

TARIFF ORDER

2014-15

For

Electricity Department
Government of MANIPUR

Against

Petition No. 2 of 2013

Joint electricity regulatory commission

For Manipur and Mizoram

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Abbreviations

Abbreviation	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
EDM	Electricity Department Manipur
EA/Act	Electricity Act, 2003
FSA	Fuel Surcharge Adjustment
FY	Financial Year
GFA	Gross Fixed Assets
GOI	Government of India
HEP	Hydro Electric Project
HT	High Tension
IEX	Indian Energy Exchange
kV	Kilovolt
kVA	Kilovolt-ampere
Kw	kilowatt
Kwh	kilowatt-hour
LT	Low Tension
MDI	Maximum Demand Indicators
MUs	Million Units
NEEPCO	North Eastern Electric Power Corporation
NHPC	National Hydro Electric Power Corporation
NTI	Non-Tariff Income
O&M	Operation and Maintenance
PGCIL	Power Grid Corporation of India Ltd
PLF	Plaint Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
PWW	Public Water Works
R&M	Repair and Maintenance
RoE	Return of Equity
SLDC	State Load Despatch Centre
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 States of Manipur and Mizoram. The powers and functions of the Commission are as prescribed in the Act. The head office of the Commission is presently located at Aizawl, the capital town of Mizoram. The Commission became functional w.e.f. January 24th, 2008.

- (a) In accordance with the Act, the Commission discharges the following functions:
- (i) Determine the tariff for generation, transmission distribution 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 of the Act, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
 - (ii) Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
 - (iii) Facilitate intra-State transmission and wheeling of electricity;
 - (iv) Issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;



- (v) Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
 - (vi) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
 - (vii) Levy fee for the purposes of this Act;
 - (viii) Specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79 of the Act;
 - (ix) Specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
 - (x) Fix the trading margin in the intra-State trading of electricity, if considered, necessary;
 - (xi) Discharge such other functions as may be assigned to it under the Act.
- (b) Further, the Commission also advises the State Government on all or any of the following matters namely:
- (i) Promotion of competition, efficiency and economy in activities of the electricity industry;
 - (ii) Promotion of investment in electricity industry;
 - (iii) Reorganization and restructuring of electricity industry in the State;
 - (iv) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that State Government.
- (1) The State Commission ensures transparency while exercising its powers and in discharging its functions.



- (2) In discharge of its functions, the State Commission is guided by the national Tariff Policy (NTP) as brought out by GOI in compliance to Section 3 of the Act. The objectives of the NTP are to:
- Ensure availability of electricity to consumers at reasonable and competitive rates;
 - Ensure financial viability of the sector and attract investments;
 - Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
 - Promote competition, efficiency in operations and improvement in quality of supply.

1.2 ARR and Tariff Petition

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

As per the Joint Electricity Regulatory Commission, Manipur and Mizoram (Terms and Conditions for Determination of Tariff) Regulations 2010, the utility was required to submit the ARR and file the Tariff Petition in the Month of November, 2013 along with the requisite data for generation, transmission and distribution business separately in the prescribed formats for determination of respective tariffs (viz) generation, transmission and retail tariff for the next financial year 2014-15 for sale of energy within the state. However, the licensee has filed petition only for fixation of retail tariff for sale of energy within the state for the year 2014-15 on 30th November, 2013. The tariff order of the Commission for the FY 2012-13 is still in force.

At present, as the petitioner does not own any major generating plant and is not in a position to sell power to other licensees, the question of fixation of generation tariff



may not arise. But transmission tariff is essential for providing open access to HT consumers and evacuation of power generated by IPPs through licensee's transmission network. Hence, it is necessary for the licensee to furnish data for fixation of transmission tariff along with the next ARR and Tariff petition. In the petition EDM, estimated an ARR of ` 430.43 crore for Distribution Sector and considered a tariff support of ` 181.29 crore from the Government of Manipur thereby showing a revenue gap of ` 50.96 crore.

1.3 Admission of Petition

There has been delay in filing of the ARR & tariff petition for the FY 2014-15, the Commission considers it appropriate to admit the ARR and tariff petition for the FY 2014-15 filed by the EDM.

The Commission also observed that the ARR filed by the petitioner was incomplete and lacking critical and vital information required as specified in Commission's Regulations on Terms and Conditions for Determination of Tariff. Therefore, EDM was asked to submit the required information vide Commission's letter Nos. H. 13011/32/13-JERC dt. 19.12.2013 & 13.01.2014.

Pending receipt of additional information, the ARR and Tariff Petition was admitted on 20th January, 2014 and marked as **Petition No. 2 of 2013 of JERC for M&M** to avoid delay in processing of ARR.

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

JERC letter No. H. 13011/32/13-JERC dt. 13.1.2014 and letter of even number dated 13.1.2014.

The EDM has submitted some data / information / clarifications etc vide its letters listed below:

- i) No. 1/1/IPED(JERC)/TP/13-14/Pt.II/9891 dt. 25.1.2014.



1.4 Public Hearing Process

The Commission directed the EDM, 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 Act to ensure public participation.

The public notice was published by the Chief Engineer, EDM in the following newspapers inviting, the public to forward their objections and suggestions on the petition on or before 23rd January, 2014.

Sl.	Name of the Newspaper	Language	Date of Publication
1	The Sangai Express	English	25.1.2014
2	Poknapham	Manipuri	25.1.2014

The Commission received two objections / suggestions one from all Manipur Power Consumers' Association and the other from Dr Meinam Binota member, SAC, Manipuron the petition filed by the EDM. The Commission passed on the objections received to EDM for communicating their response on the objections raised.

Notices for Public Hearing

A Public Notice was published by the Commission in the following leading newspapers on 1.2.2014 giving due intimation to the general public, interested parties, objectors and the consumers about the public hearing to be held at Imphal on 20th February, 2014.

Sl. No.	Name of the news paper	Language	Date of Publication
1	Poknapham	Manipuri	1.2.2014 and 12.2.2014
2	Imphal free press	English	12.2.2013

1.6 Public Hearing

The Public hearing was held as scheduled on 20th February, 2014 at Hotel Classic, Regency Hall, Imphal from 1:30 to 4:30 p.m. During the public hearing, each objector was provided a time slot for presenting before the Commission his views on the petition of the EDM. The main issues raised by the objectors during the public hearing



and corresponding response of the EDM are briefly narrated in Chapter - 5.

1.7 Meeting of State Advisory Committee

The State Advisory Committee, which met on 20th February, 2014 from 11:00 to 1:00 p.m., discussed the ARR & Tariff proposal for FY 2014-15 of the EDM. Minutes of the meeting are given in the Annexure – I.

1.8 Compliance of Directives

In its previous Tariff order the Commission had issued certain directives to the EDM in the public interest. A summary of directives issued along with the comments of the Commission and new directives issued are given in Chapter 8 of this Tariff Order.



2. Summary of ARR and Tariff Petition

2.1 Aggregate Revenue Requirement (ARR)

The EDM, in its petition, has submitted the Aggregate Revenue Requirement for the year 2014-15 for meeting its expenses and the estimated revenue with the existing tariff. The proposed ARR and revenue gap are shown in Table below.

Table 2.1: Aggregate Revenue Requirement for FY 2014-15

(Rs. Crore)	
Particulars	FY 14-15 Projected
Costs	
Power Purchase Cost (Including Arrears)	251.05
Transmission Charges	33.89
Fuel Cost	1.18
Employee Cost	107.89
Repairs and Maintenance Cost	9.92
Admin & General Cost	0.83
Interest Cost	12.63
Provision for Bad Debts	3.00
Total Costs	430.68
Add: Return on Equity	0.00
Less: Non-Tariff Income	0.25
Annual Revenue Requirement	430.43

(Source: Table-25 of ARR Petition)

2.2 Tariff

The EDM in its petition has submitted the proposed tariff for the FY 2014-15 requesting the Commission to revise the tariff structure from Non-Telescopic to Telescopic as detailed in the table 2.2 below:



Table 2.2: Proposed Tariff Structure for FY 2014-15 against the existing tariff

Existing Tariff			Proposed Tariff		
Particulars	Fixed Charges (Rs./kW/kVA/Month)	Energy Charges (Rs./kWh)	Particulars	Fixed Charges (Rs./kW/kVA/Month)	Energy Charges (Rs./kWh)
LT SUPPLY			LT SUPPLY		
Kutir Jyoti			Kutir Jyoti		
1-15 kWh	20	1.00	1-15 kWh	20	1.00
Above 15 kWh	20	1.50	Above 15 kWh	20	1.50
Domestic Light & Power			Domestic Light & Power		
1-100 kWh	60	2.40	1-100 kWh	70	2.80
1-200 kWh	60	3.00	101-200 kWh	70	3.40
Above 200 kWh	60	3.60	201-300 kWh	70	4.10
			Above 300 kWh	70	4.60
Commercial			Commercial		
1-100 kWh	80	3.30	1-100 kWh	90	3.80
1-200 kWh	80	3.90	101-200 kWh	90	4.50
Above 200 kWh	80	4.40	201-300	90	5.10
			Above 300 kWh	90	5.60
Public Lighting	60	4.30	Public Lighting	70	4.90
Public Water Works	100	4.30	Public Water Works	120	4.90
Agriculture	60	2.50	Agriculture	70	2.90
Cottage & Small Industry	60	2.50	Cottage & Small Industry	70	2.90
Temporary Supply	80	4.30	Temporary Supply	90	4.90
HT SUPPLY			HT SUPPLY		
Commercial	100	4.00	Commercial	120	4.60
Public Water Works	100	4.00	Public Water Works	120	4.60
Agriculture	100	2.50	Agriculture	120	2.90
Medium Industry	100	3.30	Medium Industry	120	3.80
Large Industry	100	3.80	Large Industry	120	4.40
Bulk Supply	100	3.40	Bulk Supply	120	3.90

Prayer

The EDM has requested the Hon’ble Commission to:

- Admit the Aggregate Revenue Requirement of FY 2014-15 and the Tariff Revision Proposal for FY 2014-15 as submitted herewith.
- Approve the Projected Aggregate Revenue Requirement of FY 2014-15.
- Condone any inadvertent omissions/ errors/ shortcomings and permit the Petitioner to add/ change/ modify/ alter this filing and make further submissions as may be required at a future date.
- Permit submission of any additional information required by the Commission during the processing of this petition.
- And pass such other and further orders as are deemed fit and proper in the facts and circumstances of the case.



3. Power Sector in Manipur

3.1 Geographical Reality

The EDM is responsible for generation, transmission and distribution of electricity in the State of Manipur, which has a total area of 22,347 Sq KM with its nine districts namely, Bishnupur, Churachandpur, Chandel, Imphal East, Imphal West, Senapati, Tamenglong, Thoubal and Ukhrul. Manipur occupies an area of great strategic importance in North East corner of India. Manipur is bounded by States of Nagaland in the North, Mizoram in the South, Assam in the West and sharing international boundary with Myanmar in the East. The total population of Manipur State is 27.22 lakhs as per 2011 census. EDM serves about 2.22 lakhs consumers of various categories. Per capita consumption is about 140 kwh for the year 2012-13.

3.2 Power Supply

(a) Own Generation

The EDM has own generation plants micro hydel, diesel with installed capacity of 45.11 MW. Actual generation during 2012-13 is 1.01 MU (Net) while the energy requirement is about 623 MU. Balance energy requirement was met from power purchase from CGS and other sources. The details of own generating stations and station wise net generation are detailed in Table below:

Table 3.1: Own generation

Sl. No	Item	Unit	Previous Year (Actuals)	Current Year (R.E)	Ensuing Year (Projection)
1	Installed Capacity	MW	44.51	44.51	44.51
2	Generation	MU			
3	PLF	%	0.17%	0.24%	0.17%
4	Plant Availability	%			
5	Auxiliary Consumption				
	(i)	MU			
	(ii)	%			
6	Net Generation	MU	0.68	0.95	0.68
7	Station Heat Rate	K cal/kWh			



8	Calorific Value of Coal (Weighted Average)	Kcal/Kg	-	-	-
9	Coal Transit Loss	%	-	-	-
10	Total Coal Consumption	Tonnes	-	-	-
11	Total Diesel Consumption	KL	246	291	215
12	Specific Oil Consumption	MI/kWh	-	-	-
13	Calorific Value of Oil	Kcla/Litre			
14	Price of Coal	Rs./Tonne	-	-	-
15	Price of Oil/ Diesel	Rs./KL	50000	53000	55000
16	Total Coal Cost	Rs. cr	-	-	-
17	Total Oil Cost/ Diesel Cost	Rs. cr	1.23	1.54	1.18
18	Total Fuel Cost	Rs. cr	1.23	1.54	1.18
19	Generation from hydel	MU	0.33	0.55	0.33
20	Total Own Generation	MU	1.01	1.50	1.01

The EDM further stated that the diesel generating sets with a total capacity of 8.51MW cater to the emergency requirement of Imphal Power House and district hospitals. The heavy fuel plant of 36 MW (6X6 MW) at Leimakhong is kept on stand by mode for the purpose of meeting emergency requirements in the State.

(b) Power Purchase

The EDM is mostly dependent on Central Generating Stations (CGS) located in different parts of the North Eastern Region for meeting its energy requirement. The total firm share from the Central Sector Generating Stations of NEEPCO and NHPC and Tripura is 132.29 MW as depicted in the Table below. The actual peak and off-peak availabilities are however always less because of low plant load factors.

Table 3.2: Share from Central Generating Stations (CGS) for FY 2012-13



Station	Installed Capacity	FY 2012-13 (Actuals)	
		Average Allocation in %	Manipur Allocation (MW)
NEEPCO(Hydro)			
Kopili I HEP	200	7.39%	14.78
Kopili II HEP	25	6.95%	1.74
Khandong HEP	50	6.56%	3.28
Ranganadi HEP	405	8.37%	33.91
Doyang HEP	75	7.87%	5.9
Sub total	755		59.6
NEEPCO(Gas Based)			
Assam Gas based Power Project	291	8.11%	23.59
Agartala Gas Turbine Power Project	84	8.31%	6.98
Sub total	375		30.57
NHPC(Loktak HEP)			
Purchased	105	30.12%	32.62
Sub total	105		32.62
TRIPURA			
Baramura (Gas Based)(Unit IV)	21	25%	5.25
Baramura(Gas Based)(Unit V)	21	25%	5.25
Sub total	42		10.5
Total	1277		132.29

The peak load demand of the State for the year 2012-13 as per NERLDC Retrospect and Annual Report for FY 2012-13 is about 122 MW. The State has not purchased power from other sources. As a result, widespread heavy load shedding prevails in the State

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

Table 3.3: Energy Draws from Central Generating Stations & Tripura

Station	(MU)
	FY 2012-13Actuals



NEEPCO (Hydro)	
Kopili I HEP	48.42
Kopili II HEP	6.40
Khandong HEP	10.62
Ranganadi HEP	102.74
Doyang HEP	15.56
Sub total	183.74
NEEPCO (Gas Based)	
Assam Gas based Power Project	131.88
Agartala Gas Turbine Power Project	51.23
Sub total	183.11
NHPC (Loktak HEP)	
Purchased	101.00
Free Power	66.90
Sub total	167.90
TRIPURA	
Baramura (Gas Based)- (Unit IV)	80.56
Baramura (Gas Based)- (Unit V)	
Sub total	80.56
Total	615.31
Power purchase from Other Sources	
UI	29.93
Sub total	
Gross Power Purchase (Including free power of 66.90 MU from Loktak)	645.24

(Source : Format 7 of ARR)

3.3 Transmissions and Distribution

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

Owned by ED, Manipur

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

Owned by PGCIL

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

Manipur, being a hilly state with its population unevenly dispersed and spread over remote corners, it is having large network of Sub-Transmission and Distribution system. The details of Transmission, Sub- Transmission and Distribution network, owned & operated by EDM as on 31/03/2013, are given in Table below.



Table 3.4: Transmission and Distribution Network as on 31.3.2013

S. No.	Voltage	Transmission lines (Ckt. Km)		Sub-stations (nos.)	Sub-station/ transformer Capacity MVA
		Double Ckt.	Single Ckt.		
1	132kV	115.924	290.656	9	317.5
2	33kV	25.658	1103.472	53	385.05
3	11kV lines	16.090	5773.787		
4	LT lines		7832		
5	Distribution transformers			4469	437.453
	11 kV (UG)		0.010		
7	LT cable (UG)		0.280		

3.4 Transmission and Distribution (T&D) Losses

The Transmission and Distribution losses of EDM system are 30.32% during the year 2012-13. The technical and commercial losses are not segregated.

3.5 Consumer Profile

The category wise consumers and corresponding energy sales during the year 2012-13 are given in Table below:

Table 3.5: Consumer Profile and Energy Sales – 2012-13

Sl. No.	Consumer Category	2012-13			
		No. of consumers (Nos.)	(%)	Energy sales (MU)	(%)
	Kutir Jyoti	17096	7.72	7.94	2.09
1	Domestic	188951	83.3	195.81	51.66
2	Commercial	11721	5.29	30.82	8.13
3	Small industry	2202	0.99	17.24	4.55
4	Medium industry	148	0.07	2.36	0.62
5	Large industry	19	0.01	13.93	3.68
6	Bulk supply	608	0.27	80.45	21.22
7	Public lighting	520	0.23	4.75	1.26
8	Irrigation	63	0.03	1.59	0.42
9	Public waterworks	170	0.08	23.6	6.22
10	Temporary supply	14	0.01	0.54	0.14
	Grant Total	221512		379.03	

3.6 Demand

The energy demand for the EDM is met by supply of power from own generation,



central generating stations of North Eastern Region and Baramura Gas Based Plants in Tripura State. The annual energy requirement during FY 2012-13 was 624.84 MU.

3.7 Energy Audit

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

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

3.8 Energy Metering

Out of 215827 service connections as on 31.3.2013, 40977 connections are reportedly without meters. During the year 2013-14 (upto to September, 2013) alone, 2664 new service connections are released without meters out of which 68 are HT service connections. Added to this 42123 service connections are with defective meters as on 31.3.2013. Metering of 33 KV feeders, 11 KV feeders is not completed and DTRs are also not provided with meters.

3.9 Continuity of Power Supply

The Power supply in the state is in a very precarious condition. Nowhere in the state, barring a few privileged consumers, the power supply is continuous. The duration of power supply to the general consumers including the State capital is 4 to 8 hours a day.

4. Review of the year 2012-13

4.1 Background



4.1.1 The Tariff Order of the Commission for FY 2012-13 contained its approvals of costs and revenue projections based on EDM's estimates for different items of cost to be incurred and revenue likely to be earned by it during the year. The EDM in its ARR petition for the year 2014-15 has furnished actuals for FY 2012-13.

4.1.2 There are differences in certain items of costs as well as revenues between the approvals granted by the Commission and the actuals now furnished by the EDM. Since the EDM 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 2012-13 with reference to the actuals now made available by the EDM but without altering the principles and norms adopted earlier. These matters are discussed in the succeeding paragraphs.

4.2 Energy Demand (Sales)

4.2.1 The energy sales projected by EDM in ARR 2012-13, sales approved by the Commission in Tariff Order of 2012-13 and actuals now furnished by EDM for FY 2012-13 are given in Table below:

Table 4.1: Energy sales for 2012-13

(MU)

Sl. No.	Category	Energy sales projected by the EDM	Energy sales approved by the Commission	Actuals for FY 2012-13	Now approved by the Commission
1	Domestic	196.04	220		
(a)	Kutir Jyoti		5.00	7.94	7.94
(b)	Domestic		215	195.81	195.81



2	Commercial	31.74	36	30.82	30.82
3	Industrial				
(a)	Cottage & small industry	16.04	16	17.24	17.24
(b)	Medium industry (HT)	3.66	4	2.36	2.36
(c)	Large industry (HT)	6.03	6	13.93	13.93
4	Bulk supply	75.85	76	80.45	80.45
(a)	LT				
(b)	HT				
5	Public lighting	6.48	7	4.78	4.78
6	Irrigation & Agriculture	0.90	1	1.59	1.59
(a)	LT				
(b)	HT		0.58		
7	PWW	22.93	23	23.60	23.60
(a)	LT		5.00		
(b)	HT		18		
8	Temporary supply	0.63	1	0.54	0.54
	Total	359.68	390	379.04	379.04

The Commission therefore now approved energy sales within the state at 379.04 MU for the year 2012-13 as per actuals.

4.3 Transmission and Distribution Losses (T&D losses)

4.3.1 The Commission in its order of 2012-13 has fixed the T&D losses within the State at 35% for FY 2012-13 as against 32 % projected by EDM. The EDM has now furnished the actual T&D loss during the FY 2012-13 as 30.09% with a reduction of 4.91% over the target fixed by the Commission in Tariff Order for 2012-13.

Commission’s analysis

The EDM has considered inter state transmission loss while calculating T&D loss within the state. As per NERLDC Retrospect and Annual Report for FY 2012-13 the average weekly transmission loss during 02.04.2012 to 31.03.2013 is 3.48% with maximum 4.70% and minimum 2.10%.



As such the average pooled loss of 3.48% is considered by the Commission for FY 2012-13. So with actuals given by the EDM the T&D Loss within the state works out to 30.32% as detailed in table below.

Table 4.2: Actual T&D Loss calculation for FY 2012-13 of EDM

Sl. No.	Particulars	Unit	2012-13
A	Energy Availability		
1	Own Generation	MU	1.01
2	Power Purchase including free power from Loktak	MU	615.31
3	Pool Loss	%	3.48%
4	Pool Loss on 2 above	MU	21.41
5	UI Purchases	MU	29.93
6	UI Sales	MU	80.89
7	Energy available at State Periphery (1+2-4+5-6)	MU	543.95
8	Energy sales within State	MU	379.04
9	T&D Loss	MU	164.91
10	T&D Loss	%	30.32%

The Commission, accordingly, approves T&D losses at 30.32 % for the year 2012-13 as per actuals.

4.4 Own generation

4.4.1 The EDM is having its own generating plants such as micro hydel, diesel and H.F.O. with an installed capacity of 45.11MW. Net generation projected by EDM for FY 2012-13 in the tariff petition for 2012-13 and approved by the Commission in the Tariff Order for 2012-13 and actuals now furnished by the EDM in tariff petition for 2014-15 and now approved by the Commission for 2012-13 are furnished in Table below:

Table 4.3: Own generation during 2010-11 (Net)

S. No.	Station	Installed capacity (MW)	Projected by EDM for 2012-13 (MU)	Approved by the Commission in Tariff Order (MU)	Actuals now furnished by EDM for FY 2012-13 (MU)	Now approved by the Commission for 2012-13 (MU)
I	Hydel					
1	Leimakhong	0.6	2.20	2.30	0.33	0.33
II	Diesel Generating					
2	Imphal	5.63	1.10	2.70	0.68	0.68
3	District hospitals	2.88				



	Sub-total	8.51				
III	Heavy fuel					
4	Leimakhong (6X6)	36				
	Total (I+II+III)	45.11	2.30	5.00	1.01	1.01

The Commission now approved the own generation at 1.01 MU for FY 2012-13 as per actuals.

4.5 Power purchase

The Commission in its tariff order for FY 2012-13 had approved power purchase of 700 MU including free power of 71 MU from Loktak HEP of NHPC for FY 2012-13. The EDM in its tariff petition for FY 2014-15 has furnished actual power purchase at Rs. 645.24 crore from CGS and other including free power of 66.90 MU from Loktak and UI purchase of 29.93 MU.

The Commission, accordingly, approves power purchase of 645.24 MU including free power of 66.90 MU from Loktak and UI purchase of 29.93 MU for the FY 2012-13 as per actuals.

4.6 Energy balance

4.6.1 The details of energy requirement and availability approved by the Commission in Tariff order 2012-13 and actuals furnished by the EDM and now approved by the Commission are furnished in Table below:

Table 4.4: Energy balance approved by the commission for FY 2012-13

S. No.	Particulars	Approved by the Commission in T.O. 2012-13	Actuals for FY 2012-13	Now approved by the Commission
A	Energy requirement			
1	Energy sales (MU)	390	379.04	379.04
2	T&D loss (%)	35%	30.09 %	30.32 %
3	T&D loss (MU)	210	163.17	164.91
4	Energy requirement (MU)	600	542.21	543.95



B	Energy availability			
5	Own generation (MU)	5	1.01	1.01
6	Power purchase	700	615.31	615.31
7	External loss (%)	3.6%	3.6%	3.48%
8	Less External loss (MU)	25	23.16	21.41
9	UI purchases	-	29.93	29.93
10	Total energy availability at State periphery	680	623.09	624.84
11	Energy requirement	600	542.21	543.95
12	Energy Surplus	80	80.89	80.89

Commission's Analysis

EDM while calculating energy balance has considered inter-state transmission loss of 3.6 %. But as per NERLDC Shillong-Retrospect and Annual Report for FY 2012-13 the average weekly transmission loss during 02-04-2012 to 31.03.2013 is 3.48%. Considering external losses at 3.48% net power available at State Periphery is approved at 543.95 MU with actual power purchase at 645.24 MU including free power at 66.90 MU from Loktak and UI purchases of 29.93 MU.

The Commission now approves total energy requirement for 2012-13 at 543.95 MU with a surplus energy of 80.89 MU.

4.7 Fuel cost

The Commission in its Tariff order for FY 2012-13, has approved the fuel cost of Rs. 2.93 crore for a net generation of 5 MU with diesel and heavy fuel. The EDM has furnished actual diesel generation at 0.68 MU at cost of Rs. 1.23 crore with an average cost of generation of Rs. 18.09/kWh which is on high side. The EDM should analyse the reasons for such a high cost of generation and take remedial measures to reduce the cost to the barest minimum. With the above observation the fuel cost of Rs. 1.23 crore is considered for FY 2012-13.

The Commission accordingly now approves fuel cost at Rs. 1.23 crore for FY 2012-13 as per actuals furnished by EDM.



4.8 Power purchase cost

4.8.1. The Commission in its Tariff order for 2012-13 approved Rs. 291.41 crore for power purchase of 700 MU (Gross) including free power 71 MU from Loktak HEP for FY 2012-13.

4.8.2. The actual power purchase cost for FY 2012-13 now furnished by the EDM is Rs. 202.94 crore for purchase of 645.24 MU (Gross) including UI purchases of 29.93 MU and free power of 66.90 MU from Loktak HEP

The Commission now approves power purchase cost of Rs. 202.94 crore for purchase of power of 645.24 MU including free power of 66.90 MU from Loktak and UI purchase of 29.93 MU as per actuals for the FY 2012-13 furnished by EDM.

4.9 Employee costs

4.9.1 The Commission in the Tariff Order for FY 2012-13 had approved employee cost at Rs. 84.47 crore for FY 2012-13.

4.9.2 The actual employee cost now furnished by the EDM is at Rs. 105.99 crore for FY 2012-13.

4.9.3 The Commission notes that the employee cadre strength has been reduced from 3462 to 3312 during 2012-13. However, the EDM reported that the increase in employee cost is due to implementation of 6th pay commission pay scales. But as per the Resources of Annual plan for FY 2014-15 submitted by EDM on 2.2.2014 the actual establishment and administrative charges during FY 2012-13 are Rs. 89.33 crore out of which Rs. 0.71 crore are A&G expenses. Hence employee cost is Rs. 88.62 crore (89.33 – 0.71)

The Commission, accordingly now approves the employee cost at Rs. 88.62 crore for FY 2012-13, as per actuals.

4.10 Repairs and Maintenance expenses

4.10.1 The Commission had approved R&M expenses at Rs. 11.24 crore in the Tariff order of 2012-13.



4.10.2 The actual expenses now furnished by the EDM for FY 2012-13 are RS. 3.96 crore.

The Commission now approves Rs. 3.96 crore towards R & M expenses for FY 2012-13 as per actuals furnished by EDM.

4.11 Administration and General (A&G) expenses

4.11.1 The Commission in the Tariff order of 2012-13 had approved A&G expenses at Rs. 3.23 crore for FY 2012-13.

4.11.2 The actual expenses now furnished by the EDM for FY 2012-13 are Rs. 0.71 crore.

The Commission now approves Rs. 0.71 crore towards A&G expenses for FY 2012-13 as per actuals furnished by EDM.

4.12 Depreciation

4.12.1 The Commission had approved depreciation at Rs. 6.05 crore equivalent to the amount of loan repayment during FY 2012-13 in the Tariff order.

4.12.2 The EDM has now furnished depreciation for FY 2012-13 at Rs. 7.54 crore being the repayment of REC loan principle during FY 2012-13.

Commission's Analysis

In the tariff order for FY 2012-13 the Commission has considered opening GFA as on 1.4.2012 at Rs. 1504.04 crore. The EDM has now furnished that Rs. 216.71 crore were capitalized during FY 2012-13 from out of the capital expenditure. EDM further stated that 90 % of GFA is created out of grants from GOI under RGGVY schemes. So, with above data the depreciation for FY 2012-13 is worked out as detailed in table below:

Table 4.5: Depreciation for FY 2012-13 approved by the Commission.

Sl. No	Particulars	Rs. in crore
		For FY 2012-13
1	Opening GFA as on 01.04.2012	1504.04
2	Additions during the year	216.71
3	Closing GFA as on 31.3.2013	1720.75



4	Average GFA	1612.40
5	10% of sl. 4	161.24
6	Average rate of Depreciation	5.28%
7	Depreciation for 2012-13	8.51

The Commission accordingly approves depreciation at Rs. 8.51 crore for FY 2012-13.

4.13 Interest and Finance charges

4.13.1 The Commission had approved interest and finance charges at Rs. 12.94 crore for FY 2012-13.

4.13.2 The EDM has stated that it has paid Rs. 12.36 crore towards interest and finance charges during FY 2012-13 as detailed in Table below:

Table 4.6: Interest and Finance charges approved by the commission for FY 2012-13

(Rs. crore)		
S. No.	Particulars	Amount
1	Opening loans	81.38
2	Additions during the year	5.28
3	Repayments	7.54
4	Closing loans	79.12
5	Average loans	82.25
6	Interest paid	10.51
7	Other finance charges paid	1.85
8	Total interest and finance charges paid	12.36

The Commission accordingly now approves Rs. 12.36 crore towards interest and finance charges for FY 2012-13 as per actuals furnished by EDM.

4.14 Interest on working capital

4.14.1 The Commission in its Tariff order for 2012-13 had approves interest on working capital at Rs.4.94 crore for FY 2012-13.

4.14.2.1 The EDM has not claimed interest on working capital as no loan is taken for working capital for FY 2012-13.

“As per Regulation 98(6) of JERC for M&M (Terms and Conditions for determination of tariff) Regulation 2010 interest on working capital for one month requirement of

- (a) Furl Cost
- (b) Power Purchase Cost



- (c) Employee Cost
- (d) R&M Expenses
- (e) Adm and General Expenses

Be allowed at the rate of interest equal to the Short-Term Prime lending rate of SBI on 1st April of the relevant year on normative basis not with standing that the Distribution Licensee has not taken working capital loan from any outside agency.....”

In view of the above regulation interest on working capital is worked out on normative basis on the approved cost at the rate of 14.75% being SBI PLR as on 1.04.2012 for FY 2012-13 as detailed in table below.

Table 4.7: Interest on working capital approved by the commission for FY 2012-13

(Rs. crore)			
Sl. No.	Particulars	Approved by Commission for FY 2012-13	One month requirement
1	Fuel cost	1.23	0.10
2	Power purchase cost	202.94	16.91
3	Employee cost	105.99	8.83
4	R&M expenses	3.96	0.33
5	A&G expenses	0.71	0.06
6	Total		26.23
7	SBI –PLR as on 1.4.2012	14.75%	14.75%
8	Int on working capital		3.87

The Commission accordingly now approves interest on working capital at Rs. 3.87 crore for FY 2012-13.

4.15 Non-Tariff income

4.15.1 The Commission in its Tariff order for FY 2012-13 had approved non-tariff income at Rs. 5.52 crore for FY 2012-13.

4.15.2 The EDM now in its ARR & Tariff petition for 2014-15 has furnished non-tariff income at RS. 0.10 crore for FY 2012-13.

Commission’s Analysis

As per JERC for M&M (Terms and Conditions for determination of Tariff) Regulations, 2010 non-tariff income comprises of the following;



- 1) Meter rent;
- 2) Late payment Surcharge;
- 3) Theft / pilferage of energy charges;
- 4) Miscellaneous receipts;
- 5) Wheeling charges;
- 6) Interest on staff loan;
- 7) Miscellaneous charges (except PLEC);
- 8) Income from Trading;
- 9) Income from welfare activities;
- 10) Excess on verification;
- 11) Interest on investments / bank balances;
- 12) Prior period income.

Over 1.5 lakh metered connections are existing as on 31.3.2013. Even with minimum meter rent of Rs. 10/- , the amount works out to about Rs. 2 crore per annum. Further, arrears to a tune of Rs. 351 crore are outstanding and surcharge on this amount works out to more than Rs 3 crore. Miscellaneous receipts are additional income. Thus, considering all these amounts the Commission in its tariff order had approved non-tariff income as Rs. 5.52 crore for FY 2012-13. Now, the EDM furnished non-tariff income as Rs. 0.10 crore which is quite meagre. As such, the Commission consider to retain the already approved amount of Rs. 5.52 crore for FY 2012-13.

The Commission accordingly approves Rs. 5.52 crore towards non-tariff income for FY 2012-13.

4.16 Revised ARR for FY 2012-13

In view of the above analysis the review of revenue requirement for FY 2012-13 is as detailed in Table below:

Table 4.8: Revenue requirement for 2012-13

(Rs. crore)				
Sl. No.	Particulars	Approved by the Commission in Tariff Order FY	Actuals furnished by EDM in tariff petition 2014-15	Now approved by the Commission



		2012-13		
1.	Energy sales (MU)	470	379.04	379.04
2.	Fuel cost	2.93	1.23	1.23
3.	Power purchase cost	299.41	202.94	202.94
4.	Employee cost	84.47	105.99	88.62
5.	R&M expenses	11.24	3.96	3.96
6.	A&G expenses	3.23	0.71	0.71
7.	Depreciation	6.05	7.54	8.51
8.	Interest & Finance charges	12.94	12.36	12.36
9.	Interest on working capital	4.94	3.87	3.58
10.	Bad debts	0.15	-	-
11.	ROE	-	-	-
12.	Total ARR	425.36	338.60	321.91
13.	Less: Non-tariff income	5.52	0.10	5.52
14.	Net ARR	419.84	334.66	316.39
15.	Revenue from revised tariff	198.04	134.86	134.86
16.	Gap	221.80	199.77	181.53

4.17 Revenue gap for 2012-13

As indicated in table 4.8 supra the revenue gap between ARR and revenue from revised tariffs works out to Rs. 181.53 crore. After appropriating Government of Manipur budgetary support of Rs. 151.80 crore, net gap works out to Rs. 29.73 crore as detailed in table below.

Table 4.8: Revenue gap approved by the commission for 2012-13

Sl. No.	Particulars	Approved by the Commission	Actuals by EDM in ARR 2014-15	Now approved
1	Revenue Gap	221.80	199.77	181.59
2	Budget for support from government of Manipur	151.80	151.80	151.80
3	Net revenue gap	70	47.97	29.73

As the utility is a Government Department and the expenditure is already met, the net gap of Rs. 29.73 crore is considered fully covered by budgetary support of the state Government and as such no pass through of the gap (loss) in the next tariff order is allowed.



5. Proceedings of Public Hearing

5.1 Public Response to the Petition

After the ARR and Tariff Petition for FY 2014-15 was admitted, the Commission directed the Electricity Department, Manipur (EDM) to make available copies of the petition to the general public through posting of the petition on its website and also publishing the same in local newspapers in abridged form and invite comments / objections from them.

In response, the Commission could receive 2 (two) numbers of objection in writing – one from Shri Konthoujam Sanatomba, General Secretary, All Manipur Power Consumers' Association, Imphal and another from Dr. Meinam Binota, Member, State Advisory Committee, Manipur during the time period fixed by the Commission.



5.2 Public Hearing

In order to ensure transparency in the process of determination of retail tariff, as envisaged in the Electricity Act, 2003, public hearing was held at Hotel Classic, Regency Hall, Imphal on 20.2.2014 as scheduled.

During the public hearing, the participants, who did not submit written objections earlier, were also given an opportunity to offer their views on the ARR and Tariff Proposal of the EDM for the FY 2014-15. The list of the stakeholders who attended the public hearing is given in Annexure – II. The officers of the EDM who were presented during the public hearing, responded to the issues raised by the objectors.

5.3 Objections / Suggestions

5.3.1 Objector -1: Shri Konthoujam Sanatomba , General Secretary, AMPCA, Imphal.

Objections:

- (i) The proposed ARR and Tariff Petition for FY 2014-15 is silent about providing power supply for 24 hours a day for the consumers. Tariff order my spell out the details.
- (ii) M/s SBI caps, the Consultant of EDM, took considerably long time to evaluate and finalize the Assets and Liabilities of the Department and as a result, the true picture of GFA is not reflected in the proposed ARR and Tariff Petition.
- (iii) Employee cost is exorbitantly high.
- (iv) Repair and Maintenance cost is also very high.
- (v) Ratio of Employees to Consumers in the Department needs to be examined and compared with that of other Departments / Distribution Licensees of other States.
- (vi) Proposes for “no revision in retail tariff unless improved power supply is assured”.

5.3.2 Objector – 2: Shri Sanasam Chaoba Singh, President, AMPCA, Imphal.

Objections:

- (i) Fuel cost is not justified when DG sets are not operated
- (ii) Depreciation can not be correctly calculated when assets are not accurately known.
- (iii) Interest on loan for capital projects is not properly calculated.



- (iv) The State suffers because of the Transmission constraints.
- (v) No. revision of retail tariff till the power supply is improved.

5.3.3 Objector – 3: Shri N. Rameswar Singh , Chief Organizer, Heart of Life Gaunt of Manipur.

Objections:

- (i) Lot of discrimination in giving power supply. Reportedly, consumers with pre-paid meter enjoy for more time.
- (ii) Uninterrupted power supply for few at the expense of others.
- (iii) Lodged complaints several times to the CE (P), EDM for redressal of the grievance but paid no head.
- (iv) Commercial accounts are not properly maintained.
- (v) Domestic consumers are prepared to pay electricity bills regularly when the power supply is regularly provided.
- (vi) Revenue realization suffers a set back because consumer service is poor.

5.3.4 Objector – 4: Dr. Meinam Binota, Member, SAC, Manipur.

Objections:

- (i) Cost of the power purchase needs to be worked out based on the Demand of Power from the consumers.
- (ii) Employee cost increases @ 12 p.c. every year, while the work efficiency of the service provider decreases visibly.
- (iii) “Return of Equity” has not been proposed.
- (iv) The Domestic and Commercial categories of consumers have to pay at almost equal rate (marginal difference) if the consumption goes beyond 300 units.

5.3.5 Objector – 5: Shri N. Behari Singh, Senior Citizen, Imphal.

Objections:

- (i) Unlike other neighboring States, Manipur remains dark most of the time. Therefore, Power Supply needs to be substantially improved.
- (ii) Consumers service from the supplier is poor.



- (iii) Department needs to assure first that supply shall be improved and it shall not resort to load shedding.
- (iv) No revision of tariff before the above are satisfactorily done.

5.3.6 Objector – 6: Shri E. Dolendro Singh, Advocate, Advisor, AMPCA, Imphal.

Objections:

- (i) The Government of Manipur has announced that it would collect the arrear amounting Rs. 300 crors from the defaulting consumers within a short period.
- (ii) Meanwhile, Distribution Company has recently come into existence in the State. The consumers must extend co-operation and let it work sincerely for a couple of years.
- (iii) Therefore, there shall be no revision in the retail tariff till the Corporation brings in such significant changes in the sector.

5.3.7 Objector 7: Shri Thounaojam Ngouba Singh, Social Worker, Langmeidong, Kakching, Thoubal District, Manipur.

Objections:

- (i) Power supply situation is really bad in rural areas.
- (ii) EDM has not extended co-operation in organizing consumer awareness campaign and solving consumers problem.
- (iii) People's response will be there when EDM is sincere. Therefore, service is first needed before the tariff revision.

5.4 Response from the EDM

With the corporatization of the then Electricity Department, Manipur (EDM) with effect from 1st of February, 2014, two companies, namely Manipur State Power Distribution Company Limited (MSPDCL) and Manipur State Power Company Limited (MSPCL) have come up in the State to run and manage the power sector in more efficient manner.

Most of the issues and challenges which have been pointed out / raised by the participants from different disciplines are under active consideration of the two Government Companies. However, both of them need some more time to settle down



and do the job to the satisfaction of all stakeholders in general and the consumers in particular.

The EDM has also assured that with the change in the system of working significant changes shall be made by the corporations in all fronts of the sector within a short period and adequate importance shall be given to the commercial and consumers service fronts particularly. The EDM has noted down the views of the participants carefully for reference during its future course of action.

5.5 Commission's Observations

The Commission has taken serious note of the points raised by the stakeholders / members, general public against the proposed hike in tariff. The response of the EDM is also taken into consideration.

The Commission feels that the recent unbundling of the EDM under the Power Sector Reform Programme, is a right move towards the right trend and therefore, believes that it will fetch significant positive changes commensurate with the consumers' expectations.

Thus, the Commission, keeping in view the aspirations of the objectors and also the requirements of Electricity Act, 2003, National Electricity Policy and National Tariff Policy, has given clear directives to the EDM as an integral part of the order for compliance without fail.



6. Analysis of Aggregate 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 revenue. This section examines in detail the consumer category wise sales projected by the EDM in its petition for assessment of ARR.

6.2 Consumer Categories

The EDM serves about 1.99 lakh consumers in its licensed area and the consumers are categorized as under:

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

The EDM serves the consumers at different voltages according to the consumer's requirement. In the categories, of commercial, Agriculture and public water works there are LT consumers as well as HT consumers, while medium Industry, Large Industry and Bulk Supply categories are under HT only.

6.3 Additional Information and Data

The ARR and Tariff Petition for the year 2014-15 filed by EDM was incomplete as many of the specified formats required under JERC (Terms and Conditions for Determination



of Tariff) Regulations 2010 were not submitted. However, the EDM has submitted some additional data / information / clarifications etc through the following references.

1. EDM L No. 1/1/1 PED (JERC) TP/13-14/PT 11 dt. 11.01.2014
2. EDM L No. 1/1/1 PED (JERC) TP/13-14/PT 11 dt. 24.01.2014
3. EDM L No. 1/1/1 PED (JERC) TP/13-14/PT 11 dt. 20.02.2014

Additional information and revised / corrected data submitted by the EDM in the above references are taken into consideration while analyzing the ARR for determination of Tariffs. In the petition, many information gaps still remain. However, to avoid further delay the commission has processed the same with the available data.

6.4 Growth of Consumers and Connected Load

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

6.4.1 Consumers and connected load

The EDM has projected the category wise number of consumers and the connected load for the years 2012-13 to 2014-15 as detailed in Table below:

Table 6.1: No. of consumers and connected load

Sl. No.	Category	2012-13		2013-14		2014-15	
		No. of consumers (No.)	Connected Load (KW)	No. of consumers (No.)	Connected Load (KW)	No. of consumers (No.)	Connected Load (KW)



1	Kutir Jyoti	15436	1500	16982	1600	18527	1707
2	Domestic	185477	275542	195122	316874	204768	364405
3	Commercial	11247	20194	11821	22213	12394	24434
4	Public Lighting	493	1324	459	1390	424	1460
5	PWW	160	21589	175	22668	188	23802
6	Agriculture and Irrigation	63	496	66	550	69	612
7	Temp. Supply	73	3831	44	3869	14	3908
8	Small and College Industries	2194	16042	2382	17408	2570	18889
9	Medium Industries	129	1621	106	1758	82	1908
10	Large Industries	11	9124	15	11001	19	13211
11	Bulk Supply	543	44592	610	46202	677	47871
12	Total	215826	395905	227780	445533	239734	502207

(Source: Format 1 & additional information)

Commission Analysis

As seen from the above Table 6.1 the connected load is not commensurate with the number of service connections especially in respect of domestic, commercial, small / medium industry. As fixed charges have to be worked out on connected load there is need for physical verification of the connected load of all LT category service connections and HT unmetered connections to bill the fixed charges based on actual connected load after regularization of unauthorized loads if any. Directive No. 11 was already issued in Tariff order 2010-11 inter alia for detailed survey and investigation of load assessment. The licensee has not understood the impact of this directive fully. A plan of action should be chalked out in all divisions, for physical verification of connected load of all service connections section wise by mobilising all staff including AEs/JEs sub division wise. A quarterly progress report in this regard may be submitted to the Commission starting from 1st April, 2014.

6.5 Overall Approach to Sales Projection

The EDM has projected the category wise energy sales for the year 2012-13 (actuals) and estimated sales for the year 2013-14 based on actual sales for six months, which have been taken as basis for projecting sales during 2014-15. The EDM has also stated that from the past experience, historical trend method is found to be reasonably accurate and is a well- accepted method for estimating the load, number of



consumers and energy consumption.

The following methodology is applied while forecasting sales for FY 2014-15.

- (a) For domestic category which is the main consumption category in Manipur contributing 50% of sales (approx.) in the state. EDM projected energy sales for FY 2013-14 at 3 year CAGR of 16.92% over actual sales during FY 2012-13. For FY 2014-15 a growth rate of 18.12% adopted over estimated sales for FY 2013-14.
- (b) For commercial, 2 year CAGR on 16.39% applied over actual sales during FY 2012-13 to estimate sales for FY 2013-14 and for FY 2014-15 a growth rate of 17.59% adopted over estimated sales for 2013-14.
- (c) For small industry one year CAGR of 19.05% applied over actual sales of 2012-13 for estimate sales for 2013-14 and for FY 2014-15 a growth rate of 20.28% applied over estimated sales of 2013-14.
- (d) For medium industry growth rate of (-) 11.84% (2 year CAGR) applied over actual sales of 2012-13 to estimate sales for 2013-14 and the same growth applied for projected for 2014-15 also.
- (e) For Large industry a growth rate of 17.46% (YoY growth) applied over actual sales of 2012-13 to estimate sales for 2013-14 and for 2014-15 a growth rate of 18.67% applied over 2013-14.
- (f) For Bulk Supply a growth rate of 16.98 (2 Year CAGR) applied over actual sales of 2012-13 to estimate sales for 2013-14 and for 2014-15 a growth rate of 18.19% applied over estimated sales of 2013-14.
- (g) For irrigation and agriculture, public water works and public lighting three year CAGR (FY 2008 to FY 2011) has been applied over the sales of FY 2012-13 to get the sales for 2014-15.

The actual sales of FY 2012-13 estimated sales for FY 2013-14 and projected sales for FY 2014-15 proposed by EDM are furnished in table below.

Table 6.2: Category wise energy sales

Energy Sales (MU)	FY 2012-13	FY 2013-14	FY 2014-15
	Actuals	Estimated	Projected
Kutir Jyoti	7.94	9.28	10.96



Domestic	195.81	228.93	270.42
Commercial	30.82	35.86	42.17
Small Industry	17.24	20.53	24.69
Medium Industry	2.36	2.08	1.83
Large Industry	13.93	16.36	19.41
Bulk	80.45	94.12	111.24
Street Lighting	4.78	4.98	5.18
Irrigation and Water Works	1.59	2.85	5.12
Public Water Works	23.60	27.31	31.60
Temporary	0.54	0.52	0.50
Total Energy Sales	379.04	442.81	523.13

(Source: Table-4 of Petition)

Commission's analysis

6.6 Detailed Analysis of Energy Sales Projection

The EDM has projected the energy sales for different categories of consumers for FY 2014-15 as given in Table 6.4 above. As per the tariff schedule, public water works, and agricultural (irrigation) categories are mix of HT and LT categories and domestic, commercial, public lighting and cottage and small industries and Temporary Supply are under LT category, while medium Industry, Large Industry and Bulk Supply are under HT category. The proposed sales are based on past trend of restricted supply. The energy sales are not following any definite trend. The projection of EDM is based on the past trend of the unfulfilled demand for the last 4 years. However, by increasing the duration of power supply, and optimizing the use and distribution of the available energy, the sale of energy to each category of consumers is discussed hereunder.

(a) Kutir Jyoti

EDM has projected energy sales of 10.96 MU for the FY 2014-15 considering actual sales of 2012-13 at 7.94 MU and the projected consumption is reasonable.

The Commission approves energy sales under Kutir Jyoti category at 10.96 MU for FY 2014-15 as projected by EDM.



(b) Domestic

EDM has projected energy sales of 270.42 MU for FY 2014-15. Domestic category is the main consumption category in Manipur, contributing about 50% of total energy sales in the State. The three years CAGR (FY-10 to FY-13) is 15.38% while two year CAGR (FY-11 to FY-13) is 13.50% and YoY growth rate (FY-12 to FY-13) is 14.29%. However, considering the normal increase in per capital consumption level and increased utilization of electrical appliances, the EDM expects a growth rate of 18% PA in energy consumption for the year 2014-15 over the year 2012-13.

Considering the improved power supply position and consumer growth, the Commission approves the energy sales to the domestic category at 270.42 MU for the year 2014-15 as projected by EDM.

(c) Commercial

The EDM projected energy sales of 42.17 MU for this category for the year 2014-15. The 3 year CAGR (FY-10 to FY-13) 24.4% and the 2 year CAGR (FY-10 to FY-13) is 16.39% and YoY growth rate is 19.56%.

Considering the past growth and improvement in availability of power, it is considered reasonable to consider the suggested consumption of 42.17 MU.

The Commission approves the energy sales for commercial category at 42.17 MU as projected by EDM for FY 2014-15.

(d) Cottage and Small Industry

The EDM has projected energy sales in this category at 24.69 MU for FY 2014-15. The actual sales during FY 2012-13 are 17.24 MU. The three-year CAGR (FY-10 to FY-13) is 51.48% while 2 year CAGR (FY –12 to FY – 13) is 43.26% and YoY growth (FY-12 to FY-13) is 19.06%. As seen from past sales there is a jump in sales during FY 2011-12. EDM has not furnished reasons for abnormal increase during 2011-12. The sales are steady since FY 2011-12.



The Commission approves the energy sales of 24.69 MU for this category for the year 2014-15 as projected by EDM.

(e) Medium Industry

The EDM has projected energy sales of 1.83 MU for 2014-15 for this category. Actual sales during FY 2012-13 are 2.36 MU. There was small negative growth during 2011-12 and 2012-13 compared to 2010-11. The EDM has not furnished reason for such negative growth. Considering actual sales during 2010-11, 2011-12 and 2012-13 Commission feels it reasonable to consider 2.5 MU for FY 2014-15.

The Commission therefore approves the energy sales of 2.50 MU for this category for the year 2014-15 as against EDM projection of 1.83 MU.

(f) Large Industry

The EDM has projected energy sales of this category at 19.41 MU for the year 2014-15. The actual sales during FY 2012-13 were 13.93 MU. There is a jump in sales during FY 2011-12 and the EDM has not explained reasons for such increase. Since then the sales are steadily increasing. As such it is reasonable to adopt YOY growth rate of 17.45% PA over the actual sales during FY 2012-13 which works out to 19 MU.

The Commission approves the energy sales of 19 MU for this category for the year 2014-15 as against 19.41 MU projected by the EDM.

(g) Bulk Supply

The EDM projected energy sales of 111.24 MU for Bulk Supply category for the year 2014-15. The actual sales during FY 2012-13 are 80.45 MU. The 3(Three) years CAGR (FY 10 to FY 13) is 21.73% while 2 year CAGR (FY 11 to FY 13) is 16.98% and YoY growth (FY 12 to FY 13) is 16.48%. Substantial growth is observed since 2010-11. As such it is felt reasonable to adopt two years CAGR of 16.98% PA to project energy sales for 2014-15 over 2012-13, which works out to 110 MU.



The Commission approves the energy sales of 110 MU for the year 2014-15 as against 111.24 MU projected by EDM.

(h) Public Lighting

The EDM projected energy sales for this category at 5.18 MU for the year 2014-15. There is no definite trend in energy consumption for this category over the last four years. However, EDM has considered a three year CAGR (FY 10 to FY 13) of 4.16% for sales projection for 2014-15 over FY 2012-13. It is observed that there is decreasing trend during the year 2011-12 and an increase of 17.16% in 2012-13 over 2011-12. The EDM has not explained the reason for such fluctuation. There is no reason for negative growth in view of better public lighting in all towns and villages. Hence it is considered reasonable to accept the suggested consumption of 5.18 MU for FY 2014-15.

The Commission approves the energy sales for Public lighting at 5.18 MU for the year 2014-15 projected by EDM.

(i) Irrigation & Agriculture

The EDM has projected energy sales of 5.12 MU for FY-2014-15. The actual sales during FY 2012-13 were 1.59 MU. There is no definite trend in energy consumption for this category. Negative growth is observed during 2010-11 and the EDM has not furnished reasons for such negative growth during 2010-11. The 3 year CAGR (FY 10 to FY 13) is 30.83% and YOY growth is 95.57%. It is considered reasonable to adopt 3 year CAGR of 30.83% PA to projected consumption for Irrigation & Agriculture for FY 2014-15 over FY 2012-13 which was out to 3 MU.

The Commission approves the energy sales for irrigation & agricultural category at 3 MU for the year 2014-15 as against 5.12 MU projected by EDM.

(j) Public Water Works

The EDM has projected energy sales of 31.60% MU for this category for the year



2014-15. The actual sales during FY 2012-13 are 23.60 MU. The three year CAGR (FY-08 to FY-11) is about 9.05% 2 year CAGR is 15.73% and YoY growth (FY-10 to FY-11) is 17.01%. A negative growth observed during FY 2010-11 the EDM has not furnished any reasons for such fluctuated consumption. Considering the growing demand, YOY growth of 17.01% PA is considered reasonable to project sales for FY 2014-15.

The Commission therefore approves the energy sales of 31.60 MU for public water works category for the year 2014-15 as projected by EDM.

(k) Temporary supply

The EDM has projected 0.50 MU for this category for the year 2014-15. The actual sales during FY 2012-13 are 0.54 MU. The 2 year CAGR (FY-11 to FY-13) is -3.51% while YoY growth (FY-12 to FY-13) is - 51.91%. There was a negative growth during 2010-11 and FY 2012-13. This being a temporary supply there is no definite trend in consumption. However a consumption of 0.50 MU is considered reasonable.

The Commission approves energy sales of 0.50 MU for FY 2014-15 as projected by EDM.

6.7 Category wise Energy Sales Approved

The category wise energy sales for the year 2014-15 as discussed above and approved by the Commission segregating Kutir Jyoti, LT & HT categories as against the projected sales by the EDM are given in Table below:

Table 6.3: Category-Wise Energy Sale approved by the Commission for 2014-15

(MU)			
S. No.	Name of Category	Energy Sales projected by EDM	Energy sales approved by Commission
1	Domestic		
	(a) Kutir Jyoti	10.96	10.00
	(b) Domestic	270.42	270.42



2	Commercial	42.17	42.17
	Industrial		
3	(a) Cottage & Small industry	24.69	24.69
	(b) Medium Industry (HT)	1.83	2.50
	(c) Large Industry (HT)	19.41	19.00
4	Bulk Supply (HT)	111.24	110.00
5	Public Lighting	5.18	5.18
	Public Water Works	31.60	31.60
6	(a) LT		8.00
	(b) HT		23.60
7	Irrigation & Agriculture	5.12	3
	(a) LT		1
	(b) HT		2
8	Temporary supply	0.50	0.50
	Total	523.12	519.06

6.8 T&D Losses

- Being a hilly terrain and characterised by population spread out throughout the State, the system network of the State consist of long length of distribution and LT lines, with aging components which are being upgraded through various schemes, The EDM has achieved a significant reduction in transmission and distribution losses. The T&D losses for FY 2009-10 and FY 2010-11 were 50.49% and 46.28% respectively. For FY 2011-12 the EDM has achieved more than 11% reduction in losses and achieved T&D loss of 34.75%. The actual T&D losses for FY 2012-13 were 30.09%.
- EDM has considered the T&D loss of 25% for FY 2014-15 assuming more than 5% loss reduction from the actual of FY 2012-13. As the base figure for losses has been reducing, it is now becoming much more difficult to further reduce the losses by a substantial margin in one year. As such, reduction of 5% is a challenging target for EDM to achieve in FY 2014-15.
- The T&D Loss trajectory is summarised in the table given below.

Table 6.4 : T&D Losses

Particulars	FY 2012-13 (Actual)	FY 2013-14 (Estimates)	FY 2014-15 (Projected)
T&D Losses	30.09%	27.00%	25.00%

- The EDM submits to the Commission to approve the T&D Losses submitted



herein.

Commission's Analysis

While calculating T&D Loss the EDM has not considered inter state pool losses, which are about 3.48% during FY 2012-13. As per NERLDC Shillong - Retrospect and Annual Report for FY 2012-13 the average weekly transmission loss in NERLDC for the period from 02.04.2012 to 31.03.2013 is 3.48%.

So with the actual data given by EDM, the T&D loss within the state an calculated as detailed in table below.

Table 6.5 : EDM – T&D Loss Calculation for FY 2012-13

Sl. No.	Particulars	Unit	FY 2012-13
A	Energy Availability		
1	Own Generation	MU	1.01
2	Power Purchase from CGS	MU	615.31
3	Pool Loss	%	3.48%
4	Pool Loss	MU	21.41
5	UI Purchases	MU	29.93
6	UI Sales	MU	80.89
7	Energy available	MU	543.95
8	Energy Sales with in the State	MU	379.04
9	T&D Loss (7-8)	MU	164.91
10	T&D Loss(9/7)/100	%	30.32%

Thus the T&D loss during FY 2012-13 works out to 30.32% as detailed above and the EDM has estimated the T&D Loss during 2013-14 at 27% and projected at 25% for FY 2014-15. The EDM is directed to adhere to the target proposed.

The Commission approves the T&D loss within the state at 25% for FY 2014-15 as projected by EDM.

(c) Trajectory of T&D losses

The trajectory loss reduction for FY 2015-16 to 2017-18 are fixed as follows:

Year	% Loss
2015-16	24.00%
2016-17	23.00%
2017-18	22.00%



This is subject to system study and energy audit. Based on the study, the loss levels will be re-fixed. The EDM shall complete the study by December 2014 duly conducting voltage wise energy audit and report.

Segregation of Technical and Commercial losses shall also be completed by June 2014.

6.9 Energy Requirement and Availability

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

Table 6.6: Energy Requirement

Particulars	FY 2012-13 (Actual)	FY 2013-14 (Estimates)	FY 2014-15 (Projected)
Sales	379.04	442.81	523.13
T&D Losses	30.09%	27.00%	25.00%
Add: Losses	163.17	163.78	174.38
Energy required at Periphery	542.22	606.59	697.50
Energy available at State Bus	623.07	686.59	824.54
Surplus/(Deficit) Power (UI)	80.87	80.00	127.07

(Source: Table - 6 of ARR)

Commission’s Analysis

The Commission after considering T & D losses at 25% has computed energy requirement based on energy sales approved for FY 2014-15 as given in table below:

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

Sl. No.	Particulars	Projected by the EDM	Approved by the Commission
1	Energy Sales (MU)	523.13	519.06
2	Distribution Loss (%)	25%	25%
3	Distribution Loss (MU)	174.38	173.02
4	Energy requirement at state Periphery (1+3)	697.50	692.08

The Commission approves the energy requirement at 692.08 MU for FY 2014-15 as



against 697.50 MU projected by EDM.

6.10 Sources of Power

(a) Own generation

The EDM is having its own generation plants such as small hydel, diesel and HFO and their installed capacity of 45.11 MW and projected a net generation of 1.01 MU during FY 2014-15 detailed in Table below for FY 2014-15.

Table 6.8: Own Generation

Sl. No.	Generating Station	Installed capacity (MW)	Net generation (MU)			
			2011-12	2012-13	2013-14	2014-15
I. Hydel						
1	Leim akhong Stage 1	0.6				
	Sub-total for hydel	0.6	0.43	0.33	0.55	0.33
II. Diesel Gen Set						
2	Imphal	5.63				
3	District Hospitals	2.88				
	Sub-Total for Diesel	8.51	0.88	0.68	0.95	0.68
III. Heavy Fuel						
4	Leimakhong	36				
IV	Total (I+II+III)	45.11	1.30	1.01	1.50	1.01

(Source : Table – 7 of ARR)

Commission's Analysis

The Commission accepts the own generation at 1.01 MU (Net) for the year 2014-15 as projected by EDM.

(b) Purchase of Power from Central Generating Station.

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

Table 6.9: Share from Central Generating Stations (Table -6 of ARR)

Source	Installed Capacity (MW)	FY 2012-13 (Actuals)		FY 2014-15 (Projected)	
		Manipur Allocation (MW)	Avg. Allocation in %	Manipur Allocation (MW)	Avg. Allocation in %
NEEPCO(Hydro)					
Kopili I HEP	200	14.78	7.39%	14.78	7.39%
Kopili II HEP	25	1.74	6.95%	1.74	6.95%



Khandong HEP	50	3.28	6.56%	3.28	6.56%
Ranganadi HEP	405	33.91	8.37%	33.91	8.37%
Doyang HEP	75	5.90	7.87%	5.90	7.87%
Subtotal	755	59.60		59.60	
NEEPCO (Gas Based)					
Assam Gas based Power Project	291	23.59	8.11%	23.59	8.11%
Agartala Gas Turbine Power Project	84	6.98	8.31%	6.98	8.31%
Subtotal	375	30.57		30.57	
NHPC (Loktak HEP)					
Purchased (20.02 MW) and Free (12.60 MW)	105	32.62	30.12%	32.62	30.12%
Subtotal	105	32.62		32.62	
TRIPURA					
Baramura (Gas Based)(Unit IV)	21	5.25	25%	5.25	25%
Baramura(Gas Based) (Unit V)	21	5.25	25%	5.25	25%
New Projects					
OTPC- (Pallatana- Unit-I)	363	0.00	0.00%	21.00	5.79%
OTPC- (Pallatana – Unit II)	363	0.00	0.00%	21.00	5.79%
NTPC Bongaigaon Unit –I	250	0.00	0.00%	13.33	5.33%
Sub-Total	768	10.50		65.83	
Total	2003	132.29		188.62	

(Source: Table 8 of ARR)

1. EDM has stated the energy availability (1) from hydro generating plants of NHPC- Loktak and NEEPCO have been taken at the average energy during last three years from FY 2010-11 to FY 2012-13.
2. From AGBPP, AGTPP and Baramura plant the average scheduled energy during FY 2012-13 has been considered.
3. From OTPC- Pallatana and NTPC- Bongaigaon unit-1 normative annual plant availability factor of 85% and normative auxiliary consumption of 1% and 8.5% have been estimated as per CERC tariff regulations.

Further pallatana unit-1 is expected to be Commissioned in December, 2013 and unit-II is expected to be Commissioned in December, 2014 out of total installed capacity of 726 MW of 2 units of Pallatana 21 MW each from two units have been allocated to EDM.

4. Intra State losses have been considered at 3.6%.



Considering the above the EDM has projected power purchase during FY 2014-15 as detailed in table below.

Table 6.10: Power purchase projected by EDM

Source (MUs)	FY 2010-11 (Actuals)	FY 2011-12 (Actuals)	FY 2012-13 (Actuals)	FY 2013-14 (Estimate)	FY 2014-15 (Projected)
NEEPCO (Hydro)					
Kopili I HEP	51.27	66.61	48.42	55.54	55.44
Kopili II HEP	5.77	6.38	6.40	6.40	6.18
Khandong HEP	10.32	11.61	10.62	10.85	10.85
Ranganadi HEP	117.21	81.22	102.74	102.74	100.39
Doyang HEP	19.33	17.21	15.56	17.37	17.37
Subtotal	203.91	183.03	183.74	192.90	190.23
NEEPCO(Gas Based)					
Assam Gas based Power Project	146.09	140.40	131.88	131.88	131.88
Agartala Gas Turbine Power Project	51.14	53.91	51.23	51.23	51.23
Subtotal	197.23	194.31	183.11	183.11	183.11
NHPC (Loktak HEP)					
Purchased	107.04	92.16	101.00	101.00	100.07
Free Power	70.91	61.04	66.90	66.90	66.28
Subtotal	177.95	153.20	167.90	167.90	166.35
TRIPURA					
Baramura (Gas Based)(Unit IV and V)	40.40	76.58	80.56	80.56	80.56
OTPC - (Pallatana - Unit-I)	0.00	0.00	0.00	54.18	154.80
OTPC - (Pallatana - Unit-II)	0.00	0.00	0.00	0.00	38.17
NTPC Bongaigaon Unit - I	0.00	0.00	0.00	0.00	22.40
Sub Total	40.40	76.58	80.56	134.74	295.93
Gross Power Purchase	619.49	607.12	615.31	678.65	835.62

(Source: Table – 9 of petition)

Commission's Analysis

The Commission has examined the allocation of power available for EDM from the Central generating stations for the year 2014-15. The energy availability projected by EDM at 835.62 MU are considered as detailed in table below:

Table 6.11: Energy drawal approved by the Commission for FY 2014-15

Source (MUs)	Projected by EDM for FY 2014-15	Approved by the Commission for FY 2014-15
NEEPCO (Hydro)		



Kopili I HEP	55.44	55.44
Kopili II HEP	6.18	6.18
Khandong HEP	10.85	10.85
Ranganadi HEP	100.39	100.39
Doyang HEP	17.37	17.37
Subtotal	190.23	190.23
NEEPCO(Gas Based)		
Assam Gas based Power Project	131.88	131.88
Agartala Gas Turbine Power Project	51.23	51.23
Subtotal	183.11	
NHPC (Loktak HEP)		
Purchased	100.07	100.07
Free Power	66.28	66.28
Subtotal	166.35	166.35
TRIPURA		
Baramura (Gas Based)(Unit IV and V)	80.56	80.56
OTPC - (Pallatana - Unit-I)	154.01	154.01
OTPC - (Pallatana - Unit-II)	38.17	38.17
NTPC Bongaigaon Unit - I	22.40	22.40
Sub Total	295.93	295.93
Gross Power Purchase	835.62	835.62

The Commission approves power purchase at 835.62 MU including free power 66.28 MU for the FY 2014-15.

6.11 Energy Balance

The actual energy balance as furnished by EDM is shown in Table below.

Table 6.12: Energy balance projected by EDM

A	Energy Requirement	(MU)		
		FY12-13 Actuals	FY 13-14 Estimated	FY 14-15 Projected
1	Sales	379.04	442.81	523.13
2	T&D Losses	30.09%	27.00%	25.00%
3	Add : Losses	163.17	163.78	174.38
4	Energy Requirement	542.21	606.59	697.50
B	Energy Availability			
5	Own Generation	1.01	1.50	1.01
6	Power Purchase (including free Power)	615.31	678.65	835.62
7	Inter State Transmission loss at 3.6%	23.16	24.43	30.08
8	UI purchases	29.93	30.87	18.00
9	Energy Available at State Bus	623.09	686.59	824.54
10	Surplus/ (Deficit) Power (UI)	80.89	80.00	127.07



(Source: Table - 10 of ARR)

Commission's Analysis

The EDM has considered inter state transmission loss at 3.6%. But as per NERCDC Shillong – Retrospect and Annual Report for FY 2012013 the average weekly loss during 02-04-2012 to 31-03-2013 is 3.48 %. Considering this percentage of loss, summary of energy balance projected by the EDM and approved by the Commission for FY 2014-15 is furnished in Table below:

Table 6.13: Energy balance approved by the Commission for FY 2014-15

Particulars	Unit	Projected by EDM	Approved by the Commission
Energy requirement			
Energy sales	MU	523.12	519.06
T&D losses	%	25%	25%
T&D losses	MU	174.38	173.02
Energy requirement	MU	697.50	692.08
Energy availability	MU		
Own generation (Net)	MU	1.01	1.01
Power purchase	MU	835.62	835.62
Less: External losses	%	3.6%	3.48%
Less: External losses	MU	30.08	29.08
UI Purchases	MU	1800	-
Net energy available	MU	824.54	807.55
Energy requirement	MU	697.50	692.08
Energy surplus	MU	127.04	115.47

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.

The Commission accordingly approves energy requirement at 692.08 MU with surplus of 115.47 MU during FY 2014-15.

6.12 Revenue Requirement for FY 2014-15

The EDM has projected a total ARR of Rs. 430.43 crore for the year 2014-15 as given in Table below:

Table 6.14: Expenses Projected by EDM for FY 2014-15

(Rs. crore)	
Annual Revenue Requirement	FY 14-15



Costs	Projected
Power Purchase Cost (Including Arrears)	251.05
Transmission Charges	33.89
Fuel Cost	1.18
Employee Cost	107.89
Repairs & Maintenance expenses	9.92
Admin & General expenses	0.83
Depreciation	10.28
Interest Cost	12.63
Provision for Bad Debts	3.00
Total Costs	430.68
Add: Return on Equity	0.00
Less: Non-Tariff Income	0.25
Annual Revenue Requirement	430.43

(Source: Table - 25 of ARR)

Commission's Analysis

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

6.13 Fuel Cost

The EDM has submitted the actual fuel cost incurred during FY 2012-13 and estimated for FY 2013-14 and projected during FY 2014-15 as detailed in table below.

Table 6.15 : Fuel Cost projected by EDM

Particulars	(Rs. crore)		
	FY 2012-13 (Actual)	FY 2013-14 (Estimated)	FY 2014-15 (Projected)
Fuel Cost	1.23	1.54	1.18

(Source: Table 14 of ARR)

The EDM further stated that the average cost of generation comes to around Rs. 17/kWh.

The Commission approves the fuel cost of Rs. 1.18 crore for FY 2014-15 as projected



by the EDM.

6.14 Power Purchase Cost

The EDM has projected power purchase cost of Rs. 284.94 crore for FY 2014-15 including arrears to a tune of Rs. 15 crore to purchase 853.62 MU including free power of 66.28 MU as detailed in Table below:

Table 6.16: Power Purchase Cost Projected by EDM for FY 2014-15 (Format 12 of ARR)

Source	FY 2012-13 (Actual)	FY 2013-14 (Estimated)	FY 2014-15 (Projected)
CGS - NEEPCO			
Kopili I HE	4.80	5.21	5.21
Kopili II HE	1.20	1.20	1.16
Khandong HEP	3.00	3.01	3.01
Ranganadi HEP	28.13	28.13	27.51
Doyang HEP	5.15	5.75	5.75
Assam GBPP	42.36	44.59	44.59
Agartala GTPP	17.71	18.53	18.53
CGS- NHPC			
Loktak HE	23.91	23.91	23.72
Loktak Free Power			
TSECL			
Baramura GBPP Unit IV and V	24.20	24.99	24.99
New Plants			
OTPC Pallatana Unit I		19.50	55.73
OTPC Pallatana Unit II			13.74
NTPC Bongaigaon Unit I			6.72
Arrears of power purchase bills	19.78	48.00	15.00
Power Purchase under UI	7.94	11.18	5.40
Total Power Purchase Cost	178.18	234.00	251.05
PGCIL Transmission Charges	23.92	26.14	32.89
SLDC Charges	0.84	0.90	1.00
Total	202.94	261.04	284.94

(Source: Format 7 of ARR)

- The EDM submitted that the cost of power purchase from CGS for FY 2014-15 is estimated.
 - Based on the average power purchase rate of FY 2012-13 or FY 2013-14 (for half year) on the projected performance in terms of units generated.
 - For TSECL (Baramura Plant), approved rate of Rs. 3.01 has been escalated by 3% and arrived at Rs. 3.10.



- For new generating plants of OTPC Pallatana and NTPC- Bongaigaon tariff has not been approved by CERC. As such provisional tariff of Rs. 3.60/ unit has been taken for OPTC- Pallatana and Rs. 3.00/ unit for NTPC Bongaigaon.
2. Besides current purchase bills, EDM shall also be required to clear the pending arrears bills which are around Rs. 78 crore as on 30.09.2013.
 - The reasons for these arrears are due to large number of supplementary bills issued by CGS based on new tariff orders issued by CERC.
 - In tariff order for FY 2012-13 the Commission has approved arrears of Rs. 80 crore as claimed by EDM, but the Commission had kept uncovered regulatory asset o RS. 70 crore. As such the arrears of power purchase bills could not be cleared completely and now supplementary bills received.
 3. However EDM is planning to liquidate about Rs. 48 crore of arrear bills in 2nd half of FY 2013-14 with the support of GoM. The balance Rs. 30 crore is proposed to be liquidated in the next two ensuring years at Rs. 15 crore P.A.
 4. The method of estimating station wise average power purchase rate per unit for FY 2014-15 is summarised in table below.

Table 6.17: Power Purchase rate for FY 2014-15

Sl. No.	Source	Average Tariff in Rs/unit				Latest applicable fixed charges	Latest applicable variable charges	Normative Tariff	Average Tariff assumed	Remarks
		FY 10-11	FY 11-12	FY 12-13	FY 13-14					
A	CGS- NEEPCO									
1	Kopili - I HE	0.69	0.72	0.99	0.94	3.95	0.46	1.17	0.94	Tariff of FY 13-14
2	Kopili - II HE	1.67	1.73	1.88	1.59	0.56	0.94	1.84	1.88	Tariff of FY 12-13
3	Khandong HE	1.03	1.37	2.77	2.45	2.00	1.11	2.96	2.77	Tariff of FY 12-13
4	Ranganadi HE Project	1.65	3.03	2.74	2.73	15.25	1.22	2.74	2.74	Tariff of FY 12-13/ Normative Tariff
5	Doyang HE project	2.84	3.01	3.31	3.31	3.68	2.08	4.19	3.31	Tariff of FY 12-13 and FY



										13-14
6	Assam GBPP	2.71	2.82	3.21	3.38	21.15	2.07	3.67	3.38	Tariff of FY 13-14
7	Agartala GTPP	2.62	3.10	3.46	3.62	6.26	2.61	3.83	3.62	Tariff of FY 13-14
B	CGS - NHPC									
8	Loktak HE	1.10	2.10	2.37	2.23	11.30	1.30	2.42	2.37	Tariff of FY 12-13
9	Loktak Free Power	0.00	0.00	0.00	0.00					
C	TSECL									
10	Baramura GBPP Unit IV and V	2.84	3.13	3.00	3.01				3.10	3% growth on tariff of FY 13-14
D	New Plants									
11	OTPC Pallatana Unit I								3.60	
12	OTPC Pallatana Unit II								3.60	
13	NTPC Bongaigaon Unit I								3.00	
	Power Purchase under UI			2.65	3.62				3.00	

Commission's Analysis

As already discussed in para 6.11(b) ante, the Commission has finalized and approved the quantum of power to be purchased by EDM during the year 2014-15. The power purchase cost constitutes about 60% of the ARR.

As verified from the power purchase rate arrived by the EDM in table 6.17 supra, it is observed in general that the highest of average unit rates during FY 2012-13 and FY 2013-14 are adopted by the EDM. The Commission considers it appropriate to adopt average rate per unit as adopted by EDM. For Baramura and Pallatana, the rates assumed by EDM are considered as it is. EDM has stated that arrear bills to a tune of Rs. 80.01 crore pending out of which EDM planning to liquidate about Rs. 48 crore in 2nd half of FY 2013-14 leaving a balance arrears amounting to Rs. 30 crore, which the EDM proposes to clear in ensuring years. That is Rs. 15 crore during FY 2014-15 and balance Rs. 15 crore during FY 2015-16. The Commission has observed that the arrear amount is accrued due to revision of tariffs retrospectively by Generation and Transmission companies for the past many years and is of the view that the timely payment will be necessary to avoid regulation of power. The Commission also realizes



the great impact of the arrear due from the consumers. This issue is addressed separately in the subsequent para 6.22. Thus, the arrears of Rs. 15 crore projected by EDM are also considered and the power purchase cost for FY 2014-15 is computed as detailed in table below.

Table 6.18: Power Purchase Cost of EDM approved by the commission for FY 2014-15

Sl. No.	Station	Energy Purchase (MU)	Average rate (Rs./Kwh)	Total Cost (Rs./crore)
I	NEEPCO			
A	Hydro			
1	Koppili I	55.44	0.94	5.21
2	Koppili II	6.18	1.88	1.16
3	Khandong	10.85	2.77	3.01
4	Ranganadi	100.39	2.74	27.51
5	Doyang	17.37	3.31	5.75
	Sub-total of (A)	190.23		42.64
B	NEEPCO (Gas Based)			
6	Assam Gas based power project	131.88	3.38	44.59
7	Agartala Gas Turbine power project	51.23	3.62	18.53
	Sub-total of (B)	183.11		63.12
C	NHPC - Loktak			
8	Power Purchase	100.07	2.37	23.72
9	Free Power	66.28	---	---
	Sub-total of (C)	166.35		23.72
D	TSECL			
10	Baramura IV & V	80.56	3.10	24.99
E	New Plants			
11	OTPC – Pallatana-I	154.80	3.60	55.73
12	OTPC-Pallatana-II	38.17	3.60	13.74
13	NTPC-Bangaigaon-I	22.40	3.00	6.72
	Sub-total of (E)	215.37		76.19
14	Arrears			15.00
15	PGCIL Transmission Charges			32.89
16	SLDC Charges			1.00
17	Grand Total	835.62		279.55



The Commission accordingly approves the power purchase cost at Rs. 279.55 core (including arrears) for purchase of 835.62 MU (including 66.28 MU free power from Loktak HEP) for FY 2014-15 as against Rs. 284.94 crore projected by the EDM.

6.15 Operation and Maintenance Expenses

(a) Employee cost

The EDM has projected employee cost at Rs. 107.89 crore for the year 2014-15. Employee cost includes basic pay, dearness allowance, house rent allowances etc. EDM has stated that the employee cost has been increased in past three years due to the implementation of 6th Pay Commission. The employee cost for 2014-15 is projected by escalating actual expenses during 2012-13 at 5%. Component of DA is made as per recommendation of 6th Pay Commission Year wise expenses furnished by the EDM for the FY 2012-13 to 2014-15 are detailed in Table below:

Table 6.19: Employee cost furnished by EDM for FY 2014-15

(Rs. Crore)			
Employees Cost	FY 12-13 Actuals	FY 13-14 Estimates	FY 14-15 Projected
Total Payouts for current year	102.79	105.37	107.89
Arrears due to VI pay Commission	3.20	0.00	0.00
Grand Total	105.99	105.37	107.89

(Source: Table 16 of ARR)

Employee cadre strength for the years 2012-13, 2013-14 and 2014-15 are furnished in Table below.

Table 6.20: Number of Employees furnished by EDM

Sl. No.	Particulars	Previous year (Actuals)	Current Year (R.E)	Ensuing Year (Projection)
1	Number of employees as on 1 st April	3462	3312	3162
2	Number of employees on deputation/ foreign service as on 1 st April	0	0	0
3	New recruitments during the year	0	0	0
4	Total Number of employees (1+2)	3462	3312	3162
5	Number of employees retired/ retiring during the year	150	150	150



6	Number of employees at the end of the year (3-4)	3312	3162	3012
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(Source: Format 9 of ARR)

Commission’s analysis

As seen from the above the EDM projected reduction in cadre strength at 5% PA over actual cadre strength during FY 2012-13, while escalation in employee costs is projected at 2.5% PA over the actual expenses during FY 2012-13. Further, as per the resources of annual plan for FY 2014-15 of EDM submitted by EDM on 21.2.2014, the establishment and administrative charges projected for FY 2014-15 are Rs. 99.18 crore out of which Rs. 0.83 crore are administrative charges. So, employee expenses are Rs. 98.35 crore (99.18-0.83)

The Commission, approves the employee cost of Rs. 98.35 crore for the year 2014-15 as against Rs 107.89 crore projected by the EDM.

(b) Repairs and Maintenance expenses

The EDM has projected R&M expenses at Rs. 9.92 crore for the year 2014-15. Year wise expenses for the year are furnished in the Table below.

Table 6.21: R & M Expenses furnished by the EDM for FY 2012-13

(Rs. crore)					
S. No.	R&M Cost	FY 11-12 Actuals	FY 12-13 Actual	FY 13-14 Estimate	FY 14-15 Projected
	Grand Total	7.87	3.96	9.82	9.92

(Source: Table 14 of ARR)

The EDM stated that the actual R&M expenditure during FY 2012-13 is less due to less funds available with the state Government. The EDM requested the Commission to approve the expenses for FY 2014-15 as projected without any disallowance as the same is necessary for proper maintenance and strengthening of the system and quality of supply in the region in order to ensure a consumer satisfaction.

Commission’s Analysis

It is observed that the expenditure estimated for the year 2011-12 is Rs. 7.87 crore



EDM stated that the expenditure during 2012-13 was less owing to less funds available. Considering actual expenditure during FY 2011-12, the EDM has projected expenditure for FY 2014-15 at an escalation of 8% PA which is on high side.

The Commission considered an escalation of 5% PA which works out to Rs. 9.11 crore.

The Commission accordingly approves Rs. 9.11 crore towards R&M expenses for the year 2014-15 as against Rs. 9.92 crore projected by EDM.

(c) Administrative and General Expenses

The EDM has projected A&G Expenses of Rs. 0.83 crore for the year 2014-15 at an escalation of 8% Payout actual expenditure of Rs. 0.71 crore during FY 2012-13 as detailed in table below.

Table 6.22: A&G Expenses projected by EDM for FY 2014-15

A&G Charges	(Rs. crore) FY 14-15 Projected
Regulatory Fees	0.17
Publication	0.06
Legal & Consultancy Charges	0.30
Office Expenses	0.20
Domestic Travel expenses	0.08
Other Expenses	0.02
Grand Total	0.83

(Source: Table 18 of ARR)

Commission’s Analysis

The actual expenditure during FY 2011-12 was Rs. 0.66 crore and the percentage of increase during FY 2012-13 over FY 2011-12 is 7.58%. As such the projection of expenditure for FY 2014-15 at 8% PA over actual expenditure during FY 2012-13 is reasonable.

The Commission approves Rs. 0.83 crore towards A&G expenses for FY 2014-15 as projected by the EDM.



6.16 Capital Expenditure Plan for FY 2014-15

The EDM has projected capital expenditure to a tune of Rs. 396.01 crore FY 2014-15 for generation, transmission and distribution functions mainly focusing on increasing generation capacity, augmenting existing generating plants, strengthening electricity network and augment new networks for ensuring reliable power to its consumers

Capital expenditure plan

1. Considering the increase in demand from HT & LT consumers, EDM would be required to undertake significant capital expenditure for system augmentation and strengthening. System augmentation would not only help EDM in handling increased load but would also ensure better quality of supply and network reliability to the consumers. EDM's T&D loss levels are very high. The capital expenditure would help in reduction in the T&D loss level.
2. Every year EDM prepares an Annual resources Plan for the capital investment for new schemes and continuing schemes, which it plans to incur in the ensuing year. The EDM, has to undertake various capital projects for generation, transmission/sub-transmission and distribution functions mainly focusing on the increasing generation capacity, augmenting existing generating plants, strengthening electricity network and augment new networks for ensuring reliable power to its consumers.

Details of ongoing capital schemes are furnished hereunder:

Major Capital Expenditure Schemes

- Loktak Down Stream Hydro Electric Project – (2 x 33 MW)
- New 132 kV Sub-Station – 6 Nos. at Kongba, Hundung Chendal. Thanlon, Moreh and Thoubal and associated lines.
- 132 kV S/C line from strengthening of 132 KV line from Ningthoukhong to Churachandpur.
- Upgradation of the installed capacities of 33/11 kV and Distribution Sub-Stations and new 33 KV lines.



- Improvement of Distribution system in Greater Imphal and other Towns
 - R&M of existing 6 Nos. 132 KV substations and augmentation of 2 Nos. existing substations.
 - 16 Nos. new 33 KV substations and augmentation of 9 Nos. existing substations.
 - Providing prepaid energy meters in Imphal and replacement of old electromechanical meters with electronic meters.
3. Apart from the above schemes, EDM has also undertaken large scale rural electrification and development, augmentation and improvement of electricity infrastructure under Rajiv Gandhi Gramin Vidyutikaran Yojana (RGGVY) and Restructured Accelerated Power Development Reforms Programme (RAPDRP) respectively. Function wise details of actual expenditure during 2012-13 and estimated for 2013-14 and projected for 2014-15 are given in Table below.

Table 6.23: Proposed Capital Expenditure

(Rs. crore)

Capital Expenditure	FY 12-13 (Actuals)		FY 13-14 (Estimated)		FY 14-15 (Projected)	
	Plan	Outside Plan	Plan	Outside Plan	Plan	Outside Plan
Generation Schemes	1.30		5.01		20.00	
Transmissions Schemes	25.95	12.33	41.10		75.00	
Distributions Schemes	46.04	8.92	72.51	119.66	139.90	129.11
Rural Electrification Schemes	13.37	44.39	25.68		12.00	
Miscellaneous Schemes	2.38		13.69		20.00	
Total	89.04	65.64	157.99	119.66	266.90	129.11

(Source: Table 19 of ARR)

The capitalization of new schemes from FY 2012-13 onwards has been considered at 30% of the planned capital expenditure in the same year, 40% in the second year and the balance 30% has been capitalized during third year. A summary of the capital expenditure and capitalization for FY 2012-13 and FY 2013-14 and FY 2014-15 is summarized in Table below:



Table 6.24: Capital Work in Progress

(Rs.crore)				
S. No.	Particulars	FY 2012-13 (Actuals)	FY 2013-14 (Estimates)	FY 2014-15 (Projected)
1	Capital Expenditure	154.68	277.65	396.01
2	Capitalisation during the year for old and New Schemes			276.27

Commission's analysis

The EDM has stated that it has capitalized the CWIP on percentage basis irrespective, whether the work is completed or not and asset put to use which is not in order. Further the CWIP is not furnished in the prescribed format i.e., opening CWIP at the beginning of the year. Expenditure during the year, capitalised during the year and closing CWIP at the end of the year.

The EDM is directed to reconcile the CWIP and correct data be furnished in the above format along with future tariff petition.

With the above observations the capital expenditure of Rs. 396.01 crore and capitalisation of Rs. 276.27 crore during FY 2014-15 is approved.

6.17 Gross Fixed Assets

The EDM has stated that as the department is not maintaining account statements as per relevant schedules of companies act, the exact value of gross fixed assets is not available with the department. The work of assets evaluation and preparation of asset registers along with segregated account statements for the various functions of the department, has been given to M/s. SBI caps. The draft report in this regard has been submitted by them, which is under the process of review and finalisation as of now. As and when the report gets finalised the department would be able to submit opening financial statements for the restructured companies of the department.

As the segregated financial statements for functions of Generation, Transmission and Distribution are yet to be finalised the department is unable to determine



transmission and wheeling charges.

Commission's Analysis

EDM has stated that draft report on preparation of asset registers with segregated account statements has been received from M/s. SBI caps which is under review and finalisation.

However in the tariff order dated 14.08.2012 for FY 2012-13 the Commission has arrived opening GFA as on 01.04.2012 at Rs. 1504.04 crore. Additions during the FY 2012-13 and FY 2013-14 are considered at Rs. 216.71 crore and Rs. 214.91 crore respectively as furnished by the EDM on 22.2.2014. Further the addition during the FY 2014-15 are considered at Rs. 276.67 crore as projected by EDM and worked out GFA growth to end off FY 2014-15 as detailed in table below.

Table 6.25: Gross Fixed Assets of EDM

(Rs. crore)			
Year	Opening GFA	Addition	Closing GFA
2012-13	1504.04	216.71	1720.75
2013-14	1720.75	214.91	1935.66
2014-15	1935.66	276.27	2211.93

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

6.18 Depreciation

The EDM has projected depreciation amount at Rs. 10.28 crore for the year 2014-15 equivalent to the amount of loan repayment proposed as detailed in table below.

Table 6.26: Depreciation projected by EDM for FY 2012-13

Particulars	(Rs. crore)		
	FY 12-13	FY 13-14	FY 14-15
	Actuals	Estimated	Projected
Repayment of loans for REC	7.54	8.79	10.28
Depreciation Claimed	7.54	8.79	10.28

(Source: Table - 19 of ARR)



Commission's Analysis

As per Regulation 98 (3) of JERC for MM (Terms and Conditions for Determination of Tariff) Regulations, 2010, the depreciation shall be computed on the historical cost of the assets including additional capitalization during the year at the CERC approved depreciation rates. The average rate of depreciation effective from 01/04/2009 is 5.28%. The total depreciation during the life of the asset shall not exceed 90% of the original cost.

As discussed in para 6.18 supra, the opening GFA as on 01.04.2014 and additions during the year at Rs. 276.27 crore proposed by EDM are considered and depreciation worked out on 10% of the average value of GFA for FY 2014-15 since 90% of the expenditure is stated to be funded by Government of India as grant. Thus the Depreciation works out to Rs. 10.26 crore as detailed in table below.

Table 6.27: Depreciation approved by the Commission for FY 2014-15

(Rs. crore)		
Sl. No.	Particulars	Amount
1	Opening GFA	1935.66
2	Additions during FY 2014-15	276.27
3	Total GFA at the end of FY 2014-15	2211.93
4	Average GFA (1+3)/2	2073.80
5	10% of (4)	207.38
5	Rate of depreciation	5.28 %
6	Depreciation for FY 2014-15	10.95

The Commission accordingly approves depreciation of Rs. 10.26 crore for the year 2014-15 as against Rs. 10.28 crore projected by EDM.

6.19 Interest and Finance Charges

The EDM has projected the interest and finance charges at Rs. 12.63 crore for FY 2014-15. The EDM is availing various loans from REC to fund capital projects. Outstanding loan amount and new loans proposed and interest changes are furnished in table below.

Table 6.28: Interest and Finance Charges furnished by EDM for FY 2014-15

(Rs. crore)			
Particulars	FY 12-13	FY 13-14	FY 14-15



	Actual	Estimates	Projected
Opening Loans	81.38	79.12	81.64
Addition during the year	5.28	11.31	11.58
Repayments	7.54	8.79	10.28
Closing Loans	79.12	81.64	82.94
Interest Paid during the year	10.51	10.53	10.78
Other Financial Charges	1.85	1.85	1.85
Total Interest and Finance Charges	12.36	12.38	12.63

(Source: Table 22 of ARR)

Commission’s Analysis

As stated the EDM they are availing loans from REC only. But the rate of interest is not furnished by EDM.

EDM proposed additional loans during FY 2013-14 and FY 2014-15. But as verified from the data furnished in resources of Annual Plan for FY 2014-15 submitted by EDM on 21.2.2014, no additional loans are proposed during FY 2013-14 and FY 2014-15. As verified from the actual during FY 2012-13 the rate of interest works out to be 13%. Accordingly interest during FY 2013-14 and FY 2014-15 is worked out on outstanding loan amount as detailed in table below. Finance charges during FY 2013-14 and FY 2014-15 are not allowed as no additional loan is contemplated.

Table 6.29 :Interest and finance charges approved by the Commission for FY 2014-15

Sl. No.	Particulars	FY 2012-13	FY 2013-14	FY 2014-15
1	Opening loan	81.38	79.12	70.33
2	Addition during the year	5.28	---	---
3	Repayment during the year	7.54	8.79	10.28
4	Closing loan	79.12	70.33	60.05
5	Average loan (1+4)÷2	80.25	74.73	65.19
6	Interest paid	10.25	9.71	8.48
7	Rate of Interest	13%	13%	13%
8	Other Finance charges	1.85	---	---
9	Total Interest and Finance charges (6+8)	12.36	9.71	8.48

The Commission accordingly approves the interest charges of Rs. 8.48 crore for the year 2014-15 as against Rs. 12.63 crore projected by the EDM.



6.20 Interest on Working Capital

The EDM has not projected interest on working capital for FY 2014-15 on the pretext that EDM has not availing any loan for working capital

Commission's Analysis

The EDM has stated that the department is not going to avail loan for working capital during the year 2014-15. However, as per the provisions of Regulation 98(6) of JERC (Terms and Conditions for Determination of Tariff) Regulations, 2010 interest for working capital loan shall be payable on normative basis not with standing that the distribution licensee has not taken working capital loan.

The rate of interest on working capital loan shall be equal to the Short Term Prime Lending Rate of SBI as on 1st April of the relevant year. The rate of interest as on 1.4.2013 is 14.45%. The interest on working capital loan is worked out on the approved expenses as detailed in Table below.

Table 6.30: Interest on Working Capital approved by the Commission for the FY 2014-15

(Rs. crore)			
Sl. No.	Particulars	Total Cost	One month requirement
1	Fuel cost	1.18	0.10
2	Power purchase cost	279.55	23.30
3	Employee cost	88.35	7.36
4	R&M expenses	9.11	0.76
5	Adm. & Gen expenses	0.83	0.07
6	Total working capital		31.59
7	Rate of interest		14.45%
8	Interest on working capital		4.56

The Commission, accordingly, approved the Interest on Working Capital at Rs. 4.56 crore for FY 2014-15.

6.21 Provision for Bad Debts

The EDM has projected the provision for bad debts at Rs. 3.00 crore for FY 2014-15 as detailed in table below.

Table 6.31: Provision for Bad & debts projected by EDM for FY 2014-15



Provision for Bad & debts	FY 14-15 Estimated
Total arrears outstanding from consumers as on 31.03.2013	351.00
Provision for Bad & debts as % of receivables	1.00%
Provision for Bad & debts (rounded off)	3.00

The EDM has stated that it has considered provision for bad debts at 1% of receivables as per Regulation 98 (5) of the JERC (Terms and Conditions of Determination of Tariff), Regulations 2010 issued by the Commission.

Commission's analysis

As per Regulations 98 (5) of JERC for M&M (Terms and Conditions and for determination of Tariff) Regulations 2010, a provision for bad debts upto 1% of audited receivables be allowed in revenue requirement. As seen from resources of Annual Plan for FY 2014-15 of EDM the break up of arrears are as follows:

	Rs. in crore
1. State Government	25.509
2. Semi Government	2.647
3. Banks	0.064
4. Central Government	5.709
5. Co-operative	0.156
6. District Council	0.237
7. Private & General Public	316.843
Total	<u>351.165</u>

As verified from the above huge amount is due from private and general public which is more than two years assessment.

This clearly indicates that electricity supply is not disconnected to the defaulting consumers. The EDM is directed to initiate action as per JERC for M&M (Electricity Supply Code) Regulation, 2010 and Electricity Act, 2003 to realize the dues from the defaulting consumers.

The EDM has not produced audited accounts for FY 2012-13. As such a nominal



amount of Rs. 0.15 crore is allowed.

The Commission accordingly approves provision for bad debts at Rs. 0.15 crore for FY 2014-15.

6.22 Return on Equity

As stated, EDM is dependent on the budgetary support from the Government of Manipur and therefore not claiming any ROE for FY 2014-15.

Commission's Analysis

In the absence of equity infusion, the question of RoE does not arise.

6.23 Non-Tariff Income

The EDM has projected the non-tariff income at Rs. 0.25 crore for FY 2014-15. Non-tariff income comprises meter rent, late payment charges, miscellaneous income such as interest on staff loans, cost of auctioned stores, rebate on timely payment of power purchase bills etc. The EDM has stated that for projecting non-tariff income for FY 2014-15, income under this head for the past three years have been assumed as provided in table below:

Table 6.32: Non-Tariff Income projected by EDM for FY 2014-15

Particulars	(Rs. crore)		
	FY 12-13 Actuals	FY 13-14 Estimates	FY 14-15 Projected
Total	0.10	0.11	0.25

(Source: Table 24 of ARR)

Commission's Analysis

EDM in its letter No. 1/1/1 EDM(JERC)/TP/13-14/pt 11 dated 24.01.2014 has stated that meter rent is not included under non-tariff income and the same is included in revenue from sale of energy, which is not in order. Non-Tariff Income comprises of meter rent, late payment charges, miscellaneous income such as reconnection



charges, Meter/consumer installation charges, interest on staff loans, rebate for timely payment, cost of auctioned stores material, penalty on theft of energy charges etc.

The EDM is directed to account for revenue from above heads under Non-Tariff Income invariably from next tariff petition.

For the present non-tariff income is approved as projected by EDM.

The Commission approves the non-tariff income of Rs. 0.25 crore for the year 2014-15 as projected by the EDM.

6.24 Aggregate Revenue Requirement

Based on the above analysis and approvals, the Aggregate Revenue Requirement projected by the EDM and approved by the Commission for the year 2014-15 is furnished in Table below:

Table 6.33: Aggregate Revenue Requirement approved by the commission for FY 2014-15

(Rs. crore)			
S. No.	Particulars	Projected by EDM	Approved by the Commission
1	Fuel cost	1.18	1.18
2	Power purchase cost	284.94	279.55
3	O&M expenses		
	(a) Employee costs	107.89	88.35
	(b) Repair & Maintenance expense	9.92	9.11
	(c) Adm & Gen. Expenses	0.83	0.83
4	Depreciation	10.28	10.95
5	Interest & Finance Charges	12.63	8.48
6	Interest on Working capital	-	4.56
7	Provision for bad debts	3.00	0.15
8	Return on Equity / ROR	-	-
9	Total expenditure	430.68	403.18
10	Less: Non Tariff income	0.25	0.25
11	Aggregate Revenue Requirement	430.43	402.93

6.25 Expected Revenue from Existing Tariff

The EDM has projected the revenue from existing tariff at Rs. 198.18 crore for FY 2014-15 including the sales under UI as detailed in Table below.



Table 6.34: Revenue with Existing Tariff Projected by EDM for FY 2014-15

(Rs. crore)

Revenue	FY 12-13 Actuals	FY 13-14 Estimated	FY 14-15 Projected	Average per unit Existing Tariff
Kutir Jyoti	1.44	1.66	1.96	1.79
Domestic	52.19	64.8	76.54	2.83
Commercial	10.26	12.81	15.06	3.57
Small Industry	2.35	2.96	3.55	1.44
Medium Industry	0.78	1.25	1.1	6
Large Industry	5.34	6.14	7.28	3.75
Bulk	31.55	37.29	44.07	3.96
Street Lighting	2.26	2.19	2.29	4.41
Irrigation & Water Works	0.25	1.18	2.13	4.16
Public Water Works	9.13	10.54	12.19	3.86
Temporary	0.22	0.25	0.24	4.72
Total	115.77	141.06	166.42	
UI Receivable	19.09	20	31.76	2.5
Total	134.86	161.06	198.18	

(Source: Table -26 of ARR)

Commission's Analysis

As already discussed in para 6.12, the surplus power to be sold under UI sales is 115.47 MU. The EDM has projected UI sale at Rs. 2.50 per kWh.

Now, with the category wise sales approved vide para 6.8, the revenue from existing tariffs including UI sales works out to Rs. 235.36 crore during FY 2014-15 as detailed in Table below.



Table 6.35: Revenue from Approved sales for 2014-15 with Existing Tariff

S. No.	Consumer category	Energy sales approved by the Commission (MU)	Average Rate (Rs. / kWh)	Revenue (Rs. crore)
1	Kutir Jyoti	10	1.78	1.78
2	Domestic	270.42	3.90	105.46
3	Commercial	42.17	4.66	19.65
4	Public lighting	5.18	4.50	2.33
5	Public water works LT	8	4.32	3.46
	Public water works HT	23.60	5.21	12.29
6	Irrigation & Agriculture LT	1	2.76	0.27
	Irrigation & Agriculture HT	2	2.72	0.54
7	Small Industries	24.69	3.05	7.53
8	Medium Industries	2.50	4.22	1.05
9	Large Industries	19	4.63	8.80
10	Bulk supply	110	3.92	43.12
11	Temp supply	0.50	4.49	0.22
12	Total	519.06		206.50
13	UI sales	115.47	2.50	28.86
	Grand Total	634.53		235.36

Detailed calculation of revenue from sale within the State excluding Temporary supply is given in Annexure – I.

The Commission, accordingly, approves the revenue from existing tariff and UI sales at Rs. 235.36 crore for FY 2014-15 as against Rs. 198.19 crore projected by the EDM.

6.26 Revenue Gap for FY 2014-15 with existing tariff

Table 6.36: Revenue Gap approved by the commission for FY 2014-15



Particulars	Unit	Projected by EDM	Approved by the Commission
Revenue requirement	Rs. crore	430.43	402.93
Revenue from existing tariff	Rs. crore	166.42	206.50
Outside state sales	Rs. crore	31.76	28.86
Total revenue from sale of energy	Rs. crore	198.18	235.36
Revenue gap	Rs. crore	232.25	167.57
Energy sales within the State	MU	523.13	519.06
Average cost without subsidy	Rs. /kWh	8.23	7.76
Average cost with subsidy of Rs 150 crore	Rs. /kWh	5.36	4.87

The total energy available for sale is inclusive of the energy available free of cost from Loktak HEP (NHPC)(i.e. 66.28 MU). Had it not been there, the average cost of supply would have been much more.

6.27 Revenue from Revised Tariff for FY 2014-15

As seen from Para 6.27 supra there is a revenue gap of Rs. 167.57 crore which is about 43 % of Net ARR FY 2014-15. The existing tariffs are fixed on 14.08.2012 and as such, the Commission considers revising the Existing non-telescopic tariffs by about 8% under telescopic billing without giving tariff shock to consumers to bridge the gap partially. Owing to revision of tariffs and considering UI energy sales and temporary power supply, the EDM is expected to get additional revenue of Rs. 16.16 crore as detailed in table below.

Table 6.37: Revenue from Approved sales for 2014-15 with Revised Tariff

Sl. No.	Consumer category	Energy sales approved by the Commission (MU)	Average Rate (Rs. / kWh)	Revenue (Rs. crore)
1	Kutir Jyoti	10	1.78	1.78
2	Domestic	270.42	4.03	108.87
3	Commercial	42.17	5.30	22.35
4	Public lighting	5.18	5.05	2.61
5	Public water works LT	8	4.92	3.93
	Public water works HT	23.6	5.81	13.70
6	Irrigation & Agriculture LT	1	3.04	0.30
	Irrigation & Agriculture HT	2	2.96	0.59



7	Small Industries	24.69	3.45	8.52
8	Medium Industries	2.5	4.72	1.17
9	Large Industries	19	5.23	9.94
10	Bulk supply	110	4.42	48.64
11	Temp supply	0.5	5.12	0.26
12	Total	519.06		222.66
13	UI sales	115.47	2.50	28.86
14	Grand Total	634.53		251.52
15	Less Revenue from existing Tariff			235.36
16	Additional Revenue			16.16

There by the gap reduced to Rs. 151.41 crore (167.57 – 16.16) which the EDM shall meet from Government subsidy and by improving internal efficiency.

The Commission accordingly approved revenue from revised tariffs at Rs.244.26 crore with the energy sales of 519.08 MU (inclusive of temporary supply) within the State.

The average realisation with existing tariffs is Rs.3.98 kWh and with revised tariffs is Rs.4.29/kWh as worked out in Annexure-IV and Annexure-V. The increase in average realisation per unit is 8 % only.

6.28 Government Subsidy

The EDM proposed budgetary support of Rs. 181.29 crore from Government of Manipur. As seen from the above it is clear that the revenue from sale of power is not sufficient to meet the expenditure of EDM as a result of this the EDM shall continue to depend upon the subsidy from Government of Manipur. Out of net revenue gap of Rs. 151.41 crore arrived in para 6.28 supra the EDM shall generate additional revenue of Rs. 1.41 crore by improving internal efficiency and balance Rs. 150 crore shall be met from Government subsidy as against Rs. 181.29 crore proposed by EDM. Thus, the burden of State Government will be reduced by Rs.23.29 crore.

As per National Tariff Policy, subsidy from government is to be reduced every year to ultimately run the utility without subsidy. In this context the Commission considers a subsidy of Rs.150 crore for FY 2014-15 and the existing tariffs are suitably revised by



an average increase of 8% only for FY 2014-15 without causing much burden to the consumers. With this tariff revision the EDM will earn additional revenue of about 16 crore during FY 2014-15 from the electricity consumers within the State.

The State Government shall pay the subsidy amount to the licensee in advance as per section 65 of 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 reducing T&D losses, proper billing and collecting revenue and reducing its expenditure.



7. Transmission and Wheeling Charges

7.1 Transmission Charges.

The EDM being an integrated utility, has to file separate petition for determination of transmission Tariff. Data made available to the Commission is not adequate for fixing transmission charges. The EDM is directed to file the separate petition with required data prescribed in JERC (Terms and Conditions for determination of tariff) Regulations, 2010.

7.2 Wheeling Charges.

Separate petition is also to be filed by EDM for determination of wheeling charges for implementation of open access in the state.



8. Directives

8.1 General

While examining the information and data contained in the proposed ARR and Tariff Petition for the FY 2014-15, it is observed that the computation and compilation of the data have been done based on assumptions only and as a result, there has been difficulties in finalization of the ARR and determination of retail tariff also. The above observation itself substantiates the fact that the administrative, technical and commercial performances of the EDM require substantial improvement within a specified time frame.

Similar situation was noticed in the ARR & Tariff petition for the FY-2012-13. The Commission had observed that while there is ample scope for reducing cost and increasing efficiency in the operation of the department, serious efforts appear to be lacking. It is in the above context that 22 directives were given for compliance in the Tariff Order 2010-11 out of which 5 directives were fully complied with five fresh Directives were issued in tariff order for FY 2012-13. The Commission expected that EDM would take prompt action on the directives and monitor their implementation. Unfortunately, action is yet to be taken on most of the important directives, which could make significant difference to operational efficiency and cost. In some cases action has no doubt been initiated, but overall the seriousness with which the directives were issued by the Commission does not appear to have been realized by the EDM.

In the above background, the Commission is constrained to repeat the directives which have not been fully complied with and also gives specific new directives.

8.2 Status and Compliance of directives issued in Tariff Order FY 2012-13

Directive 1: Filing of next Tariff Petition

EDM shall file the next Tariff Petition well in time i.e. on or before 30th November.

Compliance Status



EDM filed the ARR & Tariff petition for 2014-15 on 30.11.2013.

Comments of the Commission

Because of timely submission of the tariff petition the revised tariff now ordered will be implemented for the whole year. The EDM should adhere to the due date in future filing ARR & Tariff petitions also. The Directive is fully complied with.

Directive 2: Annual Statement of Accounts

The EDM was directed to prepare separate Annual accounts statements such as balance sheet, profit and loss Account and relevant schedules and statements, every year for regulatory purpose and submit to the Commission duly got them audited.

Compliance Status

The EDM has replied that it has submitted proposals to Government of Manipur for hiring a chartered accountant firm for this purpose. Further, M/s SBI Caps has been appointed for consultancy work of finalisation of financial restructuring plan etc to unbundle the department into two companies such as MSPCL and MSPDCL. On finalisation of the reports, the same will be submitted to the Hon'ble Commission.

Comment of the Commission

The Commission has observed that EDM has delayed in the action taken for compliance. EDM shall ensure that this is done on priority. The directive is partially complied.

Directive 3: Maintenance of Asset & Depreciation Registers

Compliance Status:

The EDM has stated that on finalisation of the corporatisation activities, which is expected shortly, the maintenance of asset and depreciation registers will be addressed.

Comment of the Commission



Since the department has already been bifurcated into two Corporations viz. Manipur State Power Distribution Company Limited (MSPDCL) and Manipur State Power Company Limited (MSPCL), there is need to have separate opening balance sheets for both the corporations.

Directive 4: Management Information System (MIS)

The EDM was directed to take appropriate steps to build up credible & accurate database and management information system (MIS) and regularly update the same for future record and reference. Arrangement may also be made for “On-line Payment” and “Payment through Bank” of the electricity bills.

Compliance Status

The EDM has stated that it has tied up with NIC vide letter No.1/2/CMTR/2K 11-12 ED (COMM) 1395-01 dt. 04.04.2012 for implementation of the MIS system. Online submission of CMTR-3 in two divisions have been implemented. The work in other division is in progress.

Comments of the Commission

This may be pursued closely and out come on implementation of MIS be reported by 30.9.2014.

Directive 5: Revenue Arrears

The EDM was directed to assess year wise Revenue Arrears due from consumers and submit a report by 30th September, 2011 to the Commission. The EDM was also further directed to initiate action to collect/ liquidate the arrears.

Compliance Status

The EDM has now furnished year wise closing balance of arrears due from consumers as follows:

As on 31.03.2010	-	Rs. 256.91 crore
As on 31.03.2011	-	Rs. 279.09 crore



As on 31.03.2012	-	Rs. 317.69 crore
As on 31.03.2013	-	Rs. 351.165 crore
As on 30.09.2013	-	Rs. 396.42 crore

EDM will submit quarterly report shortly.

Comments of the Commission

As seen from the above the arrears are increased from Rs. 256.91 crore as on 31.03.2010 to Rs. 396.42 crore as on 30.09.2013, which is a clear indication of inaction on the part of EDM in collection of dues from defaulting consumers.

The EDM is directed to analyze the arrears and take all measures under regulations and bring down the dues to barest minimum. A quarterly report on progress achieved may be reported. Directive is partially complied.

Directive 6: Availability of Energy

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

Compliance Status

The EDM has stated that owing to meager budget required oil could not be purchased.

Further the operational cost is about Rs. 16 per kwh. As such plant is operationalised only on special occasions.

Comment of the Commission

The plant will face premature damage if it is not operated. The EDM shall operate for a



*few hours to mitigate the damage and to supplement the peak power shortages.
Directive not complied with.*

Directive 7: De-commissioning of Generating plants

The Compliance to this directive shall be reported to the Commission soon on written off the asset value of defunct generating plants which are lying idle for more than 15 years.

Compliance Status

EDM has stated that M/s SBI cap who have been appointed for evaluation and finalisation of assets have submitted report which is under examination by EDM.

Comment of the Commission

Directive is not complied with. EDM is directed again to write off.

Directive 8: Sale of Power outside the State

The EMD was directed to ensure that only surplus power be sold under UI sales after fully meeting the state's requirement without any staggering of supply in the state. This may be ensured strictly

Compliance Status

EDM has submitted that there is big gap between supply and demand in the state. EDM says load shedding which depends upon the availability of power.

Comment of the Commission

Directive 9: Transmission & Distribution Losses

To know the actual T&D losses in the system, EDM was directed to ensure 100% metering of all feeders, DTs, and consumer connections and conduct voltage wise energy audit. To achieve this it was directed to chalk out an action plan for preliminary energy audit and submit the same to the Commission by May 2011.

Compliance Status

EDM has stated that for completion of 100% metering the following schemes are being undertaken:



- i) Installation of 1,00,000 Optical Port 1-phase Electronic energy meter in Greater Imphal areas. Order has been issued and work is under progress by three Firms under Trunkey basis. The work is expected to be complete by the end of March, 2014.
- ii) Providing of 60,336 Pre-paid energy meter under P-APDRP in 13 towns. Work order has been issued to two firms and the work is targeted to be completed by middle of 2014.
- iii) The work of providing of feeder meters, boundary meters, DT meters, HT meters is in progress under R-APDRP / RGGVY/ State Scheme, which is to completed by 2014-15.
- iv) Under APDRP Scheme 51,586 Nos. of 1-phase static energy meter (5-40 Amp) are being provided through a firm and present progress as on October 2013 is 26,643 Nos. in various area of Greater Imphal, Chandel and Thoubal. The target completion is by middle of 2014. Actual energy audit is only possible when there is 100% metering in the system from 132 KV level, up to the consumers premises.

Comment of the Commission

The metering system of the EDM is extremely poor. The schemes proposed by EDM are in the nascent stage. The no. of consumers without meters and with defectives meters is as high as 30%. Even the new connections are being released without meters ignoring the provisions of Electricity Act, 2003 and directive of the Commission. The directive is partially complied with.

The EDM is further directed to submit action plan for preliminary energy audit before 30.09.2014 and ensure that no new service connection be released without meter. Quarterly report on the progress of the schemes be sent starting from quarter ending 30/09/2014.

Directive 10: Unauthorized Connection/ Theft of power Cases

&

Directive 11: Detailed Survey & Investigation

In the above two directives the Commission had directed to carryout detailed survey



& Investigation to -

1. Identify an authorized connections.
2. Physical verification of the connected load of all connections.
3. Physical verification of the categories under which the consumers are availing supply.
4. Verification & updation of names of the consumers etc. and
5. Regularize 30000 unauthorised consumers annually.

Compliance Status

EDM stated that it has developed a scheme for out sourcing 147 persons for survey and investigation of consumers' connections.

Comment of the Commission

Out come of the scheme may be reported. The directive is partially complied.

Directive 12: Replacement of Defective Meters and Installation of Meters to Un-Metered Connections

The EDM was directed to provide meters to all un metered consumers and replace the defective meters within the time frame given in the commission order No. 24012/2/5/09 – JERC dt 7.1.2011 on 100% metering plan and submit quarterly report regularly.

Compliance status

The EDM submitted that it has targeted 100 % metering of all connection by middle of 2014.

Comment of the Commission

The time frame set by JERC for 100% metering is 31/03/13. EDM shall submit quarterly progress report from 30/09/2014.

Directive 13: Physical and Financial Status of RAPDRP & RGGVY Schemes



As per above directive EDM has to submit physical and financial progress of work done and the impact of the works on revenue performance and metering with details of work done, amount of revenue increase etc.

Compliance Status

1164 works are contemplated and are under various stages of completion.

Comments of the Commission

As verified from the physical progress report 100% village electrification is nearing completion but progress on providing house hold connections is very poor ie., below 50%. Regarding laying 33 KV lines and sub-stations in most of the cases the target dates of completion is given as 12/2013. The work wise actual dates of completion may be reported by 30.06.2014.

Directive 14: Interest on Security Deposit

EDM was directed to furnish upto-date position of interest on security deposit as per regulation 6.10(5) of JERC (supply code) regulations 2010.

The above rule position may be followed scrupulously and not to commit breach of rule.

Compliance Status

EDM has stated that it is in the process of preparation of segregated financial statements as per companies Act. After finalization of the security deposit held, the EDM will pay interest to the consumers.

Comment of the Commission

The EDM shall work out the interest and furnish it to the Commission. Directive is not complied.

Directive 15: Power from Renewable Sources



The EDM was directed to procure power for renewable.

Compliance Status

There is no grid connected to renewable energy in NE region.

Comment of the Commission

The EDM should make all efforts to procure power from renewable sources available in the state. Purchase of renewable energy for a minimum of the RPO prescribed is mandatory to promote renewable energy generation. EDM is directed to purchase it through REC mechanism. Directive is not complied.

Directive 16: Investment Plan and Capping of Capital expenditure

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

Compliance Status

EDM submitted for only one project on perspective transmission plan after the process of execution is started.

Comment of the Commission

The directive is partially complied.

Directive 17: Maximum Demand Indicator Meters (MDI)

Compliance Status

The Department has purchased 259 meters and planning to purchase more.

Comment of the Commission

Directive is not complied with. EDM is directed to provide MDI within the target date of 100% metering and report compliance. The directive is partially complied.

Directive – 18



Transmission Charges

EDM is directed to file tariff petition for determination of transmission charges along with next ARR and tariff petitions.

Compliance Status

On finalization of SBI Caps report on corporatization and unbundling and segregation of assets and financial statements, separate petition will be filed.

Comment of the Commission

Since, corporatization is completed and separate companies are established, separate petitions for Transmission and Wheeling charges be filed along with next tariff petition.

Directive – 20

Wheeling Charges

EDM is directed to submit adequate data of 33 Kv and 11 Kv distribution system for determination of wheeling charges along with the retail tariff petition of 2013-14.

Compliance Status

On finalization of SBI Caps report on corporatization and unbundling and segregation of assets and financial statements, separate petition will be filed.

Comment of the Commission

Since, corporatization is completed and separate companies are established, the concerned transmission and distribution companies are directed to file separate petition for Transmission charge for the FY2015-06 on or before the 30th November, 2014 and wheeling charge along with next ARR and retail tariff petition.

8.3 Fresh Directives

Directive – 1

Compliances of previous directives

Concerned Transmission and Distribution companies are directed to comply all those directives issued in tariff Order 2012-13 which are not fully complied with within the time frame specified in para 8.2 above.



Directive – 2**Unmetered supply**

As per Electricity Act, 2003, electricity supply should not be given without meters. Commission is also regularly giving directives in this regard. Yet the EDM is releasing new connections without meter which is a very serious deviation. Concerned distribution licensee is directed not to propose tariff for unmetered supply in the next ARR and retail tariff petition.

Directive – 3**Slab-wise energy consumptions.**

EDM proposes to increase number of slab-wise energy consumptions having four slabs in domestic and commercial categories in its ARR & Retail tariff petition for FY 2014-15. The number of slab-wise consumption should be decreased every year to ultimately have single slab to reflect the actual cost per unit. Therefore, concerned distribution licensee is directed to propose three numbers of slab-wise consumption along with total slab-wise energy consumption and to furnish number of consumers having single phase connection and three phase connection separately in its ARR & Retail Tariff Petition for FY2015-16.

9. Tariff Principles and Design

9.1 Background

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

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

- (b)** The NTP mandates that the Multi-Year-Tariff (MYT) framework be adopted for determination of tariff from 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. The present MIS and regulatory reporting system of the EDM is very inadequate for any such exercise at this stage. There has been no study to assess voltage wise losses in the absence of metering of all feeders, distribution transformers and consumers. Technical and commercial losses are yet to be segregated and quantified voltage wise. The Commission has issued a directive to the EDM in the Tariff Order 2010-11 as well as in the present Tariff order for 2014-15 to chalk out a long-term action plan for reduction of T&D losses for both technical and non- technical with relevant load flow studies and energy audit and submit to the Commission by December 2014. Under these conditions, it would not be practicable to implement the MYT framework this year. The Commission, after taking into account all factors, has decided to introduce MYT in due course, when the data is available.



(c) The mandate of the NTP is that tariff should be within plus / minus 20% of the average cost of supply by 2010-11. It is not possible for the Commission at this stage to lay down the road map for reduction of cross subsidy within $\pm 20\%$ mainly because of consumers' low paying capacity and relatively high cost of power. There has been a high level of the fluctuating revenue gap. The gap in the year 2010-11 was 36% and that of 2014-15 is 39%. However, in this tariff order an element of performance target has been indicated by setting target for T&D loss reduction and increasing in sales volume during the period from 2014-15 to 2017-18. The improved performance, by reduction of loss level, and increase in sale will result in substantial reduction in average cost of supply. The existing and proposed tariff of EDM is two part tariff. The Commission has considered for a nominal increase in tariff in view of the extremely poor conditions of power supply in the State.

(d) **Clause 8.3 of National Tariff Policy lays down the following principles for tariff design:**

(i) In accordance with the National Electricity Policy, consumers below poverty line who consume below a specified level, say 30 units per Month, may receive a special support through cross subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply. This provision will be re-examined after five years.

(ii) For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the SERC would notify the roadmap, within six Months with a target that latest by the end of the year 2010-11 tariffs are within $\pm 20\%$ of the average cost of supply. The road map would have intermediate milestones, based on the approach of a gradual reduction in cross subsidy.

For example, if the average cost of service is Rs.3 per unit, at the end of year 2014-15, 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.

- (iii) While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. The tariff for agricultural use may be set at different levels for different parts of the State depending on the condition of the ground water table to prevent excessive depletion of ground water.

(e) Regulation 16 of JERC for M&M (Terms and Conditions for Determination of Tariff) Regulations specifies.

- (i) 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.
- (i) In the first place, the Commission shall determine the tariff, so that it progressively reflects the combined average cost of supply of electricity and also reduce cross-subsidies within a reasonable period. In the second phase, the Commission shall consider moving towards category wise cost of supply as a basis for determination of tariff.

The Commission has considered special treatment to Kutir Jyoti connections and agricultural sector. It has also aimed at raising the per capita consumption of the State from 100 kwh in 2010-11 to 195 kwh in 2014-15 to 300 kWh by the end of 2015. The Commission endeavors that the tariff progressively reflects cost of supply in a shortest period and the Government subsidy is also reduced gradually. The tariff has been rationalized with regards to inflation, paying capacity and to avoid tariff shock.

9.2 Tariff Proposed by the EDM and Approved by the Commission

(a) Existing & Proposed Tariff



EDM in its tariff petition for FY 2014-15 has proposed for revision of the existing retail tariffs to various categories of consumers to earn additional revenue to meet the expenses partly.

The EDM has proposed tariff revision as indicated in table - 9.1 placed below. As per the EDM the proposed increase in tariff would result in an overall increase of about 15 % .

Table 9.1: Existing and Proposed Tariff for FY 2014-15

Existing Tariff(Non-telescopic)			Proposed Tariff(Telescopic)		
Particulars	Fixed Charges (Rs./kW/kVA/Month)	Energy Charges (Rs./kWh)	Particulars	Fixed Charges (Rs./kW/kVA/Month)	Energy Charges (Rs./kWh)
LT SUPPLY			LT SUPPLY		
Kutir Jyoti			Kutir Jyoti		
0-15 kWh	20	1.00	1-15 kWh	20	1.00
Above 15 kWh	20	1.50	Above 15 kWh	20	1.50
Domestic			Domestic		
0-100 kWh	60	2.40	1-100 kWh	70	2.80
0-200 kWh	60	3.00	101-200 kWh	70	3.40
> 200 kWh	60	3.60	201-300 kWh	70	4.10
			Above 300 kWh	70	4.60
Commercial			Commercial		
0-100 kWh	80	3.30	1-100 kWh	90	3.80
0-200 kWh	80	3.90	101-200 kWh	90	4.50
> 200 kWh	80	4.40	201-300	90	5.10
		4.40	Above 300 kWh	90	5.60
Public Lighting	60	4.30	Public Lighting	70	4.90
Public Water Works	100	4.30	Public Water Works	120	4.90
Irr&Agriculture	60	2.50	Irr&Agriculture	70	2.90
Cottage & Small Industry	60	2.50	Cottage & Small Industry	70	2.90
Temporary Supply	80	4.30	Temporary Supply	90	4.90
HT SUPPLY			HT SUPPLY		
Commercial	100	4.00	Commercial	120	4.60
Public Water Works	100	4.00	Public Water Works	120	4.60
Agriculture	100	2.50	Agriculture	120	2.90
Medium Industry	100	3.30	Medium Industry	120	3.80
Large Industry	100	3.80	Large Industry	120	4.40
Bulk Supply	100	3.40	Bulk Supply	120	3.90

(b) Tariff Categories

In the ARR and Tariff Petition of FY 2014-15 the EDM has proposed to revise the tariff from Non-Telescopic to Telescopic.

The Commission approved tariff categories / sub-categories are given below.



LT Supply

- (1) Kutir Jyoti**
 - A. Metered Supply
 - B. Un-metered Supply
- (2) Domestic**
 - A. Metered Supply
 - B. Un-metered Supply
- (3) Commercial**
 - A. Metered Supply
 - B. Un-metered Supply
- (4) Public Lighting**
 - A. Metered Supply
 - B. Un-metered Supply
- (5) Public Water Works (PWW)**
 - A. Metered Supply
 - B. Un-metered Supply
- (6) Irrigation & Agriculture**
 - A. Metered Supply
 - B. Un-metered Supply
- (7) Small Industries**
 - A. Metered Supply
 - B. Un-metered Supply

HT Supply

- (1) Commercial**
Metered Supply Only
- (2) Public Water Works**
 - A. Metered Supply
 - B. Un-metered Supply
- (3) Irrigation & Agriculture**
 - A. Metered Supply
 - B. Un-metered Supply



(4) Medium Industry

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

(5) Large Industry

- A. Metered
- B. Un Metered

(6) Bulk supply

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

(c) Tariff Approved by the Commission

Having considered the Petition No. 2 of 2013 of EDM for approval of Annual Revenue Requirement (ARR) and determination of Retail Tariff for sale of energy and having approved the Annual Revenue Requirement (ARR) with a revenue gap of 167.57 crore vide para 6.27 supra, the Commission considers to revise the tariffs duly switching over from Non-telescopic to Telescopic billing at an average increase of 8% as detailed in table below.

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

S. No.	Category & Consumption	Fixed/Demand Charge per month (Rs)	Energy Charge (Rs./kWh/month)
	LT SUPPLY		
1	Kutir Jyoti		
i)	First - 15 kWh	20/connection	1.00
ii)	Balance above 15 kWh	20/connection	1.50
2	Domestic		
i)	First - 100 kWh	60/contracted load in kW	2.80
ii)	Next- 100 kWh	60/contracted load in kW	3.40
iii)	Next-100 kWh	60/contracted load in kW	4.10
iv)	Balance above 300 kWh	60/contracted load in kW	4.60
3	Commercial		
i)	First - 100 kWh	80/contracted load in kW	3.80
ii)	Next - 100 kWh	80/contracted load in kW	4.50
iii)	Next -100 kWh	80/contracted load in kW	5.10
iv)	Balance above 300 kWh	80/contracted load in kW	5.60



4	Public Lighting	60/contracted load in kW	4.90
5	Public Water Works	100/contracted load in kW	4.90
6	Irrigation & Agriculture	60/contracted load in kW	2.90
7	Small Industry	80/contracted load in kW	2.90
	HT SUPPLY		
1	Commercial	100/billing demand in kVA	5.40
2	Public Water Works	100/billing demand in kVA	4.60
3	Irrigation & Agriculture	100/billing demand in kVA	2.70
4	Medium Industry	100/billing demand in kVA	3.80
5	Large Industry	100/billing demand in kVA	4.40
6	Bulk Supply	100/billing demand in kVA	4.00

Note: The above table depicts fixed and energy charge only.


Details are given in the tariff schedule in the Appendix.

(d) Miscellaneous Charges and Important Conditions of Supply

The detailed Tariffs including rates for un-metered categories of consumer, Miscellaneous charges and Important Conditions of Supply furnished by EDM are examined and approved as proposed with minor changes. These are given in the Tariff Schedule in the Appendix.

- (e)** As per Electricity Act, 2003, electricity supply should not be given without meters. Commission is also regularly giving directives in this regard. Yet the EDM is releasing new connections without meter which is a very serious deviation. In next tariff order no unmetered tariff will be allowed.

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



Dated Aizawl
The 28th February, 2014.





Tariff schedule

1. LT Supply

Category -1: Kutir Jyoti

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

System of Supply:

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

A) Metered Supply:

Consumption/month	Energy/Variable Charges (Rs./kWh)	Fixed/Demand Charge per month (Rs./Connection)
First 15 kWh	1.00	20.00
Balance above 15 kWh	1.50	20.00

B) Un – metered Supply:

1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.

2) **Fixed Charge/month:** Rs. 20/Connection/Month

Category-2: Domestic

Applicability: The Tariff is applicable to all supplies for general domestic purposes such as Light, Fans, Heating devices, Television, VCR/VCP, Radio, Refrigerator, Air-conditioner, lift motors and all others appliances only for bona-fide residential used. This will also cover consumption of energy supplied for Government owned Educational and Research Institutions, Charitable Institutions, Government owned Hospital and Dispensaries, Farm houses, Religious premises like Churches, Temples, mosques, religious offices and any other



institutions or Offices not engaged in any commercial activity or private gain, excluding those consumers specially covered under other Categories of this Tariff.

System of Supply:

- (a) AC 50 cycles, single phase, 230 V upto 5 kW of connected load.
- (b) AC 50 cycles, three phases, 400 V above 5 kW and upto 50 kW of connected load.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
First 100 kWh	2.80	60.00
Next 100 kWh	3.40	60.00
Next 100 kWh	4.10	60.00
Balance above 300 kWh	4.60	60.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/ month:** Rs. 60/contracted load in kW

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: Commercial

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



Repair Workshops, and Newspaper Press (Newspaper Printing press only), Petrol pump, etc. and other purposes which are not covered by any other categories of this tariff order.

System of Supply:

- (a) AC 50 cycles, single phase, 230 V upto 5 kW of connected load.
- (b) AC 50 cycles, three phases, 400 V above 5 kW and upto 50 kW of connected load.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
First 100 kWh	3.80	80.00
Next 100 kWh	4.50	80.00
Next 100 kWh	5.10	80.00
Balance above 300 kWh	5.60	80.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 80/contracted load in kW

Category-4 Public Lighting

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

System of Supply:

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

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
All units	4.90	60.00

B) Un-metered Supply:



- 1) **Energy Charge/month:** : Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 60/ contracted load in kW

Category-5: Public Water Works (PWW)

Applicability: Applicable to all public water supply system.

System of Supply:

- (a) AC 50 cycles, single phase, 230 V upto 5 kW of connected load.
- (b) AC 50 cycles, three phases, 400 V above 5 kW and upto 50 kW of connected load.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
All units	4.90	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** : Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 60/contracted load in kW

Category-6: Irrigational Agricultural

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

System of Supply:

- (a) AC 50 cycles, single phase, 230 V upto 5 kW of connected load.
- (b) AC 50 cycles, three phases, 400 V above 5 kW and upto 50 kW of connected load.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
All units	2.90	60.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 60/contracted load in kW.

Category-7: Small Industry



Applicability: Applicable to all Industrial power consumers with demand of power upto 50 kW which are not covered by Category No. 3 (Supply of Commercial Purposes), such as steel fabrications, motor body builders, power handloom industry, poultry farming, pisciculture, prawn culture, floriculture in green houses, mushroom production, cold storage unit of pisciculture, agriculture based industries, horticulture and any other type of industry where raw material is converted into finished products with the help of electrical motive power, printing press, etc. This will include domestic or commercial within the industrial complex.

System of Supply:

- (a) AC 50 cycles, single phase, 230 V upto 5 kW of connected load.
- (b) AC 50 cycles, three phases, 400 V above 5 kW and upto 50 kW of connected load.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
All units	2.90	80.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs.60/contracted load in kW

2. HT Supply

General Conditions of HT Supply

- (a) The tariffs are applicable for supply of Electricity to HT Consumer with a contracted Load of above 50 kW or Contract Demand of above 59 kVA with supply voltage above 400V as per clause 3.2 of JERC for M&M (Electricity Supply Code) Regulations, 2013.

- (b) **Maximum Demand**



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.

(c) Billing Demand

The billing demand shall be the maximum demand or 75% of the contracted demand whichever is higher.

H.T. Category – 1: Commercial

Applicability: This Tariff is applicable to similar purposes defined in LT Supply Category-3 Supply for Commercial Purposes.

System of Supply: AC, 50 cycles, 11000V and above.

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./billing demand in kVA)
All units	5.40	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(I) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA.

H.T. Category - 2: Public Water Works (HT- PWW)

Applicability: This tariff is applicable to similar purposes defined in LT Category-5 Supply for Public Water Works(PWW).

System of supply: AC 50 Cycles 11000 V and above

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./billing demand in kVA)
All units	4.60	100.00

B) Un-metered Supply:



- 1) **Energy Charges/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA.

H.T. Category - 3: Irrigation & Agriculture

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

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

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs/billing demand in kVA)
All units	2.70	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA.

H.T. Category - 4: Medium Industry

Applicability: This Tariff is applicable to similar purpose defined in LT Category-7 for Small industry. with Contract Demand upto 125 kVA or Contracted Load upto 100kW.

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

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs/billing demand in kVA)
All units	3.80	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(l) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA.

H.T. Category- 5: Large Industry



Applicability: This Tariff is applicable for supply of power to industrial consumers having license from designated authority of appropriate government and not covered under any other category, at a single point for industrial purposes with Contract Demand above 125 kVA or Contracted Load above 100 kW.

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

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs/billing demand in kVA)
All units	4.40	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(I) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA.

H.T. Category - 6: Bulk Supply within the State

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

System of supply: AC 50 cycles 11000 V and above

A) Metered Supply:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs/billing demand in kVA)
All units	4.00	100.00

B) Un-metered Supply:

- 1) **Energy Charge/month:** Energy charge shall be computed as per Appendix, No. 5(I) of this Tariff Order 2014-15.
- 2) **Fixed Charge/month:** Rs. 100/Billing demand in kVA

3. Temporary Power Supply



Applicability: 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:

Consumption/month	Energy/Variable Charge (Rs./kWh)	Fixed/Demand Charge per month (Rs./contracted load in kW)
All units	5.00	80.00

4. Miscellaneous Charges

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

- (i) Energy meter for AC single phase LT Supply: Rs. 10.00 per meter per Month.
- (ii) Energy meter for AC three phases LT Supply 400 V between phases (without CT): Rs. 20.00 per meter per Month.
- (iii) Energy meter for AC three phase LT Supply 400 V between phases (with CT): Rs. 50.00 per meter per Month
- (iv) Energy meter for AC three phase HT supply: Rs. 500.00 per meter per Month.

(b) **Meter Rent for Pre-Paid Meters: Monthly charges for hiring of the meter and indicator where they are the property of Electricity Department, Government of Manipur, payable by the consumers shall be as follows:**

- (i) Pre-Paid energy meter for AC single phase LT supply: Rs. 20 per meter per month
- (ii) Pre-Paid energy meter for AC three phase LT supply: Rs. 40 per meter per month

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

- (i) **Meter shifting charge:**



(1) Rs. 100.00 per shifting if resulted from reconstruction/modification of building and at consumer's request.

(2) Free of cost if shifting is done in the interest of work.

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

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

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

(2) Cost of Energy Meters supplied by Department:

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

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

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

(i) For AC single phase LT energy meter: Rs. 50.00 per meter per testing.

(ii) For AC three phase LT energy meter without CT: Rs. 75.00 per meter per testing.

(iii) For AC three phase LT energy meter with CT: Rs. 100.00 per meter per testing.

(iv) For energy meter AC three phase HT supply: Rs. 150.00 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.

(e) Testing of Consumer's Installation:

The first test and inspection will be carried out free of cost as per clause 4.47 of the Joint Electricity Regulatory Commission 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. 100.00 per test, payable in advance, shall be levied. In the event of the consumer failing to pay the testing charge in advance within stipulated time, the Department will be at liberty to disconnect the consumer's premise from the supplier's main.

(f) Disconnection and Reconnection:

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

Reconnection:

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

(g) Charges for 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.

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

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



charges if the Department supplies the materials or the consumer may arrange the required materials as per the required specifications of the Department.

The execution charge shall be as given below:

- i) Single phase connection: Rs.400.00 per connection.
- ii) LT three phase connection: Rs.600.00 per connection.
- iii) HT three phase connection: Rs.900.00 per 100 meters of the HT line

(i) Re-rating of Installation:

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

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.

(j) Security Deposit:

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

(k) Charges for Replacement of tamper proof Meter Box:

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

(l) Service Lines & Service Connection:

- (i) 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 Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.



- (ii) **Cost of Service Connection:** As stipulated in clause 4.37 and 4.131 of the Joint Electricity Regulatory Commission 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.
- (m) **Mutation Fee:** This shall be done as per clause 4.81 to 4.84 of the Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.
- (n) **Cost of Application Form:** The application form shall be free of cost vide clause 4.14 of the Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

5. Important Conditions of Supply (For all Categories of Consumers)

- (a) **Rebate for advance payment:** For payment of energy bill in advance, a rebate of 2 p.c. shall be allowed. It will be applicable to all consumers provided with prepaid energy meters.
- (b) **Rebate for payment within due date:** For payment of energy bill made within due date, Rebate of @ Rs. 0.05 per unit (will be allowed).
- (c) **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.



- (d) **Payment:** Payment against bills in full shall be made by Cash/Treasury Challan /DD/Local Cheque only unless otherwise accepted by the competent authority within the last date for payment. Bank commission/charges, if any should be borne by the consumers.
- (e) **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.
- (f) **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.
- (g) **Voltages and Frequency:** All voltages mentioned in this tariff are only nominal voltages and alternating current (AC) with nominal frequency of 50 Hertz (i.e. 50 cycles per second) and may not be 100 % correct in practical.
- (h) **Power Factor Incentive / Surcharge**
- i) 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 which his average monthly power factor is above 95%, upto unity power factor | One percent (1%) of the total amount of the bill under the head 'energy charge' |
|---|---|
- ii) 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' |
|---|---|
- iii) 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 | Two percent (2%) of the total |
|-----------------------------------|-------------------------------|



average monthly power factor falls below 85% amount of the bill under the head 'energy charge'

- iv) 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.
 - v) 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.
 - vi) 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
- (i) **Transformation Loss:** The consumers getting their supply at HT and metered on the LT side shall be charged an additional 3% over the metered consumption as transformation loss.
 - (j) **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 connected load below 0.5 kW except KJ category, the connected shall be rounded off to 0.5 kW.



- (k) **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.
- (l) **Billing for un-metered supply:** For un-metered supply the monthly energy consumption shall be computed as below and billed at applicable tariff:

$$\text{Energy Consumption} = L \times D \times H \times F$$

Where L = Contracted load in kW/Billing Demand in kVA,

D = 30 (thirty) days,

H = 4 (four) hours,

F = 50% of the Load Factor under theft cases stipulated in ANNEXURE 11.19 of the Joint Electricity Regulatory Commission for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013.

Note: The licensee shall install energy meter within three (3) months from the effective date of this Tariff Order 2014-15 and shall recalculate assessed consumption based on the succeeding three (3) months metered consumption and adjustment of bill shall be done accordingly.

(m) **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.

- (n) 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.

ANNEXURE – I



No.H.11019/26/13-JERC
JOINT ELECTRICITY REGULATORY COMMISSION



FOR MANIPUR AND MIZORAM
AIZAWL : MIZORAM

TBL Bhawan, 2nd – 5th Floor
E-18, Peter's Street, Khatla,
Aizawl, Mizoram – 796001
0389- 2333625 (O)
0389- 2335523/2336299 (F)
Website: www.jerc.mizoram.gov.in
Email: jerc.mm@gmail.com

Dated Aizawl, the 27th February 2014

**MINUTES OF THE 13TH MEETING OF THE STATE ADVISORY
COMMITTEE : MANIPUR**

Venue : Hotel Classic, Regency Hall, Imphal
Date & Time : 20th February, 2014 (Thursday) 11:00 am

Mr. N. Shyamsundar Singh, Chairperson of the Commission and Mr. A. Chhawnmawia IDES (Rtd.), Member of the Commission were on the dais.

The Chairman welcomed the Members of the Committee and the special invitees and briefly explained the importance of participation of the Members in the discussion for determination of retail tariff for Electricity Department FY 2014 – 15. The Chairman then initiated the agenda wise discussion.

List of participants is appended.

Agenda I: Confirmation on the Minutes of the 12th Meeting of the SAC of Manipur held on 16th December, 2013:

The Chairman drew the attention of the Members to the Minutes of the 12th SAC already circulated to them earlier and requested them to give their comments on the Minutes. After obtaining nod from the Members, the Meeting Minute was declared as confirmed.

Agenda II: Determination of Retail Tariff for Electricity Department, Manipur for FY 2014 –15: The Chairman explained in details the procedures and methods being followed by the Commission in determining the tariff, and also stated that it is mandatory for the Commission to judiciously determine the tariff as per the Electricity Act, 2003. The Chairman drew the attention of the Members to the summary of the ARR proposed by the Department for FY 2014 – 15 and also to the comparative statement between the approved



ARR FY 2012 – 13 and the proposed ARR for FY 2014 – 15 and requested to offer comments on it.

Mr. S. Rishikumar Singh, President All Manipur Entrepreneurs' Association argued that fuel cost should not be included as the power supply from diesel generators are utilized solely by the VIPs and not by the general public. He further wanted to know the reason behind the projection of less amount for purchase of power in the FY 2014 – 15 comparing with that of FY 2012 – 13. He also sought for clarification on high increase in employee cost for the FY 2014 – 15. Mr. Rishikumar also expressed his reservations on the rate of depreciation and provision of bad debt projected in the proposed ARR.

Mr. L. Priyo Kumar Singh, ACE (P) informed the Committee that unbundling of the Department has been done w.e.f. 1st February, 2014 and that the corporation has yet to take up various vital issues. He stated that there will be segregation of tariff petition, and more power is also expected from neighbouring power generating stations like Palatana, Bongaigon etc. He informed the Committee that sale of power outside would be a thing of the past as strict grid discipline has been imposed by REA and that the distribution company is proposing for power banking mechanism soon. On the allocation of Rs 3 crores on bad debt he stated that it is as per the Regulation framed by the Commission. He further stated that the number of consumers in the state is not increasing because of joint family system where 1 (one) family draws power from one line and distributes among other family members.

Mr. Elangbam Dolendra Singh, Advisor, All Manipur Power Consumers' Association expressed his opinion that the ARR filed by the Department is wrong since the Department has already been corporatized and that there are many lapses which needed to be checked properly like R&M expenses etc. He also would like to get the actual figures proposed by the Department in the next tariff filing.

Dr. M. Binota Devi, Associate Professor also wanted to know the reason behind the increase in employees cost when the efficiency of the Department is totally negligible. She felt that putting zero on return on equity would mean a bad business sense.

The Chairman informed the Committee that the ARR filed by the Electricity Department is accepted by the Commission as the transformation to corporation is hardly two weeks old and assured that the next tariff filing would be done by the respective power companies, and the return on equity will also be projected in the next filing.

Dr. L. Sadananda Singh, General Secretary, Senior Citizens for Society, Manipur wanted to know the status of the stringing of inter-state transmission lines from outside Manipur. He also stated that the company should do away with the huge loss and people are suffering because of frequent load shedding and restricted availability of supply for 2 – 4



hours only in a day. Dr. Sadananda also enquired about the status of installation of prepaid meters in the State. Mr. L. Priyokumar Singh informed the Committee that sufficient transmission lines are in place for drawal of power from outside State, and another 40,000 pre-paid meters are being installed soon in urban areas.

The Chairman put forward a proposal for seeking opinion of the Members on creation of separate Regulatory Commission for Manipur and narrated the inconveniences caused to the stakeholders because of the Commission being located at a far away place. The Chairman also pointed out that the segregation of the Joint Commission may not involve any more financial implication on both the States, and the neighboring States of Arunachal Pradesh, Meghalaya, Nagaland, Sikkim & Tripura have “One – Member State Electricity Regulatory Commissions.”

Mr Basantakumar Wareppa, Programme Executive, Human Rights Alert took part in the discussion and endorsed the proposal for separation of the Commission saying that there could be a speedy coordinated power reforms in the State and further suggested that the matter should be referred to appropriate authorities for necessary initiatives.

The Chairman again highlighted that as permitted by the Electricity Act, 2003, proper guidance may be sought from authorities like CEA on several issues related to power sector. Dr. L. Sadananda Singh, GS, Senior Citizens for Society, Manipur also agreed with the advice of the Chairman and stated that the Committee should leave no stone unturned in taking expert advice in the interest of stakeholders.

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 the discussion and request the Members to continue their active participation and providing support to the Commission for the development of the Sector.

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

Sd/- N. SHYAMSUNDAR SINGH

Chairperson



ANNEXURE – II

LIST OF PERSONS WHO PARTICIPATED IN THE PUBLIC HEARING ON ARR & TARIFF PROPOSAL
FOR FY 2014-15



Sl. No.	NAME	DESIGNATION/PROFESSION
1	L. Sadananda	General Secretary, Senior Citizens for Society, Manipur
2	A.K. Sanatomba	General Secretary, Mass Education & Social Development Organization.
3	M.C. Somorendro	Joint Secretary, All Manipur Power Consumers' Association.
4	K. Sanatomba	General Secretary, All Manipur Power Consumers' Association.
5	S. Ibotombi Singh	Treasurer, All Manipur Power Consumers' Association.
6	N. Bihari	President, L.K. Ahalup.
7	P. Arunkumar Singh	President, Consumers' Club, Manipur
8	S. Chaoba Singh	President, All Manipur Power Consumers' Association.
9	E. Dolendro Singh	Advisor, All Manipur Power Consumers' Association.
10	N. Rameshwar Singh	Chief Organizer, Heart of Life Gaunt of Manipur .
11	Dr. M. Binota Devi	Associate Professor, Department of Economics, Imphal College, Imphal.
12	Dr. Lucy Jojo Shimray	Associate Professor, Department of Economics, D.M. College of Arts, Imphal
13	N. Kunjeshor Singh	DGM, Chandel, MSPDCL.
14	Pamching Lungleng	GM (Commercial), MSPDCL.
15	T. Bimolkumar Singh	Office Secretary, Consumers' Club Manipur
16	Th. Ngouba Singh	Chief Trustee, Leiyaibi Memorial Trust, Langmeidong.
17	E. Sobha Singh	President, Elangbam Tondonbi Singh Memorial Charitable Trust.
18	T. Rameshwar Singh	Advisor, Leiyaibi Memorial Trust.

Sl. No.	NAME	DESIGNATION/PROFESSION
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19	M. Jadumani Singh	GM/EC-III, MSPDCL.
20	Th. Aton Singh	GM/EC-II, MSPDCL.
21	Piyush Lohia	Consultant, PNC.
22	L. Priyokumar	MSPDCL
23	Y. Satyanarayana	Consultant, ASCI, Hyderabad
34	L. Ibobi Singh	A/L
25	I. Sarat Singh	Assistant Engineer (Tariff)
26	R.K. Priyobrata Singh	EE/DGM (IP), MSPDCL.
27	Kh. Sashi Singh	AE/(i/c), MSPDCL.
28	M. Ashalata	S.O, REDI, Kakching.
29.	Mr. Richard Zothankima	Assistant Secretary, JERC for M&M
30	Mr. H. Thanthianga	Assistant Chief (Engineering), 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 pool loss in NER: 3.48%

