

**TARIFF ORDER
2014-15**

For

**Electricity Department
Government of MIZORAM**

Case No. 3 of 2013

Joint electricity regulatory commission

For Manipur and Mizoram

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LIST OF ABBREVIATION

Abbreviations	Description
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
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
JERC	Joint Electricity Regulatory Commission for Manipur and Mizoram
kV	Kilovolt
kVa	Kilovolt-ampere
Kw	Kilowatt
kWh	Kilowatt-hour
LT	Low Tension
MDI	Maximum Demand Indicators
MU	Million Unit
NEEPCO	North Eastern Electric Power Corporation
NHPC	National Hydro Electric Power Corporation
NTI	Non-Tariff Income
O&M	Operations and Maintenance
PED	Power & Electricity Department
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, Aizwal

Present:

Mr. N. Shyamsundar Singh, Chairperson
Mr. A. Chhawnmawia, Member

Petition No. 3 of 2013

In the matter of
Aggregate Revenue Requirement (ARR) and
Retail Tariff for the State of Mizoram for FY 2014-15

AND

In the matter of
Power and Electricity Department
Government of Mizoram, Aizwal
Petitioner
(herein referred to as PED)

O R D E R

Date: 28th February, 2014

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 authorization 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 the 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. 24th January, 2008.

1.1.1 In accordance with the provisions of the Act, the Joint Commission discharges the following functions:

- (a) 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;
- (b) 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;

- (c) facilitate intra-State transmission and wheeling of electricity;
- (d) issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
- (e) 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;
- (f) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
- (g) levy fee for the purposes of this Act;
- (h) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section(1) of Section 79;
- (i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
- (j) fix the trading margin in the intra-State trading of electricity, if considered, necessary;
- (k) discharge such other functions as may be assigned to it under the Act.

1.1.2 Further, the Commission also advises the State Government on all or any of the following matters namely:

- (a) promotion of competition, efficiency and economy in activities of the electricity industry;
- (b) promotion of investment in electricity industry;
- (c) reorganization and restructuring of electricity industry in the State;
- (d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that

Government.

1.1.3 The State Commission ensures transparency while exercising its powers and discharging its functions.

1.1.4 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:

- (a) ensure availability of electricity to consumers at reasonable and competitive rates;
- (b) ensure financial viability of the sector and attract investments;
- (c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
- (d) promote competition, efficiency in operations and improvement in quality of supply.

1.2 ARR and Tariff Petition

PED, being an integrated utility, is responsible for generation, transmission, and distribution of electricity in the State of Mizoram and also trading functions through its SLDC.

As per the Tariff Regulations, the utility was required to submit the ARR and file the Petition in the Month of November for fixing the Tariff for the next financial year. The PED has filed the ARR and Tariff Petition for the FY 2014-15 on 30.11.2013. In the petition PED estimated an ARR of Rs. 333.88 cr and considered a tariff support of Rs. 196.60 cr as subsidy by the State Government and worked out a net revenue gap of Rs. 20.44 cr.

1.3 Admission of Petition and Public Hearing Process

The Commission 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.

PED was asked to submit the required information vide Commission's letter No. H. 1311/33/13-JERC, dt 13.1.2014, No. H. 13011/33/13-JERC, dt 13.1.2014.

Pending receipt of additional information the ARR and Tariff Petition was admitted on 20.1.2014 and marked as Petition No. 3 of 2013 to avoid delay in processing of ARR.

The Commission directed the PED 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 notification of the proposed ARR and the tariff schedule for FY 2014-15 was published by the PED in the following newspapers.

Sl.No.	Name of the newspaper	Language	Date of publication
1	Sakeibaknei	Mizo	10.02.2014
2	Highlander	English	10.02.2014

Through the public notice, the stakeholders/public were invited to file their objections and suggestions on the petition on or before 14.2.2014.

The Commission has not received any objection / suggestion on the petition filed by PED.

1.4 Notice for Public Hearing:

A notification was published by the Commission in the following leading newspapers for giving due intimation to all stakeholders, general public, interested parties, and consumers about the public hearing to be held at Aizawl on 17.2.2014 from 1.00 PM to 4.00 PM.

Sl. No.	Name of the News-paper	Language	Date of Publication
1	Vanglaini	Mizo	
2	Highlander	English	10.02.2014

1.5 Public Hearing:

Public hearing was held as scheduled on 17.2.2014 at the conference Hall of I & PR Department, Aizawl. During the public hearing each objector was provided

a time slot for presenting his views on the petition of PED before the Commission. The main issues raised by the objectors during the public hearing along with response of PED are briefly reproduced in Chapter - 5.

1.6 Meeting of State Advisory Committee

The State Advisory Committee met on 17.2.2014 from 9.am to 12 noon at the Conference Hall of I & PR Department, Aizawl and discussed the ARR & Tariff proposal for FY 2014-15 of PED, Mizoram. 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 Power and Electricity Department, Government of Mizoram in its petition has projected the Aggregate Revenue Requirement for the year 2014-15 for meeting its expenses and the estimated revenue during the year with the existing tariff. The ARR and revenue gap after government subsidy are shown in Table 2.1 below.

Table 2.1: Aggregate Revenue Requirement for FY 2014-15

		(Rs. in cr)
Sl. No.	Particular	2014-15
1	Fuel Cost	.05
2	Power Purchase Cost	242.21
3	Operation & Maintenance Expenses	
3.1	Employee Cost	60.00
3.2	Repair & Maintenance Expenses	14.44
3.3	Administration & General Expenses	3.59
4	Depreciation	6.80
5	Interest & Finance Charges	4.00
6	Interest on Working Capital	4.32
7	Provision for bad debts	1.47
8	Sub Total	336.88
9	Return on Equity	-
10	Total Expenditure	336.88
11	Less: Non Tariff Income	3.00
12	Aggregate Revenue Requirement	333.88
13	Revenue from existing tariff	116.84
14	Gap (12-13)	217.04
15	Govt. subsidy	196.60
16	Net gap	20.44
17	Energy sales(MU)	346.20

(Source: Table 2.17 of ARR Petition)

2.2 Tariff

The PED in its petition has submitted the proposed tariff for the FY 2014-15 as per the table 2.2 below:

Table 2.2: Existing V/s. Proposed Tariff for FY 2014-15

Existing Tariff			Proposed tariff		
Category/ Slab	Fixed charges Rs/Con /Kw	Energy Charges Rs./kwh	Category/ Slab	Fixed charges Rs/Con /Kw	Energy Charges Rs./kwh
1	2	3	4	5	6
LT Categories					
Domestics (KJ)			Domestics (KJ)		
a) 1-15	10	1.00	a) 1-15	15	1.45
b) 1-30	10	1.20	b) 16-30	15	1.90
c) Above 30	10	1.70	c) Above 30	15	2.35
Domestics(RES)			Domestics(RES)		
a) 1-50	25	1.70	a) 1-50	30	2.35
b) 1-100	25	2.10	b) 51-100	30	2.35
c) 1-200	25	2.80	c) 101-200	30	3.45
d) above 200	25	3.90	d) above 200	30	4.05
COM			COM		
a)1-100	50	2.60	a)1-100	60	3.45
b) 1-200	50	4.00	b) 101-200	60	4.05
c) above 200	50	4.45	c) Above 200	60	4.65
Public Lighting All Units	50	4.75	Public Lighting All Units	60	4.65
PWW All Units	50	4.40	PWW All Units	70	4.65
Irrigation & Agri All Units	20	1.20	Irrigation & Agri All Units	30	1.75
Small industries			Small Industries		
a) 1-400	50	3.00	a) 1-400	70	3.45
SI b) Above 400	50	3.50	b) Above 400	70	4.05
Temp Supply	20	1.20	Temp Supply	20	
HT Categories					
Domestic All Units	30	3.30	Domestic All Units	30	4.05
Commercial All Units	60	4.20	Commercial All Units	60	4.65
PWW All Units	80	4.20	PWW All Units	70	4.65
Irrigation & Agri All Units	30	1.20	Irrigation & Agri All Units	30	1.75
Industrial All Units	80	3.30	Industrial All Units	60	4.05
Bulk Power All Units	80	3.30	Bulk Power All Units	70	3.85

Note: The above table depicts comparison of Fixed and energy charges only. The

detailed tariffs are given in tariff schedule. Unit consumption for a particular consumer in projected tariff may be calculated based telescopic tariff principle.

The PED respectfully prays the Hon'ble Commission;

1. To admit the ARR & Tariff Petition for FY 2014-15 with function wise separation of Assets in two segments i.e Generation/Distribution Transmission in the Department.
2. Approve the Aggregate Revenue Requirement (ARR) for FY 2014-15.
3. Determine the Tariff for FY 2014-15 based on tariff proposed for recovery of Revenue Gap.
4. Approve the Capital Expenditure as indicated in the Petition.
5. To grant any other relief as the Hon'ble Commission may consider appropriate. The petitioner craves leave of the Hon'ble Commission to allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
6. To pass any other order as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice.

3. Power Sector in Mizoram

Power supply scenario in the State as per the tariff petition are as given below:

3.1 Geographical Reality

The PED is responsible for supply and distribution of electricity in the State of Mizoram, which has a total area of 21087 Sq KM in its eight districts (Viz) Aizawl, Mamit, Kolasib, Champhai, Serchhip, Lunglei, Lawngtlai and Saiha. The State shares more than 700 Kms of international boundary with Bangladesh and Myanmar. The total population of Mizoram State is 10.92 lakhs as per 2011 census. The per capita consumption is 262 kWh for FY 2012-13. PED serves about 1.86 lakh consumers of various categories at the end of March, 2013.

3.2 Power supply

3.2.1 Own Generation

PED has Generation from its own generating plants, for the year 2012-13. The total installed capacity of the State owned generating stations and the actual energy generation during 2012-13 are as detailed in Table 3.1 below:

Table 3.1: Own Generating Stations as on 31.03.2013

Sl. No.	Station	Installed Capacity (MW)	Gross Generation (MU)
			2012-13
I	Hydel	29.35	
1	Serlui 'A'	1.00	0.30
2	Tuirivang	0.30	Damaged
3	Khawiva	1.05	1.70
4	Tuipui	0.50	1.03
5	Maicham-I	2.00	6.08
6	Teirei	3.00	0.83
7	Tuipanglui	3.00	-
8	Kau-Tlabung	3.00	7.38
9	Lamsial	0.50	0.36
10	Maicham-II	3.00	1.06
11	Serlui 'B'	12.00	39.85
II	Diesel		
1	Lengpui	0.50	0.01
III	HFO		
1	Bairabi	22.92	1.72
	Total (I+II+III)	52.77	60.32

PED stated that out of its own generation plants of 52.77 MW the diesel generating set of 0.50 MW is for Lengpui Airport and the heavy fuel plant of 22.92 MW at Bairabi is kept on standby mode for the purpose of meeting the emergency requirements. The rest are mini Hydel plants having seasonal generation.

3.2.2 Power Purchase

The State is dependent on outside sources for meeting its energy requirement. The State has share from Central Sector Generating Stations and total firm share from the Central Sector Generating Stations of NEEPCO, NHPC and NTPC is 70.60 MW. Apart from this PED is also getting power to a tune of 10.5 MW from NEC funded Baramura gas based thermal power plant and 22 MW from Palatana gas based power plant in Tripura state. Therefore the total allocation to Mizoram from its share of power from the generating stations outside the State is 103.09 MW as depicted in the Table 3.2 below:

Table 3.2: Share from Central Generating Stations (CGS)

Sl. No.	Name of the Power Station	Installed Capacity (MW)	%age share from I/C	Share in MW
1	2	3	4	5
	Central Sector			
A	NEEPCO- Hydro			
	Kopilli – I HEP	200.00	4.618	9.24
	Kopilli – II HEP	25.00	6.040	1.51
	Khandong HEP	50.00	3.940	1.97
	Ranganadi HEP	405.00	5.700	23.09
	Doyang HEP	75.00	5.250	3.94
B	NEEPCO- Gas Based			
	Assam Gas based Power Project	291.00	5.410	15.74
	Agartala Gas based Power Project	84.00	5.980	5.02
C	NHPC Loktak	105.00	5.020	5.27
D	NTPC, Eastern Region			
	Farakka STPS (NTPC)	1600.00	0.140	2.24
	Kahalgaon STPS – 1 (NTPC)	840.00	0.140	1.18
	Talcher STPS-1 (NTPC)	1000.00	0.140	1.40
E	OTPC- Palatana Gas Based Project	726.00	3.030	22.00
F	Baramura, Tripura (State Sector)	42.00	25.00	10.50
	Total Allocation (Firm and Infirm)	5443.00	70.41	103.09

(Source: table 1.2 of ARR Petition)

The energy drawn from various central generating stations and Tripura during 2012-13 is given in Table 3.3 below:

Table 3.3: Energy Drawl from Sources Outside State

Sl. No	Station	(In MUs)		
		2010-11 Actual	2011-12 Actual	2012-13 Actual
A	NEEPCO	272.34	272.34	240.96
	Hydro			
1	Kopili – I HEP (200 MW)	32.06	32.06	28.56
2	Kopili – II HEP (200 MW)	5.02	5.02	5.57
3	Khandong HEP (50 MW)	6.20	6.20	6.38
4	Ranganadi HEP (405 MW)	79.93	79.93	69.94
5	Doyang HEP (75 MW)	12.84	12.84	10.39
	Total A	136.05	136.05	120.84
	Gas Based			
6	Assam Gas Based Power Project	97.60	97.60	84.17
7	Agartala Gas Turbine Power	38.69	38.69	35.96
	Total B	136.29	136.29	120.12
B	NHPC Loktak HEP (105 MW) (II)	29.93	30.00	27.99
C	Eastern Power			
8	Farakka STPP		19.20	14.87
9	Kahalgaon STPP-I		12.00	8.83
10	Talcher STPP- I		16.80	10.44
	Total C	0.00	48.00	34.14
D	Others			
11	OTPC-Palatana			
E	Tripura	41.08	45.98	74.67
12	Rokhia (8 MW)			
13	B'mra (2x25.25 MW)	41.08	45.98	79.00
	Total (A+B+C+D)	343.35	396.32	377.75

(Ref: Extracted from Table 2-7 of Tariff Petition)

3.3 Transmission and distribution

For drawing power from CGS and other outside sources, there are 3 (three) Nos. of 132kV transmission lines owned by PGCIL connecting Mizoram as given below.

- (a) 132kV S/C Jiribam (Manipur) – Aizawl
- (b) 132kV S/C Badarpur (Assam) – Aizawl
- (c) 132kV S/C Kumarghat (Tripura) – Aizawl

All these lines terminate at 132KV Luangmual SS, Aizawl under PGCIL, from where power is drawn to different load centers through 2 (two) No. 132 kV lines of PED.

Being a hilly State with its population unevenly dispersed to the remote areas, the State of Mizoram is having large network of HT and LT lines as well as distribution transformers.

The details of transmission and distribution network, owned & operated by PED as on 31/03/2013 are given in Table 3.4 below:

Table 3.4: Transmission and Distribution Network

Sl. No.	Voltage	Transmission lines (cKt KM)	Substations/ Transformers (Nos.)	Capacity (MVA)
1	132kV	728.961	7	121.80
2	33kV	828.03	45	236.60
3	11kV lines	4292.41		
4	LT lines	2251.97		
5	Power transformers		79	358.40
6	Distribution transformers		1634	188.323

(Source: Table 1.3 & 1.4 of Transmission ARR)

3.4 Transmission and distribution (T&D) losses

The transmission and distribution losses of PED system were given as 30% during the year 2012-13 including external pool losses. The technical and

commercial losses are not segregated.

3.5 Consumer profile and Energy sales

The consumers profile and corresponding energy sales during the year 2012-13 are given in Table 3.5 below.

Table 3.5: Consumer Profile and Energy Sales for FY 2012-13

Sl. No	Category of Consumers	No. of Consumers		Connected Load at the end of the year (kW)	Energy Sales (MU's)	
		Nos	%		Nos	%
1	2	3		4	5	
		Nos	%		Nos	%
1	Kutir Jyoty	13907	7.30	1434.41	3.89	1.24
	Domestic (LT)	164065	88.2	199090.75	193.60	67
	Domestic (HT)	6		1026.00	0.097	.03
2	Commercial (LT)	6362	3.42	22150.96	19.88	6.69
	Commercial (HT)	55	.02	846.30	1.218	.42
3	Public Lighting	579	.40	1227.11	5.364	2.32
4	Irrigation and Water (LT)	17	.01	18.42	0.007	
	Irrigation and Water (HT)	1		100.50	0.070	.02
5	Public Water Works (LT)	11		736.18	0.384	.13
	Public Water Works (HT)	34	.01	37513.92	36.84	12.80
6	Industrial (LT)	622	.35	4109.84	1.81	0.79
	Industrial (HT)	12		7361.20	1.473	0.52
7	Bulk Supply	230	.12	28464.82	22.576	7.92
8	Temporary Supply	121	.06		0.47	
	Total	180622		304080.41	286.60	

(Source: Additional information dt. 07.02.2014)

3.6 Demand

The restricted peak power demand of PED during FY 2012-13 was 86 MW as per Retrospect and annual report of NERLDC shillong for FY 2012-13. The allocation (firm and infirm) from various central generating stations and NEC funded Baramura Gas Based Thermal Power Plant is, 103.10 MW.

The energy drawals by PED during the year 2012-13 are 377.75 MU.

3.7 Energy Audit

PED is not conducting Energy Audit effectively- neither at the state level nor at the consumer end. At present, the PED does the calculation of loss by taking the energy input at 132kV and energy sales at consumer end and the difference is shown as distribution loss, which cannot be termed as energy audit. As a matter of fact, energy audit should be conducted Voltage wise and computed with standard norms. Any high loss areas should be identified and analyzed and effective measures to be taken to bring down the losses to the permissible limits. To achieve this all the line feeders, transformers and consumers should be provided with standard meters.

3.8 Energy Metering

PED has completed 100 % consumers metering. Most of the meters are static type. Some are not tested for many years. Metering of 33KV, 11KV feeders and DTs are not completed.

3.9 Continuity of Power Supply

All the District Head Quarters are given a continuous power supply. In remote areas and outskirts of the District Headquarters of the State, there are load sheddings during dry season.

3.10 Financial Position

Table 3.6: Statement of Income & Expenditure for FY 2012-13

Expenditure	Rs. Cr	Income	Rs. Cr
Fuel Cost	0.03	Revenue from operations	104.61
Power Purchase Cost	183.72	Other Income	4.00
O&M Expenses	72.03	Subsidy from Government of Mizoram	187.66
Depreciation	17.13		
Int & Finance charges	3.72		
Interest on working capital	3.14		

Total	279.77	Total	296.27
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4. Review of ARR of 2012-13

4.1 Back ground

4.1.1 The Commission had approved the ARR for FY 2012-13 vide Tariff Order dated 25.07.2012 based on the projected data by the PED. Now PED has submitted actuals for FY 2012-13. There are differences in certain items of costs as well as revenue between the approvals granted by the commission and the actuals now furnished by the PED.

Since PED has not submitted audited accounts for FY 2012-13 true up of Tariff order for 2012-13 is not done. However the Commission considers it appropriate and fair to revisit and review the approvals granted by it in the tariff order of FY 2012-13 with reference to actuals now made available by the PED but without altering the Principles and norms adopted earlier. These matters are discussed in the succeeding paragraphs.

4.2 Energy sales

The PED has reported the actual energy sales at 286.60 MU as against 326.25 MU approved by the Commission for the FY 2012-13. The Category wise actual sales during the FY 2012-13 as reported vide Table 2.1 of the Petition and now approved by the Commission are given in table below:

4.2.1 Summary of the sales achievement against the approved sales for the FY 2012-13

Table 4.1: Energy Sales for FY 2012-13

Sl. No.	Category	Projected by PED (FY 2012-13) (MU)	Approved by the Commission (MU)	Actuals furnished by PED (MU)	Now approved by Commission
1	(a) Kutir Jyothi	5.00	8.00	3.89	3.89
	(b) Domestic	195.00	222.00	193.60	193.60
	Domestic HT	0.50	0.50	0.10	0.10
2	Commercial	21.00	22.00	19.88	19.88
	Commercial HT	1.50	1.50	1.22	1.22

3	Public lighting	7.00	7.00	5.36	5.36
	Irrigation & Agriculture LT	1.00	1.00	0.007	.007
4	Irrigation & Agriculture HT	0.25	0.25	0.07	0.07
	Public Water Works LT	0.50	0.50	0.38	0.38
5	Public Water Works HT	42.00	42.00	36.84	36.84
	LT Industrial	1.00	1.00	1.81	1.81
6	(HT Industrial)	0.50	0.50	1.47	1.47
7	Bulk Supply	20.00	20.00	21.48	21.48
8	Temp. Supply			0.47	0.47
	Total	295.20	326.25	286.60	286.60

There is considerable variation in respect of sales for Domestic category.

4.3 Transmission & Distribution Losses (T & D Losses)

The Commission in its order dt 25.7.2012 has approved T&D loss at 31% for FY 2012-13. The PED has furnished actual T&D loss at 30% as detailed in table below:

Table 4.2: T&D loss arrived by PED for FY 2012-13

Sl. No.	Particulars	As per PED's Calculation
1	Own Generation	
	Hydel	58.59
	Diesel	0.02
	Total	58.61
2	Power Purchase from CSGS and others	377.76
3	Pool loss %	-
4	Pool loss MU	-
5	UI Sales	27.99
6	Net energy available	408.27
7	Energy sales MU	284.89
8	T&D Loss MU	123.38
9	T&D Loss MU	30.22%

Commission's analysis

The T&D Loss calculated by PED is not correct for the reason that it had not considered inter-state pool loss which are around 3.48% as per weekly Transmission loss in NER during the period from 02.04.2012 to 31.03.2013 as reported in Retrospect and Annual Report for FY 2012-13 of NERLDC Shillong. Statement of weekly pool losses from 2.4.2012 to 31.3.2013 is given in

Annexure-II. Considering the Pooled Loss of 3.48% the T&D Losses in Mizoram is worked out as follows.

Table 4.3: T&D loss of PED for FY 2012-13 approved by the Commission

Sl. No.	Particulars	Energy (MU)
1	Power Purchase from CSGS and others	377.76
2	Pool loss %	3.48%
3	Pool loss MU (Less)	13.15
4	Energy Generation	58.61
5	Energy available for sale	423.42
6	Less: UI Sales	27.99
7	Net energy available	395.23
8	Energy sales MU	286.60
9	T&D Loss MU	108.63
9	T&D Loss MU	27.49%

Commission accordingly approves actual T&D Loss within the state at 27.49% for FY 2012-13.

4.4 Energy Requirement

The energy requirement approved by the Commission for FY 2012-13 in its tariff order dated 25. 7. 2012, actuals furnished by PED in its tariff petition FY 2014-15 and now approved by the Commission are detailed in table below:

Table 4.4: Energy Requirement for FY 2012.13

Sl. No.	Particulars	Units	Approved by the Commission	Actuals for FY 2012-13	Now approved by Commission
1	Energy Sales	MU	326.25	286.60	286.60
2	Distribution Loss	MU	146.57	121.67	108.63
3	Distribution Loss	%	31%	29.80	27.49
4	Energy Requirement at State periphery	MU	472.82	408.27	395.23
	Energy availability				
5	Own generation	MU	40.87	58.61	58.61
6	Power purchase	MU	483	377.66	377.76
7	Less Pool Loss	MU	16.90		13.15
8	Pool Loss	%	3.50		3.48%
9	Net trading / UI (±)	MU	34.15	27.99	27.99
10	Energy availability (5+6-7+9)	MU	472.82	408.38	395.23

4.5 Own Generation

PED has projected 43.02 MU own generation for the FY 2012-13. But the Commission approved 40.87 MU as given in Para 6.91 of the Tariff Order for 2012-13. The actuals now furnished by PED are at 58.61 MU.

The Commission now approved PED own generation of 58.61 MU for FY 2012-13 as per actuals.

4.6 Purchase of Power

Power purchase projected by PED for FY 2012-13 and approved by the Commission and actuals furnished by the PED in tariff petition for 2014-15 and now approved by the Commission are furnished in table below:

Table 4.5: Power Purchase during FY 2012-13

(in MU)

Sl. No.	Stations	Projected by PED	Approved by the Commission	Actuals furnished by PED	Now approved by Commission
	NEEPCO				
1	Koppili I	32.06	32	28.56	28.56
2	Koppili II	5.50	5.50	5.57	5.57
3	Khandong	6.20	6.20	6.38	6.38
4	Ranganadi	80	80	69.94	69.94
5	Doyang	15	15	10.39	10.39
	Gas Based				
6	Assam Gas based	97.60	97.60	84.17	84.17
7	Agartala Gas Turbine	38.69	38.70	35.96	35.96
	NHPC				
8	NHPC loktak	30	30	27.99	27.99
9	Baramura – Tripura	90	90	74.67	74.67
10	Palatana	-	40	-	-
11	Eastrapu	48	48	34.14	34.14
	Grand Total	443.05	483	377.76	377.76

4.7 Energy Balance

The details of energy requirement and availability of power approved by the Commission FY 2012-13 in its tariff order dated. 25.7.2012 and actuals furnished

by the PED in its tariff petition for FY 2014-15 and approved by the Commission are furnished in Table below:

Table 4.6: Energy Balance for FY 2012-13

Sl. No.	Particulars	Approved by the Commission	Actuals furnished by PED	Now approved by Commission
A	Energy Requirement			
1	Energy Sales MU	326.25	286.60	286.60
2	T&D Loss %	31%	29.80%	27.49%
3	T&D Loss MU	146.57	123.38	110.34
4	Energy Requirement MU	472.82	408.27	395.23
B	Energy Availability			
5	Own Generation			
	Hydel	40.85	58.59	58.59
	Diesel	0.02	0.02	0.02
	Total	40.87	58.61	58.61
6	Power Purchase	483.00	377.76	377.76
7	Transmission Loss %	3.5%		3.48%
8	Transmission Loss MU	16.90		13.15
9	Net Energy available	506.97	436.26	423.22
10	Energy requirement	472.82	408.27	395.23
11	Surplus	34.15	27.99	27.99

The Commission approves for purchase of 377.76 MU and sale of 27.99 MU through trading / UI mechanism.

4.7.1 Fuel Cost:

PED Fuel Cost of Rs. 0.03 cr during the FY 2012-13 for DG set generation at Lengpui. The Commission accordingly approved Rs. 0.03 cr towards fuel cost for FY 2012-13 in its tariff order dated 25.7.2012.

The PED in its ARR & Tariff petition for FY 2014-15 has furnished actual fuel cost at Rs. 0.03 cr for FY 2012-13.

The Commission accordingly approves Fuel Cost at Rs. 0.03 cr for FY 2012-13.

4.7.2 Power Purchase Cost:

The Commission in its order dt 25.7.2012 had approved Rs. 186.61 cr towards power purchase cost during FY 2012-13 for purchase of 483 MU. The PED in its

ARR & Tariff petition for FY 2014-15 has furnished actual power purchase cost during FY 2012-13 at Rs. 183.72 cr for purchase of 377.76 MU.

The Commission accordingly now approves power purchase cost of Rs. 183.72 cr for FY 2012-13 for purchase of 377.76 MU as per actuals furnished by PED.

4.7.3 O & M Expenses

a) Employee Cost

The Commission had approved Rs. 85.34 cr for the year 2012-13 to meet the employee expenses of PED Mizoram.

PED has now reported the actual employee expenses at Rs. 54.73 cr for FY 2012-13 in its ARR and Tariff petition for FY 2014-15.

The Commission accordingly now approves employee expenses at Rs. 54.73 crore for the FY 2012-13 as per actuals furnished by PED.

b) Repairs & Maintenance

The Commission had approved R&M expenses at Rs. 11.87 cr as projected by the PED Mizoram for FY 2012-13. PED has now reported the actual R&M expenses at Rs. 13.59 cr for the FY 2012-13 in its ARR petition for FY 2014-15.

The Commission accordingly approves the R&M expenses at Rs. 13.59 cr for the FY 2012-13 as per actuals furnished by PED.

c) Administration & General Expenses

The Commission had approved Rs. 4.76 cr for the FY 2012-13 as projected by the PED Mizoram. PED has now reported the actual Administration and General expenses at Rs. 3.71 Cr in its ARR and tariff petition for FY 2014-15.

The Commission now approves Administration and General Expenses at Rs. 3.71 cr for the FY 2012-13 as per actuals furnished by PED.

4.7.4 Depreciation

The Commission had approved depreciation at Rs. 17.70 cr for the FY 2012-13.

The PED in table 2.5 of ARR & Tariff Petition for FY 2014-15 has submitted the progressive capital expenditure till FY 2012-13 as Rs. 1280.40 cr and in table 2.6 the gross fixed assets at the beginning of the year 2013-14 are furnished as Rs. 1280.40 cr. From this information it can be derived that the entire capital expenditure to end of FY 2012-13 is capitalized. In the format 21 the capital expenditure during FY 2012-13 is furnished as Rs. 5.55 cr, which amount also should have been capitalized. From the above information the opening GFA as on 1.4.2012 is arrived at Rs. 1274.85 cr (1280.40 – 5.55).

But in ARR & tariff petition for FY 2012-13 the PED has submitted opening GFA as on 1.4.2012 as Rs.719.72cr.

This is not correlating with the latest information furnished in ARR & Tariff Petition for FY 2014-15.

As such in the absence of the audited accounts and asset registers the value of Rs. 1280.40 cr as on 31.3.2013 furnished in table 2.6 of ARR & Tariff petition for FY 2014-15 cannot be considered. As such considering already approved opening GFA of Rs. 719.72 cr as on 1.4.2012 vide tariff order dt. 25.07.2012 and additions during the year at Rs. 5.55 cr stated to be capitalized during FY 2012-13 depreciation is worked out on 10% of the average closing GFA as on 31.03.2013 as 90% of the expenditure is stated to be funded by GOI as grant.

Table 4.7: Depreciation for FY 2012-13

Sl. No.	Particulars	Amount Rs / Cr
1	Opening GFA as on 1.4.2012	719.72
2	Additions during 2012-13	5.55
3	Closing GFA	725.27
4	Average GFA	722.50
5	10% of (4)	72.25
6	Rate of Dep.	5.28%
7	Depreciation for 2012-13	3.81

Depreciation an average GFA is calculated at an average rate of 5.28% Depreciation on the assets to end of 31.3.2013 are considered at 10% of the asset value since 90% of funds are provided by Government of India as grant.

The Commission accordingly now approves depreciation of Rs. 3.81 cr for the FY 2012-13.

4.7.5 Interest & Finance Charges

The Commission had approved Rs. 6.09 cr for the FY 2012-13 in its tariff order dated 25.07.2012.

PED in its ARR and tariff petition for FY 2014-15 has now reported the Interest & Finance charges at Rs. 4.84 cr for FY 2012-13.

The PED has stated that the department is availing loans from LIC, REC and PFC to fund capital expenditure. The loans from REC under RGGVY which are convertible into grants at a future date subject to fulfillment of certain stipulations have not been included. The details of interest and finance charges are furnished in tables below:

Table 4.8: Interest & Finance Charges for FY 2012-13

Particulars	(Rs. Lakhs)	
	FY 2011-12 (Actual)	FY 2012-13 (Actual)
Opening Loan	9910.78	9711.98
Loan Additions	0	0
Repayment	198.80	240.80
Closing Loan	9711.98	9471.18
Interest on Loan		
LIC Loans	106.60	204.00
REC Loans	50.51	-
REC (RGGVY) Loans	139.49	279.75
Interest & Finance Charges	296.60	483.75

(Source: format 15 of ARR)

Table 4.9: Loans availed by PED Mizoram during FY 2010-11

Sl. No.	Particulars	(Rs. Lakhs)					
		Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1534	8.00%		133	1401	123

2	REC Loans	6824	8.50%	1604	2316	6112	1678
3	PFC Loans						
	Total	8358		1604	2449	7513	1801

(Source: format 15 of ARR)

Table 4.10: Loans availed by PED Mizoram during 2011-12

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1401	8.00%		133	1268	107
2	REC Loans	6112	8.50%		66	6046	51
3	REC (RGGVY) Loans	2398				2398	139
	Total	9911			199	9712	297

(Source : format 15 of ARR)

Table 4.11: Loans availed by PED Mizoram during FY 2012-13

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1268	8.00%		133.00	1135	204
2	REC Loans	6046	8.50%		107.80	5938	-
3	REC (RGGVY) Loans	2398	11.50%			2398	280
	Total	9712			241	9471	484

(Source : format 15 of ARR)

Commission Analysis:

As seen from the above table No. 4.11 interest calculation appears to be incorrect. Further the PED has not claimed interest on normal REC loan during FY 2012-13. Even in FY 2011-12 the interest stated to be paid is Rs. 51 cr while the actual interest works out to be Rs. 5.17 cr. The reasons for short claim are not furnished. So barring interest on normal REC loan actual interest on other loans are worked out as detailed in table below.

Table 4.12: Interest and Finance Charges approved by the Commission for FY 2012-13**(Rs. cr)**

Sl. No.	Funding Agency	Rate of Interest	Opening Balance	Loans availed during the year	Loan repayment during the year	Closing Loan	Average Loan	Interest	Average rate of Interest
2012-13									
1	LIC	8%	12.68	-	1.33	11.35	12.02	0.96	
	REC	8.50%	60.46	-	1.08	59.38	59.92	-	
	REC (RGGVY)	11.50%	23.98			23.98	23.98	2.76	
	Total		97.12	-	2.41	94.71	95.92	3.72	

The Commission approves Interest & Finance charges at Rs. 3.72 cr for the FY 2012-13.

4.7.6 Interest on Working Capital

Interest on working capital approved by the Commission for FY 2012-13, actuals now furnished by the PED in its ARR & Tariff petition for FY 2014-15 and now approved by the Commission are furnished in Table below:

Table 4.13: Interest on Working Capital for FY 2012-13**(Rs. Lakhs)**

Particulars	Approved by the Commission	Actuals furnished by PED	Now approved by Commission
Fuel Cost	0.23	0.27	0.27
Power Purchase Cost	1555.12	1531.13	1531.13
Employee Cost	713.67	456.09	456.09
R&M Expenses	98.92	113.24	113.24
A & G Expenses	39.64	30.88	30.88
Total W C	2407.58	2131.60	2131.60
Rate of Interest	14.75%	14.75%	14.75%
Interest on W C	355.12	314.41	314.41
	Rs. 3.55 cr	Rs. 3.14 cr	Rs. 3.14 cr

The Commission approves Interest on Working Capital at Rs. 3.14 cr for FY 2012-13.

4.7.7 Provision for Bad Debts

The Commission had not considered any Provision for Bad Debts for the FY 2012-13, since PED has not submitted the amount written off during FY 2012-13.

4.7.8 Return on Equity

Commission had not considered any Return on Equity Capital for the FY 2012-13 as the PED is functioning as Government Department.

4.7.9 Non Tariff Income

The Commission had approved Rs. 4 cr as Non-tariff Income for the FY 2012-13.

PED has reported the Non tariff Income at Rs. NIL for the FY 2012-13 vide ARR Format – 20. As such the Commission retains already approved nontariff income of Rs. 4 cr for FY 2012-13.

The Commission accordingly approves Rs. 4 cr towards Non tariff Income for the FY 2012-13.

4.8 Revenue from approved tariffs

The PED has reported the sales at 286.60 MU, Revenue receipt is shown as Rs. 9621 lakhs as furnished in ARR format – 27. But the PED failed to account for revenue from outside sales of 27.99 MU, which should also be considered as revenue from sale of energy.

The revenue from outside sales of 27.99 MU at an average rate of Rs. 3/kWh works out to be Rs. 8.40 cr. Thus total revenue from sale of energy works out to be Rs. 104.61 cr (96.21+8.40).

The Commission accordingly approves the revenue from sale of energy of 314.59 MU (286.60+27.99) at Rs. 104.61 cr during FY 2012-13.

4.9 Summary of ARR after review with actuals and approvals

Table 4.14: Aggregate Revenue Requirement for FY 2012-13

(Rs. Crore)				
Sl. No.	ARR Elements	Approved in TO dated 25.07.2012	Actuals Now furnished by PED	Now approved by the Commission
1	Fuel Cost	0.03	0.03	0.03
2	Power Purchase Cost including UI purchase	186.61	183.72	183.72
3	Employees Cost	85.64	54.73	54.73
4	Repairs and Maintenance Exp	11.87	13.59	13.59
5	Adm. & Gen Exp	4.76	3.71	3.71
6	Depreciation	17.70	17.70	3.81
7	Int. & Fin charges	6.09	4.84	3.72
8	Int. on Working Capital	3.55	3.14	3.14
9	Prov. for Bad Debts	-	-	-
10	Return on Equity	-	-	-
11	Sub-Total	316.25	281.46	266.45
12	Less: Non-Tariff Income	4.00	4.00	4.00
13	Total Expenditure	312.25	277.46	262.45
14	Revenue from existing tariff (Excl UI sale)	124.59	96.21 (Excluding UI Sales)	104.61 (Including UI Sales)
15	Revenue Gap	187.66	181.25	157.84
16	Less: UI Sales Rev			
17	Gap before subsidy			
18	Govt. Subsidy	187.66	187.66	187.66
19	Net Gap/Surplus (-)	NIL	(6.41)	(29.82)
20	Sales (MU)	326.25	314.59	314.59

As seen above there is a surplus of revenue of Rs. 29.82 crore during FY 2012-13 after the Government Subsidy of Rs. 187.66 cr.

5. Proceedings of Public Hearing

5.1 Public Response to the Petition

On admitting the ARR and Tariff Petition for 2014-15, the Commission directed the PED 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.

No written objection was received from any consumer / stake holders during the time period fixed by the Commission.

5.2 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 Aizawl on 17.02.2014 as scheduled.

During the public hearing, the participants from the general public, were given an opportunity to offer their views in respect of the ARR and Tariff proposal of the PED. The list of stakeholders who attended the public hearing is given in Annexure- II. The officers of the PED, who were present during the public hearing, responded to the issues raised by the objectors.

5.3 Proceedings of Public Hearing

5.3.1 Objector -1: Mr. Vanlalruata, Gen. Secretary, CYMA.

Objection:

- (i) The annual per unit cost of power purchase and sale within the state may be informed.
- (ii) The possibility to purchase more power from those stations that sell at the cheapest rate may be informed.
- (iii) How power purchase rates are determined and how unmetered supply are being proposed to be charge may be informed.

- (iv) The prevailing transmission loss may be informed.
- (v) How defence establishments are charged energy consumption may be informed.
- (vi) The existing fixed charge is very high. Whether there is any possibility to reduce it for the benefit of consumers in general and for industrial purpose in particular may be informed.

5.3.2 Objector-2: Mr. Vanlahmuaka, Joint Secretary, AMFU, Gen. Hqrs. Aizawl.

Objection:

- (i) Farmers are using electricity in their firms and agriculture. Is there a proposal that their energy rates be made lower than other categories of consumers.
- (ii) Is it possible to avail subsidy?

5.3.3 Objector-3. Mr. R. L. Liantluanga, Gen. Secretary, PRIMS.

Objection:

Bill payment mechanism is required to be made easier for the consumers. The existing status and proposal if any, may be informed.

5.3.4 Objector- 4: Mr. Zoramthanpuia, Coordinator, Goodwill Foundation.

Objection:

Mizoram depends on power purchase from outside the state. Is there any action being initiated for sustainable growth in power sector ?

5.3.5 Objector-5: Dr. Chawngsailova, gen. Secretary, M.C.U.

Objection:

- (i) In southern parts of Mizoram, the employees demand money as climbing charge on electric poles. Is there such charges payable?.
- (ii) There have been rampant uses of heaters for cooking purpose in department quarters in rural areas. Is there any mechanism to curb such illegal use of heaters?

5.3.6 Objector- 6: Mr. L. Biakthanga, Joint Director, Transport Department.

Objection:

Is it possible to reduce the ARR projected in the petition to have lower tariff?

5.3.7 Objector -7: Mr. C. Lalbiakthanga, Director, Industries Department.

Objection:

Is there any proposal to reduce high fixed charge being paid by Industries?

5.4 Response of PED:

5.4.1 On objector-1.

- (i) The annual average power purchase rate during FY 2012-13 is Rs. 4.48 per unit and the annual average sale rate is Rs 3.31 per unit.
- (ii) Allocation of power from the central Sector generating Stations is made by the Ministry of Power, Government of India. Power purchase is possible only based on available allocation.
- (iii) Fixed charge and energy charge of the Central Sector Generating Stations are determined by the Central Electricity Regulatory Commission (CERC). Power is purchased based on the rates fixed by CERC. As per the Electricity Act, 2003, no supply of electricity shall be given except through installation of a correct meter. Therefore, no charge is proposed for unmetered supply.
- (iv) The prevailing transmission charge is about 7.5%.
- (v) Defence establishments are treated as bulk consumers at present. Their status of granting them as deemed licensee is under examination in the JERC for Manipur and Mizoram.
- (vi) Increase of fixed charges are proposed except in Public Water Works HT, Industrial HT and Bulk Supply HT categories where reduction are proposed and no hike in Industrial LT category.

5.4.2 Objector-2:

- (i) The tariff proposed for irrigation & agriculture purposes are comparatively lower than that of for other categories.
- (ii) Subsidy is given in the form of providing power supply at lower tariff.

5.4.3 Objector- 3:

Computerised energy billing system is introduced in Aizawl and there are payment counters at various places. Payment through internet banking is also proposed for which approval is not yet received from the state Government.

5.4.4 On objector- 4:

There are various projects pipe line for sustainable growth in power sector. The State government is taking pro-active actions to tap the hydel resources within the State to meet the even increasing gap between the demand and supply. To tap maximum power potential from water potential, the state Govt. had conducted survey & investigation of various rivers and prepared a number of DPRs. However, due to lack of sufficient fund, the state Government by its own could not execute the projects. Therefore, some projects have been taken up by CPSUs and some other projects either through MOU or PPP mode. The projects in the pipeline are Kolodyne HEP(460 MW), Chhimtuipui HEP(635 MW), Lungreng HEP(815 MW), Mat HEP(75 MW), Tuivawl HEP(43 MW), Tuirini HEP(38(MW), Bairabi dam project(80 MW), Tlawng HEP(55 MW), Tuivai HEP(210 MW) and Tuirial HEP(60 MW). Ongoing projects are Tlawng SHP(5 MW), Tuiriza SHP(0.10 MW) and Tuiching SHP(0.10 MW)

5.4.5 Objector- 5:

- (i) Climbing charges are not available in the tariff.
- (ii) The Commission is very much aware of theft cases and as per its instruction the department has been conducting operation from time to time to detect illegal use of electricity at various places.

5.4.6 Objector – 6:

The ARR is worked out based on previous and existing trend of expenditure incurred. The Commission shall examine to what extent the expenditure is acceptable. If the ARR is reduced there is a chance of giving electricity at lower tariff.

5.4.7 Objector-7:

There is a proposal not to increase fixed charge under Industrial LT and reduction of fixed charge under Industrial HT.

5.5 Commission's Observation

The Commission has taken careful note of the objections, comments and suggestions made by the stake holders, members, general public and response from PED, Mizoram. While analyzing and finalizing different components of ARR and tariff proposal. Keeping in view the remarks/suggestions made by the objectors and also to meet some of the requirements of Electricity Act, 2003, National Electricity Policy and national Tariff Policy, the Commission has also given certain directions to the department as an integral part of this order.

6. Analysis of Annual Revenue Requirement for FY 2014-15

6.1 Energy Sales

Proper estimation of category wise energy sales is essential to determine the quantum of power purchase and the likely assessment of revenue. This section examines in detail the customer category wise sales projected by the Power & Electricity Department (PED) in their petition for assessment of ARR.

6.2 Consumer Categories

PED serves about 2.00 lakhs consumers in their licensed area and the consumers are categorized as under.

1. (a) Kutir Jyothi LT
(b) Domestic LT
(c) Domestic HT
2. (a) Non-domestic / Commercial LT
(b) Non-domestic / Commercial HT
3. Public Lighting LT
4. (a) Irrigation & Agricultural LT
(b) Irrigation & Agricultural HT
5. (a) Public Water Works LT
(b) Public Water Works HT
6. (a) Industrial LT
(b) Industrial HT
7. Bulk Supply HT
8. Temporary Supply LT

PED serves the consumers at different voltage levels at which the consumers avail supply. In all categories there are LT consumers as well as HT consumers except in the categories of Kutir Jyoti and Public Lighting and Temporary Supply. The Commission has considered to retain the same categories as are existing.

6.3 Additional information and Data

The ARR and Tariff Petition for the year 2014-15 filed by PED was incomplete, as many of the specified formats required under JERC (Terms and Conditions for Determination of Tariff) Regulations, 2010 were not submitted. PED have submitted some additional data / information / clarifications etc through the following references.

1. No.T-23011/02/13-EC(P)/Com/19 dt 21.1.2014.
2. No.T-23011/02/13-EC(P)/Com/- dt 28.1.2014
3. No.T-23011/02/13-EC(P)/Com/23 dt 7.2.2014

Additional information and revised / corrected data submitted by the PED in the above references are taken into consideration while analyzing the ARR and Tariff Petition. The information gaps in many elements of ARR still remain unanswered. ARR submitted by the PED, has been considered by the Commission with specific directives on the data gaps.

6.4 Growth of Consumers and Connected Load

PED has projected the category wise growth of consumers, their connected load for the years 2012-13 (actuals), 2013-14 (estimated) and 2014-15 (projected) as given in the table below:

Table 6.1: Category-wise Consumers and connected load

Sl. No.	Category of Consumers	FY 2012-13			FY 2013-14			FY 2014-15		
		No. of Consumers	Connected Load at the end of the year (kW)	Energy sales (MUs)	No. of Consumers	Connected Load at the end of the year (kW)	Energy sales (MUs)	No. of Consumers	Connected Load at the end of the year (kW)	Energy sales (MUs)
1	Kutir Jyoti	13097	1434.41	3.89	14595	1577.00	4.28	15333	1735.00	4.71
	Domestic (LT)	164065	199090.75	193.60	172276	219000.00	212.96	180882	240900	222.3
	Domestic (HT)	6	1026.00	0.097	6	1128.60	0.11	6	1240.00	0.12
2	Commercial (LT)	6362	22150.96	19.88	6681	24360.00	21.87	7015	26802.66	36.01
	Commercial (HT)	55	846.30	1.218	57	930.00	1.34	60	1024.02	1.47
3	Public Lighting	579	1227.11	5.34	608	1350.00	5.90	638	1484.80	6.49
4	Irrigation and Water (LT)	17	18.42	.007	18	20.00	0.01	19	22.29	0.01
	Irrigation and Water (HT)	1	100.50	0.070	1	110.00	0.08	1	121.61	0.09
5	PWW (LT)	11	736.18	0.384	10	810.00	0.42	12	890.78	0.46
	PWW (HT)	34	37513.92	36.84	37	41265.00	40.53	38	45391.84	44.58
6	Industrial (LT)	622	4109.84	1.81	653	4520.00	1.99	686	4972.91	2.19
	Industrial (HT)	12	7361.20	1.473	13	8097.00	1.62	13	8907.05	1.78
7	Bulk Supply	230	28464.82	21.48	242	31310.00	23.63	254	34442.43	25.99
8	Temporary Supply	121		.47						
	Total	186022	304080.41	286.60	195197	334477.60	314.74	204957	3,67935.39	346.20

(Source: format 1 & Additional information)

Commission's Analysis

As seen from the above table there is substantial increase in respect of Kutir Jyoti. This might be due to extensive electrification of unelectrified habitations and households under RGGVY programme.

6.5 Projected Energy Sales for FY 2014-15

PED has furnished category wise energy sales for the years FY 2010-11 to FY 2012-13 (Actuals), FY 2013-14 (Estimated) and FY 2014-15 (Projected) as given in the table below:

Table 6.2: Consumer Category-wise Energy Sales

(MU)						
Sl. No.	Sales	2010-11 (Actual)	2011-12 (Actuals)	2012-13 (Actuals)	2013-14 (Estimate)	2014-15 (Projection)
1.	Domestic (LT & HT)	174.40	171.15	197.59	217.34	239.08
2.	Commercial (HT & LT)	14.65	18.89	21.10	23.21	25.53
3.	Public Lighting	7.04	6.04	5.364	5.90	6.49
4.	Irrigation (HT & LT)	0.12	0.09	0.077	0.08	0.09
5.	PWW (HT & LT)	27.29	36.28	37.23	40.95	45.05
6.	Industrial (LT)	1.57	1.76	1.81	1.99	2.19
7.	Industrial (HT)	1.57	0.33	1.47	1.62	1.78
8.	Bulk Supply (HT)	12.18	17.31	21.48	23.63	25.99
9.	Temp. Conn.	0.00	0.43	0.48		
10.	Total	238.83	252.29	286.60	314.73	346.20

(Source : Table 2.1 of the Tariff Petition)

Table 6.3: Consumer Category-wise growth in Energy Sales

Sl. No.	Energy sales (MU)	FY 2010-11 (Actuals)	FY 2011-12 (Actuals)	FY 2012-13 (Actuals)	CAGR for 2 Years FY 2010-11 to 2012-13	CAGR for 2011-12 to 2012-13
1	Kutir Jyoti	6.50	6.74	3.89	(25.99)	(47.18)
2	Domestic (HT & LT)	167.90	164.41	194.57	6.73	18.34%
3	Commercial (HT & LT)	14.65	18.89	21.10	17.63	11.70%
4	Public Lighting	7.04	6.04	5.36	(3.03)	(-) 11.26%
5	Irrigation (HT & LT)	0.12	0.09	0.08	(18.35)	(11.11)
6	PWW (HT & LT)	27.29	36.28	37.22	16.17	2.59%
7	Industrial (LT)	1.57	1.76	1.81	19.45	2.84%
8	Industrial (HT)	1.57	0.33	1.47	(3.24)	345.45
9	Bulk Supply (HT)	12.18	17.31	21.48	36.16	24.09%
10	Total Energy Sales	238.82	251.85	286.60	45.52	13.80%

Considering the data submitted in the petition the Category wise sales projected by the PED are discussed below:

1. Domestic

(a) Kutir Jyoti

PED has projected sales under Kutir Jyoti at 4.71 MU for FY 2014-15. The growth of consumers projected at 1787 Nos. for FY 2014-15 over FY 2012-13 is found to be 13%. The average sales under 'Kutir Jyothi' during FY 2012-13 (Actuals) and estimated during FY 2013-14 and projected for FY 2014-15 by PED areas detailed below.

Table 6.4: Average Consumption of Kutir Jyoti Connections

Sl. No.	Year	No. of consumers	Sales (MU)	Average (kWh)
1	2010-11	13604	6.40	40
2	2011-12	14047	6.74	40
3	2012-13	13907	3.89	23
4	2013-14	14595	4.28	24
5	2014-15	15333	4.01	22

The consumers with higher consumption than permissible limit per month under Kutir Jyoti shall be billed under Domestic category to safeguard the revenue.

The Commission approves the sales of Kutir Jyoti at 4.01 MU for the FY 2014-15 as against 4.71 MU projected by PED.

(b) Domestic (LT)

PED has projected 222.30 MU for the year 2014-15 for this category. From the table 6.3, 2 year CAGR is 6.7% while YOY growth is 16.3%. PED projected 8606 new connections during 2014-15 over FY 2013-14. Consumption growth during 2010-11, 2011-12 and 2012-113 was erratic. This may be due to Power Cuts during peak hours in the state. Considering a normal growth of 8%, consumption of this category would be 223.07 MU for FY 2014-15.

Commission approves the consumption of 223.30 MU for FY 2014-15 as against 223.30 MU projected by the PED.

(c) Domestic (HT)

The sales of this category are projected at 0.12 MU for FY 2014-15 for 6 consumers under this category. There is no historical trend to substantiate the projection, and the sales are meagre.

The Commission considers 0.12 MU for Domestic (HT) consumers for the FY 2014-15 as projected by PED. As these consumers are classified based on the connected load exceeding 50 KW and supply extended at 11000 volts. PED shall ensure installation of high accuracy static meters to this category of consumers, so that the consumption can be measured and billed accurately.

The Commission approves energy sales for domestic (HT) category at 0.12 MU for FY 2014-15 as projected by PED.

2. Commercial

(a) Commercial (LT)

PED has projected energy sales for this category at 36.01 MU for the year 2014-15. 2 year CAGR is 17.63% while YoY growth is 11.70%. The sales are steadily increasing. As such Commission considered reasonable to adopt YoY growth rate of 11.70% over the actual sales during FY 2012-13, which works out to 24 MU.

The Commission approves sales at 24 MU for Commercial (LT) category for FY 2014-15 as against 36.01 projected by PED.

(b) Commercial (HT)

PED has projected sales at 1.47 MU for FY 2014-15. There is no historical trend to estimate the consumption for this category. The PED projected consumption of 1.47 MU is reasonable.

The Commission approves sales at 1.47 MU for commercial (HT) category for the FY 2014-15, as projected by PED.

3. Public Lighting

PED has projected sales at 6.49 MU to this category for FY 2014-15. The sales growth is projected at 10% over the current year estimated sales of 5.90 MU. The increase in number of consumers and sales over current year might be due to electrification of unelectrified habitations.

Commission, approves the sales for the FY 2014-15 at 6.49 MU for public lighting category as projected by the PED.

4(a) Irrigation & Agriculture (LT)

PED has projected energy sales for this category are at 0.01 MU (LT). Projection for FY 2014-15 is found to be reasonable.

The Commission approves the sales at 0.01 MU to irrigation & agriculture (LT) for the FY 2014-15, as projected by PED.

4(b) Irrigation & Agriculture (HT)

PED has projected energy sales to this category at 0.09 MU, which is found to be reasonable.

The Commission approves energy sales at 0.09 MU to Irrigation and Agriculture (HT) category for the year 2014-15 as projected by PED.

5. Public Water Works

(a) Public water works (LT)

PED has projected energy sales to this category at **0.46** MU for the FY 2014-15, which is considered reasonable.

The Commission approves energy sales for PWW (LT) at 0.46 MU for FY 2014-15 as projected by PED.

(b) Public water works (HT)

PED has projected sales to this category at 44.58 MU for FY 2014-15. The actuals for the FY 2012-13 are stated to be 36.45 MU and for FY 2013-14 was 40.53. The growth is not uniform. As such considering a growth of 11% the projected consumption for FY 2014-15 would be 44.10 MU.

The Commission approves the sales PWW (HT) at 44.58 MU for FY 2014-15 as projected by PED

6. Industrial

(a) Industrial (LT)

PED has projected sales to this category at 2.19 MU for 2014-15. The actuals for FY 2012-13 is stated to be 1.81 MU. 2 Year CAGR is 19.45% while the YoY growth works out to 2.84%. The sales to this category are steadily increasing. Projected consumption of 2.19 MU is found reasonable.

Accordingly, the Commission approves the sales at 2.19 MU for FY 2014-15 as projected by PED.

(b) Industrial (HT)

The PED has projected at a growth rate of 10%, which is considered reasonable.

The Commission approves sales at 1.78 MU to this category for FY 2014-15 as projected by PED.

7. Bulk Supply

PED has projected sales at 25.99 MU for the FY 2014-15, against the actuals of 22.58 MU of the previous year 2012-13. PED adopted 10% growth in projecting the sales for FY 2014-15, which the Commission considers reasonable.

The Commission approves the sales at 25.99 MU for FY 2014-15 as projected by the PED.

6.6 Category Wise Energy Sales Projected and Approved

The category wise Energy Sales for the year 2014-15 as discussed are given in table below:

Table 6.5: Category-wise Energy Sales projected and approved for FY 2014-15

(MU)

Sl. No.	Category	Projected by PED	Approved by Commission
1	2	3	4
1 (a)	Kutir Jyothi MU	4.71	4.01
(b)	Domestic (LT)	222.30	223.30
(c)	Domestic (HT)	0.12	0.12
2 (a)	Commercial (LT)	36.01	24.00
(b)	Commercial (HT)	1.47	1.47
3	Public Lighting	6.49	6.49
4 (a)	Irrigation & Agriculture (LT)	0.01	0.01
(b)	Irrigation & Agriculture (HT)	0.09	0.09
5 (a)	Public Water Works (LT)	0.46	0.46
(b)	Public Water Works (HT)	44.58	44.58
6 (a)	Industrial (LT)	2.19	2.19
(b)	Industrial (HT)	1.78	1.78
7	Bulk Supply	25.99	25.99
	Total	346.20	334.19

6.7 T&D losses

PED has projected the distribution losses at 29% for the year 2014-15. Since transmission is an integral part of distribution, the transmission and distribution losses are considered together as distribution losses. PED has submitted that since population in the State is scattered and spread out, the network has long length of LT lines and hence the distribution losses are high. It is submitted that PED has taken several measures to reduce the losses and projected the losses at 29% for FY 2014-15.

Commission's Analysis

T&D losses projected by PED for FY 2014-15 has been examined by the Commission. As discussed at Para 4.3 ante the T&D Losses for FY 2012-13 were 27.49, considering a reduction of 0.49% during FY 2013-14 the T&D Losses for FY 2014-15 would be 27% and this figure is considered reasonable for assessing the energy requirement.

Considering T&D loss of 27% for FY 2014-15 Commission fixes the trajectory for future years as follows.

Year	% of T&D Loss
2015-16	26
2016-17	25
2017-18	24

6.8 Energy requirement for FY 2014-15

PED has projected the energy requirement for FY 2014-15 as given in table below:

Table 6.6: Energy Requirement Projected by PED for FY 2014-15

Particulars	Energy (MU)
Energy sales	346.20
Distribution loss	181.41
Distribution loss (%)	29%
Energy requirement	496.14

(Source: Table 2.4 of ARR)

Commission analysis

Considering the approved T&D losses of 27% the energy requirement based on energy sales approved for FY 2014-15 are given in table below:

Table 6.7: Energy Requirement approved by the Commission for FY 2014-15

Sl. No.	Particulars	Energy (MU) for FY 2014-15
1	Energy sales	334.19
2	T&D Loss	123.60
	Distribution loss (%)	27%
3	Energy requirement at state periphery (1+2)	457.79

The Commission approves the energy requirement at 457.79 MU for FY 2014-15 as against 496.14 MU projected by PED.

6.9 Sources of power

6.9.1 Own generation

PED owns eleven mini hydel stations with an installed capacity of 29.35 MW, one diesel station of 0.5 MW and a diesel station of 22.92 MW run on HFO. Thus the total installed capacity is 52.77 MW. The 22.92 MW HFO station is kept as standby in view of high cost of generation and run to meet the emergencies only. The generation from hydel at 86.05 MU and from diesel set at 0.02 MU PED has projected totaling to 86.07 MU for FY 2014-15 as detailed in table below.

Table 6.8: Generation from own Generating Stations

Sl. No.	Station	Installed Capacity	Year wise Energy Gen.		
			2012-13 Actual	2013-14 Provision	2014-15 Projected
I	Hydel				
1	Serlui 'A'	1.00	0.30	0.40	0.70
2	Tuirivang	0.30	Damaged	Damaged	1.00
3	Khawiva	1.05	1.70	1.72	1.80
4	Tuipi	0.50	1.03	0.80	1.50
5	Maicham – I	2.00	6.08	3.00	6.10
6	Teirei	3.00	0.83	1.00	2.00
7	Tuipanglui	3.00		0.00	1.50
8	Kau-Tlabung	3.00	7.38	7.40	7.50
9	Lamsial	0.50	0.36	0.40	0.60
10	Maicham – II	3.00	1.06	0.35	3.35
	Sub Total (A)	29.35	58.59	55.11	86.05
II	Diesel				
12	Lengpui	0.500	0.010	0.014	0.015
III	HFO				
13	Bairabi	22.92	1.72	0.00	0.00
	Total (I+II+III)	52.77	60.32	55.12	86.07

(Source: Table 1.1 of petition)

The Commission accepts PED's own generation of 86.07 MU as projected.

6.9.2 Purchase from outside the state

PED has allocation of power from various Central Generating Stations in North Eastern Region - (NEEPCO), (NHPC) and Eastern Region - (NTPC) and from Tripura gas based stations as given below:

Table 6.9: Allocation of power from Central Sector and other Generating Stations

Sl. No.	Name of the Power Station	Installed Capacity (MW)	%age share	Share in MW
1	2	3	4	5
	Central Sector			
A	NEEPCO- Hydro			
	Kopilli – I HEP	200.00	4.618	9.24
	Kopilli – II HEP	25.00	6.040	1.51
	Khandong HEP	50.00	3.940	1.97
	Ranganadi HEP	405.00	5.700	23.09
	Doyang HEP	75.00	5.250	3.94
B	NEEPCO- Gas Based			
	Assam Gas Based Power Project	291.00	5.410	15.74
	Agartala Gas based Power Project	84.00	5.980	5.02
C	NHPC Loktak	105.00	5.020	5.27
D	NTPC, Eastern Region			
	Farakka STPS (NTPC)	1600.00	0.140	2.24
	Kahalgaon STPS –1 (NTPC)	840.00	0.140	1.18
	Talcher STPS-1 (NTPC)	1000.00	0.140	1.40
E	OTPC-Palatana Gas based Project	726.00	3.030	22.00
F	Baramura, Tripura (State section)	42.00	25.000	10.50
	Total Allocation (Firm and Infirm)	5443.00	70.41	103.09

(Source : Table 1.2 of ARR)

6.9.3 Energy drawl projected by PED from Central Generating Stations and Other sources

PED has projected drawal of about 418 MU from the above Central Generating Stations and other sources for FY 2014-15 as given in table below:

Table 6.10: Energy purchase projected for FY 2014-15 from Central Generating Stations and other sources

Sl. No.	Station	Energy Drawl (In MU)				
		2010-11	2011-12	2012-13	2013-14	2014-15
		(Actual)	(Actual)	(Actual)	(Estimate)	(Projection)
A	NEEPCO					
	Hydro					
1	Kopill - I HEP (200 MW)	32.06	32.06	28.56	31.00	32.00
2	Kopili - II HEP (200 MW)	5.02	5.02	5.57	7.00	6.00
3	Khandoni – II HEP (50MW)	6.20	6.20	6.38	8.00	8.00
4	Ranga nadi H EP (405MW)	79.93	79.93	69.94	73.00	74.00
5	Doyang HEP (75MW)	12.84	12.84	10.39	13.00	15.00
	Total 'A'	136.05	136.02	120.84	132.00	135.00
	Gas Based					
6	Assam Gas based Power	97.60	97.60	84.17	87.00	90.00
7	Agartala Gas Turbine Power	38.69	38.69	35.96	38.00	38.00
	Total 'B'	136.29	136.29	120.12	125.00	128.00
B	NHPC Loktak HEP (105 MW) (ii)	29.93	30.00	27.99	30.00	30.00
C	Eastern Power					
8	Fakakka STPP		19.20	14.87	15.00	16.00
9	Kahalgaon STPP-I		12.00	8.83	10.00	10.00
10	Talcher STPP-I		16.80	10.44	11.00	12.00
	Total 'C'	0.00	48.00	34.14	36.00	38.00
D	Others					
11	OTPC-Palatana				10.00	10.00
E	Tripura	41.08	45.98	74.67	77.00	77.00
12	Rokhia (8 MW)					
13	B'mura (2x5.25 MW)	41.08	45.98	79.00	77.00	77.00
	Total (A+B+C+D)	343.35	396.32	377.75	410.00	418.00

(Source Table 2.8 of Petition)

Commission's Analysis

The Commission has examined the allocation of energy available for PED from Central Sector Generating Stations and others.

Commission accepts the power procurement as projected by PED as above at 418 MU for FY 2014-15.

6.10 Energy balance

PED has projected the energy balance by considering the energy requirement and energy available from various sources as given in table below.

Table 6.11: Energy Balance projected by PED

(MU)				
Sl. No.	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
	ENERGY REQUIREMENT			
	Energy sales			
	Total energy sales	284.89	314.73	346.20
	Overall losses %	30%	30%	29%
	Overall losses	123.38	166.14	181.41
	Total energy requirement	408.27	451.03	496.14
	ENERGY AVAILABILITY			
	Net own generation (A)			
	- Hydel	58.59	55.11	86.05
	- Diesel based	0.020	0.020	0.024
	- Furnace oil based	-	-	-
	Power purchase (B)			
	-From NEEPCO	240.957	257	263
	- From NHPC-Loktak	27.99	29.00	30.00
	- ER Region Power	34.04	36.00	38.00
	- From OTPC Palatana	0	10.00	10.00
	- From Tripur	74.666	77.00	77.00
	Energy Available (A+B)	436.26	464.13	504.07
	Trading / UI (C)	-27.99	-13.10	-7.94
	Net Energy Available (A+B+C)	408.27	451.03	496.14

(Source : Table 2.4 of petition)

Commission's Analysis

The Commission has examined the energy balance projected by PED. PED has not considered the interstate transmission loss (pool loss) while working out the total energy available for distribution in the state. As per Retrospect and Annual Report for FY 2012-13 of NERLDC Shillong, the average Weekly transmission loss in NER during the period from 02.04.2012 to 31.03.2013 are 3.48%. Considering these inter-state losses, the energy balance computed by the Commission is given in table below:

Table 6.12: Energy Balance approved for FY 2014-15

Sl. No.	Particulars	Energy (MU) for FY 2014-15
1	Energy sales	334.19
2	T&D Loss (MU)	123.60
	T&D Loss (%)	27%
3	Energy requirement	457.79
4	Energy available	
(a)	Own generation (net)	
	Hydro Net	86.05
	Diesel Net	0.02
	Sub-total (a)	86.07
(b)	Power purchase	
	(i) NEEPCO (Hydel + Gas)	263
	(ii) NHPC (Loktak)	30
	(iii) Eastern Region (NTPC)	38
	(iv) Tripura	77
	(v) Palatana	10
	Sub-total (b)	418
(c)	Less: Pool loss at 3.48% {on (b)}	14.55
5	Net Power Purchase	403.45
6	Energy available for the state(a)+(b)-(c)	489.52
7	Energy requirement	457.79
8	Surplus (MU)	31.73

The Commission approves the energy balance as above, which provides surplus energy of 31.73 MU.

6.11 Capital Expenditure Plan and Capitalization

PED has given the actual capital expenditure incurred during FY 2012-13, proposed to be incurred during the FY 2013-14 and FY 2014-15 as detailed in table below. The provisional capital expenditure and asset capitalisation for FY 2014-15 as furnished by PED are as below:

Table 6.13: Investment Plan (Scheme- Wise)

(Rs. Lakhs)

Sl. No	Name of Scheme/ Project	Approved Outlay	Previous Year (Actuals) 2012-13	Current Year (RE) 2013-14	Ensuing Year (Projections) 2014-15	Progressive Expenditure upto Ensuing year
1	2	3	4	5	6	7
1	Construction of 33/11 KV sub-station	1257.75	555.15	588.48	114.12	1143.63
2	Construction of 33 KV lines	1587.78	-	626.34	17.74	1570.04
	Total	2845.53	555.15	1214.82	131.86	2713.67

(Source: Format 21 of Tariff Petition)

Table 6.14: Capital expenditure and asset capitalisation for FY 2014-15

(Rs. lakh)

Particulars	Cumulative Capex till FY 2012-13	FY 2013-14 (Estimate)	FY 2014-15 (Projection)
Capital expenditure incurred during the Financial Year	1,28,039.57	1,214.82	131.86
Asset Capitalisation during the Financial Year	-	597.57	480.79

(Source: Format 21 of Tariff Petition)

6.12 Gross Fixed Assets

PED has stated that the gross fixed assets have been ascertained from field offices and segregation of fixed assets between Generation, Transmission and Distribution is done at 30%, 15% and 55% respectively. However, clubbed value of gross fixed assets are furnished in the petition.

The GFA projected by PED for FY 2014-15 is given in table below:

Table 6.15: Gross Fixed Assets projected by PED

(Rs. lakh)

Sl. No.	Description	Amount
1	Gross Fixed Assets in beginning of FY 2013-14	128039.57
2	Additions during the year	793.14
3	Gross Fixed Assets at the end of FY 2013-14	128832.71
4	Depreciation during 2013-14	6802.37
5	Net fixed assets at the end of FY 2013-14	122030.34
6	Depreciable @ 10% on total dep amount	680.24

(Source: Table 2.6 of petition)

Commission's analysis

The PED – Mizoram has stated, that the fixed assets of the department have been ascertained by collecting certain data submitted by field offices in the format prescribed by Engineer-in-chief. Segregation of fixed assets had been done for generation transmission and distribution in the ratio of 30%, 15% and 55% respectively. But in the petition clubbed value of fixed assets are furnished.

In Tariff Order for FY 2012-13 the Commission approved opening GFA as on 01.04.2012 at Rs. 719.72 crore. Year wise growth of Fixed assets are arrived considering Rs. 719.72 crore as opening GFA as on 01.04.2012, and additions during the years equivalent to amount capitalized during the year.

Table 6.16: Gross Fixed Assets approved by the Commission.

(Rs. cr)

Year	Opening Balance	Additions during the year	Closing Balance
2012-13	719.72	5.55	725.27
2013-14	72.27	5.98	731.25
2014-15	731.25	4.81	736.06

6.13 Aggregate Revenue Requirement for FY 2014-15

The PED- Mizoram has projected Aggregate Revenue Requirement for FY 2014-15 as detailed in table below.

Table 6.17: Aggregate Revenue Requirement for FY 2014-15

(Rs. Lakhs)

Sl. No.	Items	Proposed FY 2014-15
1	Cost of Fuel	4.62
2	Cost of Power Purchase	24220.74
3	Employee Costs	5999.91
4	R&M Expenses	1444.32
5	A&G Expenses	358.88
6	Depreciation	680.24
7	Interest Charges	400.20
8	Interest on Working Capital	432.20
9	Provision for Bad Debts	147.26
10	Return on Equity	0.00
11	Total Revenue Requirement	33688.37
12	Less: Non-Tariff Income	300.00
13	Net Revenue Requirement (9-10)	33388.37
14	Revenue from Existing Tariff	11684.13
15	GAP (13 – 14)	21704.24

(Source : Table 2.17 of ARR)
Commission's analysis

Item wise expenses are discussed here under.

6.14 Fuel cost

PED has projected fuel cost of Rs. 4.62 lakhs for FY 2014-15 for generation of 0.02 MU from diesel generating stations.

The Commission approves the fuel cost of Rs. 0.05 crore for FY 2014-15 as projected by PED.

6.15 Power purchase cost

PED has submitted that the power purchase cost for FY 2014-15 is worked out based on the fixed charges and variable charges equal to those of FY 2013-14 as detailed in table below.

Table 6.18: Power Purchase Cost projected by PED for FY 2014-15

(Rs. cr)									
Sl. No.	Station	Purchase (MU)	AFC (crs)	Mizorams Share %	VC (Rs./unit)	FC (Rs. cr)	VC (Rs. Cr)	Total	Av Cost (Rs./kWh)
	NEEPCO								
A	Hydro								
1	Kopilli – I HEP (200 MW)	32.00	88.46	4.62%	0.455	4.08	1.46	5.54	1.73
2	Kopilli – II HEP (25 MW)	6.00	13.23	6.04%	0.94	0.80	0.56	1.36	2.27
3	Khandog HEP (50 MW)	8.00	50.51	3.94%	1.111	1.99	0.89	2.88	3.60
4	Ranganadi HEP (405 MW)	74.00	295.35	5.70%	1.219	16.84	9.02	25.86	3.49
5	Doyang HEP (75MW)	15.00	80.41	5.25%	2.077	4.22	3.12	7.34	4.89
B	Gas based								
6	Assam gas based Power Project (291 MW)	90.00	244.58	5.41%	2.645	13.23	23.81	37.04	4.12
7	Agartala gas Turbine Power Project (84 MW)	38.00	71.76	5.98%	2.273	4.29	8.64	12.93	3.40
8	NHPC Loktak HEP (105 MW)	30.00	107.17	5.02%	1.406	5.38	4.22	9.60	3.2

9	NTPC						0.00		
	Farakka STPP	16.00	880.53	0.14%	3.155	1.23	5.05	6.28	3.93
	Kahalgaon STPP-I	10.00	558.18	0.14%	2.826	0.78	2.83	3.61	3.61
	Talcher STPP-I	12.00	583.60	0.14%	1.646	0.82	1.76	2.57	2.14
10	Tripura- Baramura (2x5.25 MW)	77.00		25%	3.015		23.22	23.22	3.02
11	OTPC Palatana	10.00		3.03%	3.46		3.46	3.46	3.46
12	Other Charges						0.00	0.00	
	PGCIL Charges						0.00	17.00	
	STC Charges					0.00	0.00	0.50	
	O&M Expenses of Local generating stations					0.00	0.00	1.00	
13	Supplementary bills during 2013-14 due revision of AFC etc.					0.00	0.00	55.00	
	Gross Total	418.00			26.05	53.67	88.01	215.18	
	Trading/UI	25.00			3.01	0.00	7.53	7.53	
	Total (Net of UI & Trading)	443.00				107.33	95.54	242.21	

(Source: format 7 of ARR)

Commission's Analysis

The Commission has examined the station-wise power purchase cost projected by PED. The Annual fixed charges adopted by PED Mizoram are in accordance with the AFC approved by NERPC for FY 2013-14 vide ABT based REA for November, 2013. The variable charges adopted by PED are equal to that of bills raised by respective generating stations during FY 2013-14. For Baramura and Pallantana stations tentative rates as proposed by the PED Mizoram are adopted.

The Commission has not considered UI purchases as there is surplus power. If any contingency arises the same will be considered at the time of true up. Supplementary bills of Rs.55 crore for FY 2013-14 due to revisions of AFC are allowed. O&M expenses of Rs.1crore on local generating stations is not allowed as it does not come under power purchase cost. However, the same are allowed under R&M expenses for FY 2014-15.

The amount of power purchase cost furnished by PED Mizoram appears to be not correct. When actually totalled it comes to Rs 222.73 cr.

Thus, Power purchase cost computed by the Commission for FY 2014-15 is given in the table below:

Table 6.19: Power Purchase Cost of PED Mizoram approved by the Commission for FY 2014-15

Sl. No.	Station	Energy purchased	AFC (Rs. cr)	Mizoram share	Variable Charges (Rs./kWh)	Fixed Charges	Variable Charges	Total	Average Cost
I	NEEPCO								
A	Hydro								
1	Koppili I	32	88.46	4.61	0.46	4.08	1.46	5.53	1.73
2	Koppili II	6	13.23	6.04	0.94	0.80	0.56	1.36	2.27
3	Khandong	8	50.51	3.94	1.00	1.99	0.80	2.79	3.49
4	Ranganadi	74	295.36	5.70	1.22	16.84	9.02	25.86	3.49
5	Doyang	15	80.41	5.25	2.08	4.22	3.12	7.34	4.89
	Sub-total (A)	135	528	25.54	5.69	27.92	14.96	42.88	3.18
B	Gas Based								
6	AGBP	90	244.58	5.41	2.65	13.23	23.81	37.04	4.12
7	Agartala Gas Turbine Power project	38	71.76	5.98	2.27	4.29	8.64	12.93	3.40
	Sub-total (B)	128	316.3	11.39	4.92	17.52	32.44	49.97	3.90
C	NHPC								
8	Loktak	30	107.17	5.02	1.41	5.38	4.22	9.60	3.20
	Sub-total ©	30	107.2	5.02	1.41	5.38	4.22	9.60	3.20
D	Eastern Power NTPC								
9	Farakka	16	880.53	0.14	3.16	1.23	5.05	6.28	3.93
10	Kahalgaoon	10	558.18	0.14	2.83	0.78	2.83	3.61	3.61
11	Talcher	12	583.60	0.14	1.65	0.82	1.98	2.79	2.33
	Sub-total (D)	38	2022	0.42	7.63	2.83	9.85	12.68	3.34
E	Inter State								
12	Baramura	77		0.25	3.02		23.22	23.22	3.02
13	Palatana	10		0.03	3.46		3.46	3.46	3.46
	Sub-total (E)	87	0	0.2803	6.48	0.00	26.68	26.68	3.07
14	Supplementary bills during 2013-14 due revision of AFC etc.							55.00	
15	PGCIL Transmission Charges							17.00	
	Total (A+B+C+D)	418	2974	42.6503	26.12	53.66	143.14	196.80	3.39
16	STC Charges							0.50	3.16
	Grand Total	418	2974	42.6503	26.12	53.66	143.14	214.30	5.13

The Commission accordingly approves the power purchase cost at Rs. 214.30 crore for purchase of 418 MU for FY 2014-15 as against Rs. 242.12 crore projected by PED for purchase of 443 MU.

6.16 Operation and Maintenance Expenses

6.16.1 Employee Cost

PED has projected employee cost at Rs 60 crore for the FY 2014-15 with an escalation of 6% over the estimated expenses of Rs 56.73 crore for the FY 2013-14, which are escalated at 4% over the actual employee cost of Rs. 54.73 crore during FY 2012-13.

The details of actual employee cost during FY 2012-13 estimated during FY 2013-14 and projected for FY 2014-15 are furnished in table below.

Table 6.20: Employee Cost

(Rs. lakh)				
Sl. No.	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
	Salaries & Allowances			
1	Basic Pay	2978.63	3067.99	3160.03
2	Dearness Pay	228.75	233.30	244.94
3	Dearness allowances	1602.73	1763.00	1939.30
4	House rent allowances	227.46	230.05	236.53
I	Total	5037.57	5294.34	5580.81
5	Leave encashment	97.08	77.74	94.81
6	Gratuity	191.91	159.79	174.16
7	Commutation of Pension	110.656	101.224	107.84
8	Workman compensation	31.528	36.016	37.60
9	Ex-gratia			
II	Total	431.184	374.776	414.408
	Pension Payment			
10	Basic Pension	2.6	2.264	2.472
11	Dearness Pension	0	0	0
12	Dearness allowances	1.688	1.632	2.224
13	Any other expenses			
III	Total	4.288	3.896	4.696
	Grand Total	5473.04	5673.016	5999.912

(Source : Table 2.10 of the Petition)

The Cadre strength of employee actuals during 2012-13 and estimated during FY 2013-14 and projected for FY 2014-15 are furnished in table below.

Table 6.21: Number of Employee

Sl. No.	Particulars	31 st March, 2013 (Actual)	31 st March, 2014 (Estimate)	31 st March, 2015 (Projection)
1	2	3	4	5
1	Regular Employees	1841	1818	1791
	Contract Employees	5	5	5
	Work Charge	527	523	521
	Muster Roll	2252	2272	2272
	Total Employees	4625	4618	4589
2	No Employees on Deputation/ foreign service as on 1 st April	5	5	5
3	Total No. of Employees (1+2)	4630	4623	4894
4	No employees retired/ retiring during 1 st April	40	29	29
5	No Employees recruited during 1 st April	33		
6	No. of Employees at the end of the year (3-4+5)	4623	4594	4565

(Source : Table 2.11 of ARR)

Commission's Analysis

PED has projected employee cost for FY 2014-15 at an average increase of about 5% over the actual expenditure during FY 2012-13, which the Commission considers reasonable.

The Commission approves Employees Cost at Rs. 60 crore as projected by PED for FY 2014-15.

6.16.2 Repairs and Maintenance

PED Mizoram has projected R & M expense at Rs 14.44 crore for the FY 2014-15 as detailed in the table below:

Table 6.22: Repairs and Maintenance expenses projected by PED

Particulars	(Rs. lakh)		
	FY 2012-13 (Actual)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
Minor R &M Work	1286.70	850.00	1360.00
R & M of Motor Vehicles	72.17	71.17	84.32
Total R&M Expenses	1358.86	921.17	1444.32

(Source : Table 2.12 of the Petition)

It is stated that PED is strained to determine the amount to be incurred on Repair & Maintenance of its fixed assets in the light of very limited financial resources allocated by Govt of Mizoram. PED sought for the approval of R & M expenses as projected, in order to ensure better and timely maintenance of distribution network and to extend better consumer service.

Commission's Analysis

The PED has projected expenses for FY 2014-15 at an average increase of 3% PA over the actual expenditure during FY 2012-13 which is reasonable. The O&M expenses of Rs.1crore on local generating stations which are disallowed under power purchase cost are also considered. Thus the total R&M expenses works out to Rs. 15.44 cr (14.44+1.00).

The Commission, approves R & M expenses at Rs. 15.44 crore for the FY 2014-15 as projected by PED.

6.16.3 Administration and General Expenses

PED has projected Administration and General expenses at Rs 3.59 cr for the FY 2014-15 as detailed in table below.

Table 6.23: Administration and General expenses projected by PED

(Rs. Lakh)				
Sl. No.	Category	FY 2012-13 (Actual)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
1	Regulatory Fee	11.36	15.20	16.00
2	Publication	-	0.80	0.80
3	Legal & Consultation charges	-	-	-
4	Miscellaneous	-	-	-
	1. Office Expenses (OE)	98.26	69.14	100.00
	2. Advertisement	31.16	22.40	22.40
	3. Grant-in-Aid	56.54	56.54	56.54
	4. Other Charges	81.94	50.40	56.00
	5. Conveyance & Travel expenses	63.44	44.80	78.80
	Sub-Total (Miscellaneous)	331.34	243.28	313.74
	A&G Expenses	370.56	292.64	358.88

(Source : Table 2.13 of the Petition)

PED has stated that they have accounted tentative expenditure on fees payable to the Commission and to the consultants hired for implementation of various improvement activities. Adjustments for actual expenses will be under taken at the time of True-Up exercise for 2014-15. PED sought for approval of the projected expenses for FY 2014-15.

Commission's Analysis

The PED has projected about (-) 3% less expenditure over the actual expenditure incurred during FY 2012-13.

The Commission approves Admin & General expenses at Rs 3.59 crore for FY 2014-15 as projected by PED.

6.17 Depreciation

PED in its ARR petition has claimed depreciation at Rs. 6.80 crore for the FY 2014-15. The Asset wise breakup figures required in the Format No 11 are not furnished.

PED has stated that 90% funding of the capital project costs are provided by Govt. of India as a special assistance for the development of infrastructure in North Eastern States and infrastructure is supported through grants, through schemes of APDRP, RGGVY etc. PED also stated that due to unavailability of complete data of the gross fixed assets, it is assumed that 90% of the total GFA is being funded through grants and accordingly the proportionate amount to the extent of 90% of the total depreciation computed as detailed in table below.

Table 6.24: Deprecation for FY 2014-15 projected by PED - Mizoram

(Rs. lakh)

Sl. No.	Particulars	
1	Gross Fixed Assets in beginning of FY 2013-14	128039.57
2	Additions during the year	793.14
3	Gross Fixed Assets at the end of FY 2013-14	128832.71
4	Depreciation during 2013-14	6802.37
5	Net Fixed Assets at the end of FY 2013-14	122030.34
6	Depreciable @10% on total dip amt.	680.24

(Source: Table 2.14 of petition)

Commission's analysis

As seen from the above table No.6.24, assets additions during FY 2013-14 are shown as 793.14 lakhs while the amount capitalized during the year 2013-14 is Rs.597.57 lakhs vide table No.6.14 ante. The source from which the amount of Rs.793.14 lakhs are arrived is not furnished by the PED. Further the depreciation for FY 2013-14 is calculated on closing GFA instead of on average GFA. The amount of Rs.480.79 lakhs capitalized during FY 2014-15 is not taken into account but 10% of depreciation for FY 2013-14 is projected as para 6.12 ante considering the opening GFA for FY 2014-15 at Rs.731.25 depreciation for FY 2014-15 which has so relevance. As such the data furnished in table 6.24 above is not considered.

As discussed in crore, vide table 6.16 depreciation is worked out as detailed in table below.

Table 6.25: Depreciation approved by the Commission for FY 2014-15

(Rs. cr)

Sl. No.	Particulars	Amount
1	Opening Balance of GFA for FY 2014-15	731.25
2	Additions during FY 2014-15	4.81
3	Closing Balance of GFA for FY 2014-15	736.06
4	Average GFA for FY 2014-15	733.66
5	10% Of average GFA	73.36
6	Rate of Depreciation	5.28%
7	Depreciation Amount	3.87

The depreciation on average GFA is calculated at an average rate of 5.28%, Depreciation on the assets to end of FY 2014-15 is considered at 10% of the asset value since 90% of funds are stated to be provided by the Government of India as grant.

The Commission approves depreciation at Rs. 3.87 crore for FY 2014-15.

6.18 Interest & Finance Charges

PED in its ARR petition has claimed Rs.4 crore towards interest and finance charges for the FY 2014-15. The PED has stated that the department is availing loans from LIC, REC and PFC to fund capital expenditure. The loans from REC under RGGVY which are convertible into grants at a future date subject to fulfillment of certain stipulations have not been included. The details of interest and finance charges and institution wise loan details submitted by PED are furnished in tables below.

Table 6.26: Interest and Finance Charges for FY 2014-15

(Rs. Lakhs)				
Particulars	FY 2011-12 (Actual)	FY 2012-13 (Actual)	FY 2013-14 (Estimate)	FY 2014-15 (Projection)
Opening Loan	9910.78	9711.98	9471.18	9230.38
Loan Additions	0	0	0	0
Repayment	198.80	240.80	240.80	480.58
Closing Loan	9711.98	9471.18	9230.38	8749.80
Interest on Loan				
LIC Loans	106.60	204.00	169.30	134.74
REC Loans	50.51	-	-	-
REC (RGGVY) Loans	139.49	279.75	279.70	265.50
Interest and Finance Charges	296.60	483.75	449.00	400.20

(Source: Table 2.15 of petition)

Table 6.27: Loans availed by PED Mizoram during FY 2010-11

(Rs. Lakhs)							
Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1534	8.00%		133	1401	123
2	REC Loans	6824	8.50%	1604	2316	6112	1678
3	PFC Loans						
	Total	8358		1604	2449	7513	1801

Table 6.28: Loans availed by PED Mizoram during 2011-12

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1401	8.00%		133	1268	107
2	REC Loans	6112	8.50%		66	6046	51
3	REC (RGGVY) Loans	2398				2398	139
	Total	9911			199	9712	297

(Source: format 15 of petition)

Table 6.29: Loans availed by PED Mizoram during FY 2012-13

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1268	8.00%		133.00	1135	204
2	REC Loans	6046	8.50%		107.80	5938	-
3	REC (RGGVY) Loans	2398	11.50%			2398	280
	Total	9712			241	9471	484

(Source : format 15 of petition)

Table 6.30: Loans availed by PED Mizoram during 2013-14

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during the Year	Repayment during the year	Closing Balance	Amount of Interest paid
1	2	3	4	5	6	7	8
1	LIC Loans	1135.00	8.00%		133.00	1002.00	169.30
2	REC Loans	5938.40	8.50%		107.80	5830.60	-
3	REC (RGGVY) Loans	2397.79	11.50%			2397.78	279.70
	Total	9471.19			240.80	9230.38	449.00

(Source : format 15 of petition)

Table 6.31: Loan availed by PED Mizoram during FY 2014-15

(Rs. Lakhs)

Sl. No.	Particulars	Opening Balance	Rate of Interest	Addition during	Repayment during the	Closing Balance	Amount of Interest
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				the Year	year		paid
1	2	3	4	5	6	7	8
1	LIC Loans	1002.00	8.00%		133.00	869.00	134.70
2	REC Loans	5830.60	8.50%		107.80	5722.80	-
3	REC (RGGVY) Loans	2397.78	11.50%		239.78	2158.00	265.50
	Total	9230.38		0	480.58	8749.80	400.20

(Source: format 15 of petition)

Commission's Analysis

The loans and the interest claimed by PED are examined. The interest claimed on loans for FY 2014-15 appears to be in correct. Further PED has not claimed interest on normal REC Loan since FY 2012-13. Even during FY 2011-12, the interest stated to be paid is Rs. 51 cr while the actual interest works out to be Rs. 5.17 cr. The reasons for short claim are not furnished by the PED. So barring interest on normal REC Loan, actual interest on other loans are worked out as detailed in table below.

Table 6.32: Interest and Finance Charges approved by the Commission for FY 2014-15

(Rs. cr)

Sl. No.	Funding Agency	Rate of Interest	Opening Balance	Loan availed during the year	Loan repayment during the year	Closing Loan	Average Loan	Interest
FY 2014-15								
1	LIC	8.00%	10.02	---	1.33	8.69	9.36	0.75
2	REC	8.50%	58.30	---	1.08	57.22	57.76	-
3	REC (RGGVY)	11.50%	23.98	---	2.40	21.58	22.78	2.62
	Total		92.30	---	4.81	87.49	89.90	3.37

The Commission approves interest on loan at Rs. 3.37 crore for FY 2014-15 as against Rs. 4.00 crore projected by PED.

6.19 Interest on Working Capital

PED Mizoram has computed and projected Rs. 4.16 crore towards interest on working capital for the FY 2014-15 on normative basis as per the provisions of Regulations 98 (f) of JERC for M&M (Terms and Conditions for determination of Tariff) Regulations 2010 as detailed in table below.

Table 6.33: Interest on working capital projected by PED

(Rs. lakh)				
Sl. No.	Particulars	FY 2012-13 (Actuals)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
1	Fuel cost (1 month)	0.27	0.31	0.39
2	Power purchase cost (1 month)	1531.13	1585.18	1855.85
3	O&M expenses (1 month)			
	(a) Employee Cost	456.09	472.75	499.99
	(b) R&M Expenses	113.24	98.92	1444.32
	(c) Admin & Gen Expenses	30.88	39.64	358.88
	Sub Total O&M Expenses	600.21	611.31	2303.19
4	Total working capital	2131.60	2196.80	4159.43
5	Rate of interest on working capital i.e. SBI short term PLR on 1 st April of respective FY	14.75%	14.50%	10.00%
6	Interest on working capital	314.41	318.54	415.94

(Sources: Table 2.16 of petition)

Commission's Analysis

As per the Regulation 98 (6) (b) of JERC for Manipur and Mizoram (Terms and Condition for Determination of Tariff) Regulations, 2010, the working capital has to be computed on normative basis for Integrated utility as below:

- (i) One month Fuel cost
- (ii) One month Power purchase cost
- (ii) One month O & M expenses
 - (a) Employees cost
 - (b) R & M expenses
 - (c) Administration & General Expenses.

Rate of Interest shall be short term prime lending rate of SBI as on the 1st April of the relevant year and the rate of interest as on 01.04.2013 is 14.45%. Hence, the same rate is adopted.

The working capital and Interest there on approved are given in table below:

Table 6.34 Interest on Working Capital approved for FY 2014-15

(Rs. Crore)

Sl. No.	Particulars	Total Cost	Amount
1.	One month Fuel cost	0.05	-
2.	One month Power purchase cost	214.30	17.86
3.	One month O & M expenses		
	(a) Employees cost	60	5.00
	(b) R & M expenses	15.44	1.29
	(c) Administration & General Expenses	3.59	0.30
4	Total working capital	247.70	24.45
5	Interest on working capital at 14.45%		3.53

The Commission approves the interest on working capital at Rs. 3.53 cr for FY 2014-15 as against Rs. 4.16 cr as projected by PED.

6.20 Provision for Bad debts

The PED has made a provision of Rs. 1.47 crore towards bad debts for FY 2014-15 at 1% on the revenue from sale of power during FY 2014-15.

Commission's analysis

Regulation 98(5) of JERC for Manipur and Mizoram (Terms and Conditions for determination of Tariff) Regulations 2010 states as follows:

“The Commission may after the Distribution Licensee gets the receivables audited allow a provision for bad debts upto 1% of receivables in the revenue requirement of distribution licensee.” Receivables reported by PED are at Rs. 20.42 crore as on 01.09.2013.

In view of the above the Commission approves a provision of Rs. 0.20 crore towards bad debts for FY 2014-15 as against Rs. 1.47 cr projected by PED.

6.21 Return on Equity

PED has stated that 90% of fund for creation of fixed assets are being financed through various schemes like APDRP, RGGVY etc, but complete data of these grants are not available. PED further stated that in line with decision made by

the commission in tariff order for FY 2012-13, the return on equity is not claimed.

Commission's Analysis

The basic requirement for consideration of return on equity is the audited annual accounts and registers of assets. The PED has not prepared the statement of accounts viz., profit and loss accounts balance sheet, etc.

In the absence of relevant data the value of equity cannot be arrived to allow return on equity and as such the commission has not considered for return on equity.

6.22 Non-Tariff Income

PED Mizoram has projected Non-tariff income at Rs.3 crore for the FY 2014-15.

Commission approves Non-tariff income at Rs. 3 crore for the FY 2014-15 as projected by the PED.

6.23 Expected Revenue from existing tariff

The PED has furnished the revenue from existing tariff at Rs.147.26 crore with energy sales of 346.20 MU for FY 2014-15 as tabulated below:

Table 6.35 : Revenue from Existing Tariff

(Rs. Lakhs)				
Sl. No	Particulars	FY 2012-13 (Actual)	FY 2013-14 (Provisional)	FY 2014-15 (Projected)
1	Domestic (HT & LT)	5649.00	7998.30	8750.31
2	Commercial (HT & LT)	923.00	1246.30	1370.93
3	Public Lighting (LT)	359.00	303.28	333.60
4	Irrigation & Agriculture (LT)	5.00	1.86	2.24
5	Public Water Works (HT & LT)	1685.00	2330.12	2585.66
6	LT Industries	89.00	116.28	124.62
7	HT Industries	88.00	127.22	137.27
8	Bulk Supply (HT)	823.00	1209.68	1421.61
	Total	9621.00	13333.05	14726.24

(Source : format 27 of petition)

Commission's Analysis

The revenue from sale of power projected by PED appears to be not correct. As per table 2.18 revenue from existing tariff is Rs.11684.13 lakhs while as per

format 27 of petition is Rs.14726.24 lakhs. Further the PED has not considered the revenue from out side sales which is also not correct. The Commission has worked out category-wise revenue as detailed in table below.

Table 6.36: Expected revenue from existing tariffs for FY 2014-15

(Rs. cr)						
Sl. No.	Category	Approved sales (MU)	Fixed Charges	Energy Charges	Total	Avg. Realization (Ps/kWh)
I	Kutir Jyothi	4.71	0.18	0.65	0.84	148
1	Domestic					
a	LT	222.3	7.26	62.50	69.76	314
b	HT	0.12	0.04	0.04	0.08	382
2	Commercial					
a	LT	24	1.61	9.21	10.82	451
b	HT	1.47	.07	0.62	.69	469
3	Public Lighting	6.49	0.09	3.08	2.94	440
4	Irrigation & Agriculture					
a	LT	0.01	.0005	.001	0.002	200
b	HT	0.09	0.005	0.01	0.024	222
5	Public Water Works					
a	LT	0.46	.050	.20	.25	543
b	HT	44.58	4.36	18.72	23.08	518
6	Industrial					
a	LT	2.19	.30	.72	1.02	464
b	HT	1.78	.86	0.59	1.44	809
7	Bulk Supply	25.99	3.31	8.58	11.89	457
	Sub-Total	334.19	18.14	104.92	123.06	368
8	Outside Sales (UI)	31.73	-	9.52	9.52	300
	Total	365.92	18.14	114.44	132.58	362

Note: Detailed calculation statement is given in Annexure - IV

The Commission approves revenue from existing tariff including outside sales at Rs. 132.58 crore for FY 2014-15, with energy sales at 365.92 MU (including energy sales to outside the state- UI sales)

6.24 Aggregate Revenue Requirement and Revenue gap

Based on the above discussions, the Commission has approved the ARR for FY 2014-15 as given in table below:

Table 6.37: ARR projected by PED and approved by the Commission for FY 2014-15

(Rs. crore)			
Sl.	Particulars	ARR projected by PED	ARR approved by the Commission
1	Cost of fuel	0.05	0.05
2	Cost of power purchase	242.21	214.30
3	Employee cost	60.00	60.00
4	R&M expenses	14.44	15.44
5	A&G expenses	3.59	3.59
6	Depreciation	6.80	3.87
7	Interest and finance charges	4.00	3.37
8	Interest on working capital	4.32	3.53
9	Provision for bad debts	1.47	0.20
10	Return on equity	-	-
11	Total expenditure	336.88	304.35
12	Less: Non-tariff income	3.00	3.00
14	Aggregate Revenue Requirement	333.88	301.35
15	Revenue from existing tariff	116.84	130.20
16	Gap	217.04	168.77
17	Energy Sales(MU)	346.20	334.19
18	Average cost of supply(Rs/kWh)	9.64	9.02
19	Average cost of supply after Govt. subsidy of ` 160 cr(Rs/kWh)	5.39	4.23

6.25 Revenue from Revised Tariff for FY 2014-15

As seen from Para 6.24 supra there is a revenue gap of Rs. 168.77 crore which is about 56% of net ARR for FY 2014-15. The existing non-telescopic tariffs were fixed on 25.07.2012 for FY 2012-13. As such the Commission considers it to revise the tariffs at an average increase of 6% only under telescopic tariff without giving tariff shock to consumers to bridge the gap partially. Owing to revision of tariffs the PED is expected to get additional revenue of Rs. 7.14 crore, (139.72-132.58) as detailed in table below.

Table 6.38 : Expected Revenue from Revised tariffs for FY 2014-15.

(Rs. crore)

Sl. No	Category	Approved Sales(MU)	Fixed Charges Rs/cr	Energy Charges Rs/Cr	Total Rs/cr	Averages Revenue Rs/Cr
1	Kurtir jyoti	4.71	.18	0.59	0.77	1.63
2	Domestic					
A	LT	222.30	7.26	65.93	73.19	3.50
B	HT	0.12	0.04	0.06	0.10	9.17
	Total Domestic	222.42	7.30	65.99	73.29	3.50
	Total Domestic including KJ	227.13	7.48	66.58	74.06	3.46
3	Commercial					
A	LT	24.00	1.61	9.86	11.47	4.88
B	HT	1.47	.01	0.77	0.84	3.68
	Total Commercial	26.20	1.68	10.63	12.31	4.78
4	Public lighting	6.49	.09	3.08	3.17	4.88
5	Irrigation & Agriculture					
A	LT	0.01	0.004	0.001	.001	1.00
B	HT	0.09	0.004	0.014	.02	2.22
	Total Agriculture	0.10	0.01	0.01	0.02	2.00
6	Public Water Works					
A	LT	0.46	0.05	0.22	0.27	6.75
	HT	44.58	3.81	21.17	24.98	5.60
	Total PWW	44.98	4.41	21.39	25.80	5.74
7	Industrial					
A	LT	2.19	0.30	0.81	1.11	5.02
B	HT	1.78	0.64	0.72	1.36	7.64
	Total Industrial	3.97	1.16	1.53	2.69	6.70
8	Bulk Supply	25.99	2.89	10.00	12.89	4.96
9	Total sales	334.19	16.95	113.22	130.20	3.90
10	Out side sales(UI)	31.73		9.52	9.52	3.00
11	Total	365.92	16.95	127.20	139.72	3.81

Note: Details calculation statement is given in Annexure - V

There by the gap is reduced to Rs. 161.63 crore (168.77- 7.14) which the PED will meet from Government Subsidy and by improving internal efficiency.

The commission accordingly approves revenue from revised tariffs as Rs.139.72 crore with the energy sales of 365.95 MU (inclusive of UI energy sale).

The average realisation with existing tariff is Rs.3.68/KWH and with revised tariffs is Rs.3.90/KWH. The increase in average realisation per unit is 6% only.

6.26 Government Subsidy

As seen from the above it is clear that the revenue from sale of power is not sufficient to meet the expenditure of PED. As a result of this the PED shall continue to depend upon the subsidy from Government of Mizoram. Government of Mizoram proposed to provide a subsidy of Rs.196.60 crore for the FY 2014-15. So, out of the Net Revenue Gap of Rs.161.63 crore arrived in para 6.25 supra, PED Mizoram shall generate additional revenue of Rs. 1.63 crore by improving internal efficiency and balance Rs. 160 crore shall be met from Government Subsidy.

The State Government's commitment for payment of subsidy of Rs.196.60 crore is reduced in view of stipulation in National Tariff Policy that the subsidy given by the State government is to be reduced every year to ultimately run the power utility without government subsidy. In this context the Commission considers a subsidy of Rs.160 crore for FY 2014-15 and the existing tariffs are suitably revised by an average increase of 6% only for FY 2014-15 without causing much burden to the consumers. With this tariff revision the PED will earn additional revenue of about Rs.7.14 crore during FY2014-15. The state government shall pay the subsidy amount to the licensee in advance as per Section 65 of the Electricity Act 2003 to enable the licensee to implement the subsidized tariffs to the consumers.

The commission directs the PED to improve its performance by way of proper billing for revenue collection, reducing T&D losses, and reducing the expenditure.

7. Transmission and Wheeling Charges

7.1 Introduction

PED has first time filed petition for fixing transmission and wheeling tariffs for FY 2014-15. PED stated that during the FY 2013-14, the department has segregated the assets and staff on functional basis. In staff segregation the percentage of contribution is arrived as 10%, 20% and 70% and for the asset segregation the percentage of contribution is arrived as 30%, 15% and 55% for Generation, Transmission and Distribution functions respectively. PED further stated that the expenses of generation are considered under Distribution function while calculating wheeling charges.

Based on the above parameters the PED has segregated the expenses between the transmission as one unit and distribution and generation as another unit as detailed in table below.

Table 7.1: Segregated ARR projected by PED for FY 2014-15

(Rs. in crore)

Sl.No	Particulars	Gen.&Dist.	Transmission	Total
1	Employee cost	52.50	15.00	67.50
2	R&M expenses	9.35	2.55	11.90
3	Adm.& Genrl. Expences	3.14	0.90	4.04
4	Depreciation	4.24	0.90	5.14
5	Int. & Fin. Charges	4.00	-	4.00
6	Int. on W. C	1.69	0.16	1.85
7	Total ARR	74.92	19.51	94.43

Commission's Analysis

As seen from the above table the PED has not considered fuel cost, power purchase cost, provision for bad debts and non tariff income while computing function wise annual revenue requirements. With approved energy sales and expenses and T&D losses and the percentage of allocation between generation, transmission and distribution, projected by PED, segregated ARR between Generation, Transmission and Distribution are worked out for onward calculation of transmission tariff and wheeling charges as detailed in table below.

Table 7.2 : Segregated ARR approved by the Commission for FY 2014-15.

(Rs. Crore)								
Sl. No	Particulars	Generation	% of Total costs	Transmission	% of total cost	Distribution	% of total cost	Total
1	Fuel cost	0.05	100%	-	-	-	-	0.05
2	Power purchase cost	-	-	-	-	214.30	100%	214.30
3	Employee cost	6.00	10%	12.00	20%	42.00	70%	60.00
4	R & M expenses	5.33	30%	2.17	15%	7.94	55%	15.44
5	Adm. & Genl. Expenses	0.36	10%	0.72	20%	2.51	70%	3.59
6	Sub-Total(1 to 5)	11.74		14.89		266.95		293.38
7	Depreciation	1.16	30%	0.58	15%	2.13	55%	3.87
8	Int. & Fin. Charges	-	-	-	-	3.57	100%	3.57
9	Interest on working capital(WC) (6÷12x14.45%)	0.14	-	0.18	-	3.21	-	3.53
10	Provision for bad debts	-	-	-	-	0.20	100%	0.20
11	Return on equity	-	-	-	-			
12	Total costs (6 to 11)	13.04		15.65		275.86		304.55
13	Less non tariff Income	-	-	-	-	3.00	100%	3.00
14	ARR	13.04		15.65		272.86		301.55
15	Total Fixed costs(3 to 5 + 7 to 11)	12.99		15.65		61.56		
16	Variable cost(1+2-13)	0.05		-		211.30		

Table 7.3 : Segment wise ARR approved by the Commission for FY 2014-15

(Rs. crore)

Sl. No	Particulars	Fixed charge	Variable charges	Total
1	Generation	12.99	0.05	13.04
2	Transmission	15.65	-	15.65
3	Distribution	61.56	211.30	272.86
4	Total	90.20	211.35	301.55

7.2 Transmission Charges

The transmission charges have been computed based on the above approved and segregated ARR of transmission business for FY 2014-15 as detailed in table below.

Table 7.4: Segregated Transmission and Distribution losses approved by the Commission for FY 2014-15

Sl.	Particulars	Percentage
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No		
1	T&D losses approved for FY 2014-15	27%
2	Transmission losses estimated	3%
3	Net Distribution losses(1-2)	24%

Table 7.5 : Transmission Tariff Projected by PED for FY 2014-15

Sl. No.	Particulars	Estimate
1	Annual Transmission Charges (Rs. in lakhs)	1950.56
2	Total MW Allocation	103.09
3	Total Energy Transferred at Dist. Pheri[hery (in MUs)	404.09
4	Transmission Tariff (Rs/MW/day)	5183.85
5	Transmission Tariff (Paise/unit)	48

Table 7.6 : Transmission Tariff approved by the Commission for FY 2014-15

Sl. No	Particulars	Unit	Approved by the Commission
1	2	3	5
1	ARR for FY 2014-15	(Rs. core)	15.65
2	Power Purchase Cost	(Rs. core)	214.30
3	Generation Cost(Rs core)	(Rs. core)	0.05
4	Total Power Purchase Cost(2+3)	(Rs. core)	214.35
5	Energy available for Transmission	(MU)	457.79
6	Transmission Loss	%	3%
7	Transmission Loss	(MU)	13.73
8	Net energy available for sale at Transmission level(5-7)	(MU)	444.06
9	Average cost power(4/5)	Rs/kwh	4.68
10	Transmission Losses(7x9)	Rs/cr	6.43
11	Total ARR(1+10)	Rs/cr	22.08
12	Transmission Tariff(11/8)	Rs/kwh	0.46
13	Total allocation	MW	103.09
14	Transmission tariff	Rs/MW/day	5867.99

The Commission approves Transmission tariff at Rs.0.46/kWh and Rs. 5867.99/MW/day for FY 2014-15.

7.3 Wheeling Charges

Wheeling charges are worked out as detailed in tables below.

Table 7.7 : ARR for wheeling function approved by the Commission for FY 2014-15

Sl No	Particular	Project by PED	Approved by the Commission
1	ARR for distributions for FY 2014-15	---	272.86
2	Less power purchase cost	---	214.35

3	ARR for wheeling function	74.92 (including Gen ARR)	58.51 (excluding Gen ARR)
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Table 7.8 : Wheeling tariff for FY 2014-15

Sl No	Particulars	Unit	Projected by PED	Approved by Commission
1	ARR for wheeling function for FY 2014-15	Rs/cr	74.92	58.51
2	Total energy sold	MU	346.20	334.19
3	Wheeling tariff(1/ 2)	Rs/kWh	2.16	1.75

The Commission approved Wheeling tariff at Rs. 1.75/kwh for FY 2014-15.

8. Directives

8.1 General Status and Compliance of Directives issued in the Tariff Order for FY 2010-11 and continuing directives

Directive 1: Submission of Next ARR

It was directed to file next ARR before 30th November every year.

Compliance Status

PED has filed ARR & Tariff petition for FY 2014-15 within the prescribed date.

Commission's comments

Directive is fully complied with.

Directive 2: Annual Statement of Accounts

Compliance Status

PED Mizoram in their letter No. T-23011/02/10–E-in-C (P) Com/18 Dated Aizawl 22.05.2012 has submitted that a proposal for engagement of Consultant to prepare books of Accounts and Assets Register was submitted to Government of Mizoram for sanction of financial commitment vide letter No. T.23002/11-EC (P) Com/47 dated 30.01.2012, which is stated to be under process.

Commission's comments

The Directive was issued in the Tariff order 2010-11 in January 2011. The PED has initiated action after one year. Non-compliance of the Directive in time would result in non recovery of the Costs and Charges at actuals through the tariffs, which ultimately cause more burden to the Government for providing tariff support / subsidy to the utility. PED shall expedite for full Compliance. Directive is partially complied.

Directive 3: Preparation of Assets & Depreciation Registers / Records

Compliance Status

PED Mizoram in their letter No. T-23011/02/10 – E-in-C (P) Com/18 Dated Aizawl the 22.05.2012 has submitted that a proposal for engagement of Consultant to prepare books of Accounts and Assets Register was submitted to Government of Mizoram for sanction of financial commitment vide letter No. T.23002/11-EC (P) Com/47 dt. 30.01.2012, which is stated to be under process.

Commission's comments

The Directive was issued in the Tariff order 2010-11 in January 2011. The PED has initiated action after one year. Non-compliance of the Directive in time

would result in non recovery of the Costs and Charges at actuals through the tariffs, which ultimately cause more burden to the Government for providing tariff support / subsidy to the utility. The directive is partially complied. PED shall expedite for full Compliance.

Directive 4: Management Information System

Compliance Status

PED has submitted that a Committee has been constituted to study the existing Information Management System and propose for upgradation / revision if necessary as required for reporting the data to JERC for M&M and CEA.

Commission's comments

PED shall ensure the data updation as required for Regulatory system and also make use of data for Management review at E-in-C's level and submit the latest position. Directive is not complied with. PED is to expedite submission.

Directive 5: Pilferage of Energy

Compliance Status

PED has stated that Government of Mizoram has set-up special courts at two locations to cover northern and southern Mizoram stationed at Aizawl and Lunglei vide letter No. B-16013/28/2006 – P&E dt 27.02.2012 for speedy trial of Energy theft cases. It is also stated that special inspection squads are established to check illegal tapping, tampering of Meters and un-authorized use of energy.

Commission's comments

PED has been sustaining huge T&D losses due to non fixing of high accuracy energy meters for high consumption categories, non-replacement of disfunctional meters and, at the same time theft and pilferage of energy. Theft and pilferage of energy shall be effectively dealt. Commission directs the PED to report the progress quarterly. The directive is complied partially.

Directive 6: Metering of Consumer installations / Replacement of non-functional defective meters and providing meters to un-metered connections

Compliance Status

PED has submitted that no new services are being released without correct energy meter. The consumers with own meters were informed to replace the defective meters. Due to funds crunch the consumers with own meters were requested to provide their own healthy meters, where meter rent is not being charged.

Commission's comments

PED has not taken up adequate measures for 100% metering. PED shall ensure 100% metering by March, 2013 and compliance reported. Direction not complied with.

Directive 7: Contribution by Consumers for Capital investment

Compliance Status

PED has submitted that local consumers extend co-operation and service to the Department for erection of Electric poles stringing lines by providing their plot of land free of cost for installation of DTs and HT & LT lines. But the volume of consumer contribution could not be quantified in terms of monetary value.

Commission's comments

Section 46 of Electricity Act 2003 provides for, Recovery of Expenditure reasonably incurred by the Licensee (PED Mizoram) in providing any electric line or electrical plant to any person requiring supply of electricity in pursuance of Section 43 of Electricity Act 2003.

Thus the expenditure so recovered will be classified as Consumer's Contribution towards Capital investment. The costs so recovered as per the Reg. 3.5 of JERC (Electricity Supply Code) Regulation 2010 shall be capitalised after the service connections released. The total sum recovered, and capitalized during the year, will not be considered for calculation of Depreciation on assets during that year

and the sum will be reduced while calculating the interest on Debt Capital. Action may be taken for recovery of such expenditure from the consumers and maintain such details.

PED shall maintain the books of accounts with specific classification as required for ARR Format-23. Directive is not complied with.

Directive 8: Transmission and Distribution Losses

Compliance Status

PED Mizoram has stated that the under sized conductors being replaced with AB cables in Urban areas like Aizawl & Lunglei in order to minimize the T&D losses.

Commission's comments

Commission directed to get energy audit conducted by providing meters in at 132kV, 33 kV and 11 kV feeders and distribution transformers to identify the high loss areas and take appropriate measures to reduce the loss. PED has not complied with the direction. The loss level is still as high as 39%. PED Mizoram shall expedite the Measures initiated like replacement of dysfunctional meters, providing high accuracy energy meters, while continuing the process of providing AB cables.

Directive 9: Consumers bills

Compliance Status

PED has submitted that implementation of spot billing system could not be achieved with the existing staff & infrastructure. Focus being kept on introducing the spot billing with the APDRP scheme funds.

Commission's comments

As per Section 56 (1) of electricity Act 2003, the PED may allow 15 days time to consumers for Payment of Charges for supply of Electricity and in lieu of the notice the same may be displayed on the monthly bills. PED Mizoram may consider out sourcing the activity of spot billing by which the collection of

Consumer bills will be realized within 15 days of issue of bill. Many utilities are implementing spot billing and found beneficial in avoiding delays in taking readings, preparation of manual bills and serving of such bills. PED may review & analyse the cost effect benefits for implementation of the spot billing system and take action on priority. The existing system of billing entails delay in collection of revenue by two months for the energy consumed. The directive is not complied with.

Directive 10: Investment and Capping of Capital Expenditure

Compliance Status

PED Mizoram has submitted the investment plan of 12th Five year plan, wherein phasing of works programme in FY 2012-13 to FY 2016-17 is featured.

Commission's comments

The investment plan for the FY 2012-13, as per the document is Rs. 183.59 crore covering 22 Hydel Projects (spill over works) new works, R&M of existing projects, 3 Nos. Transmission schemes (New works), 7 Nos Transmission line works and 7 Nos. Transformation works. The plan envisage the Distribution works which includes erection of 33 kV lines DTRs Metering etc. The projected plan seems to be herculean task since achievement of physical progress is stated to be subject to fund tie up. PED may consider realistic investments in the FY 2014-15. Directive is complied partially.

Directive 11: High Employee Cost of the Department

Compliance Status

PED has submitted that initially the Department was not setup to suit a commercial entity in nature. Further, PED stated that service matters etc. are at par the other Government Department employees. Therefore the Department could not change its present function by its own. Due to the above circumstances, the employee cost cannot be reduced at this instance.

Commission's comments

The total No. of employee at the end of March 2011 is 4642. Necessity for such huge strength may be critically examined so as to reduce high costs on continuous basis. Directive is not complied with.

Directive 12: Metering of H.T services with MD Indicators

Compliance Status

PED has stated that MDIs are introduced in some high consumption consumers like ICFAI – Office, Aizawl, Zoological Garden, and Municipal Council Office. HT Consumers are being encouraged to provide MDIs.

Commission's comments

HT consumers are high revenue yielding units. For such consumers PED can procure and provide meters instead of requesting consumers for procurement. Cost of metering equipment can be compensated by increase in revenue. Directive is partially complied.

Directive 13: Display of Government tariff support on the Consumers bills

Compliance Status

PED has submitted specimen copies of the Consumer bills wherein it is displayed as 53.50% Tariff subsidy being given by the Government of Mizoram.

Commission's comments

Directive is complied.

Directive 14: Fixation of last date of payment

Compliance Status

PED stated that the Due Date of Payment and Last Date of Payment were treated as same. As such the due date of payment is fixed as due date for disconnection process.

Commission's comments

As per Section 56 (1) of Electricity Act 2003, the PED may allow 15 days time to consumers for payment of Charges for supply of Electricity and in lieu of the notice the same may be displayed on the monthly bills.

The PED is allowing the consumers for payment of Electricity bills 45 days (approximately) from the date of issue of the bill (As per the specimen copy of the bills submitted for the month of April 2012) whereas the Generators / suppliers of Power to PED are claiming interests at 1.25% of the bill amount for delay beyond stipulated one month. PED may consider and initiate expeditious action on this Directive, which will improve cash flow crunch. Action taken shall be reported within three (3) months of the Order.

8.2 Compliance Status of Directives in the Tariff Order 2012-13 and continuing directives:

Directive 15: Contract Demand

With the introduction of two-part tariff in the Tariff Order of 2010-11 the consumers feel the impact of connected load in the Electricity bill is high. The PED stated that connected load and contract demand are the same in Mizoram. If so, the Commission has observed that the contract demand is high. PED is therefore directed to reassess the contract demand by December, 2014 and submit a report.

Directive 16 : Restructuring of Staff

PED has stated that the number of employee as on 31st March, 2012 is 4575. It is very high. The Department however, has pleaded shortage of staff for poor performance. The Commission has observed that deployment of the existing staff is not rational. PED is directed to prepare a restructuring plan by 31st December, 2014 and submit a report.

Directive 17 : Tariff Petition for Small Hydro Power Stations

The State has 8 (Eight) Small Hydro Power Stations with installed capacity of 1 MW and above. Generation Tariff of these stations need to be determined. PED is directed to file the Tariff Petition for these projects along with next tariff petitions for distribution and Transmission segments.

Directive 18: Review Petition

The Commission is to undertake review with next Tariff. PED is directed to submit review petition along with the next Tariff Petition.

8.3 Fresh Directive

Directive 19:

Survey and physical verification of consumer connections: The PED is directed to conduct survey and physical verifications to find out their actual connected load and category in which supply is being availed and to analyse category wise single phase and 3 phase connections with their annual energy consumption and status of meters. This work should be completed by 31.10.2014 and details be furnished in next tariff petition invariably.

9. Tariff Principles and Design

9.1 Background

9.1.1 The Commission in determining the revenue requirement of PED, Mizoram for the year 2014-15 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 the Regulations on Terms and Conditions of Tariff notified by the

JERC for Manipur and Mizoram. 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.

9.1.2 NTP mandates that the Multi-Year-Tariff (MYT) framework be adopted for determination of tariff from 1st 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 with the Power and Electricity Department. The present MIS and regulatory reporting system of the PED 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 directives to the PED in the Tariff Order 2010-11 to chalk out action plan for reduction of T&D losses for both technical and non-technical, maintain correct data energy audit and submit to the Commission by June 2011 which are not complied with. Under these conditions it would not be practicable to implement the MYT framework this year. The Commission taking into account all factors, has decided to introduce MYT in due course, as soon as the data is made available.

9.1.3 The mandate of the NTP on cross subsidy is that tariff should be within plus / minus 20% of the average cost of supply by 2010-11. This could not be achieved due to high cost of power, low paying capacity of the consumers and lack of

industrialization. The PED 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 maintaining the set target for T&D loss reduction for the year 2014-15, 2015-16 and 2017-18. This guides the PED for better performance by reduction of loss level, which will result in substantial reduction in average cost of supply. The existing and proposed tariff of PED is two-part tariff.

9.1.4 Section 8.3 of National Tariff Policy lays down the following principles for tariff design:

1. 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.
2. 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 Rs.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 Rs. 2.40 per unit and that for any of the cross subsidizing categories should not go beyond Rs.3.60 per unit.
3. 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.”

4. Regulation 16 of the JERC for Manipur and Mizoram (Terms and Conditions for Determination of Tariff) Regulations, 2010 specifies:
 - (a) 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.
 - (b) In the first phase, 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 cost of supply as a basis for determination of tariff.

9.1.5 NEP aims at increased access to electricity, supply of reliable and quality power at reasonable rates, minimum lifeline consumption, financial turnaround of consumer interest. The Commission has considered factors as far as possible which aim at achieving the objectives of NEP while determining the revenue requirement of the PED and designing the retail tariff for its consumers. The Commission considered for special treatment to Kutir Jyoti connection and agricultural sector. It has also aimed at to raise the per capita consumption of the State from the existing level of 270 kWh to 350 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 reduced gradually. The tariff has been rationalized with regards to inflation, paying capacity and avoid tariff shock.

9.2 Tariff Proposed by PED and Approved by the Commission

9.2.1 Tariff Categories

In the ARR and Tariff Petition of 2014-15, PED has proposed some changes in the existing categories of consumers and tariff structure.

The Commission approved the proposed changes in the categories and tariff structure. The approved categories are as stated below:

1. (a) Kutir Jyoti LT
(b) Domestic LT
(c) Domestic HT
2. (a) Non-domestic/Commercial LT
(b) Non-domestic/Commercial HT
3. Public Lighting LT
4. (a) Irrigation & Agriculture LT
(b) Irrigation & Agriculture HT
5. (a) Public Water Works LT
(b) Public Water Works HT
6. (a) Industrial LT
(b) Industrial HT
7. Bulk Supply HT

9.2.2 Existing & Proposed Tariff

PED in its tariff petition for FY 2014-15 has proposed for revision of the existing two part retail tariffs to various categories of consumers to earn additional revenue of Rs. 20.02 cr to meet the gap partially as shown below:

The PED has proposed tariff revision both in energy charges and Fixed Charges, which are in existence since 25.07.2012 with an average increase of 17.13% from the existing tariff. The proposed hike will be within the range varying from 10% to 20% across all categories of consumers to bridge the revenue gap partially.

The summary of the tariff proposal by PED for FY 2014-15 is tabulated below:

Table 9.1: Existing v/s Proposed Tariff

Existing Tariff			Proposed tariff		
Category/ Slab	Fixed charges Rs/Con /Kw	Energy Charges Rs./kwh	Category/ Slab	Fixed charges Rs/Con /Kw	Energy Charges Rs./kwh
1	2	3	4	5	6
LT Categories					
Domestics (KJ) a) 1-15	10	1.00	Domestics (KJ) a) 1-15	15	1.45

b) 1-30	10	1.20	b) 16-30	15	1.90
c) Above 30	10	1.70	c) Above 30	15	2.35
Domestics(RES)			Domestics(RES)		
a) 1-50	25	1.70	a) 1-50	30	2.35
b) 1-100	25	2.10	b) 51-100	30	2.95
c) 1-200	25	2.80	c) 101-200	30	3.35
d) above 200	25	3.90		30	4.05
COM			COM		
a)1-100	50	2.60	a)1-100	60	3.45
b) 1-200	50	4.00	b) 101-200	60	4.05
c) above 200	50	4.45	c) Above 200	60	4.65
Public Lighting All Units	50	4.75	Public Lighting All Units	60	4.65
PWW All Units	50	4.40	PWW All Units	70	4.65
Irrigation & Agri All Units	20	1.20	Irrigation & Agri All Units	30	1.75
Small industries			Small industries		
a) 1-400	50	3.00	a) 1-400	70	3.45
b) Above 400	50	3.50	b) Above 400	70	4.05
Temp Supply	50	6.00	Temp Supply		
HT Categories					
Domestic All Units	30	3.30	Domestic All Units	30	4.05
Commercial All Units	60	4.20	Commercial All Units	60	4.65
PWW All Units	80	4.20	PWW All Units	70	4.65
Irrigation & Agri All Units	30	1.20	Irrigation & Agri All Units	30	1.75
Industrial All Units	80	3.30	Industrial All Units	60	4.05
Bulk Power All Units	80	3.30	Bulk Power All Units	70	3.85

Note: The above table depicts comparison of Fixed and Energy charges only. The details tariff are given in the tariff schedule. Unit consumption for a particular consumer is proposed tariff may be calculated based on the telescopic tariff principle.

Commission Analysis

The Commission after detailed analysis and prudent scrutiny of the aggregate revenue requirement filed by the PED, has arrived at a more realistic revenue requirement.

9.2.3 Tariff Approved by the Commission

Having considered the petition of PED Mizoram for approval of Annual Revenue Requirement (ARR) and determination of Retail Tariff for supply of energy and

having approved the Annual Revenue Requirement (ARR) with a gap of Rs. 168.77 crore vide para 6.24 of Chapter–6, the Commission considers to revise the tariffs duly changing the revenue billing from Non-Telescopic to Telescopic billing within an average increase of 6% as detailed below.

Table 9.2 : Category wise Tariff approved by the Commission for FY 2014-15

Sl. No.	Category	Approved	
		Fixed/Demand Charge per month (Rs)	Energy Charge (Rs./kWh/month)
1	2		
1	Kutir Jyoti		
i)	First 15 kWh	10/connection	1.20
ii)	Next 15 kWh	10/connection	1.80
iii)	Balance above 30 kWh	10/connection	2.10
2	Domestic LT		
i)	First 50 kWh	25/contracted load in kW	2.10
ii)	Next 50 kWh	25/contracted load in kW	3.00
iii)	Next 100 kWh	25/contracted load in kW	3.80
iv)	Balance above 200 kWh	25/contracted load in kW	4.50
3	Domestic HT	30/billing demand in kVA	4.50
4	Non-domestic/ Commercial LT		
i)	First 100 kWh	50/contracted load in kW	3.30
ii)	Next 100 kWh	50/contracted load in kW	4.30
iii)	Balance above 200 kWh	50/contracted load in kW	5.20
5	Non-domestic /Commercial HT	60/billing demand in kVA	5.20
6	Public Lighting LT	50/contracted load in kW	4.75
7	PWW LT	50/contracted load in kW	4.75
8	PWW HT	70/billing demand in kVA	4.75
9	Irrigation & Agri LT	20/contracted load in kW	1.75
10	Irrigation & Agri HT	30/billing demand in kVA	1.75
11	Industrial LT		
i)	First 400 kWh	50/contracted load in kW	3.45
ii)	Balance above 400 kWh	50/contracted load in kW	4.10
12	Industrial HT	60/billing demand in kVA	4.10
13	Bulk Supply HT	70/billing demand in kVA	3.85

9.2.4 General Conditions of Supply of Electricity to Consumers:

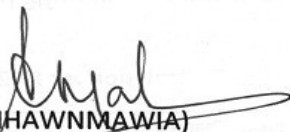
PED has

proposed some rates which are in force as approved in Tariff Order of 2012-13. The Commission has approved it with minor changes as given in Tariff Schedule in Appendix.

9.2.5 Miscellaneous Charges

PED proposed for new rates of charges in some of the miscellaneous items as against the rates approved by the Commission in the Tariff Order of 2012-13. The Commission has approved the same rates for all miscellaneous items of services as proposed by PED with minor changes as given in the Tariff Schedule in Appendix.

This order shall come into force from 01.04.2014 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.


(A. CHHAWNMAWIA)
Member


(N. SHYAMSUNDAR SINGH)
Chairperson

Place: Aizawl

Date: 28th February, 2014.

TARIFF SCHEDULE

APPENDIX

Tariff Schedule

- 1. General Conditions of Supply of Electricity to Consumers:**
 - 1.1 Rebate:** For payment of energy bill made within due date, Rebate of @ Rs.0.05 per unit is admissible.
 - 1.2 Special rebate/surcharge for availing supply at voltage higher/lower than base voltage:** In spite of feasibility/availability of voltage as in the classified supply

voltage for corresponding load as per clause 3.2 of the JERC for Manipur and Mizoram(Electricity Supply Code) Regulations, 2013;

- (i) For consumers having contracted load upto 50 kW – If the supply is given at HV/EHV, a rebate of 5 % would be admissible on the rate of charge of the applicable tariff.
- (ii) For consumers having contracted load above 5 kW – If supply is given at voltage lower than the base voltage for corresponding load as per clause mentioned above, the consumer shall be required to pay an extra charge of 10 % on the bill amount calculated at the applicable tariff.
- (iii) All voltages mentioned above are nominal rate voltages.

1.3 Payment: Payment against bills in full shall be made by cash/Treasury Challan/DD/local Cheque only; otherwise part payment is subjected to accept by the competent authority. Bank commission/charges, if any should be borne by the consumers.

1.4 Surcharge for late payment of bills: If payment is not received within due date surcharge @ 2% at simple interest on the outstanding principal amount for each 30 days successive period or part thereof will be charged, until the amount is paid in full.

1.5 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.

1.6 Voltage and frequency: All voltages and frequency shall be as per clause 3.1 and 3.2 of the JERC for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013.

1.7 Power Factor Incentive / Surcharge

- a) If the average monthly power factor of the consumer increases above 95%, he shall be paid an incentive at the following rate:

For each one percent increase by	One percent (1%) of the total
which his average monthly power	amount of the bill under the

factor is above 95%, upto unity head 'energy charge'
power factor

- b) If the average monthly power factor of the consumer falls below 90%, he shall pay a surcharge in addition to his normal tariff, at the following rate:

For each one percent by which his average monthly power factor falls below 90% upto 85%	One percent (1%) of the total amount of the bill under the head 'energy charge'
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- c) If average monthly power factor of the consumer falls below 85%, he shall pay a surcharge in addition to his normal tariff at the following rate :

For each one percent by which his average monthly power factor falls below 85%	Two percent (2%) of the total amount of the bill under the head 'energy charge'
--	---

- d) If the average monthly power factor of the consumer falls below 70%, then the PED shall have the right to disconnect supply to consumer's installation after serving a notice of 15 days. Supply may be restored only after steps are taken to improve the power factor to the satisfaction of the PED. This is, however, without prejudice to the levy of surcharge for low power factor in the event of supply not being disconnected.

- e) For this purpose, the "average monthly power factor" is defined as the ratio of total 'Kilo Watt hours' to the total 'Kilo Volt Ampere hours' recorded during the month. This ratio will be rounded off to two figures after decimal, 5 or above in the third place after decimal being rounded off to the next higher figure in the second place after decimal.

- f) Notwithstanding the above, if the average monthly power factor of a new consumer is found to be less than 90% at any time during the first 6 (six) months from the date of connection, and if he maintains the average monthly power factor in subsequent three months at not less than 90%, then the surcharge billed on account of low power factor during the said period, shall be withdrawn and credited in next month's bill

1.8 Transformation loss: The consumers getting their supply at HT and metered on the LT side shall be charged as per clause 5.7 JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

1.9 Rounding of Contracted Load/billing demand: For calculation of fixed/demand charge in the monthly billing the contracted load/billing demand shall be rounded to the next higher whole number if the decimal is higher than 0.5 and to the nearest lower whole number if the decimal is lower than 0.5. For consumers having contracted load below 0.5 kW except KJ category, the contracted load shall be rounded off to 0.5 kW.

1.10 Rounding of Rupees: Each components of bill including interest involving fraction of a rupee should be individually round off to nearest rupee (fraction of 50 paise and above to be round off to the next higher rupee and fraction less than 50 paise to be ignored). In case of non availability/scarcity of small change of rupees less the Rs. 10, consumer may be allowed to tender next higher amount divisible by 10. Such over tendered amount shall be carried to next bill as credit and shall not earn interest whatsoever.

1.11 System of LT supply

- i) Alternating current, 50 Hz, single phase 230 Volts up to 5kW
- ii) Alternating current, three phase, 400 Volts for loads above 5 kW, subject to the availability of supply. Wherever 3-phase connection is required for load less than or equal to 5 kW, necessary justification shall be provided along with such request for consideration of licensee for extending such supply.

1.12 The HT tariffs are applicable for supply of Electricity to the Consumers enjoying supply voltage above 400V as per clause 3.2 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

1.13 The maximum demand means the highest load measured in average kVA or kW at the point of supply of a consumer during any consecutive period of 30 (thirty) minutes during the month or the maximum demand recorded by the MDI during the month. The billing demand shall be the maximum demand or 75% of the contracted demand whichever is higher.

1.14 Tax or Duty

The tariff does not include any tax or duty, etc, on electrical energy that may be payable at any time in accordance with any law / State Government Rules in force. Such charges, if any, shall be payable by the consumer in addition to tariff charges.

- 1.15 In case of any inconsistency between this Tariff schedule and the prevailing JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013, the provision, meaning and contend of the said Code shall prevail.

2. LT Supply

Category-1: Kutir Jyoti

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

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs. /kWh)	Fixed / Demand Charges per month (Rs. /Conn)
a)	First 15 kWh	1.20	10
b)	Next 15 kWh	1.80	10
c)	Balance above 30 kWh	2.10	10

Category - 2: Domestic.

Applicability: Applicable for supply of energy exclusively for domestic purposes only in domestic premises. This tariff is also applicable to orphanage/ recognized charitable institutions where no fees/rental of any kind are charged whatsoever.

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs./kWh)	Fixed / Demand Charges per month (Rs./contracted load in kW)
a)	First 50 kWh	2.10	25

b)	Next 50 kWh	3.00	25
c)	Next 100 kWh	3.80	25
d)	Balance above 200 kWh	4.50	25

Note: *If any part of the domestic connection is utilized for any use other than dwelling purpose like commercial, industrial, etc., a separate connection should be taken for such loads under appropriate category, failing which the entire consumption shall be treated as the case may be, in the corresponding category with applicable tariff.*

Category - 3: Non-Domestic/Commercial

Applicability: Applicable for supply of electrical energy for light, fan and power loads for non-domestic purposes like Government/semi-government/non-government offices, shops, hospitals, nursing homes, clinics, dispensaries, health canters, restaurants, bars, hotels, clubs, guest houses, circuit houses/rest houses, tourist lodges, picnic spots, resorts, farm/garden houses, clubs, markets, optical houses, public buildings, community halls/YMA halls, stadiums, meeting/conference halls, religious premises like churches, temples, mosques, gurudwara, religious offices, all types of studios, tea stalls, professional chambers (like Advocates, chartered Accountants, consultants, Doctors, etc.), private trusts, marriage houses, public halls, show rooms, centrally air-conditioning units, commercial establishments, X-ray plants, diagnostic centers, pathological labs, carpenters and furniture makers, repair workshops, laundries, typing institutes, internet cafes, STD/ISD PCO's, FAX/photocopy shops, tailoring shops, Government/Non-Government Institutions, schools, colleges, libraries, research institutes, boarding/lodging houses, railway stations, fuel/oil stations/pumps, bottling or filling stations /plants, service stations, Railway/Bus stations/terminals, All India radio/T.V. installations, printing presses, commercial trusts, societies, banks, financial institutions, theatres, cinema halls, circus, coaching institutes, common facilities in multistoried commercial offices/buildings, public museums, orphanages/recognized charitable institutions where rental or fees of any kind are charged, non-recognized charitable institutions,

power supply to tele-communication system/towers and others applications not covered under any other categories.

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
a)	First 100 kWh	3.30	60
b)	Next 100 kWh	4.30	60
c)	Balance above 200 kWh	5.20	60

Category - 4: Public Lighting

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

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
a)	All units	4.75	50

Category - 5: Public Water Works

Applicability: Applicable to all public water supply system.

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
a)	All units	4.75	50

Category - 6: Irrigation & Agriculture

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

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
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a)	All units	1.75	20
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Category - 7: Industrial

Applicability: Applicable for supply of energy for Industrial purposes, such as manufacturing / processing of goods, cold storage plants, sewerage pumping stations, all types of workshops using electrical energy for such works, power looms, weaving houses, carpentry works, steel fabrication works, tyre rethreading works, blacksmithy, Goldsmithy, saw mills, flour/rice mills, oil mills, re-rolling mills, motor body building works, coffee/ginger/turmeric processing units, winery plants, fruits processing plants, Ice candy units, fodder cutting units, poultry farming/ hatchery units, silk rearing/processing units, pisciculture, prawn culture units, mushroom production units, floriculture in green houses, sugarcane crushing, milk/meat processing units, bamboo processing units, paper/ steel/aluminum recycling units, construction of power generating stations/substations and power supply to any generating stations.

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
a)	First 400 kWh	3.45	50
b)	Balance above 400 kWh	4.10	50

3. HT Supply

Category - I: Domestic

Applicability: This tariff is applicable to similar purposes as defined in LT category- 2 as below:

- (1) Fixed/Demand Charges/month: Rs. 30/Billing demand in kVA
plus
- (2) Energy Charges: Rs. 4.50/kWh

Category - 2: Non- domestic/Commercial

Applicability: This tariff is applicable to similar purposes defined in LT Category-3 as below:

- | | | |
|-----|-----------------------------|----------------------------------|
| (1) | Fixed/Demand Charges/month: | 60/Billing demand in kVA
plus |
| (2) | Energy Charges: | Rs. 5.20/kWh |

Category - 3 : Public Water Works(PWW)

Applicability: This tariff is applicable to similar purposes defined in LT Category-5 as below:

- | | | |
|-----|-----------------------------|--------------------------------------|
| (1) | Fixed/Demand Charges/month: | Rs. 70/Billing demand in kVA
plus |
| (2) | Energy Charges: | Rs. 4.75/kWh |

Category - 4: Irrigation & Agriculture

Applicability: This Tariff is applicable to irrigation / pumping for agricultural purpose only as below:

- | | | |
|-----|-----------------------------|---------------------------------------|
| (1) | Fixed/Demand Charges/month: | Rs. 30/ Billing demand in kVA
plus |
| (2) | Energy Charges: | Rs.1.75/kWh |

Category - 5: Industrial

Applicability: This Tariff is applicable to similar purpose defined in LT Category – 7 as below:

- | | | |
|-----|-----------------------|---------------------------------------|
| (1) | Fixed/Demand Charges: | Rs. 60/ Billing demand in kVA
plus |
| (2) | Energy Charges: | Rs. 4.10/kWh |

Category - 6: Bulk supply within the State

Applicability: Applicable for HT Consumers having single point metering of mixed load of housing complex, multistoried building, Military Engineering Service (MES), Border Road Task Force (BRTF), etc. where the supply is used predominantly for domestic purpose (with domestic load not less than 85 % of the total load) and internal maintenance of power supply is carried out by the bulk consumers. Tariff Rates are as below:

- (1) Fixed/Demand Charges/month: Rs.70/ Billing demand in kVA
plus
- (2) Energy Charges: Rs. 3.85/kWh

4. Temporary Supply:

Applicability: The Terms and Condition for Temporary power supply shall be given as per clause 4.56 to 4.70 of the prevailing JERC for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013 at the following rates:

Tariff Rates:

Sl. No.	Consumption/month	Energy/Variable Charges (Rs/kWh)	Fixed / Demand Charges per month (Rs/contracted load in kW)
a)	All units	6.00	50

5. Miscellaneous Charges

5.1 Meter Rent: Monthly charges for hiring of the meter and indicators where they are the property of Power & Electricity Department payable by the consumers shall be as follows:

5.2 LT Metering:

- a) Energy meter for AC single phase LT supply: Rs.20.00/ meter per Month.
- b) Energy meter for AC three phase supply 400 V between phases (without CT): Rs.35.00 per meter per Month.
- c) Energy meter for AC three phase supply 400 V between phases (with CT): Rs.50.00 per meter per Month.
- d) Any other type of meter/indicator for LT supply: Rs.100.00 per meter per Month.

5.3 HT Metering:

- a) Energy meter for AC three phase HT supply: Rs.200.00 per meter per Month.
- b) Any other type of meter/indicator for HT supply: Rs.300.00 per meter per Month.

5.4. Other charges for meter:

(a) Meter shifting charge:

- i) Rs. 200.00 per shifting if resulted from reconstruction/modification of building and at consumer's request.
- ii) Free of cost if shifting is done in the interest of work.

Meter shifting shall be carried out as per Chapter – 5 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

(b) The cost of replacement and execution charge:

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

- i) **Installation/Re-installation of new meter:** (exclusive of re-installation of existing meter sent for calibration/test) Rs. 100.00 each. Material cost, if any will be charged extra.
- ii) **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).

c) Charges for testing of Meters at the request of consumers:

- i) For AC single phase LT energy meter: Rs.75.00 per meter per testing.
- ii) For AC three phase LT energy meter without CT: Rs.100.00 per meter per testing.
- iii) For AC three phase LT energy meter with CT: Rs.200.00 per meter per testing.
- iv) For energy meter AC three phase HT supply: Rs.300.00 per meter per testing.

- v) For any other type of energy meter HT supply: Rs.300.00 per meter per testing.

In case the meter supplied by the Licensee fitted to the consumer premises is found to be defective from initial fitting, testing and replacement of meter shall be carried out as per clause 5.31 to 5.50 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

5.5 Testing of Consumer's Installation:

The first test and inspection will be carried out free of cost as per Clause 4.47 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. 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 Rs.150.00 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.

5.6 Disconnection and Reconnection:

Charges towards each disconnection or reconnection as the case may be for punitive measure shall be as follows, however for disconnection or reconnection at the request of consumer or any other disconnection or reconnection other than punitive measure shall be half of the rate given below:

- (a) For AC single phase LT supply: Rs.100.00
- (b) For energy meter with/without CTs for AC three phase LT supply: Rs.150.00
- (c) For AC HT supply: Rs.400.00 Aggregate Revenue Requirement & Tariff Petition for FY 2014-15.

5.7 Change of category:

Change of category will be carried out as per clause 4.72 to 4.80, clause 4.85 to 4.86 and 4.90 to 4.93 of the Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity supply Code) Regulations, 2013.

5.8 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 arranged required materials as per the required specifications of the Department. In any case, the execution charge shall be as follows:

- (a) Single phase connection: Rs.400.00 per connection.
- (b) LT three phase connection: Rs.600.00 per connection.
- (c) HT three phase connection: Rs.900.00 per 100 meters of the HT line.

5.9 Re-rating of Installation:

- (a) Rs.150.00 per case of upward rating.
- (b) Rs.150.00 per case of downward rating.

These charges shall be payable by the consumer in advance. The aforesaid charges do not include the charges payable by the consumer for other works connected due to change of connected load. Rerating shall be carried out as per clause 4.94 to 4.107 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

5.10 Meter Security (if Department's meter is used):

The amount of Security deposit for meter security shall normally be the price of the meter as fixed by the licensee from time to time.

5.11 Charges for Replacement of tamper proof Meter Box:

- (a) For AC single phase LT or three phases LT without CT or with CT, the energy meter box if replaced from Department store: The charge will be as per Department purchase rate plus 15% towards Departmental charge.
- (b) Charges for replacement of broken glass of meter Box: As per purchase rate of the Department plus 15% Departmental charges.
- (c) For replacement of any type of meter box or broken glass, consumer will arrange for the necessary part from his own source and the department

shall charge Rs.50.00 per single phase connection and Rs.75.00 for three phase connection towards installation cost.

5.12 Charges for Testing of Transformer Oil:

- (a) For first sample of oil: Rs.150.00 per sample.
- (b) For the next additional sample of oil of the equipment received at the same time of the first sample: Rs.100.00 per sample.

5.13 Service Lines & Service Connection:

Type of Service Connection: Type of service connection and distance for service connection line length will be as per clause 4.2 read with clause 5.10 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

Cost of Service Connection: As stipulated in Clause 4.37 & 4.131 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. If the consumer desires to arrange service connection materials, the Department (not below rank of Junior Engineer concerned) will check all the materials.

Cost of Application Form: The application form shall be free of cost vide Clause 4.14 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

4.14 Load Security:

The amount of load security for new service connection will be calculated as per the procedure prescribed in Clause 4.123 - 4.127 of the JERC for M&M (Electricity Supply Code) Regulations, 2013.

**MINUTES OF THE 14th MEETING OF THE STATE ADVISORY
COMMITTEE OF MIZORAM**

Venue : I&PR Department Conference Hall, Aizawl, Mizoram

Date & Time : 17th February, 2014, 11:00 a.m.

List of participants is appended.

Mr. N.Shyamsundar Singh, Chairperson of the Commission, and Mr. A.Chhawnmawia IDES (Rtd.), Member of the Commission were on the dais to take the 14th Meeting of the SAC, Mizoram.

The Chairman initiated Agenda - wise discussion:

1. Confirmation of the Minutes of the 13th Meeting of the SAC Mizoram held on 5th December, 2013:

Initiating the discussion, the Chairman requested the Members of the Committee to give their comments on the minutes of the 13th SAC which has been circulated to them earlier. After obtaining nod from the members, the minutes of the meeting was declared as confirmed.

2. Determination of Retail Tariff for Power & Electricity Department, Mizoram for FY 2014 – 15:

The Chairman explained in details how the tariff is being determined by the Commission and also informed the Committee that a thorough discussion on the various aspects of the Tariff Petition is required so that the interests of both the Department and the Public do not clash. The Chairman also re-iterated that the determination of tariff is a basic requirement for the healthy power sector reform in Mizoram and briefly narrated about the proviso to be kept in mind while determining the tariff as required by Section 61 of EA, 2003. The retail tariff is for

the FY 2014 -15, which will be effective with effect from 1st April 2014 till the next Tariff Order is issued by the Commission.

The Chairman also explained in details the various components of the Aggregate Revenue Requirement (ARR) proposed by the Department and also drew the attention of the Members to the comparison between the proposed ARR FY 2014-15 and the approved ARR for the FY 2012 – 13. The Chairman, then requested the Members to give their views on the Agenda.

Mr. Vanlalruata, General Secretary, CYMA representing the President enquired about the rate of depreciation filed by the Department in the Tariff Petition. The Chairman replied that the rate of depreciation differs from item to item and as the asset of the department is not yet accounted properly, the depreciation stated by the Department is an assumed figure, the real figure would be known only after proper maintenance of account and auditing are done in the Department.

Mr. Laldingliana, Secretary representing Mizoram Consumers' Union wanted to know the reason behind the decrease in employee cost and Administration & General Expenses in the proposed FY 2014 – 15 comparing with the figures of FY 2012 – 13. Mr. L.Pachau, E-in-C, P&E Department replied that this is because more fund was expected from the Government. Mrs. M. Zohmingthangi IAS (Rtd.) CEO, AMC wanted to know the reason for the delay in serving bills. The E-in-C replied that there are various factors which cause the delay in serving bills to consumer and said that even surcharge has been imposed for the delayed payments.

The Members are of the opinion that even though the hike in the tariff is required it should not seriously affect the public and that the tariff hike should be within the affordability of general public.

Mr. C. Lalbiaktluanga, Additional Director, representing Director, Industries Department enquired about how to lessen the contract demand rate billed by the

department to their industrial estates. The Committee felt that it is a matter to be discussed between the two Government Departments.

3. **a) Introduction of Smart / Highly Efficient Energy Metering System in the State of Mizoram by Power & Electricity Department:**

The introduction of smart metering system was proposed by the CYMA and the Chairman requested Mr. Vanlalruata GS, CYMA to give his views on the item. Mr. Vanlalruata stated that introduction of smart metering system in Mizoram is required so as to minimize theft and loss of power in the system. Further, this smart system would enable both the consumer and the Department on how much bills are to be made to each consumers. Mr. L. Pachuau, E-in-C replied that with the prevailing use of induction electrical stoves in Mizoram for cooking purposes, there is a huge consumption in energy, particularly re-active power which is not yet accounted for in Mizoram. He also stated that the present meters are not accurate enough. In this regard, he assured the Committee that with a completion of the RADPRP scheme, this matter shall be solved.

b) Amendment of Mizoram Electrical Licensing Regulation, 2003:

The Amendment of the Mizoram Electrical Licensing Regulation, 2003 was discussed and the E-in-C informed the Committee that the Department will take a further study and if it is permissible within their Electricity Act of 2003, appropriate amendments as proposed by the CYMA will be done.

4. **Chapter 6 (c) of the Draft Electricity Supply Code Regulation, 2013:**

Mr. A.Biaklawma, MCS, Director, LAD informed the Committee that on chapter 6 (c) of the Draft Electricity Supply Code Regulation, 2013 it is stated that Local Bodies / Village Councils are to finance the cost of energy / power supply to public lighting including complete fittings etc. He further stated that the Local Bodies in Mizoram

does not receive funds for maintenance and therefore, proposed that this should be handed over to the Department as done earlier.

The Chairman informed the Members that Regulations was made with a view to setting up a healthy power sector in the State and stated that if fund constraint is the problem, the Department concerned should take up the matter with the State authorities for allocation of appropriate funds for the installation and maintenance of public lighting system in Mizoram.

The Chairman informed the Committee that he will be demitting his office on the 28th of this month and expressed his humble apologies for any wrong that he might have done during his tenure and requested the Members to continue their active participation and providing support to the Commission for the further development of the sector.

The Meeting ended at 2:30 PM with a vote of thanks to the Chair.

Sd/- N. SHYAMSUNDAR SINGH
Chairperson

Annexure – II

List of persons who attended in the Public Hearing on ARR & Tariff proposal for FY 2014-15 in respect of Power & Electricity Department, Government of Mizoram, held on 17th February, 2014, from 1.00 PM to 4.00 PM, at I & PR Department's Conference Hall, Treasury Square, Aizawl.

Sl. No	Name	Designation
1	Dr. Chawngsailova	Gen. Secretary, MCU
2	Y. Satyanarayana	Consultant, ASCI, Hyderabad.
3	H. Thanthianga	Assist. Chief (Engg.) JERC
4	Lalramlien F. Tusing	AE (Comml), P & E Deptt.
5	F. Lalnunmawia	Coordinator, Goodwill foundation
6	Zoramthangpuia	-do-
7	Ginzago	President, Zomi Cultural Society
8	Nangxianmung	Gen. Secretary. Zomi Cultural Society
9	Rochungnunga	PRISM
10	R. L. Liantluanga	Gen. Secretary. PRISM
11	James Lalnunmawia	Secretary. AMC
12	Zahlira Ralte	Asst. Secretary. MUP
13	R. Thankima	Fin. Secretary. MUP Hqrs.
14	R. Zothansiamia	Programme Coordinator,
15	Labuatsaiha	Project Officer, AMFU, Gen. Hqrs.
16	Vanlalhmuaaka	Jt. Secretary, AMFU, Gen. Hqrs.
17	Lala Khobung	Consultant(Legal) JERC
18	Vanlalruata	Gen. Secretary, CYMA
19	B. Lalrinliana	Member, SAC
20	L. Biakthanga	Jt. Dir, Transport.
21	C. Lalbiakthanga	Director, Industries
22	C. Lalramliana	Project Director, ZEDA
23	Rualkhuma Hmar	Advocate
24	B. L. Tlumtea	EE (Comml.), P & E Deptt.
25	V. Rodingliana	SE (Comml.), P & E Deptt.
26	Lahminghlua	A E Comml.), P & E Deptt.
27	Richard Zothankima	Asst. Secretary, JERC for M&M

ANNEXURE – III**ACTUAL METERED TRANSMISSION LOSS IN NER**

Week No.	Week		% loss
	From	To	
1	02-04-2012	08-04-2012	3.40
2	09-04-2012	15-04-2012	3.00
3	16-04-2012	22-04-2012	2.90
4	23-04-2012	29-04-2012	3.10
5	30-04-2012	06-05-2012	3.70
6	07-05-2012	13-05-2012	3.00
7	14-05-2012	20-05-2012	3.10
8	21-05-2012	27-05-2012	3.20
9	28-05-2012	03-06-2012	3.20
10	04-06-2012	10-06-2012	4.00
11	11-06-2012	17-06-2012	4.00
12	18-06-2012	24-06-2012	3.60
13	25-06-2012	01-07-2012	4.70
14	02-07-2012	08-07-2012	3.70
15	09-07-2012	15-07-2012	3.60
16	16-07-2012	22-07-2012	3.50
17	23-07-2012	29-07-2012	3.50
18	30-07-2012	05-08-2012	2.80
19	06-08-2012	12-08-2012	2.60
20	13-08-2012	19-08-2012	2.10
21	20-08-2012	26-08-2012	2.90
22	27-08-2012	02-09-2012	2.50
23	03-09-2012	09-09-2012	2.40
24	10-09-2012	16-09-2012	3.00
25	17-09-2012	23-09-2012	3.50
26	24-09-2012	30-09-2012	2.90
27	01-10-2012	07-10-2012	3.20
28	08-10-2012	14-10-2012	3.10
29	15-10-2012	21-10-2012	2.50
30	22-10-2012	28-10-2012	2.70
31	29-10-2012	04-11-2012	2.20
32	05-11-2012	11-11-2012	2.60
33	12-11-2012	18-11-2012	2.80
34	19-11-2012	25-11-2012	3.30
35	26-11-2012	02-12-2012	3.60
36	03-12-2012	09-12-2012	4.00
37	10-12-2012	16-12-2012	3.20
38	17-12-2012	23-12-2012	3.70
39	24-12-2012	30-12-2012	3.50
40	31-12-2012	06-01-2013	5.50
41	07-01-2013	13-01-2013	5.70
42	14-01-2013	20-01-2013	3.50
43	21-01-2013	27-01-2013	3.60

44	28-01-2013	03-02-2013	5.60
45	04-02-2013	10-02-2013	5.60
46	11-02-2013	17-02-2013	4.10
47	18-02-2013	24-02-2013	3.70
48	25-02-2013	03-03-2013	4.00
49	04-03-2013	10-03-2013	4.50
50	11-03-2013	17-03-2013	3.90
51	18-03-2013	24-03-2013	3.70
52	25-03-2013	31-03-2013	3.40

52 Weeks Average Loss 3.48 %.