b>2.96</b>	<b>6884</b>
10	UI/Trading	112.15	4.38	4914
		344.92	3.42	11798

### Commission's Analysis

As already discussed in para 5.12, the surplus power to be sold under UI sales is 109.91 MU which will fetch an additional revenue of ₹ 4814.06 lakhs at ₹ 4.38/kWh as proposed by the EDM. Now with the category wise sales approved vide para 5.8, the revenue from existing tariffs including UI sales works out to ₹ 13223.60 lakhs as detailed in Table-5.42 below.

**Table - 5.42**  
**Revenue from Approved sales for 2010-11 with Existing Tariff.**

S.N	Consumer category	Energy sales approved by the Commission (MU)	Av. Rate / kWh	Amount (₹./lakhs)
1	Domestic	158.00	2.79	4403.46
2	Commercial	18.00	3.00	540.00
3	Public lighting	5.45	3.50	190.75
4	Public water works	14.11	3.83	540.41
5	Irrigation & Agriculture	0.70	3.23	22.61
6	Small Industries	7.00	2.85	199.50
7	Medium Industries	2.53	3.00	75.90
8	Large Industries	1.54	6.40	98.48
9	Bulk supply	52.69	4.44	2338.43
<b>10</b>	<b>Total</b>	<b>260.02</b>	<b>3.23</b>	<b>8409.55</b>
11	UI sales	109.91	4.38	4814.06
<b>12</b>	<b>Grand Total</b>	<b>369.93</b>	<b>3.38</b>	<b>13223.60</b>

The Commission accordingly approves the revenue from existing tariff and UI sales at ₹ 13223.6 lakhs for FY 2010-11 as against ₹ 11798 lakhs projected by the EDM.

### 5.28 Subsidy

The EDM has stated that the State Government of Manipur has committed to pay a subsidy (subvention) of ₹ 5556 lakhs for FY 2010-11.

### Commission's Analysis

The Commission feels that the subsidy amount proposed by the State Government is very much less considering the size of ARR.

**5.29 Revenue Gap for FY 2010-11**

**Table - 5.43**  
**Gap for FY 2010-11**

Particulars	Projected by EDM	Projected by EDM (Revised)	Approved by Commission
Revenue requirement	16106	21020	20749
Revenue from existing tariff	6884	11798	13223.6
Government subsidy	5556	5556	5556
Revenue gap	3666	3666	1969.4
Energy sales(MU)	233	345	369.93
Average cost	6.92	6.09	5.60

As seen from the Table-5.43 above there is a gap of ₹ 1969 lakhs between Aggregate Revenue Requirement and Revenue from sale of power even after apportioning Government subsidy of ₹ 5556 lakhs. The percentage of gap works out to 23% and the average cost of supply works out to ₹ 5.60/kWh.

The total energy available for sale (369.93MU) is inclusive of the energy (51.77 MU) available free of cost from Loktak H E Project (NHPC). Had it not been there, the average cost of supply would have been more.

**5.30 Revenue from Revised Tariff**

As seen from Table-5.43, there is a gap of ₹ 1969 Lakhs between the aggregate revenue requirement and revenue from sale of power after appropriating Govt. Subsidy of ₹ 5556 lakhs. The percentage gap works out to 23%. The existing tariff is already high for the economically backward State of Manipur. Further increase of 23% will be a burden to the consumers. The Commission allows an increase of about 15% considering the present power supply condition in the State and inflation rate during the last 8 years. Tariff designing and fixation of Tariffs are discussed in Chapter-7 of this order.

The Revenue from new tariffs is furnished in Table-5.44 below.

**Table-5.44**  
**Revenue As Per Revised Tariff**

S.N	Name of Category	Energy Sales projected by EDM(MU)	Energy sales approved by Commission (MU)	Average Revenue (Rs./kWh)	Revenue as per revised tariff(Rs in lakh)
<b>1</b>	<b>Domestic</b>	139.31	<b>158</b>		
	(a) Kutir Jyoty		5.00	2.02	101.00
	(b) Domestic		153.00	3.22	4926.63
2	Commercial	17.52	18.00	4.64	835.20
3	Public Lighting	4.69	5.45	4.67	254.52
4	Public Water Works	14.11	14.11		0.00
	(a) LT		5.00	4.66	233.00
	(b) HT		9.11	4.18	380.80
<b>5</b>	<b>Irrigation &amp; Agriculture</b>	<b>0.70</b>	<b>0.70</b>		<b>0.00</b>
	(a) LT		0.42	3.30	13.86
	(b) HT		0.28	4.30	12.04
<b>6</b>	<b>Industrial</b>	9.39	<b>11.07</b>		<b>0.00</b>
	(a) Cottage & Small Industry	5.32	7.00	4.21	294.70
	(b) Medium Industry (HT)	2.53	2.53	6.24	157.87
	(c) Large Industry (LT)	1.54	1.54	6.90	106.26
7	Bulk Supply	47.05	52.69		0.00
	(a) LT		4.50	4.17	187.65
	(b) HT		48.19	4.42	2131.80
	<b>Total</b>	<b>232.77</b>	<b>260.02</b>	<b>3.73</b>	<b>9635.29</b>

As seen from Table-5.44 and Table 5.42, the additional revenue expected due to revision of tariff works out to ₹ 1225 Lakhs(₹ 9635.29-₹ 8409.55) as against the gap of ₹ 1969 lakhs. The EDM shall recover the balance of ₹ 744 lakhs (₹1969-₹ 1225), by improving internal efficiency.

## 6 DIRECTIVES

While examining the information and data contained in the proposed ARR and Tariff Petition for the FY 2010-11, it has been found that the computation and compilation of the data have been done based on assumptions only and as a result, there has been difficulties in finalization of the ARR and determination of retail tariff also. The above observation itself substantiates the fact that the administrative, technical and commercial performances of the Electricity Department require substantial improvement within a specified time frame.

The Commission is fully aware that determination of retail tariff for the EDM is long over due and in the absence of the revised tariff, the Department continues to suffer losses in both commercial and financial terms. Therefore, timely revision of the tariff is essential.

The commission feels that there is an urgent need for beginning of benchmarking and maintenance of a database which provide a foundation in the Department for future development of the sector.

Therefore, the Commission considers it necessary to issue the following directives to the ED Manipur in the larger interest of the stakeholders.

### ***Directive 1.***

**Filing of next Tariff Petition:-** EDM shall file the next Tariff Petition well in time i.e. on or before 30<sup>th</sup> November, 2011.

### ***Directive 2.***

**Annual Statement of Accounts:-** The EDM is directed to prepare "Statement of Accounts" which include balance sheet, profit & loss account, report of the auditors, lost records & Registers etc along with supporting statements/ schedules for Electricity Business separately and submit the same along with the next ARR and Tariff Petition.

The prudence of the expenses could be checked only with reference to the audited accounts of the previous years and this is required for realistic projection of ARR.



**Directive 3.**

**Maintenance of Asset & Depreciation Registers:-** Determination of Tariff requires both GFA value and corresponding depreciation. The EDM is therefore, directed to maintain henceforth Asset and Depreciation Registers function wise and asset wise, for future record and reference. This shall be completed by 30<sup>th</sup> September, 2011.

**Directive 4.**

**Management Information System (MIS):-** The EDM has not maintained proper data in respect of sales, revenue and revenue expenses as also the category wise/ slab wise number of consumers, connected load/ demand etc, which are required for projections for ensuing year.

Therefore, the EDM is directed to take appropriate steps to build up credible & accurate data base and management information system (MIS) and regularly update the same for future record and reference. Arrangement may also be made for "On-line Payment" and "Payment to the Bank" of the electricity bills.

**Directive 5.**

**Revenue Arrears:-** The EDM is directed to assess year wise Revenue Arrears due to consumers and submit a report by 30<sup>th</sup> September, 2011 to the Commission. The EDM is also further directed to initiate measures to collect/ liquidate the arrears.

**Directive 6.**

**Availability of Power & Energy:-** The Commission has observed that there is a seasonal power shortage in the State, even though the available annual energy is adequate. Heavy Fuel Based Power Project at Leimakhong which is stated to be made available for standby generation may be operated during peak hours to minimize load shedding. The high cost of generation from this plant will not cause much impact on the tariff revision when mixed with the cheaper rate of the grid power and 12% free power received from Loktak Hydro Electric Plant by the State. The Department is therefore directed to generate 20 MU from the plant during peak hours.

**Directive 7.**

De-commissioning of Generating plants:-

The Generating plants which have been lying defunct for more than 15 years, shall be written off formally by December, 2011.

**Directive 8.**

**Sale outside the State:** - The Commission is fully aware of the hue & cry of the consumers from all parts of the State about the poor & erratic supply of power in the State. At the same time, the Commission also noticed that the EDM has proposed for sale of about 50% of its projected requirement to outside the State through UI mechanism. The UI mechanism is for balancing of frequency in the system and it shall not be treated as a mechanism for gaming.

Therefore, the EDM is directed to make sure that sale outside takes place only when there is surplus in the State due to excess generation or system constraints.

**Directive 9.**

**Transmission & Distribution Losses:-** The EDM has furnished the T&D loss at 52.79 p.c. during 2009-10 and projected the same for 2010-11 at 45 p.c. The correctness of these figures cannot be established without conducting the Energy Audit which involves unavoidably achieving 100% metering of all feeders, DTs and consumers.

Therefore, the EDM is directed to get preliminary Energy Audit conducted by assessing it based on empirical formulae and take appropriate measures to reduce the loss in compliance with the trajectory drawn by the Commission in this order. Action plan for preliminary Energy Audit and loss reduction measures shall be furnished to the Commission by May, 2011.

**Directive 10.**

**Unauthorised Connection/ Theft of Power Cases:-** Unauthorised consumers/ theft of power cases in the State are estimated to be above 40% while the present authorized consumers constitute about 60% of the expected total. These cases may be identified and registered as regular consumer. EDM shall conduct a detailed survey of unauthorized consumers and shall regularize at least 30,000 (thirty thousand) numbers of unauthorized consumers annually till it is reduced to zero.

**Directive 11.**

**Detailed Survey & Investigation:-** Under a time bound programme, special teams may be deployed in the areas suitably demarcated, to carry out Detailed Survey & Investigation on the following

- (a) Verification and Updation of Consumers Name.
- (b) Registration of Sub-families as separate consumers, even though they stay under the same roof, as done in the case of Gas Card, Ration Card etc.
- (c) Load assessment and Review of Contract demand.

**Directive 12.**

**Metering of Consumer Installations/ Replacement of Non-Functional/ Defective Meters and Installation of Meter to Un-Metered Services:-** It is observed that there are several defective meters that remained unchanged for years together and 20,689 services are without meters. The EDM must not encourage un-metered supply.

Under **Section 55(1)** of Electricity Act, 2003, no licensee shall supply electricity after expiry of two years from the appointed date except through installation of correct meter in accordance with the Regulation framed in this behalf by the Authority. Accordingly, metering is required to be done in line with Central Electricity Authority (Installations and Operation of Meters) Regulations, 2006, to all consumers. Both the billing efficiency and the collection efficiency cannot be improved in the absence of proper functioning of the meters. The EDM is directed to provide meters to all un-metered consumers within the time frame given in the Commission Order No.D.24012/5/09-JERC dt. 07.01.201 on 100% metering plan and submit Quarterly progress reports regularly.

**Directive 13.**

**Contribution of Consumers for Capital Investment:-** The amount of consumer contribution for capital investment is not brought out in the ARR and Tariff Petition.

The EDM is directed to furnish the details of contribution being collected from consumers towards the Capital Investment. The amounts collected from the consumers towards capital investment shall be brought out in the accounts. The depreciation and Return on Equity/ Capital Base should not be claimed on the amount contributed by the consumers towards capital investment.

**Directive 14.**

**Physical and Financial Status of RAPDRP & RGGVY Schemes:-** Physical and financial progress reports of RAPDRP and RGGVY works in respect of each circle, with all details including revenue performance and metering are required to be submitted to the Commission by September 2011.

**Directive 15.**

**Statement of Interest Analysis:-** The EDM is directed to submit a Statement of Interest analysis with opening balance, interest accrued during the relevant financial year, interest paid during the Financial year, interest waived, interest capitalized during the Financial year and the Closing balance duly reconciling with:-

- (a) Statement of the Lender/ Third parties
- (b) Repayment Schedule
- (c) Interest Agreement
- (d) Detail analysis of Interest capitalized and to be capitalized.

**Directive 16.**

**Timely Completion of Projects/ Schemes:-** The EDM is also directed to take all possible measures to ensure that the projects / schemes taken up are completed on schedule. In this regard, the Commission clarifies that it will not allow any interest during construction for delays exceeding one month and three months in respect of completion of projects/ schemes with the completion schedules of up to one year and more than one year, respectively, unless the Commission's prior approval for extension in the completion schedules is obtained.

**Directive 17.**

**Interest on Security Deposits:-** The EDM is directed to furnish the up to date position of interest on security deposits refundable to the consumers as per Regulation within one month of issue of the order.

Further, the EDM is directed to refund to the consumers the appropriate amount of Load Security deposited by them, if any; in case they prefer Pre-Paid Energy meter to any other kind of meter, within one month from the date of installation of the Pre-paid Energy meter.

**Directive 18.**

**Power from Renewable Sources:** - The EDM should make all efforts to procure more power from renewable sources to promote renewable energy generation.

**Directive 19.**

**Investment Plan and Capping of Capital expenditure:-** Annual Investment Plan shall be submitted to the Commission and necessary approval of Commission shall be obtained for all major capital works costing Rs. 5.00 crore and above before execution of the works.

**Directive 20.**

**Maximum Demand Indicator Meters (MDI):-** Maximum Demand Meters shall be provided for all the HT and bulk Consumers.

**Directive 21.**

**Tariff Support:** - State Government's contribution of 26.80% towards tariff support shall be clearly highlighted in the monthly energy bills.

**Directive 22.**

**Disconnection Date :-** Last date of payment for purposes of disconnection shall be fixed by EDM.

## 7 Tariff Principles and Design

### 7.1 Background

- (a) The Commission, in determining the revenue requirement of Electricity Department, Manipur for the year 2010-11 and the retail tariff, has been guided by the provisions of the Electricity Act, 2003, the National Tariff Policy (NTP), Regulations on Terms and Conditions of Tariff issued by the Central Electricity Regulatory Commission (CERC) and Regulations on Terms and Conditions of Tariff notified by the JERC. Section 61 of the Act lays down the broad principles, which shall guide determination of retail tariff. As per these principles the tariff should “Progressively reflect cost of supply” and also reduce cross subsidies “within the period to be specified by the Commission”. The Act lays special emphasis on safeguarding consumer interests and also requires that the costs should be recovered in a reasonable manner. The Act mandates that tariff determination should be guided by the factors, which encourage competition, efficiency, economical use of resources, good performance and optimum investment.

The NTP, notified by Government of India in January 2006, provides comprehensive guidelines for determination of tariff as also working out the revenue requirement of power utilities. The Commission has endeavored to follow these guidelines as far as possible.

- (b) The NTP mandates that the Multi-Year-Tariff (MYT) framework be adopted for determination of tariff from 1<sup>st</sup> April 2006. However, the Commission is not in a position to introduce MYT Regime in the State mainly because of lack of requisite and reliable data. The present MIS and regulatory reporting system of the EDM is very inadequate for any such exercise at this stage. There has been no study to assess voltage wise losses in the absence of metering of all feeders, distribution transformers and consumers. Technical and commercial losses are yet to be segregated and quantified voltage wise. The Commission has issued a directive to the EDM in the Tariff Order 2010-11 to chalk out a long-term action plan for reduction of T&D losses for both technical and non-technical with relevant load flow studies and energy audit and submit to the Commission by June 2011. Under these conditions, it would not be practicable to implement the MYT framework this year. The Commission, after taking into

account all factors, has decided to introduce MYT in due course, when the data is available.

- (c) The mandate of the NTP is that tariff should be within plus / minus 20% of the average cost of supply by 2010-11; it is not possible for the Commission to lay down the road map for reduction of cross subsidy, mainly because of lack of data regarding cost of supply at various voltage levels. The EDM has not furnished the voltage-wise cost of supply. A directive has been issued in this order to build up data to arrive at cost of supply at various voltage levels etc. Hence, in working out the cost of supply, the Commission has gone on the basis of average cost of supply in the absence of relevant data for working out consumer category wise cost of supply. However, in this tariff order an element of performance target has been indicated by setting target for T&D loss reduction during the period from 2010-11 to 2012-13. The improved performance, by reduction of loss level, will result in substantial reduction in average cost of supply. The existing and proposed tariff of EDM is single part tariff. The Commission has however, introduced two part tariff in this order, in the interest of Consumers.
- (d) **Section 8.3 of National Tariff Policy lays down the following principles for tariff design:**
- (i) In accordance with the National Electricity Policy, consumers below poverty line who consume below a specified level, say 30 units per Month, may receive a special support through cross subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply. This provision will be re-examined after five years.
- (ii) For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the SERC would notify the roadmap, within six Months with a target that latest by the end of the year 2010-11 tariffs are within  $\pm 20\%$  of the average cost of supply. The road map would have intermediate milestones, based on the approach of a gradual reduction in cross subsidy.
- For example, if the average cost of service is ₹3 per unit, at the end of year 2010-11, the tariff for the cross subsidized categories excluding those referred to in para-1 above should not be lower than ₹2.40 per unit

and that for any of the cross subsidizing categories should not go beyond ₹3.60 per unit.

- (iii) While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. The tariff for agricultural use may be set at different levels for different parts of the State depending on the condition of the ground water table to prevent excessive depletion of ground water.”
- (iv) Regulation 16 of JERC for M&M (Terms and Conditions for Determination of Tariff) Regulations specifies.
  - The cross subsidy for a consumer category means the difference between the average per unit rate based on tariff schedule of the Commission for that Category and the combine average cost of supply per unit expressed in percentage terms as a portion of the combined average cost of supply.
  - In the first place, the Commission shall determine the tariff, so that it progressively reflects the combined average cost of supply of electricity and also reduce cross-subsidies within a reasonable period. In the second phase, the Commission shall consider moving towards category wise of supply as a basis for determination of tariff.
- (e) The Commission considered for special treatment to Kutir Jyoti connection and agricultural sector. It has also aimed at raising the per capita consumption of the State from the existing level of 100 kWh to 300 kWh by the end of 2015. The Commission endeavors that the tariff progressively reflects cost of supply in a shortest period and the Government subsidy is also reduced gradually. The tariff has been rationalized with regards to inflation, paying capacity and to avoid tariff shock.

## **7.2 Tariff Proposed by the EDM and Approved by the Commission**

### **(a) Existing & Proposed Tariff**

EDM in its tariff petition for FY 2010-11 has proposed for revision of the existing single part retail tariffs to various categories of consumers to earn additional revenue of ₹3524 lakhs to meet the expenses fully. However, on detailed and prudent scrutiny of the aggregate revenue requirement filed by the



EDM, the Commission has arrived at a more realistic revenue requirement. The average cost of supply has been worked out at ₹5.60 / kWh against ₹6.92/ kWh projected by the EDM

The EDM has proposed tariff revision. The proposed increase in tariff by the EDM would result in an overall increase (from ₹ 2.96 per unit to ₹ 3.88 per unit vide Table 3.5 of ARR & Tariff Petition furnished by EDM) of about 31 p.c., - the increase for different categories varying from 20 % to 60 %. Proposed Category wise Tariffs are shown at Table 7.1

**Table – 7.1**

**Category wise Tariff Existing and Proposed by EDM  
(Table- 3.3 of ARR)**

S.N	Consumer Category & Slabs	Fixed Charges (₹/kW)		Energy Charges (₹/kWh)	
		Existing	Proposed	Existing	Proposed
1	Kutri Jyoti	40	50		
2	Domestic				
	0-100			2.60	3.25
	101-200			2.90	3.65
	>200			3.20	4.30
3	Commercial		50		
	0-200			3.00	4.35
	>200			3.00	4.80
4	Public Lighting			3.50	4.40
5	Public water works & Sewage pumping				
	Small			3.50	4.35
	Large	74	105	3.50	4.40
6	Agriculture				
	Small			2.70	3.25
	Large	74	105	2.70	3.25
7	Cottage & Small Industries				
	0>1000			2.85	4.30
	>1000			2.85	4.55
8	Medium Industries		75	3.00	4.60
9	Large Industries	74	105	3.50	5.10
10	Bulk Supply	74	105	3.50	4.40

**(b) Tariff Categories**

In the ARR and Tariff Petition of 2010-11, the EDM has not proposed any changes in the existing categories of consumers and tariff structure. However, the Commission considers appropriate to introduce additional categories of HT Supply as it involves different nature of infrastructure works.

The approved tariff categories / sub-categories are given below. The un-metered supply includes consumers not provided with energy meters and meters being found prima-facie incorrect. The consumers will be billed at the relevant rates of un-metered supply as minimum charge.

**LT Supply**

**(1) Power Supply for “Kutir Jyoti” – of Domestic Consumers.**

- A. Metered Supply
- B. Un-metered Supply

**(2) Power Supply for Domestic**

- A. Metered Supply
- B. Un-metered Supply

**(3) Power Supply for Commercial**

- A. Metered Supply
- B. Un-metered Supply

**(4) Power Supply for Public Lighting**

- A. Metered Supply
- B. Un-metered Supply

**(5) Power Supply for Public Water Works (PWW)**

- A. Metered Supply
- B. Un-metered Supply

**(6) Power Supply for Agricultural**

- A. Metered Supply
- B. Un-metered Supply

**(7) Power Supply to Small Industries**

- A. Metered Supply
- B. Un-metered Supply

**(8) Temporary Power Supply**

- A. Metered Supply
- B. Un-metered Supply

**HT Supply**

**(1) HT Domestic**

- A. Metered Supply
- B. Un-metered Supply

- (2) HT Commercial**
  - A. Metered Supply
  - B. Un-metered Supply
  
- (3) HT PWW**
  - A. Metered Supply
  - B. Un-metered Supply
  
- (4) HT Agricultural**
  - A. Metered Supply
  - B. Un-metered Supply
  
- (5) HT Industrial**
  - A. Metered Supply
  - B. Un-metered Supply
  
- (6) HT Bulk supply within the State**
  - A. Metered Supply
  - B. Un-metered Supply

**(c) Tariff Approved by the Commission**

Having considered the case no. 1/2011 of Electricity Department (Manipur), Imphal for approval of Annual Revenue Requirement (ARR) and determination of Retail Tariff for sale of energy and having approved the Annual Revenue Requirement (ARR) under clause 5.26 the Commission approves two part retail tariff duly segregating LT & HT categories with an increase in tariff by 15% as below. The miscellaneous charges & the rates for common item specified in the important conditions of Supply as proposed by EDM are examined and approved as per clause 3 and 4 of Tariff Schedule.

**Category wise Tariff approved by the Commission**

S.N	Consumer Category & Slabs	Fixed Charges (₹/kW)	Energy Charges (₹/kWh)
	<b>LT SUPPLY</b>		
1	<b>Kutir Jyoti</b>		
	(a) 1-15 kWh	20	1.0
	(b) Above 15 kWh	20	1.5
2	<b>Domestic Light &amp; Power</b>		
	(a) 1-100 kWh	60	2.2
	(b) 101-200 kWh	60	2.7
	(c) Above 200 kWh	60	3.2
3	<b>Commercial</b>		
	(a) 1-100 kWh	80	3.0
	(b) 101-200 kWh	80	3.5
	(c) Above 200 kWh	80	4.0
4	Public Lighting	60	4.0
5	Public water works	100	4.0
6	Agriculture	60	2.5
7	Cottage & Small Industries	60	2.5
8	Bulk Supply	100	3.2
9	Temporary Supply	50	4.0
	<b>HT Supply</b>		
1	Public Water works	100	3.5
2	Agriculture	100	2.5
3	Medium Industry	60	3.0
4	Large Industry	100	3.5
5	Bulk Supply	100	3.2

**Note:** (i) The above Table depicts comparison of fixed/demand charges and energy charges only.

(ii) The detailed Tariffs including Rates for un-metered categories of consumer, common items and Miscellaneous charges are given in the Tariff Schedule appended as Appendix-I.

This order shall come into force from 21<sup>st</sup> March, 2011 and shall remain effective till revised / amended by the Commission. The Order shall be given wide publicity by the petitioner for information of the general public.



(H. BIHARI SINGH)  
Member



(C. HMINGTHANZUALA)  
Chairperson

**Place: Aizawl**

Date: 15<sup>th</sup> March, 2011

## APPENDIX-I

### Tariff Schedule

#### 1. LT Supply

##### **Category-1: Supply for Kutir Jyoti Scheme Connection Domestic Consumers**

**Applicability:** Applicable to all households who have been given connection under Kutir Jyoti Scheme or similar connection under any scheme of the State Govt. or Central Govt. for the benefit of poorer section. If the total consumption in three Months exceed 45 kWh, the connection should be converted to Category-2 as per existing norms of KJS unless superseded by other new norms.

##### **System of Supply:**

AC 50 cycle, single phase, 230 V, initially single light point connection which can be extended by one or two light points or as per the norms specified by competent Authority from time to time.

**A) Metered Supply:** The total energy consumed shall be charged at the corresponding slab rate as given below -

Consumption Range	Energy/Variable Charges Fixed/Demand Charges	
	(₹/kWh/Month)	(₹/Month/Connection)
a) 1 - 15 kWh for all units	1.00	20
b) Above 15 for all units	1.5	20

##### **B) Un-metered Supply:**

**(1) Energy Charges:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

**(2) Fixed/Demand Charges:** ₹ 20/connection/Month

##### **Category-2: Supply for Domestic Light and Power**

**Applicability:** The Tariff is applicable to all supplies for general domestic purposes such as Light, Fans, Heating devices, Television, VCR/VCP, Radio, Refrigerator, Air-conditioner, lift motors and all others appliances only for bona-fide residential used. This will also cover consumption of energy supplied for Government owned Educational and Research Institutions, Charitable Institutions, Government owned Hospital and Dispensaries, Farm houses, Religious premises like Churches, Temples, Mosques, religious offices and any other institution, Offices not engaged

in any commercial activity or private gain, excluding those consumers specially covered under other Categories of this Tariff.

**System of Supply:**

- (a) AC 50 cycles, single phase, 230 V upto 4 kW connected load.
- (b) AC 50 cycles, three phases, 400 V above 4 kW and below 20 kW of connected load.

**A) Metered Supply:** The total energy consumed shall be charged at the corresponding slab rate as given below -

Consumption Range	Energy/Variable Charges (₹/kWh/Month)	Fixed/Demand Charges (₹/kW/Month of Contract demand.
a) 1 - 100 kWh for all units	2.2	60
b) 101 - 200 kWh for all units	2.7	60
c) Above 200 kWh for all units	3.2	60

**B) Un-metered Supply:**

- (1) Energy Charges:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2) Fixed/Demand charges:** ₹ 60/kW/Month of Contract demand.

**Note:** *Mixed domestic and commercial establishment shall be treated as commercial establishment if the load on commercial side is more than 200 W or 10% of the total connected load.*

**Category-3: Supply for Commercial Purposes**

**Applicability:** This tariff is applicable to all lights, all types of fans, heating devices, Television, VCR/VCP, Radio, Refrigerator, Air Conditioner, lift motors, pump and all other appliances for the purpose of private gain including other small power. This category includes supply of power to all establishment and installations of commercial offices, Government undertakings, Public Sector undertakings, Commercial houses, Markets, Optical houses, Restaurants, Bars, Tailoring shops not using motive power, Refreshment and Tea Stalls, Show-Cases of advertisement, Theatres, Cinemas, Hotels, Lodging and Boarding, Private Nursing Homes and Hospitals, Religious Hospitals, Private run Schools and Hostels and Boarding facilities, any other educational institutions demanding fees, Photographic studio, Battery charging units, Repair Workshops, and Newspaper Press (Newspaper Printing press only), Petrol pump, etc. and other purposes which are

not covered by any of the categories of this tariff order the connected load of which is upto 20 kW.

**Note:** Mixed domestic and commercial establishment shall be treated as commercial establishments if the load on commercial side is more than 200W or 10% of the total connected load.

**System of Supply:**

- (a) AC 50 cycle, single phase, 230 V upto a connected load of 4 kW.
- (b) AC 50 cycle, three phases, 400 V above 4 kW upto 20 kW contract demand.

**A) Metered Supply:** The total energy consumed shall be charged at the corresponding slab rate as given below:-

Consumption Range	Energy /Variable Charges (₹/kWh/Month)	Fixed/Demand Charges (₹/kW/Month of Contract demand.
(a) 1 - 100 kWh for all units	3.0	80
(b) 101 - 200 kWh for all units	3.5	80
(c) Above 200 kWh for all units	4.0	80

**B) Un-metered Supply:**

- (1)Energy Charges:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2)Fixed/Demand Charges:** ₹ 80/kW/Month of Contract demand.

**Category-4: Public Lighting Supply**

**Applicability:** Applicable to Public Street Lighting System in municipality, Town, Committee, Sub-Town/Village, etc. including Signal system and Road & Park lighting in areas of Municipality Town/Committee, Sub-Town/Village, etc.

**System of Supply:**

- (a) AC 50 cycles, single phase, 230 V,
- (b) AC 50 cycles, three phases 400 V.

A) Metered Supply: Energy/Variable Charges Consumption Range	₹/kWh/Month	Fixed/Demand Charges ₹/kW/Month of Contract demand
All units	4.0	60

**B) Un-metered Supply:**

- (1) **Energy Charge:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2) **Fixed/Demand Charges:** ₹ 60/kW/Month of Contract demand.

**Category-5: Public Water Works**

**Applicability:** Applicable to all public water supply system.

**System of Supply:**

- (a) AC 50 cycles, single phase, 230 V upto Connected load of 4 kW.
- (b) AC 50 cycles, three phases, 440 V above 4 kW upto 20 kW.

**A) Metered Supply:**

Consumption Range	Energy/Variable Charges ₹/kWh/Month	Fixed/Demand Charges ₹/kW/Month of Contract demand
All units	4.00	100

**B) Un-metered Supply:**

- (1) **Energy Charge:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2) **Fixed/Demand Charges:** ₹50/kW/Month of Contract demand.

**Category-6: Supply for Agricultural & Irrigational Purpose**

**Applicability:** This tariff is applicable to irrigation/pumping for agricultural purpose only.

**System of Supply:**

- (a) AC 50 cycles, single phase, 230 V upto Connected Load 4 kW.
- (b) AC 50 cycles, three phases, 400 V above 4kW upto 20 kW.

**A) Metered Supply:**

Consumption Range	Energy /Variable Charges ₹/kWh/Month	Fixed/Demand Charges ₹/kW/Month of Contract Demand.
All units	2.5	60

**B) Un-metered Supply:**

- (1) **Energy charges:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2) **Fixed/Demand Charge:** ₹60.00 per/kW/Month of Contract demand.



**Category-7: Cottage & Small Industry Power Supply**

**Applicability:** Applicable to all Industrial power consumers with demand of power upto 20 kW which are not covered by Category No. 3 (Supply of Commercial Purposes), such as steel fabrications, motor body builders, power handloom industry, poultry farming, pisciculture, prawn culture, floriculture in green houses, mushroom production, cold storage unit of pisciculture, agriculture, horticulture and any other type of industry where raw material is converted into finished products with the help of electrical motive power, printing press, etc. This will include domestic or commercial within the industrial complex.

**System of Supply:**

AC 50 cycles, single/three phase, 230/400 V.

**B) Metered Supply:** The total energy consumed shall be charged at the corresponding slab rate as given below –

<b>Consumption Range</b>	<b>Energy/Variable Charges (₹/kWh/Month)</b>	<b>Fixed/Demand charges ₹/kW/Month of Contract Demand.</b>
For all units	2.5	60

**C) Un-metered Supply:**

**(1) Energy charges:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

**(2) Fixed/Demand Charges:** ₹ 60.00/kW/Month of Contract demand.

**Category-8: Bulk Supply**

**Applicability:** This tariff is applicable for including mixed loads similar to LT category 2 & 3 such as private sector installation educational institution, defense installation, government and public sector offices and complexes Hospitalities etc.. who arranges their own distributions system of power within the premises with the approval of competent authority. This will not include industrial complexes consisting mixed load of LT category 2 & 3.

**System of supply:** AC 50 cycles 11000 V and above

**A) Metered Supply:**

**(1) Fixed/Demand Charges:** ₹ 100/kW/Month of billing demand.

Plus

**(2) Energy Charges:** ₹ 3.2/kWh/Month for all Units

**B) Un metered supply:**

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of Contract demand.  
Plus
- (2) Energy charges: Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

**Category-9: Temporary Power Supply****Applicability:**

- (a) For marriage, puja, religious/public function/gathering and all others domestics, festivals/ ceremony purposes which are of temporary nature upto 20 kW of connected load for a period not exceeding 180 days.
- (b) For commercial and Industrial purposes like cinemas, theatres, circus, carnivals, exhibition, concerts, etc. which are of temporary nature for private gain upto 20 kW, of connected load for a period not exceeding 180 days.

**System of Supply:** As may be decided by the Electricity Department, Government of Manipur.

Consumption Range	Energy/Variable Charges ₹/kWh/Month	Fixed/Demand charges ₹/kW/Month of Contract demand
All units	4.00	50

**A) Metered Supply:**

Consumer shall be supplied with energy meter by the Department after receiving in advance from consumer, the full cost of energy meter as security, which shall be released to the consumer after period of connection is over provided energy meter is not defective/damage during the connection; otherwise security shall be forfeited. Connection and disconnection charges will be extra.

Materials for service connection shall be arranged by the Department on advance payment by consumer or the same may be arranged by the consumer as per the specifications required by the Department, which will be the property of the consumer after the connection period is over. In addition to this, usual Departmental charges for connection and disconnection should be paid in advance.

**B) Un-metered Supply:**

- (1) **Energy Charge:** Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.
- (2) **Fixed/Demand Charges:** ₹ 50/kW/Month of Contract demand.

**C) Terms & Conditions:**

(a) Temporary power supply may be provided in accordance with the power delegation as furnished below:

- (i) S.D.O concerned - upto 30 days.
- (ii) E.E. concerned - upto 120 days.
- (iii) S.E. concerned - upto 180 days.

(b) The energy cost as per tariff above along with connection & disconnection charge will be realized in advance from the applicant before making the supply available to him.

(c) The complete wiring for which temporary supply of power is required shall be arranged by applicant at his own expense. It will also be the responsibility of the applicant to ensure that the wiring conforms to the technical requirements as specified by the Electricity Department, Government of Manipur.

(d) Supply will be given only after obtaining proper security for meters and realising a prepayment @ ₹50.00 per kW of connected load or part thereof, in advance which will finally be adjusted against consumption bill.

**D) Payment:** Charges for temporary connection shall be paid in advance against bill to be served.

(a) Bill based on actual consumption and daily fixed charge shall be served to the consumer at reasonable interval. The amount of each bill shall be adjusted from the amount of advance prepaid.

(b) In the event that the total amount of advance paid is found short of the amount of the bills served as above, the Department shall be at liberty to request the consumer to pay additional payment in advance as required based on this tariff.

- (c) If the consumer fails to pay the additional payment, the Department shall be at liberty to discontinue the temporary power supply.
- (d) The advance amount paid and the consumption bill shall be adjusted in full immediately after the termination of the temporary power supply.

**Note:** “For all units” mean’s that the consumers shall be billed for the whole unit consumed at the corresponding rate fixed for the slab.

## 2. HT Supply Tariffs

### General Conditions of HT Supply

- (a) The tariffs are applicable for supply of Electricity to HT Consumers having loads with a Contract demand of 20 kW and above.
- (b) **Maximum Demand**  
Maximum demand shall be the highest value of average load measured in kVA or kW as the case may be, delivered at the point of commencement of supply of the consumer during any consecutive 30/15 minutes period of maximum used (depending upon a type of the day meter being used) in the said Month.
- (c) **Billing Demand**  
The billing demand shall be the maximum demand recorded during the Month or 80% of the Contract demands whichever is higher.

### Category-I: Public Water Works (PWW)

This tariff is applicable to similar purposes defined in LT Category-5 - Public water works

**System of supply:** AC 50 Cycles 11000 V and above

#### A) Metered Supply

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of billing demand  
Plus
- (2) Energy Charges: ₹ 3.50/kWh/Month for all Units

#### B) Un-metered Supply

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of Contract demand  
plus
- (2) Energy Charges Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

### Category-2: Agriculture & Irrigation

**Applicability:** This Tariff is applicable to irrigation / pumping for agricultural purpose only.

**System of supply:** AC 50 cycles 11000 V and above

#### A) Metered Supply

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of billing demand  
Plus  
(2) Energy Charges: ₹ 2.5/kWh/Month for all Units

#### B) Un-metered Supply

- (1) Fixed/Demand Charges ₹ 100/kW/Month of Contract demand  
Plus  
(2) Energy Charges: Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

### Category-3: Medium Industry

**Applicability:** This Tariff is applicable to similar purpose defined in LT Category of supply to Industrial purposes.

**System of supply:** AC, 50 cycles, 11000 V and above

#### A) Metered Supply

- (1) Fixed/Demand Charges: ₹ 60/kw/Month of billing demand  
Plus  
(2) Energy Charges: ₹ 3.0/kWh/Month for all Units

#### B) Un-metered Supply

- (1) Fixed/Demand Charges: ₹ 60/kW/Month of Contract demand.  
Plus  
(2) Energy Charges Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

### Category-4: Large Industry

**Applicability:** This Tariff is applicable to similar purpose defined in LT Category of supply to Industrial purposes.

**System of supply:** AC, 50 cycles, 11000 V and above

#### A) Metered Supply

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of billing demand  
Plus  
(2) Energy Charges: ₹ 3.5/kWh/Month for all Units

**B) Un-metered Supply**

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of Contract demand.  
Plus  
(2) Energy Charges Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

**Category 5: Bulk Supply within the State**

Applicability: This tariff is applicable for all installations, including mixed loads similar to LT category 2 & 3 such as private sector installation, educational institution, defence installation, government & public sector offices & complexes and Hospital etc... that arrange their own distributions system of power within the premises with the approval of competent authority. This will not include industrial complexes consisting mixed load of LT category 2 & 3 and HT category 5.

**System of supply:** AC 50 cycles 11000 V and above

**A) Metered Supply:**

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of billing demand.  
Plus  
(2) Energy Charges: ₹ 3.2/kWh/Month for all Units

**B) Un metered supply:**

- (1) Fixed/Demand Charges: ₹ 100/kW/Month of Contract demand.  
Plus  
(2) Energy charges: Energy consumed shall be computed as per Appendix-I, No.4 (j) of this order.

**3. Miscellaneous Charges**

**(a) Meter Rent:** Monthly charges for hiring of the meter and indicators where they are the property of Electricity Department, Government of Manipur payable by the consumers shall be as follows:

- (i) Energy meter for AC single phase LT Supply: ₹10.00 per meter per Month.
- (ii) Energy meter for AC three phases LT Supply 400 V between phases (without CT): ₹20.00 per meter per Month.
- (iii) Energy meter for AC three phase LT Supply 400 V between phases (with CT): ₹50.00 per meter per Month.

(iv) Energy meter for AC three phase HT supply: ₹500.00 per meter per Month.

**(b) Pre-Paid Meters: Meter rent for Pre-Paid meters shall be finalized after requisite details are furnished.**

**(c) Other charges for meter:**

(i) Meter shifting charge:

- (1) ₹100.00 per shifting if resulted from reconstruction/modification of building and at consumer's request.
- (2) Free of cost if shifting is done in the interest of work.

(ii) The Cost of Replacement:

Cost of the energy meter after initial installation shall normally be borne by the consumers at the following rates:

- (1) Re-installation/Replacement charge by new meter: (exclusive of re-installation of existing meter sent for calibration/test).  
₹75.00 each and material cost, if any will be charged extra.

(2) Cost of Energy Meters supplied by Department:

As per the Department's purchase rate plus 15% Departmental charge if supplied from the Department (energy meters approved / tested by the Department only shall be used).

*Generally, the cost of energy meter for subsequent replacement will be borne by the consumer. However, when the cause leading to subsequent replacement is either manufacturing defect or Department's fault then, it shall be free of cost*

**(d) Charges for testing of Meters at the request of consumers:**

- (i) For AC single phase LT energy meter: ₹50.00 per meter per testing.
- (ii) For AC three phase LT energy meter without CT: ₹75.00 per meter per testing.
- (iii) For AC three phase LT energy meter with CT: ₹100.00 per meter per testing.
- (iv) For energy meter AC three phase HT supply: ₹150.00 per meter per testing.

In case the meter installed at the consumer premises is found to be defective from initial installation, testing and replacement of meter will be done free of cost.

**(e) Testing of Consumer's Installation:**

The first test and inspection will be carried out free of cost. Should any further test or inspection is necessitated due to fault in the installation or due to non-compliance with the condition of supply by the consumer an extra charge of ₹100.00 per test, payable in advance, shall be levied. In the event of the consumer failing to pay the testing charge in advance within stipulated time, the Department will be at liberty to disconnect the consumer's premise from the supplier's main.

**(f) Disconnection and Reconnection:**

**Disconnection:** Disconnection of an installation in all cases will be free of charges.

**Reconnection:**

- (i) For AC single phase LT supply: ₹80.00
- (ii) For AC three phase LT supply: ₹150.00
- (iii) For AC HT supply: ₹400.00

**(g) Charges for change of category:**

Charges for change of category will be done as stipulated in Joint Electricity Regulatory Commission for Manipur & Mizoram (Electricity supply Code) Regulations 2010, chapter-6 clause-6.1

**(h) Charges for Replacement of Connection Wire, Cut-out, Fuse, etc.:**

Cost of replacement after initial fixation of connection wire, cut-out, fuses, etc. will be borne by the consumers and shall be payable by the consumer in advance as per purchase rate of the Department plus 15% Departmental charges if the Department supplies the materials or the consumer may arrange the required materials as per the required specifications of the Department.

The execution charge shall be as given below:

- i) Single phase connection: ₹400.00 per connection.



- ii) LT three phase connection: ₹600.00 per connection.
- iii) HT three phase connection: ₹900.00 per 100 meters of the HT line.

**(i) Re-rating of Installation:**

Fees for re-rating of the consumer's installation at the request of the consumer shall be ₹100.00 per connection.

*The aforesaid charges do not include the charges payable by the consumer for other works that may be needed due to change of connected load.*

**(j) Security Deposit:**

Security Deposit against safe custody of supplier's apparatus for new service connection shall be cost of energy meter and other apparatus of the supplier installed at the premises of the consumer. The cost of energy meter shall not be included in the Security Deposit in case the meter is supplied by the consumer at his own cost.

The amount of Security deposit shall normally be the price of the meter and other appliances as fixed by the licensee from time to time.

**(k) Load Security:**

The amount of Load security for new service connection will be calculated as per the procedure prescribed in the Joint Electricity Regulatory Commission for Manipur & Mizoram (Electricity Supply Code) Regulations, 2010(6.10)

**(l) Charges for Replacement of tamper proof Meter Box:**

For AC single phase LT or three phases LT without CT or with CT, the charge will be as per Department purchase rate plus 15% towards Departmental charge in case the energy meter box is replaced from the Department Store.

**(m) Service Lines & Service Connection:**

**(i) Type of Service Connection:** Type of service connection and line length for service connection will be as per Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations 2010 chapter-3

**(ii) Cost of Service Connection:** As stipulated in the Joint electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations 2010 chapter 3 clause 3.5, Appendix-1, cost of material is to be assessed based on the department purchase rate. If the consumer desires to arrange service connection materials, the Department (not below rank of Junior Engineer concerned) will check all the materials.

**(n) Mutation Fee:** Mutation fee i.e. fee for change of name shall be ₹50.00.

**(o) Cost of Application Form:** Application and Agreement for supply i.e. Energy Requisition form for supply of energy shall be obtainable on payment of ₹20.00 at any one of the Divisional Offices of the Department on any working day during Office hours.

#### **4. Important Conditions of Supply**

##### **(For all Categories of Consumers)**

- (a) **Rebate for advance payment:** For payment of energy bill in advance, a rebate of 2 p.c. shall be allowed. It will be applicable to all consumers provided with prepaid energy meters.
- (b) **Rebate for payment within due date:** For payment of energy bill made within due date, Rebate of @ Re 0.05 per unit (will be allowed).
- (c) **Payment:** Payment against bills in full shall be made by Cash/Treasury Challan/DD/Local Cheque only unless otherwise accepted by the competent authority within the last date for payment. Bank commission/charges, if any should be borne by the consumers.
- (d) **Surcharge for late Payment of Bills:** If payment is not received within due date surcharge @ 2% on the outstanding amount for each 30 days successive period or part thereof will be charged, until the amount is paid in full.
- (e) **Single Point Delivery:** This tariff is based on the supply being given through a single point of delivery and metering at one voltage. Supply at other points at other voltage shall be separately metered and billed for and shall be considered as separate connection.

- (f) **Voltages and Frequency:** All voltages mentioned in this tariff are only nominal voltages and alternating current (AC) with nominal frequency of 50 Hertz (i.e. 50 cycles per second) and may not be 100 % correct in practical.
- (g) **Surcharge for Low Power Factor:** Power factor for the Month shall be the ratio of (kWh and kVAh) supplied to the consumer during the Month. The power factor of consumer's installation shall not be less than 90%. If the power factor falls below 90% during any Month, the consumer shall pay surcharge as detailed below:

Power factor range	Surcharge
For every 1% fall below 90%	Surcharge at 0.5% on energy charge and demand charges will be levied subject to a maximum of 2.5%.

Should the power factor drop below 70% and to remain for a period of 2 consecutive Months it must be brought up to 90% within a period of 6 Months by methods approved by the licensee failing which without prejudice to the right of the licensee to collect surcharge and without prejudice to such other rights as having accused to the licensee or any other right of the licensee consumer may be discontinued.

All LT consumers whose connected load include Welding Transformers or induction meters of 3HP and above shall be required to have suitable shunt capacitors installed as per Chapter 4 clause 4.6(1) & (2) of JERC(Electricity Supply Code) Regulations 2010 to ensure power factor is not less than 85%. Failure to install required rated capacitors as indicated in the above regulations or the capacitors installed became defective, surcharge at 25% on the bill amount shall be levied till sound and adequate capacitors are installed. LT consumers who are provided with electronic meters which can record power factor will however become under the preview of clause 6 above and power factor surcharge will be levied accordingly.

- (h) **Transformation Loss:** The consumers getting their supply at HT and metered on the LT side shall be charged an additional 3% over the metered consumption as transformation loss.

- (i) **Contract Demand** for Calculation of Un-metered Energy, Fixed/Demand Charges in the monthly billing shall be rounded to 0.5 Kilowatt or part thereof.
- (j) Billing for un-metered supply shall be computed as per the procedure prescribed in the JERC for (M&M) (Electricity Supply Code) Regulations, 2010 as below:
  - (i) For Regular consumers without Energy meters, Annexure-8, Para-A(1) of JERC for M&M(Electricity Supply Code) Regulations, 2010, shall be referred to.
  - (ii) For defective Energy meters, Regulation No. 9.6 of JERC for M&M (Electricity Supply Code) Regulations, 2010 shall be referred to.
  - (iii) For Un-authorized consumer/theft/pilferage, Annexure-8 (A), (B) & (C) of JERC for M&M (Electricity Supply Code) Regulations, 2010 may be referred to.

**Note:** In case of any inconsistency between the Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations, 2010 and this Tariff Schedule, the provisions and meanings content in the said Code shall prevail.

## ANNEXURE-I

### MINUTES OF THE 5<sup>TH</sup> MEETING OF THE STATE ADVISORY COMMITTEE FOR MANIPUR HELD ON 15/01/2011 AT THE CLASSIC HOTEL, IMPHAL.

#### List of participants appended

The Chairman gave a warm welcome to the members and others present in the meeting and wished them all a happy and prosperous new year. During the brief opening speech, the Chairman informed that the tenure of the present SAC which was constituted two years ago expires on 16/01/2011 and as such the 5<sup>th</sup> meeting is going to be the last meeting for the present committee. The Chairman further stated that a new SAC shall be constituted when Pu C. Hmingthanzuala, Member JERC for Manipur and Mizoram becomes the Chairperson of this Commission w.e.f 24/01/2011 and also welcomed the new Chairman in advance.

#### Agenda 1: Confirmation of the minutes of the 4<sup>th</sup> meeting of the State Advisory Committee

The Chairman sought the consent of the members to the confirmation of the Minutes of 4<sup>th</sup> Meeting of State Advisory Committee which was circulated already to all Members.

After obtaining nod from each of the Members, the Chairman declared that the minutes of the 4<sup>th</sup> SAC Meeting stand confirmed without any change.

#### Agenda 2: Tariff Petition for FY 2010-11

Giving adequate importance and priority to the main agenda, the Chairman with the consent of the SAC, allowed the representative of M/S Feedback Ventures, Consultants for preparation of the ARR and Tariff Petition for FY 2010, to offer power point presentation on the proposed ARR and Tariff Petition for FY 2010-11 on behalf of the ED, Manipur before start of the discussion.

**Shir J.Chauhan**, Representative of M/S Feedback Ventures drew the attention of the members to the summary of ARR, Energy purchase and sale and proposed retail tariff circulated already to the members and briefly explained how it had arrived at those figures after the Department made the information and data available to the consultant. The members were then invited to offer their views and suggestions on each of the projections in the proposed ARR and Tariff Petition. A copy of the power point presentation is enclosed as Annexure -1. Agenda No. 2 was then discussed.

**Shri S. Radhadamudor Singh**, who represented the Director, Industries Department felt that the raise of the tariff to the extent of 80% over the existing tariff in respect of small and medium scale industries, is really high and further stated that with this kind of high electricity charge, the industry sector may not be able to attract young industrialists and entrepreneurs in the state.

**Shri S. Chaothoi Singh**, President, Manipur industries union, Imphal stated that the proposal of the ED to increase the average tariff by 31% is considered very high. He also endorsed the views of Shri Radhadamudor and opined that the hike of the electricity tariff on one hand and drastic cut of power supply on the other shall not be in the interest of development of the industry sector and it will rather discourage.

**Shri S. Rishikumar Singh**, President, AMEA, Imphal also expressed disapproval to the tariff revision in view of the inadequate power supply, defective meters and lackadaisical attitude of the Department to consumers service. He also stated that recently, there was adoption / application of higher rate of energy by the Department without informing the consumers about the reasons for the increase. He strongly protested against the recent hike.

**Shri N. Sarat Singh**, CE (Power), ED, Manipur made a deliberate attempt to convince the members that the amount being charged by the Department is far less than the amount the consumers should have paid had the meters been working perfectly. He informed that the application of the higher rate of tariff is due to increase of connected load by the individual consumers and is in accordance to the existing tariff notification. The CE (Power) further informed the members of the initiatives taken by the Department under different schemes to replace the old electro magnetic type of energy meters, both defective and good ones, with static type meters of prepaid meters.

The Chairman intervened and requested the Members to find out if their meters are perfectly working or otherwise and further added that if meters are not working then Department has to serve bills on minimum basis which was worked out 8 years before in a situation of normal power supply. The minimum charge as per the existing tariff may not be appropriate in the present power scenario. The Committee may recommend to the Commission for fixing a reasonable charge at the time of tariff fixation.

Taking part in the discussion, Shri N. Shyamsundar Singh, Chief (E), JERC for (M&M) sought a clarification from the consultant on whether the allocated share from the NHPC includes the 12% free power and also whether the corresponding cost aspects are taken into considerations at the times of the assessment of ARR. Shri Chauhan asserted that both have taken into considerations.

The Chairman stated that there is no proposal for purchase of power at any point of time from other sources than the central sector generating stations from where allocated shares of the state are available. In reply, Shri Chauhan classified that quantum of energy sold (112.50MU), indicated in the energy calculation of the petition, and is the net energy available for sale i.e after deduction of the purchase from the sale. The Committee was therefore given to understand by the statement that the actual sale is much more than what is projected in the petition. All members were of the view that sale outside the state when the duration of power supply is 5 to 8 hours a day is not justified. The Committee recommended collecting the correct sale and purchasing data from the Department for consideration by the Commission while fixing tariff.

Pu C. Hmingthanzuala, Member, JERC for (M&M) expressed the desire to know how the repayment of the capital of loan for which interest & finance charges only are projected in the ARR, will be made when the same is not reflected in the proposed ARR. The Chairman also endorsed the view of the Member and sought a clarification on how a huge loan of ₹ 82 crore shall be repaid and also the reason for not indicating the same in the petition. The reply from the consultant was not convincing and therefore, it was decided to collect loan data and payment schedule before hand to have further discussion during the public hearing.

The Committee also found that there is a substantial reduction in the quantum of purchase of power during 2010-11 and the Department has not spelt out anywhere in the petition the specific reason for that reduction. The Committee also observed that transfer of ₹ 15.15 crore to the next ARR in the form of Regulatory Asset would have a heavy impact on the next tariff. The Committee decided to request the Commission to carry out a detailed analysis of these implications before a proper decision is taken.

Members agreed that various aspects of the petition have already been discussed and further discussion shall continue during public hearing.

Before concluding, the Chairman once again took the opportunity to thank the Members of the first State Advisory Committee of Manipur for their constant cooperation and valuable contribution to a good cause of the state.

The meeting ended at 1.30 PM with a vote of thanks to the Chair.



**ANNEXURE-II**

**List of Persons who participated in the public hearing on Tariff Petition**

1. Shrimati S. Radhapyari Devi, Secretary, EEMA
2. Shri Meihoubam Rakesh, Director, Human Rights Law Network
3. Shri Basanta Wareppa, Human Rights Alert
4. Shri Ksh Onil, Human Right Alert
5. Shri S. Chaothoi Singh, Manipur Industries Union
6. Shri Jhaljit Singh, of a NGO on Drugs & HIV, Nagamapal
7. Shri Y. Gunindro Singh, Consumer, Kwakeithel, Imphal
8. Shri Y. Ranapratap Singh, Vice President, MEEU
9. Shri E. Dolendra Singh, Advocate, Former President, MEEU
10. Shri Salam Chingtam Luwang, Manipur Industries Union
11. Shri Sanasam Chaoba Singh, President, AMPCA
12. Shri Wahengbam Joykumer Singh, Member, AMPCA
13. Shri K. A. Singh (Retd., Col.), Senior Citizen
14. N. Sarat Singh, CE (Power)
15. R.K. Kishore Singh, Addl. CE(Power)-I
16. L. Priyokumar Singh, Addl. CE (Power)-II
17. Th. Aton Singh, SE (Commercial)
18. Kh. Khamba Singh, SE/EC-I
19. Ng. Sarat Singh, SE/EC-II
20. Ng. Birjit Singh, SE/EC-III
21. A.V. Narasimha Rao, Consultant (ASCI)
22. Jayesh Chauhan, Consultant, (Feedback Ventures)

## ANNEXURE-III

ACTUAL METERED TRANSMISSION LOSS IN NER  
2010-11

Week No.	WEEK		% loss
	From	to	
1	29-Mar-10	4-Apr-10	3.57
2	5-Apr-10	11-Apr-10	3.24
3	12-Apr-10	18-Apr-10	3.49
4	19-Apr-10	25-Apr-10	4.31
5	26-Apr-10	2-May-10	3.66
6	3-May-10	9-May-10	3.08
7	10-May-10	16-May-10	3.83
8	17-May-10	23-May-10	3.94
9	24-May-10	30-May-10	3.24
10	31-May-10	6-Jun-10	4.07
11	7-Jun-10	13-Jun-10	3.61
12	14-Jun-10	20-Jun-10	3.03
13	21-Jun-10	27-Jun-10	3.26
14	28-Jun-10	4-Jul-10	3.21
15	5-Jul-10	11-Jul-10	2.96
16	12-Jul-10	18-Jul-10	2.87
17	19-Jul-10	25-Jul-10	3.04
18	26-Jul-10	1-Aug-10	2.80
19	2-Aug-10	8-Aug-10	2.87
20	9-Aug-10	15-Aug-10	2.96
21	16-Aug-10	22-Aug-10	3.24
22	23-Aug-10	29-Aug-10	3.09
23	30-Aug-10	5-Sep-10	2.96
24	6-Sep-10	12-Sep-10	3.04
25	13-Sep-10	19-Sep-10	3.04
26	20-Sep-10	26-Sep-10	3.27
27	27-Sep-10	3-Oct-10	3.07
28	4-Oct-10	10-Oct-10	3.27
29	11-Oct-10	17-Oct-10	2.87
30	18-Oct-10	24-Oct-10	2.77
31	25-Oct-10	31-Oct-10	2.78
32	1-Nov-10	7-Nov-10	2.85
33	8-Nov-10	14-Nov-10	2.96
34	15-Nov-10	21-Nov-10	3.12
35	22-Nov-10	28-Nov-10	3.17
36	29-Nov-10	5-Dec-10	3.26
37	6-Dec-10	12-Dec-10	3.07
		Average	3.21
	Maximum Loss of 37 Week		4.31