



TARIFF ORDER

TRUE UP FOR FY 2014-15

REVIEW FOR FY 2015-16

AGGREGATE REVENUE REQUIREMENT

&

TARIFF FOR FY 2016-17

FOR

POWER & ELECTRICITY DEPARTMENT

GOVERNMENT OF MIZORAM

Petition (ARR & Tariff) No. 1 of 2015

29 FEBRUARY 2016

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
EA, 2003	Electricity Act, 2003
FSA	Fuel Surcharge Adjustment
FY	Financial Year
GFA	Gross Fixed Assets
GOI	Government of India
HT	High Tension
IEX	Indian Energy Exchange
JERC	Joint Electricity Regulatory Commission for Manipur
kV	Kilovolt
kVA	Kilovolt-ampere
kW	kilowatt
kWh	kilowatt-hour
LT	Low Tension
MAT	Minimum Alternate Tax
MDI	Maximum Demand Indicators
MUs	Million Units
MYT	Multi Year Tariff
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	Plant Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
PWW	Public Water Works
R&M	Repair and Maintenance
RoE	Return of Equity
SBAR	State Bank Advance Rate
SLDC	State Load Despatch Centre
T&D	Transmission and Distribution
UI	Unscheduled Interchange
NTPC	National Thermal Power Corporation
P&ED	Power & Electricity Department, Mizoram
YOY	Year On Year

JOINT ELECTRICITY REGULATORY COMMISSION FOR MANIPUR AND MIZORAM

**TBL Bhawan, 2nd to 5th Floor peter street,
E18, Khatla, Aizawl, Mizoram – 796001**

Petition (ARR & Tariff) No.1 of 2015

In the matter of

True up for FY 2014-15 and Review for FY 2015-16 and Determination of Aggregate Revenue Requirement (ARR) and Tariffs for FY 2016-17 for P&ED Mizoram.

FOR

Power & Electricity Department, Government of Mizoram----- Petitioner
(herein referred to as P&ED).

Present

Mr. R.K. Kishore Singh
Chairperson

ORDER

(29/02/2016)

2. The Electricity Department, Government of Mizoram (herein after referred to as P&ED or petitioner) is a deemed licensee in terms of section 14 of the Electricity Act 2003 (hereinafter referred to as Act), engaged in the business of generation, transmission and distribution of electricity in the State of Mizoram.
3. As per the directive of the Commission, the P&ED has filed the Petition for true up of expenses and revenues for FY 2014-15, review of ARR for FY 2015-16 and determination of Aggregate Revenue Requirement (ARR) and Retail Tariff for FY 2016- 17.
4. In exercise of the powers vested under section 62(1) read with section 62(3) and 64 3(a) of the Electricity Act 2003 and Regulation 5.2 JERC (M&M) MYT Regulations, 2014 (Notified on 09.06.2014) (hereinafter referred to as “Tariff Regulations 2014”, and other enabling provisions in this behalf the Commission issues this order for

truing up of the ARR and revenues for FY 2014-15 and Annual Performance Review for FY 2015-16 and approval of the ARR and determination of retail Tariff for FY 2016-17 for supply of electricity in the State of Mizoram under JERC (M&M) (MYT) Regulations, 2014.

5. Tariff Regulations specify that the distribution licensee shall file ARR and Tariff Petition with all relevant data along with requisite fee as specified in Commission's Fees, Fines and Charges Regulations on or before 30th November of the preceding year. Accordingly the P&ED has filed the ARR and Tariff Petition for truing up for FY 2014-15 and review for FY 2015-16 and determination of ARR and retail tariff for FY 2016-17.

5.1 As per Regulation 5.2 (ii) for the first year of the Control Period (April 1st 2015 to March 31st 2016) and onwards, the petition shall comprise of:

- a. True-up for FY 2013-14 and Annual Performance Review for FY 2014-15 are to be carried out under JERC for Manipur and Mizoram (Terms and Conditions for Determination of Tariff) Regulation 2010 and Truing up for FY 2014-15 onwards shall be in accordance with JERC for Manipur and Mizoram (Multi Year Tariff) Regulations, 2014.
- b. Revenue from sale of power at existing tariff and charges for the ensuring year.
- c. Revenue gap for the ensuring year calculated based on ARR approved in the Tariff Order or MYT Order and truing for the previous year.
- d. Application for determination of tariff for the ensuring year.

5.2 As per Regulation 5.3 the Generation Company or Transmission licensee or distribution licensee shall file separate audited accounting statements along with the application for determination of tariff and truing-up under Regulation 10, as under;

5.3 As per Regulation 10.1

- Where ARR and expected revenue from tariff and charges of Generating Company, Transmission licensee or Distribution Licensee is covered under a MYT network then the Generating Company or licensee shall be subject to truing-up of

expenses and revenue during the control period in accordance with the MYT Regulation, 2014

5.4 As per Regulation 10.2

- The Generating Company or Transmission Licensee or Distribution Licensee shall:
 - a. file an application for Truing-up of the previous year and determination of tariff for ensuring year within the time limit specified in the Regulation, 2014.
 - b. submit to the Commission information in such form as may be prescribed by the Commission together with audited accounts, extracts of books of account and such other details as may be required by the Commission to assess the reasons for and extent of any variation in financial performance from the approved forecast of ARR and expected revenue from tariff and changes
 - c. Once the Commission notifies the Regulations for submission of Regulatory Accounts, the application for determination and truing-up shall be based on the Regulatory Accounts.

5.5 As per Regulation 10.3 the scope of truing-up shall be comparison of the performance of the Generating Company or Transmission licensee or Distribution Licensee with the approved forecast of ARR and expected revenue from tariff and charges and shall comprise of the following:

- a. a comparison of audited performance of the applicant for the previous financial year with the approved forecast for such financial year subject to prudent check including pass through of impact of uncontrollable factors
- b. a review of compliance with the directives issued by the Commission from time to time and
- c. other relevant details if any

5.6 As per Regulation 10.4 of MYT Regulation 2014 in respect of expenses of the company or the licensee during the year for controllable and uncontrollable parameters, the Commission shall carryout a detailed review of the performance of the applicant vis-à-vis the approved forecast as part of the truing-up

5.7 As per Regulations 10.5 and 10.6 of the MYT Regulations, 2014 upon completion of the truing-up under Regulation 10.4, the Commission shall attribute any variations or expected variations in performance for variables specified under Regulation 11 to factors within the control of the applicant (controllable factors) or to factors beyond the control of the applicant (uncontrollable factors). On completion of truing up the Commission shall issue an order on:

- a) Approving aggregate gain or loss on account of controllable factors and the amount of such gains or loss that may be shared in accordance with these regulations;
- b) Components of approved cost pertaining to uncontrollable factors, which were not recovered during the previous year shall be a pass through under these regulations.
- c) Tariff determined for the ensuing year.

6. Regulation 17 of the Tariff Regulations, 2014 provides for adequate opportunities to all stakeholders and general public for making suggestions/objections on the Tariff Petition as mandated under section 64(3) of the Electricity Act 2003. Accordingly the Commission directed P&ED vide letter no H.20013/10/15-JERC dt. 05.01.2016 to publish the ARR and Tariff Petition for FY 2016-17 in an abridged form as public notice in two daily newspapers having wide circulation in the State inviting suggestions/objections on the Tariff Petition.

As per Regulation 17.4 of MYT Regulation, 2014 P&ED has published the Tariff Petition in the abridged form as public notice in various newspapers and the Tariff petition was also placed on the website of P&ED. The last date of submission of suggestions/objections was fixed on 29.01.2016.

7. The Commission shall ensure transparency in the process of Tariff determination and for providing proper opportunity to all stakeholders and general public for making suggestions/objections on the Tariff Petition. For this purpose the Commission, decided to hold the public hearing at the headquarters of the state. Accordingly the

Commission held public hearing at Aizawl on 16.02.2016. The proposal of P&ED was also placed before the State Advisory Committee in its meeting held on 15.02.2016 and various aspects of the Petition were discussed by the committee. The Commission has taken into consideration the deliberations in the State Advisory Committee on the ARR and Tariff Petition of P&ED for the FY 2016-17 during finalisation of ARR and also the suggestions/objections received from stakeholders, consumer organizations, general public and State Advisory Committee and response of the P&ED to those suggestions/objections.

8. The Commission has reviewed the directives issued earlier to P&ED (the petitioner) in the Tariff orders for FY 2010-11 to FY 2015-16 and noted that some of the directives have already been complied with and hence dropped the directives which are complied with and the remaining directives are now consolidated and fresh directives are issued.
9. This Order contains thirteen chapters as detailed below:
 1. Chapter 1: Introduction.
 2. Chapter 2: Summary of ARR and Tariff petition for FY 2016-17.
 3. Chapter 3: Power Sector in Mizoram-An over view.
 4. Chapter 4: Public hearing process.
 5. Chapter 5: True up of ARR for FY 2014-15.
 6. Chapter 6: Review of ARR for FY2015-16.
 7. Chapter 7: Analysis of ARR for FY 2016-17 and approval of the Commission.
 8. Chapter 8: Tariff principles and design.
 9. Chapter 9: Wheeling charges for FY2016-17.
 10. Chapter 10: Fuel and Power purchase cost Adjustment.
 11. Chapter 11: ARR of Transmission Function and Transmission charges.
 12. Chapter 12: ARR of Generation Function.
 13. Chapter 13: Directives.

10. The P&ED should ensure implementation of the order from the effective date after issuance of a public notice, in such a font size which is clearly visible in two daily newspapers having wide circulation in the state within a week and compliance of the same shall be submitted to the Commission by the P&ED.
11. This order shall be effective from 1st April, 2016 and shall remain in force till 31st March, 2017 or till the next Tariff Order is issued by the Commission.


(R.K. Kishore Singh)
Chairperson

Place : Aizawl
Date : 29.02.2016

1. Introduction

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

In exercise of the powers conferred by the Electricity Act 2003, (hereinafter referred to as Act) the Government of India constituted a Joint Electricity Regulatory Commission for the States of Manipur and Mizoram to be known as “Joint Electricity Regulatory Commission for Manipur and Mizoram” vide GOI. Gazette (Extra Ordinary) Notification No.23/3/2002 R&R dated 18/01/2005, (hereinafter referred to as Commission) as per the authorization given by the Government of Manipur and the Government of Mizoram vide Memorandum of Agreement dated 23/07/2004. The Commission constituted is a two-member body designated to function as an autonomous authority responsible for regulation of the power sector in the States of Manipur and Mizoram. The powers and functions of the Commission are as prescribed in the Act. The head office of the Commission is presently located at Aizawl, the capital town of Mizoram. The Commission became functional w.e.f. 24th January, 2008.

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

- a. Determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale or bulk or retail, as the case may be, within the State: Provided that where open access has been permitted to a category of consumers under Section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
- b. Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured by the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
- c. Facilitate intra-State transmission and wheeling of electricity;

- d. Issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
- e. Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
- f. Adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
- g. Levy fee for the purposes of this Act;
- h. Specify State Grid Code consistent with the Grid Standards specified under Clause (h) of sub-section(1) of Section 79;
- i. Specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
- j. Fix the trading margin in the intra-State trading of electricity, if considered, necessary;
- k. Discharge such other functions as may be assigned to it under the Act.

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

- a) Promotion of competition, efficiency and economy in activities of the electricity industry;
- b) Promotion of investment in electricity industry;
- c) Reorganization and restructuring of electricity industry in the State;
- d) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

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

1.1.4 In discharge of its functions, the State Commission is guided by the National Tariff Policy (NTP) as brought out by GOI in compliance to Section 3 of the Act. The objectives of the NTP are to:

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

1.2 ARR and Tariff Petition

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

As per the JERC (M&M) (MYT) Regulations, 2014 the licensee is required to submit the ARR and tariff petition for second control period of FY 2015-16 to FY 2017-18 and file the Petition in the month of November of preceding year for fixing the Tariff for the next financial year. The P&ED has filed the ARR and MYT Tariff Petition for FY 2016-17 along with true up petition for FY 2014-15 and review petition for FY 2015-16. In the petition P&ED estimated an ARR of Rs. 255.51 Crore, for FY 2016-17 and projected a gap of Rs. 96.88 Crore for FY2016-17.

1.3 Admission of Petition and Public Hearing Process

The Commission observed that the ARR filed by the petitioner was incomplete and lacking Crucial and vital information required as specified in Commission's Regulations on Terms and Conditions for Determination of Tariff.

P&ED was asked to submit the required information vide Commission's letter No.H.20013/10/15-JERC Dt. 23.12.2015. Pending receipt of additional information, the ARR and Tariff Petition was admitted on 28.12.2015 and marked as Petition (ARR & Tariff) No. 1 of 2015 to avoid delay in processing of ARR.

The Commission directed the P&ED to publish the summary of the ARR and tariff proposal in the abridged form and manner as approved in accordance with section 64 of the Electricity Act 2003 to ensure public participation.

The notification of the proposed ARR and the tariff schedule for FY 2016-17 was published by the P&ED in the following newspapers.

Sl.No.	Name of the newspaper	Language	Date of publication
1	Newslink	English	15.01.2016
2	Thuthar	Mizo	19.01.2016
3	Vanglaini	Mizo	15.01.2016

Through the public notice, the stakeholders/public were invited to file their objections and suggestions on the petition on or before 29.01.2016.

1.4 Notice for Public Hearing:

A notification was published by the Commission in the following leading newspapers for giving due intimation to all stakeholders, general public, interested parties, and consumers about the public hearing to be held at Aizawl on 16.02.2016.

Sl. No.	Name of the News-	Language	Date of Publication
1	The Aizawl Post	Mizo	11.02.2016 & 12.02.2016
2	Highlander	English	06.02.2016 & 09.02.2016

1.5 Public Hearing:

Public hearing was held as scheduled on 16.02.2016 in the Conference Hall of I & PR Department, Aizawl. During the public hearing each objector was provided a time slot for presenting his views on the petition of P&ED before the Commission. The main issues raised by the objectors during the public hearing along with response of P&ED and Commission comments there on are briefly reproduced in Chapter - 4.

1.6 Meeting of State Advisory Committee

The State Advisory Committee met on 15.02.2016 in the Conference Hall of I & PR Department, Aizawl and discussed the MYT ARR & Tariff proposal for FY 2016-17 of P&ED, Mizoram. The minutes of the Advisory Committee meeting are given in Annexure – I

2. Summary of ARR & Tariff Petition

2.1 Aggregate Revenue Requirement (ARR)

The P&ED in its petition has projected the Aggregate Revenue Requirement (ARR) and Tariff Proposal for FY 2016-17, and expected revenue with the existing tariff and resultant gap. The ARR and revenue gap are shown in Table 2.1 below.

Table 2.1: Aggregate Revenue Requirement for the period FY 2016-17

(Rs. Lakhs)		
Sl. No.	Item of Expense	As Approved by Commission
1	Cost of Fuel	7.00
2	Cost of Generation	875.00
3	Cost of Power Purchase	14586.00
4	Transmission Charges	2046.00
5	Intra State Transmission	1973.00
6	Cost of DSM Program	153.88*
7	Employee Costs	4336.00
8	Repair & Maintenance Expenses	658.00
9	Administration and General Expenses	107.00
10	Depreciation	194.00
11	Interest charges	268.00
12	Interest on Working Capital	347.00
13	Provision for bad debts	0.00
14	Return on NFA /Equity	0.00
15	Total Revenue Requirement	25550.88
16	Less: Non Tariff Income	258.00
17	Net Revenue Requirement	25292.88
18	Less: Revenue from Sale of Power at existing Tariff	15605.06
19	Net Gap	9687.82

Source: Table 2.22 of Petition.

2.2 Tariff

The P&ED in its petition has submitted the proposed tariff for the FY 2016-17 as per the table 2.2 below:

Table 2.2: Existing V/s. Proposed Tariff for FY 2016-17

Sl. No.	Category	Existing		Proposed	
		Energy Charges (Rs./Kwh)	Fixed Charges (Rs./con./contracted load/Billing demand)	Energy Charges (Rs./Kwh)	Fixed Charges (Rs./con./contracted load/Billing demand)
		A	B	C	D
1	Kutir Jyothi				
i)	First 15 Kwh	1.20	10/Conn.	1.40	15/Conn.
ii)	Next 15 Kwh	1.80	10/Conn.	2.00	15/Conn.
iii)	Balance above 30 Kwh	2.10	10/Conn.	2.30	15/Conn.
2	Domestic				
A	LT				
i)	First 50 Kwh	2.10	30/ Kw	2.30	40/ Kw
ii)	Next 50 Kwh	3.00	30/ Kw	3.25	40/ Kw
iii)	Next 100 Kwh	3.90	30/ Kw	4.15	40/ Kw
iv)	Balance above 200 Kwh	4.60	30/ Kw	4.80	40/ Kw
B	HT	4.50	30/ KVA	4.65	40/ KVA
3	Commercial				
A	LT				
i)	First 100 Kwh	3.35	60/Kw	3.50	70/ Kw
ii)	Next 100 Kwh	4.35	60/Kw	4.50	70/ Kw
iii)	Balance above 200 Kwh	5.30	60/Kw	5.45	70/ Kw
B	HT	5.20	60/KVA	5.30	70/ KVA
4	Public Lighting	4.80	60/Kw	5.00	70/ Kw
5	Irrig. & Agriculture				
A	LT	1.75	30/ Kw	1.80	40/ Kw
B	HT	1.75	30/ KVA	1.80	40/ KVA
6	Public Water Works				
A	LT	4.80	75/ Kw	5.00	80/ Kw
B	HT	4.75	70/ KVA	4.90	80/ KVA
7	Industrial				
A	LT				
i)	First 400 Kwh	3.50	60/ Kw	3.75	70/ Kw
ii)	Balance above 400 Kwh	4.20	60/ Kw	4.45	70/ Kw
B	HT	4.10	60/KVA	4.35	70/ KVA
8	Bulk Supply	3.90	70/ KVA	4.10	70/ KVA

(Source: Table 3.1 of Petition)

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

The Petitioner requested that the Hon'ble Commission may;

- Approve True-up Petition for FY 2014-15 and APR for the FY 2015-16 and Tariff Petition for FY 2016-17 in respect of distribution function, transmission function and generation function for P&ED formulated in accordance with the regulations of Joint Electricity Regulatory Commission (JERC) and the principles contained therein.
- Condone any inadvertent delay / omissions / errors / rounding off / differences / short comings and the P&ED may please be permitted to add / change / modify / alter the petition during its process.
- Permit P&ED to file additional data / information as may be necessary
- Pass such other orders as the Hon'ble Commission may deem fit and proper keeping in view the facts and circumstances of the case.

3. Power Sector in Mizoram- An over view

3.1 Geographical Reality

The P&ED is responsible for supply and distribution of electricity in the State of Mizoram which has a total area of 21087 Sq KM with eight districts, viz. Aizawl, Mamit, Kolasib, Champhai, Serchhip, Lunglei, Lawngtlai and Saiha. The State shares more than 700 Kms of international boundary with Bangladesh and Myanmar. The total population of Mizoram State is 10.92 lakh as per 2011 census. The per capita consumption is about 262 kWh for FY 2014-15. P&ED served about 2.03 lakh consumers of various categories at the end of March, 2015.

3.2 Power supply

3.2.1 Own Generation

P&ED has its own generating plants. The total installed capacity of the State-owned generating stations and the actual energy generated during 2014-15 as furnished by P&ED is as in Table 3.1 below:

Table 3.1: Own Generating Stations as on 31.03.2015

Sl. No.	Station	Installed Capacity (MW)	Net Generation (MU) 2014-15
I	Hydel	29.35	
1	Serlui 'A'	1.00	
2	Tuirivang	0.30	
3	Khawiva	1.05	
4	Tuipui	0.50	
5	Maicham-I	2.00	
6	Teirei	3.00	
7	Tuipanglui	3.00	
8	Kau-Tlabung	3.00	
9	Lamsial	0.50	
10	Maicham-II	3.00	
11	Serlui 'B'	12.00	
II	Diesel		
1	Lengpui	0.50	
III	HFO		
1	Bairabi	22.92	
	Total (I+II+III)	52.77	35.17

P&ED has stated that out of the installed capacity of generation plants of 52.77 MW the diesel generating set of 0.50 MW is for Lengpui Airport and the heavy fuel plant of 22.92 MW at Bairabi is kept on standby mode for the purpose of meeting the

emergency requirements. The rest are mini Hydel plants having seasonal generation.

3.2.2 Power Purchase

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

Table 3.2: Share from Central Generating Stations (CGS)

(MW)				
Sl. No	Source	Plant Capacity (MW)	Licensee's Share in (%)	Licensee's Share in (MW)
A	Central Generating			
I	NTPC			
1	Farakka STPS	1600	0.14	2.24
2	Kahalgaon	840	0.14	1.18
3	Talcher STPS	1000	0.14	1.4
	NTPC-Total	3440		4.82
II	NHPC			
1	Loktak HEP	105	5.02	5.27
	NHPC-Total	105		5.27
III	NEEPCO			
1	Kopilli HEP	200	4.618	9.24
2	Kopili - II HEP	25	6.04	1.51
3	Khandong HEP	50	3.94	1.97
4	Ranganadi HEP	405	5.7	23.09
5	Doyang HEP	75	5.25	3.94
6	AGBPP	291	5.41	15.74
7	AGTPP	84	5.98	5.02
	NEEPCO-Total	1130		60.50
IV	TSECL			
1	B'mura - IV	21	.5	5.25
2	B'mura - V	21	25	5.25
	TSECL-Total	42		10.5
V	OTPC			
1	Palatana	726	3.03	22
	OTPC-Total	726		22
VI	Total	5443		103.09

(Source: Format – F1 of ARR Petition)

The energy drawn from various central generating stations and Tripura during 2014-15 is given in Table 3.3 below:

Table: 3.3: Energy draws from Sources outside the State and Own Generation for FY 2014-15.

		(MU)
SI No	Source	FY 2014-15
A	Central Generating Stations	
I	NTPC	
1	Farakka STPS	16.25
2	Kahalgaoon STPS	8.05
3	Talcher STPS	927
	NTPC-Total	33.57
II	NHPC	
1	Loktak HEP	17.75
	NHPC-Total	17.75
III	NEEPCO	
1	Kopili HEP	24.62
2	Kopili - II HEP	4.88
3	Khandong HEP	3.40
4	Ranganadi HEP	62.68
5	Doyang HEP	8.18
6	AGBPP	92.03
7	AGTPP	36.62
	NEEPCO-Total	232.40
IV	TSECL	
1	B`mura -IV	38.86
2	B`mura -V	40.21
	TSECL-Total	79.07
V	OTPC	
1	Palatana	71.68
	OTPC-Total	71.68
VI	Other Stations/IPPs	
	Others-total	0.00
	State Generating Stations	
1	All Units	35.17
	State Generating Stations-Total	35.17
C	UI/ Deviation	64.02
D	Supplementary Bills	
E	Grand Total	533.66

(Source: Format F1 of Petition)

3.3 Transmission and distribution

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

- i) 132kV S/C Jiribam (Manipur) – Aizawl
- ii) 132kV S/C Badarpur (Assam) – Aizawl
- iii) 132kV S/C Kumarghat (Tripura) – Aizawl

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

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

The details of transmission and distribution network, owned & operated by P&ED as on 31/03/2015 are given in Table below:

Table 3.4: Network Details as on 31.03.2015

Sl. No	Voltage	Transmission & Distribution lines (Ckt. Km)	Substations/ Transformers	Capacity (MVA)
1	132kV	728.961	7	121.80
2	66 KV	117.00	2	12.60
3	33kV	972.26	45	208.70
4	11kV lines	4976.22		
	LT lines	2728.92		
6	Power Transformers		79	358.40
7	Distribution Transformers		1648	188.323

3.4 Distribution Losses

The distribution losses of P&ED system were 29.20% during the year 2014-15. The technical and commercial losses are not segregated.

3.5 Consumer profile and Energy sales

The consumers profile and corresponding energy sales during the year 2014-15 are given in Table below:

Table 3.5: Consumer Profile and Energy Sales for FY 2014-15

Sl. No	Category	FY 2014-15		
		Energy Sales	No. of Consumers	Connected Load (MW)
		(MU)	(Nos.)	(MW)
1(a)	Kutir Jyothi - LT	3.29	10162	1.255
1(b)	Domestic - LT	210.91	179107	261.628
1(c)	Domestic - HT	3.58	43	8.088
2(a)	Commercial - LT	27.24	11852	35.347
2(b)	Commercial - HT	6.77	133	9.634
3	Public Lighting - LT	7.20	803	1.620
4(a)	Irrigation & Agriculture -	0.01	20	0.019
4(b)	Irrigation & Agriculture -	0.03	1	0.085
5(a)	Public Water Works - LT	0.13	6	0.036
5(b)	Public Water Works - HT	46.55	43	35.965
6(a)	Industrial - LT	1.87	777	5.859
6(b)	Industrial - HT	6.77	18	10.646
7	Bulk Supply - LT	12.48	159	12.882
8	Temp connection & Theft	0.37	96	0.151
9	UI Sales	41.34	-	-
	TOTAL		203220	383.217

(Source: Form No: R1 of ARR)

3.6 Demand

The restricted peak power demand of P&ED during FY 2014-15 was 86 MW as per annual report of NERLDC, Shillong for FY 2014-15. The allocation of power (firm and infirm) from various central generating stations and NEC funded Baramura Gas Based Thermal Power Plant is 103.09 MW.

The energy procured by P&ED during the year 2014-15 was 533.66 MU including own generation of 35.12 MU.

3.7 Energy Audit

P&ED is not conducting Energy Audit. At present, the P&ED does the calculation of losses by taking the energy input at 132kV and energy sales at consumer end and the difference is shown as distribution loss, even though energy audit should be conducted Voltage-wise and computed with standard norms. The distribution licensee shall take action to identify and analyze and measures to bring down the losses to the permissible limits. To achieve this all the line feeders, transformers and consumers should be provided with standard meters.

4. Public Hearing Process

4.1 Introduction:

On admitting the ARR and Tariff Petition for FY 2016-17, the Commission directed the P&ED to make available the copies of the petition to the general public, post the petition on their website and also publish the same in newspapers in abridged form and invite comments/objections/suggestions from them.

One written objection is received from Dr. Chawngsailova, General Secretary, Mizoram Consumers Union Hqrs., Mizoram.

4.2 Public Hearing:

In order to ensure transparency in the process of determination of tariff as envisaged in the Electricity Act, 2003, Public Hearing was held at Aizawl on 16.02.2016 as scheduled in the Conference Hall of I&PR Deptt., Aizawl from 11:00 A.M. to 1:00 P.M. During the Public Hearing those who submitted objections in writing and the participants from general public were given an opportunity to offer their views in respect of the ARR and Tariff Petition for FY 2016-17 of P&ED.

The list of stakeholders who attended the Public Hearing is given in Annexure-II.

The Officers of P&ED who attended the Public Hearing responded on the issues raised by the objectors.

4.3 Proceedings of Public Hearing:

4.3.1 Objection 1

(1) The proposed tariff is acceptable in general. However, we propose to increase rate in domestic category under LT supply as below:-

Increases of rates suggested are as below:

- (a) Fixed rate - from Rs 30.00 to Rs 35.00
- (b) First 50 kwh - from Rs 2.10 to Rs 2.20/Unit
- (c) Next 50 kwh - from Rs 3.10 to Rs 3.15/Unit
- (d) Next 100 kwh - from Rs 3.90 to Rs 4.05/unit
- (e) Balance above 200 kwh - from Rs 4.60 to Rs 4.70 /unit.

(2)The following are the reasons why the above suggestions are made:

- (i) It shall be a burden to the general public if the hike is more than 5% as the electricity rate has been increased annually. It is, therefore, suggested to increase it by not more than 5%.
- (ii) The Electricity Department is owned by the State Government. Therefore, we feel that revenue short fall shall be given in the budget without collecting from the people.

Response of P&ED, Mizoram

- 1(i) As per prevailing MYT Regulations, 2014, Aggregate Revenue Requirement under the Control period for FY 2015-16 to FY 2017-18 was filed to the Joint Electricity Regulatory Commission for Manipur & Mizoram (JERC-M&M). The JERC-M&M had approved ARR for the above control period and fixed the tariff for a particular year after considering various parameters.

The Commission judiciously fixed the electricity tariff not only based on the proposal submitted by the Utility (P&E Department) but also heard from other stakeholders at the time of public hearing. The table below clearly depicts the status of proposal and fixation made by the Commission.

Sl.No	Year	Proposed increase (%)	Approved by Commission (%)
1	2010-11	23.00	10.73
2	2011-12		
3	2012-13	10.00	9.72
4	2013-14		
5	2014-15	17.13	6.00
6	2015-16	5.97	2.00
7	2016-17	8.21	

From the above table, the percentage increase proposed is 56 over a span of ten (10) years considering proportionate increase in cost of fuel, power purchase, transmission charge, O&M, employee costs etc. Whereas, the increase approved by the Commission is 28.45% only. Therefore, there already exists substantial gap to be made up.

- (2) The Department is constantly trying to reduce revenue gap by not only increasing the tariff but also by improving service efficiency and reducing cost of service and inherent losses with a limited resources. As the Commission was authorised by the EA 2003 to do the needful in line with prevailing regulations, a proposal is made to revise the tariff at a reasonable increase, to avoid tariff shock as well as some return for the

Department.

If tariff has been fixed at a minimal increase as proposed by the MCU, or the tariff not being revised, the gap between Expenditure - receipts will be wider & wider due to increasing cost of generation, cost of supply and other factors. There will be hue and cry among the consumers in the end as the cost have to be borne by the end user some day.

As of now, the said gaps were normally absorbed by the Government in the interest of the Consumers.

ARR before and after revision of tariff are given below.

ARR & Revenue Gap

S. N	Year	ARR	Rs in lakhs			
			Revenue		Gap	
			Before increase	After increase	Before increase	After increase
1	2010-11	21491	9247	9978	12244	11513
2	2011-12					
3	2012-13	31225	11419	12459	19806	18766
4	2013-14					
5	2014-15	30135	13258	13972	16877	16163
6	2015-16	19947	14976	15292	4971	4655
7	2016-17	25292	15371	16852	9921	8440

In spite of tariff being mildly increased every year, the state government has to meet the Expenditure-receipts gap to the tune of Rs. 46.55 cores during 2015-16.

Commission's observation

The Commission noted the objection and the response of P&ED.

5. True-up of ARR of 2014-15

5.1 Back ground

The Commission had approved ARR for FY2014-15 on 28.2.2014 based on the petition filed by P&ED. The Commission had carried out the review exercise for FY 2014-15 in Tariff Order for FY 2015-16 dt 27-02-2015 based on revised estimates of P&ED.

Now the P&ED has submitted true-up Petition along with ARR and Tariff Petition for FY 2016-17, Second year of the Control Period of FY 2015-16 to FY 2017-18 along with audited annual accounts for FY 2014-15.

As per Regulation 5.2 (ii) of the MYT Regulations, 2014 the true up exercise for FY 2014-15 has been undertaken by the Commission on the basis of audited accounts for FY 2014-15. However, wherever necessary the Commission has considered expenses based on prudence check and after taking into account efficiency parameters like T&D losses etc.

5.2 True-up Petition for FY 2014-15

The P&ED Mizoram in its petition for true-up for FY 2014-15 has furnished actual energy sales, expenditure based on the audited annual accounts for FY 2014-15. Accordingly the petitioner claimed revised ARR, Revenue and consequent gap for FY 2014-15. The Commission has analyzed all components of actual energy sales, expenses and gap under true-up for FY 2014-15 based on audited accounts as under:

5.3 Energy sales

The P&ED in its True Up Petition has furnished the actual energy sales at 327.21 MU as against 333.90 MU approved by the Commission for the FY 2014-15. The Category wise actual sales during the FY 2014-15 as reported by the P&ED and now approved by the Commission are given in table below:

Table 5.1: Energy Sales approved by the Commission for FY 2014-15:**(MU)**

Sl. No	Category	Approved by Commission in Tariff Order dated 27.02.2015 (MU)	Actuals furnished by P&ED (MU)	Now approved by Commission
1	(a) Kutir Jyothi	4.01	3.29	3.29
	(b) Domestic	223.30	210.91	210.91
	Domestic HT	0.13	3.58	3.58
2	Commercial	24.00	27.24	27.24
	Commercial HT	1.47	6.77	6.77
3	Public lighting	7.20	7.20	7.20
	Irrigation & Agriculture LT	0.01	0.01	0.01
4	Irrigation & Agriculture HT	0.09	0.03	0.03
	Public Water Works LT	1.04	0.13	0.13
5	Public Water Works HT	44.00	46.55	46.55
	LT Industrial	2.19	1.87	1.87
6	(HT Industrial)	1.78	6.77	6.77
7	Bulk Supply	24.99	12.85	12.85
8	Temp. Supply		0.37	0.37
9	Total sales within States	333.90	327.21	327.21

The Commission approves energy sales within the State at 327.21 MU as per actuals for FY 2014-15.

5.4 Distribution Losses

The Commission in its order dt 27.2.2015 had approved Distribution Loss at 21.40 % for FY 2014-15. The P&ED has furnished actual distribution losses at 29.52% for FY 2014-15

Commission's analysis

The P&ED Mizoram has not furnished detailed calculation as to how the Distribution losses are arrived at. Hence the losses are recalculated duly considering the energy availability, average inter-state pool loss at 3.48% in NER based on average weekly transmission losses from 31.03.2014 to 29.03.2015 and the ER transmission loss during 2014-15 at 2.27% based on average weekly transmission loss in ER from 01.04.2014 to 30.03.2015. The intrastate transmission losses were considered at 3%. Considering the above the Distribution Losses in Mizoram are worked out as detailed in Table below:

Table 5.2: T&D loss calculation of P&ED for FY 2014-15 approved by the Commission

Sl. No.	Source	Unit	Energy
1	Own generation	MU	35.17
2	Energy from ER		33.57
3	ER Tr. Loss	%	2.27 %
4	Less ER Tr. Loss	MU	0.76
5	Net Energy from ER(2-4)	MU	32.80
6	Energy from NER		400.90
7	Total energy in NER(5+6)		433.70
8	NER Tr. Loss	%	3.48
9	Less NER Tr. Loss	MU	15.09
10	Net energy in NER (8-9)		418.60
11	UI purchases		64.02
12	UI sales		41.34
13	Net energy available at state periphery (1+10+11-12)	MU	476.45
14	Less instate transmission loss @ 3%		14.29
15	Net energy available for sale	MU	462.16
16	Energy sales within the state	MU	327.21
17	Distribution loss	MU	134.97
18	Distribution loss	%	29.20%

Commission accordingly approves actual Distribution Loss within the state at 29.20% for FY 2014-15, in true-up.

5.5 Energy Requirement

The energy requirement approved by the Commission for FY 2014-15 in its review order dt 27.02.2015, actuals furnished by P&ED in its true-up petition FY2014-15 and now approved by the Commission are detailed in table below:

Table 5.3: Energy Requirement for FY 2014-15 approved by the Commission in true-up

Sl. No.	Particulars	Unit	Approved In T.O dt.27.2.15	Actuals for FY 2014-15	Now approved by Commission
1	Energy Sales	MU	333.90	327.21	327.21
2	Distribution Loss	MU	90.91	137.05	
3	Distribution Loss	%	21.40%	29.52	29.20
4	Energy Requirement at State periphery	MU	424.81	464.26	462.16

5.6 Own Generation

The Commission in its review order for FY 2014-15 had approved net own generation at 49.30 MU.

P&ED has furnished net own generation at 35.17 MU for the FY 2014-15.

The Commission now approved P&ED own generation of 35.17 MU for FY 2014-15 as per actuals.

5.7 Purchase of Power.

The Commission in its review order dated 27.02.2015 had approved power purchase of 442.01 Mu for FY 2014-15. The P&ED in its true-up petition for 2014-15 has furnished actual power purchase at 498.49 MU including UI purchase of 64.02 Mu as detailed in table below:

Table 5.4: Power Purchase during FY 2014-15 approved by the Commission in true-up.

Sl. No	Source	Power Purchase Approved in Review Order for FY 2014-15 (MU)	Actuals furnished by P&ED	New Approved by the Commission
A	Central Generating			
I	NTPC			
1	Farakka STPS	13.89	16.25	16.25
2	Kahalgaon STPS	6.31	8.05	8.05
3	Talcher STPS	8.81	9.27	9.27
	NTPC-Total	29.01	33.57	33.54
II	NHPC			
1	Loktak HEP	21	17.75	17.75
	NHPC-Total	21	17.75	17.75
III	NEEPCO			
1	Kopili HEP	20	24.62	24.62
2	Kopili - II HEP	5	4.88	4.88
3	Khandong HEP	4	3.40	3.40
4	Ranganadi HEP	70	62.68	62.68
5	Doyang HEP	10	8.18	8.18
6	AGBPP	91	92.03	92.03
7	AGTPP	37	36.62	36.62
	NEEPCO-Total	237	232.40	232.40

Sl. No	Source	Power Purchase Approved in Review Order for FY 2014-15 (MU)	Actuals furnished by P&ED	New Approved by the Commission
IV	TSECL			
1	B'mura - IV	32	38.86	38.86
2	B'mura - V	38	40.21	40.21
	TSECL-Total	70	79.07	79.07
V	OTPC			
1	Palatana	70	71.68	71.68
	OTPC-Total	70	71.68	71.68
VI	Other Stations / IPPS	-	-	-
1	Total	-	-	-
B	UI Purchase Total	15	64.02	64.02
C	Grand Total	442.01	498.49	498.49

The Commission approves power purchase of 498.49 MU including UI purchase of 64.02 MU during FY 2014-15 after true-up as per actuals.

5.8 Energy Balance

The details of energy requirement and availability of power approved by the Commission FY 2014-15 in its review order dated 27.02.2015 and actuals furnished by the P&ED in its true-up petition for FY 2014-15 and approved by the Commission are furnished in Table below:

Table 5.5: Energy Balance for FY 2014-15 approved by the Commission.

Sl. No.	Particulars	Approved in order dated 27.02.15	Actuals furnished by P&ED	Now approved by Commission
A	Energy Requirement			
1	Energy Sales	333.90	327.21	327.21
2	Distribution Loss %	21.40%	29.52%	29.20%
3	Distribution Loss MU	90.91	137.07	134.95
4	Energy Requirement	424.81	464.28	462.16
B	Energy Availability			
5	Own Generation	49.30	35.17	35.17
6	Energy from ER	29.01	33.57	33.57
7	Less ER Tr loss %	2.12	2.12	2.27
8	-do (MU)	0.62	0.71	0.76
9	Net Energy for ER	28.39	32.86	32.81
10	Energy from NER	398.01	400.90	400.90
11	Total energy in NER(9+10)	426.40	433.76	433.71

Sl. No.	Particulars	Approved in order dated 27.02.15	Actuals furnished by P&ED	Now approved by Commission
12	Less NER Tr loss %	2.99%	2.99%	3.48%
13	-do- MU	12.75	12.97	15.09
14	Net energy(11-13)	413.65	420.79	418.62
15	UI Purchases	15.01	64.02	64.02
16	Total energy available(5+14-15)	477.95	519.98	517.81
17	Intrastate transmission loss 3%	14.34	15.60	14.48
18	Energy available for sale	463.61	504.38	502.28
19	Surplus	38.80	40.10	40.12
20	Surplus grossed-up by 3%	40	41.34	41.34

5.8.1 Fuel Cost.

The Commission in its T.O for FY 14-15 had approved fuel cost at Rs. 0.05 Crore

Actual Fuel Cost furnished by P&ED is Rs. 3.60 Crore during the FY 2014-15. But fuel cost as per audited accounts is NIL.

The Commission accordingly approves fuel cost as Rs. NIL for FY2014-15.

5.8.2 Power Purchase Cost.

The Commission in its review order dt 27.2.2015 had approved Rs. 214.30 Crore towards power purchase cost during FY 2014-15 for purchase of 418 MU. The P&ED in its true-up petition for FY 2014-15 has furnished actual power purchase cost during FY 2014-15 at Rs. 171.34 Crore for 498.49 MU. But as per annual accounts, the power purchase cost is Rs. 171.38.

Commission's analysis

The Commission accordingly approves power purchase cost of Rs. 171.38 Crore for FY 2014-15 for purchase of 498.49 MU as per actuals based on audited accounts in true-up.

5.8.3 O & M Expenses

a) Employee Cost

The Commission in its review order dated 27.02.2015 had approved Rs. 60 Crore for

the year 2014-15 to meet the employee expenses of P&ED Mizoram.

P&ED has now reported the actual employee expenses at Rs. 82.77 Crore for FY 2014-15 as per audited accounts.

The Commission accordingly approves employee expenses at Rs. 82.77 Crore for the FY 2014-15 as per actuals.

b) Repairs & Maintenance

The Commission in its review order dated 27.02.2015 had approved R&M expenses at Rs. 15.44 Crore for FY 2014-15. P&ED has now reported the actual R&M expenses at Rs. 20.99 Crore for the FY 2014-15 as per audited accounts.

The Commission accordingly approves the R&M expenses at Rs. 20.99 Crore for the FY 2014-15 as per actual.

c) Administration & General Expenses

The Commission in its review order dated 27.02.2015 had approved Rs. 3.59 Crore for the FY 2014-15. P&ED has now reported the actual Administration and General expenses at Rs. 1.39 Crore in its true-up petition for FY 2014-15 based on audited accounts.

The Commission approves Administration and General Expenses at Rs. 1.39 Crore for the FY 2014-15 as per actuals.

5.8.4 Depreciation.

The Commission had approved depreciation at Rs. 3.87 Crore for FY 2014-15 in its review dated 27.02.2015.

The P&ED in its true-up petition for FY 2014-15 has furnished depreciation for FY 2014-15 at Rs. 6.51 Crore being 10% of depreciation worked out as per audited accounts.

Commissions Analysis

As per audited accounts for FY 2014-15 the average rate of depreciation worked out

to 5.23% and with this rate the depreciation for 10% of average GFA worked out to Rs. 5.57 Crore.

The Commission accordingly now approves depreciation of Rs. 5.57 Crore for the FY 2014-15, being the 10% of depreciation as per audited accounts.

5.8.5 Interest & Finance Charges

The Commission had approved Rs. 3.37 Crore for the FY 2014-15 in its review order dated 27.2.2015.

P&ED in its true-up petition for FY 2014-15 has now furnished the Interest & Finance charges at Rs. 3.63 Crore for FY 2014-15 as per audited accounts.

The Commission approves Interest & Finance charges at Rs. 3.63 Crore for the FY 2014-15 as per actuals in true-up.

5.8.6 Interest on Working Capital

Interest on working capital worked out as per Regulation 29(4) of JERC, M&M (Terms and Conditions for determination of Tariff) Regulations 2014, on approved costs as detailed in Table below:

Table 5.6: Interest on working capital approved by the Commission for FY 14-15 for true-up (Rs. Crore)

Sl. No	Particulars	Total Cost	One Month
1	Power Purchase Cost	171.38	14.28
2	Employee cost	82.77	6.90
3	R&M Expenses	20.99	1.75
4	A&G Expenses	1.39	0.12
5	Total	276.53	23.05
6	SBAR as on 01-04-2012		14.75%
7	Interest on Working Capital		3.40

The Commission approves Interest on Working Capital at Rs. 3.40 Crore for FY 2014-15 as per actuals.

5.8.7 Provision for Bad Debts

The Commission had not considered any Provision for Bad Debts for the FY 2014-15, since P&ED has not submitted the amount written off during FY 2014-15.

5.8.8 Return on Equity

Commission had not considered any Return on Equity Capital for the FY 2014-15 as the P&ED is a Government Department.

5.8.9 Non-Tariff Income

The Commission had approved Rs. 3 Crore as Non-tariff Income for the FY 2014-15. P&ED has reported the Non-tariff Income at Rs. 2.29 Crore for the FY 2014-15 as per audited accounts.

The Commission accordingly approves Rs. 2.29 Crore towards Non-tariff Income for the FY 2014-15, as per actuals.

5.9 Revenue from approved tariffs

The P&ED has reported the energy sales at 368.55 MU, including UI Sales of 41.34 MU and Revenue from sale of power as per annual accounts is Rs. 138.88 Crore including of UI sales amount of Rs. 12.98 Crore as detailed in Table below:

Table 5.7: Revenue from energy Sales FY 2014-15

Sl. No	Category	Sales (MU)	Amount (Rs. Crore)	Average Revenue (Rs/kWh)
1	a. Kutir Jyoti	217.78	69.33	3.18
	b. Domestic (LT)			
	c. Domestic (HT)			
2	a. Commercial (LT)	34.01	14.60	4.29
	b. Commercial (HT)			
3	Public Lighting	7.20	3.98	5.53
4	a. Irrigation & Agriculture (LT)	0.04	0.89	222.50
	b. Irrigation & Agriculture (HT)			
5	a. Public Water Works (LT)	46.68	29.07	6.23
	b. Public Water Works (HT)			
6	a. Industrial (LT)	1.87	0.81	4.33
	b. Industrial (LT)	6.77	3.07	4.53
7	Bulk Supply	12.48	4.81	3.85
8	Temporary supply	0.37	0.22	5.95
9	Total Sales within State	327.21	125.90	3.85
10	Outside Sales UI	41.34	12.98	3.14
11	Total	368.55	138.88	3.77

Commission analysis

As per audited accounts for FY 2014-15 revenue from sale of power is Rs. 142.07 Crore.

The Commission accordingly approves the revenue from sale of energy at 142.07 Crore during FY 2014-15 as per actuals in true-up.

5.10 Summary of ARR after review with actuals and approvals.

Table 5.8: Aggregate Revenue Requirement for FY 2014-15 for true-up
(Rs. Crore)

Sl. No.	ARR Elements	Approved in Order dated 27.02.2015	Actuals Now furnished by P&ED	Now approved by the Commission
1	Fuel Cost	0.05	0.04	-
2	Power Purchase Cost including UI purchase	214.30	171.34	171.38
3	Employees Cost	60.00	82.77	82.77
4	Repairs and Maintenance Exp.	15.44	20.99	20.99
5	Adm. & Gen Exp.	3.59	1.39	1.39
6	Depreciation	3.87	6.51	5.57
7	Int. & Fin charges	3.37	3.63	3.63
8	Int. on Working Capital	3.53	3.40	3.40
9	Prov. for Bad Debts	0.20	-	-
10	Return on Equity	-	-	-
11	Total ARR	304.35	290.06	289.13
12	Less: Non-Tariff Income	3.00	2.29	2.29
13	Net ARR	301.35	287.77	286.84
14	Less: Revenue from revised tariff (Including UI sales)	139.72	138.88	142.07
15	Revenue Gap before subsidy	161.63	148.89	144.77
16	Govt. Subsidy	160.00	154.08	154.08
17	Net Gap/Surplus (-)	1.63	-5.19	- 9.31
18	Additional by the	Nil		
19	Sales (MU)	365.92	368.55	368.55
20	Cost of Supply(Rs/KWh)	8.24	7.81	7.78
21	Average reliasation(Rs/kWh)	3.82	3.77	3.85

5.11 Revenue gap/surplus after true up

As seen above there is a surplus revenue of Rs. 9.31 Crore during FY 2014-15 after taking into consideration the Government Subsidy of Rs. 154.08 Crore.

As per regulation 13.1(i) of the JERC for M&M (MYT) Regulations, 2014, one third of

gain shall be passed on as a rebate in the tariffs.

Accordingly Rs. 3.10 Crore being the one third of the surplus amount of Rs. 9.31 Crore resulted in True Up of FY 2014-15, is being passed on as rebate in the present ARR for FY 2016-17.

6. Annual Performance Review for 2015-16

6.1 Back ground

The Commission had approved the ARR for FY 2015-16 vide Tariff Order dt 27.02.2015 based on the projected data by the P&ED. Now the P&ED in its petition for FY 2016-17 has submitted data as per Revised Estimate for FY2015-16. There are differences in certain items of costs as well as revenue between the approvals granted by the Commission and estimates now furnished by P&ED.

The Commission considers it appropriate and fair to revisit and review the approvals granted by it in the tariff order of FY 2015-16 with reference to estimates now made available by the P&ED but without altering the Principles and norms adopted earlier. These matters are discussed in the succeeding paragraphs.

6.2 Energy sales

The P&ED has reported the estimated energy sales at 362.11 MU as approved by the Commission for the FY 2015-16. The Category wise estimated sales during the FY 2015-16 as reported in the Petition and now approved by the Commission are given in table below:

Table 6.1: Energy Sales as approved by the Commission for FY 2015-16 after review

Sl. No.	Category	Approved by the Commission in to dt.27.2.15 (MU)	Estimates furnished by P&ED (MU)	Now approved by the Commission
1	(a) Kutir Jyothi	4.01	4.00	4.00
	(b) Domestic	242	242	242
	Domestic HT	2	2	2
2	Commercial	28	28	28
	Commercial HT	1	1	1
3	Public lighting	8	8	8
	Irrigation & Agriculture LT	0.01	0.01	0.01
4	Irrigation & Agriculture HT	0.1	0.1	0.1
	Public Water Works LT	1.00	1.00	1.00
5	Public Water Works HT	46	46	46
	LT Industrial	3	3	3
6	(HT Industrial)	3	3	3
7	Bulk Supply	24	24	24
	Total	362.11	362.11	362.11

The Commission approves energy sales at 362.11 MU for FY2015-16 after review.

6.3 Distribution Losses

The Commission in its order dt 27.2.2015 had approved distribution loss at 20.40% for FY 2015-16. The P&ED has estimated distribution loss at same level of 20.40% as approved in tariff order dated 27.2.2015.

Commission accordingly approves distribution loss at 20.40% for FY 2015-16 as estimated by the P&ED.

6.4 Energy Requirement

The energy requirement approved by the Commission for FY 2015-16 in its Tariff Order dated 27.2.2015, Revised Estimate furnished by P&ED in its review petition for FY 2015-16 and now approved by the Commission are detailed in table below:

Table 6.2: Energy Requirement as approved by the Commission for FY 2015-16 after review

Sl. No	Particulars	Units	Approved by the Commission	Estimates for FY 2015-16	Now approved by Commission
1	Energy Sales	MU	362.11	362.11	362.11
2	Distribution Loss	MU	92.80	92.80	92.80
3	Distribution Loss	%	20.40%	20.40%	20.40%
4	Energy Requirement at State periphery	MU	454.91	454.91	454.91

6.5 Own Generation

The Commission in its order dated 27.2.2015 had approved own generation at 66.52 MU for FY 2015-16. Now the P&ED has estimated own generation at the same level of 66.52 MU for FY 2015-16.

The Commission accordingly approves own generation at 66.52 MU for FY 2015-16 as estimated by P&ED.

6.6 Purchase of Power

Power purchase approved by the Commission in Tariff Order for FY 2015-16, estimated by the P&ED for FY 2015-16 in its review petition for 2015-16 and now approved by the Commission are furnished in table below:

Table 6.3: Power Purchase approved by the Commission for FY 2015-16 after review**(MU)**

Sl. No.	Stations	Approved in to Tariff Order dt.27.2.2015	Estimated by the P&ED	Now approved by Commission
A	NTPC			
1	Farakka	14.37	14.37	14.37
2	Kahalgam	6.53	6.53	6.53
3	Talcher	9.11	9.11	9.11
	Sub Total	30.01	30.01	30.01
B	NEEPCO –Hydro			
4	Koppili I	28	28	28
5	Koppili II	5	5	5
6	Khandong	4	4	4
7	Rangamati	55	55	55
8	Doyang	10	10	10
9	Sub Total	102	102	102
C	NEEPCO – Gas based			
10	AGBPP	90	90	90
11	AGTPP	35	35	35
	Sub Total	125	125	125
	NHPC			
12	NHPC Ioktak	20	20	20
D	Others			
13	OTPC- Pallatana	78	78	78
14	Baramura – IV	36	36	36
15	Baramura – V	38	38	38
	Sub total	152	152	152
16	UI purchase / RPO	14	14	14
17	Grand Total	443.01	443.01	443.01

The Commission approves power purchase of 443.01 MU during FY 2015-16 as estimated by P&ED.

6.7 Energy Balance

The details of energy requirement, availability of power approved by the Commission for FY 2015-16 in its tariff order dated 27.2.2015, estimated by the P&ED in its review petition for FY 2015-16 and now approved by the Commission are furnished in Table below:

Table 6.4: Energy Balance of Approved by the Commission for FY 2015-16 after review (MU)

Sl. No.	Particulars	Approved by the Commission in to dated 27.2.2015	Estimates by P&ED	Now approved by Commission
A	Energy Requirement			
1	Energy Sales	362.11	362.11	362.11
2	Distribution loss (%)	20.40	20.40	20.40
3	Distribution loss (MU)	92.80	92.80	92.80
4	Energy Requirement	454.91	454.91	454.91
B	Energy Availability			
5	Own Generation	66.52	66.52	66.52
6	Energy from ER	30.01	30.01	30.01
7	Less ER Tr. Loss %	2.12	2.12	2.20
8	-do- MU	0.64	0.64	0.66
9	Net energy for ER	29.37	29.37	29.35
10	Energy from NER	399	399	399
11	Sub Total(9+10)	428.37	428.37	428.35
12	Less NER Tr Loss (%)	2.99	2.99	3.25
13	Less NER Tr Loss (MU)	12.81	12.81	13.92
14	Net Energy at NERLDC	415.56	415.56	414.43
15	UI purchases / RPO	14	14	14
16	Total energy available(5+14+15)	496.08	496.08	494.95
17	Intra State Tr. Loss (%)	3	3	3
18	Intra State Tr. Loss (MU)	14.88	14.88	14.85
19	Energy available for sale (16-18)	481.20	481.20	480.10
20	Surplus	26.29	26.29	25.19
21	Surplus grossed up by 3%	27.10	27.10	25.95

The Commission has considered the latest inter-state transmission losses in ER and NER as follows. As per latest weekly transmission losses from 30.03.2015 to 10.01.2016, the average weekly transmission loss in ER is 2.20% while in NER the average weekly transmission loss is 3.25% as per weekly losses from 30.03.2015 to 20.12.2015. Accordingly the energy balance has been modified as detailed in table above, which resulted in surplus power of 25.95 MU to be sold under U.I.

6.8 Fuel Cost

The Commission in its order dated 27.02.2015 had approved Fuel Cost at Rs. 0.07 Crore for FY 2015-16 for DG set generation at Lengpui. The P&ED has now estimated the same fuel cost of Rs. 0.07 Crore.

The Commission accordingly approves Fuel Cost at Rs. 0.07 Crore for FY 2015-16.

6.9 Generation Cost

The Commission in its order dated 27.02.2015 had approved generation cost at Rs. 8.45 Crore for FY 2015-16.

The P&ED in its review petition has stated that generation costs are not proposed to be revised at this stage. However, the P&ED has shown generation cost at Rs. 7 Crore for which no details are furnished. As such already approved cost of Rs. 8.45 Crore is adopted.

The Commission accordingly approves generation cost at Rs. 8.45 Crore for FY 2015-16.

6.10 Power Purchase Cost

The Commission in its order dt 27.2.2015 had approved Rs. 137.64 Crore towards power purchase cost during FY 2015-16 for purchase of 443.01 MU including transmission charges of Rs. 37.86 Crore. The P&ED in its review petition for FY 2015-16 has estimated power purchase cost during FY 2015-16 at Rs. 179.63 Crore stating that the increase is due to submission of arrear bills by generating companies. But the P&ED has not submitted detailed report on payment of arrear bills in FY 2015-16. As such the arrear bill amount of Rs. 42 Crore is not considered at this stage. However the actual amount paid during FY 2015-16 will be considered at the time of true-up.

The Commission accordingly approves power purchase cost of Rs.137.64 Crore for FY 2015-16 for purchase of 443.01 MU after review.

6.11 Inter-state Transmission Charges

The Commission in its order dated 27.02.2015 had approved inter-state transmission charges (PGCIL Charges) at Rs. 19.30 Crore for FY 2015-16. The P&ED in its review petition has estimated the same amount of Rs. 19.30 Crore for FY 2015-16.

The Commission approves inter-state transmission charges (PGCIL charges) at Rs. 19.30 Crore for FY 2015-16 after review.

6.12 Intra-state Transmission Charges

The Commission in its order dated 27.02.2015 had approved intra-state transmission charges at Rs. 18.55 Crore for FY 2015-16. The P&ED in its review petition has estimated the same amount of Rs. 18.55 Crore towards intra-state transmission charges for FY 2015-16.

The Commission accordingly approves intra-state transmission charges at Rs. 18.55 Crore for FY 2015-16.

6.13 O & M Expenses

6.13.1 Employee Cost:

The Commission in its order dated 27.02.2015 had approved Rs. 41.02 Crore for the year 2015-16 towards employee expenses of P&ED Mizoram.

P&ED has now estimated the same amount of Rs. 41.02 Crore towards employee expenses for FY 2015-16 in its review petition for FY 2015-16.

The Commission accordingly approves employee expenses at Rs. 41.02 Crore for the FY 2015-16 as estimated by P&ED.

6.13.2 Repairs & Maintenance

The Commission had approved R&M expenses at Rs. 6.22 Crore in its tariff order dt 27.2.2015 for FY 2015-16. P&ED has now estimated R&M expenses at Rs. 6.22 Crore for the FY 2015-16 in its review petition for FY 2015-16.

The Commission accordingly approves the R&M expenses at Rs.6.22 Crore for the FY 2015-16 as estimated by P&ED.

6.13.3 Administration & General Expenses

The Commission had approved Rs. 1.02 Crore for the FY 2015-16 in its Tariff Order dt 27.2.2015. P&ED has now estimated Administration and General Expenses at Rs. 1.02 Crore in its review petition for FY 2015-16.

The Commission accordingly approves Administration and General Expenses at Rs. 1.02 Crore for the FY 2015-16 as estimated by P&ED.

6.14 Depreciation

The Commission had approved depreciation at Rs. 0.96 Crore for the FY 2015-16.

The P&ED in its review Petition for FY 2015-16 has estimated total depreciation at Rs. 0.96 Crore for FY 2015-16.

The Commission accordingly approves depreciation at Rs. 0.96 Crore for FY 2015-16 estimated by P&ED.

6.15 Interest & Finance Charges

The Commission had approved Rs. 3.16 Crore for the FY 2015-16 in its Tariff Order dt 28.02.2014.

P&ED in its review petition for FY 2015-16 has estimated Interest & Finance charges at Rs. 3.16 Crore for FY 2015-16.

The Commission accordingly approves Interest & Finance charges at Rs. 3.16 Crore for the FY 2015-16 as estimated by P&ED.

6.16 Interest on Working Capital

The Commission in its order dated 27.2.2015 has approved interest on working capital at Rs. 3.20 Crore based on approved costs at the SABR of 14.75% for FY 2015-16. The P&ED in its review petition for FY 2015-16 has estimated the same amount of Rs. 3.20 Crore for FY 2015-16.

The Commission accordingly approves Interest on Working Capital at Rs. 3.20 Crore for FY 2015-16 as estimated by P&ED.

6.17 Provision for Bad Debts

The Commission had not considered any Provision for Bad Debts for the FY 2015-16, since P&ED has not submitted the amount written off during FY 2015-16.

6.18 Return on Equity

The Commission had not considered any Return on Equity Capital for the FY 2015-16 as the P&ED is a Government Department.

6.19 Non-tariff Income

The Commission had approved Rs. 2.44 Crore as Non-tariff Income for the FY 2015-16. P&ED in his review petition for FY 2015-16 has estimated the Non-tariff Income at Rs. 2.44 Crore for the FY 2015-16.

The Commission accordingly approves Rs. 2.44 Crore towards Non-tariff Income for the FY 2015-16.

6.20 Revenue from approved tariffs

The Commission in its order dated 27.2.2015 had approved revenue from revised tariff at Rs. 152.92 Crore including revenue from sale of surplus power of 27.09 MU. The P&ED in its review petition also estimated the same revenue of Rs. 152.92 Crore for FY 2015-16.

Commission Analysis

Owing to change in inter-state transmission losses the surplus power is reduced to 25.95 MU. Thus the revenue from revised tariffs worked out to Rs. 152.56 as detailed in table below:

Table 6.5 Revenue from revised Tariff approved by the Commission for FY 2015-16 after review

Sl No	Category	Approved Sales (MU)	Average Revenue (Rs/kWh)	Total Cost (Rs Crore)
A	LT Supply			
1	Kutir Jyoti	4	1.82	0.80
2	Domestic	242	3.34	80.84
3	Commercial	28	5.27	14.76
4	Public Lighting	8	4.96	3.96
5	Public water works	1	5.65	0.57
6	Agriculture	0.01	2.40	-

Sl No	Category	Approved Sales (MU)	Average Revenue (Rs/kWh)	Total Cost (Rs Crore)
7	Industrial	3	4.91	1.47
	Total	292.01	3.51	102.40
B	HT Supply			
8	Domestic	2	4.74	0.95
9	Commercial	1	5.99	0.60
10	Public water works	46	5.64	25.93
11	Agriculture	0.10	2.28	0.02
12	Industrial	3	6.39	1.92
13	Bulk supply	24	5.14	12.46
	Total HT	76.1	5.50	41.88
	Total LT + HT	362.11	4.35	144.28
14	Sale of Surplus power	25.95	3.19	8.28
15	Grand Total	388.06		152.56

The Commission accordingly approves revenue from revised tariffs at Rs. 152.56 Crore for FY 2015-16.

6.21 Summary of ARR after review with estimates and approvals.

Table 6.6: Aggregate Revenue Requirement approved by the Commission for FY 2015-16 after review

(Rs. Crore)				
Sl. No.	Item of Expense	As Approved by Commission	As per Revised Estimate	Now Approved by the Commission
1	2	3	4	5
1	Cost of Fuel	0.07	0.07	0.07
2	Cost of Generation	8.45	8.45	8.45
3	Cost of Power Purchase	137.64	179.63	137.64
4	Transmission Charges	19.31	19.31	19.31
5	Intra State Transmission	18.55	18.55	18.55
6	Employee Costs	41.02	41.02	41.02
7	R&M Expenses	6.22	6.22	6.22
8	Administration and General Expenses	1.02	1.02	1.02
9	Depreciation	0.96	0.96	0.96
10	Interest charges	3.16	3.16	3.16
11	Interest on Working Capital	3.20	3.20	3.20
12	Provision for bad debts	0.00	0.00	0.00
13	Return on NFA /Equity	0.00	0.00	0.00
14	Total Revenue Requirement	239.60	281.60	239.60
15	Less: Non Tariff Income	2.44	2.44	2.44
16	Net surplus in FY 2012-13	37.67	37.67	37.67

Sl. No.	Item of Expense	As Approved by Commission	As per Revised Estimate	Now Approved by the Commission
	after true-up			
17	Net Revenue Requirement	199.49	241.19	199.49
18	Less: Revenue from Sale of Power	152.92	152.92	152.56
19	Net Gap	46.57	88.27	46.93

As seen from the above the revenue gap during FY 2015-16 is Rs. 46.93 Crore.

6.22 Govt. Subsidy

As against the resultant gap of Rs. 46.93 Crore the P&ED shall generate additional revenue of Rs. 0.93 Crore by improving internal efficiency and the balance Rs. 46 Crore shall be met from Govt. subsidy as against Rs. 131.85Crore proposed.

7. Revised Aggregate Revenue Requirement (ARR) for FY 2016-17

7.1 Background

The Commission had determined the Multi Year Aggregate Revenue Requirement for FY 2015-16 to FY 2017-18 and retail tariff for FY 2015-16 in the Multi Year Tariff Order dated 27.02.2015.

P&ED has submitted the petition seeking determination of revised ARR and retail tariff for FY 2016-17.

In this chapter the Commission has analysed the energy sales and components of expenditure and revenue projected by P&ED for FY 2016-17.

7.2 Consumers and Connected Load and Energy Sales

P&ED has projected the category wise consumers and their connected load and energy sales as approved in Multi Year Tariff order dated 27.02.2015 for 2016-17.

P&ED has proposed outside sales at 7.33 MU as given in the table below:

Table 7.1: Projection of Sales, Customers & Connected Load for FY 2016-17

Sl.No	Category	FY 2016-17		
		Projection of Sales (MU)	Projection of no. of Consumers	Projection of Connected Load (MW)
1 (a)	Kutir Jyothi - LT	4	17555	1.986
1 (b)	Domestic - LT	250	199423	277.226
1 (c)	Domestic - HT	4	6	1.42
2 (a)	Commercial - LT	31	7735	30.687
2 (b)	Commercial - HT	2	66	1.172
3	Public Lighting - LT	9	796	1.855
4 (a)	Irrigation & Agriculture - LT	0.01	21	0.026
4 (b)	Irrigation & Agriculture -HT	0.1	1	0.139
5 (a)	Public Water Works – LT	1	14	1.02
5 (b)	Public Water Works – HT	50	42	51.969
6 (a)	Industrial – LT	3	756	5.694
6 (b)	Industrial – HT	3	15	10.198
7	Bulk Supply - LT	25	280	39.433
8	Temporary Connection & Theft – HT			
9	Outside State Sale - UI / Trading	7.33		
	Total	389.44	226710	422.825

Commission Analysis

P&ED while projecting categorywise energy sales for FY 2016-17 as approved by the Commission in its MYT order dt. 27.02.2015, has proposed U.I. sales of 7.33 MU.

Energy sales outside the State will arise if there is surplus power after meeting the requirement within the State. As such sale of power outside the State will not arise at this stage. The Commission therefore considers the energy sales within state as approved by the Commission in its Multi Year Tariff order dated 27.02.2015 as detailed in table below:

Table 7.2 Energy Sales approved by the Commission for FY 2016-17

Sl.No	Category	Energy Sales Approved (FY 2016-17)
A	LT Supply	
1	Kutir Jyothi	4.00
2	Domestic	250.00
3	Commercial	31.00
4	Public Lighting	9.00
5	Public Water Works	1.00
6	Irrigation & Agriculture	0.01
7	Industrial	3.00
	Total LT	298.01
B	HT Supply	
1	Domestic	4.00
2	Commercial	2.00
3	Industrial	3.00
4	Irrigation & Agriculture	0.10
5	Public Water Works	50.00
6	Bulk Supply	25.00
	Total HT	84.10
	Grand Total	382.11

7.3 Distribution Loss

P&ED has projected the distribution loss at 19.40% for FY 2016-17 as approved by the Commission in its MYT order dated 27.02.2015.

The Commission approves distribution loss at 19.40% for FY2016-17.

Consequently the distribution loss reduction target approved by the Commission for balance MYT period, i.e. for FY 2017-18 is 18.40%.

7.4 Energy requirement for FY 2016-17

The energy requirement for FY 2016-17 approved by the Commission in its MYT order dated 27.02.2015 and projected by P&ED based on the retail sales projections and distribution loss levels for FY 2016-17 are detailed in table below.

Table 7.3: Energy requirement projected by P&ED for FY 2016-17

Energy Balance	Unit	Approved in TO dated 27.02.2015	Projected by P&ED	Now Approved by the Commission
ENERGY REQUIREMENT				
Energy Sales within State	MU	382.11	382.11	382.11
Overall Distribution Losses %	%	19.40	19.40	19.40
Overall Distribution Loss(MUs)	MU	91.97	91.97	91.97
Total Energy Requirement	MU	474.08	474.08	474.08

Commission's analysis

Commission approves energy requirement of 474.08 MU for FY 2016-17.

7.5 Energy Availability

7.5.1 Own Generation

The P&ED is having 11 mini hydel stations with an installed capacity of 29.35 MW and one diesel generator of capacity of 0.5 MW and one HFO generator of 22.92 MW totalling to 52.77 MW as detailed in Table below.

Table 7.4 Details of Own Generating Stations

Sl.No.	Name of Station	Capacity (MW)
I	Hydel	
1	Serlui 'A'	1.00
2	Tuirivang	0.30
3	Khawiva	1.05
4	Tuipui	0.50
5	Maicham-I	2.00
6	Teirei	3.00
7	Tuipanglui	3.00
8	Kau-Tlabung	3.00
9	Lamsial	0.50
10	Maicham-II	3.00
11	Seruli'B'	12.00
	Sub Total	29.35
II	Diesel	
12	Lengpui	0.50
III	HFO	
	Bairabi	22.92
	Total (I+II+III)	52.77

Own generation approved by the Commission in its MYT dated 27.02.2015 as projected by the P&ED and now approved by the Commission for FY 2016-17 are detailed in Table below:

Table 7.5: P&ED Own Generation for FY 2016-17

Particulars	Approved in TO dated 27.02.2015	Projected by P&ED	(MU) Now Approved by the Commission
Units Generated	67.88	67.88	67.88
Auxiliary	1.36	1.36	1.36
Net Generation	66.52	66.52	66.52

The Commission approves own generation (Net) at 66.52 MU for FY 2016-17

7.5.2 Power Purchase

P&ED has allocation of power from various central generating stations in north eastern region of NEEPCO, NHPC and eastern region of NTPC and from Tripura gas based generating stations as given below:

Table 7.6: Allocation of power from Central Sector and other Generating Stations

Sl. No.	Source	Plant Capacity (MW)	P&ED Share in %	P&ED Share in MW
A	Central Generating			
I	NTPC			
1	Farakka STPS	1600	0.14	2.24
2	Kahalgaon STPS	840	0.14	1.18
3	Talcher STPS	1000	0.14	1.40
	NTPC-Total	3440		4.82
II	NHPC			
1	Loktak HEP	105	5.02	5.27
	NHPC-Total	105		5.27
III	NEEPCO			
1	Kopili HEP	200	4.618	9.24
2	Kopili - II HEP	25	6.04	1.51
3	Khandong HEP	50	3.94	1.97
4	Ranganadi HEP	405	5.7	23.09
5	Doyang HEP	75	5.25	3.94
6	AGBPP	291	5.41	15.74
7	AGTPP	84	5.98	5.02

Sl. No.	Source	Plant Capacity (MW)	P&ED Share in %	P&ED Share in MW
	NEEPCO-Total	1130		60.50
IV	TSECL			
1	B'mura - IV	21	25	5.25
2	B'mura - V	21	25	5.25
	TSECL-Total	42		10.50
V	OTPC			
1	Palatana	726	3.03	22.00
	OTPC-Total	726		22.00
VI	Own Generation	29.35	100	29.85
VI	Total	5472.35		132.94

(Source: Extract of Form F1)

7.5.3 Assumption for Power Purchase Projection:

The merit order dispatch principles are to be adopted while determining the power purchases from various generating stations. However, in a power deficit scenario, these principles do not play a significant role as the utilities will try and purchase all the power that is available at its disposal. Accordingly, P&ED has considered purchase of the entire power available from all the possible sources during the period to meet the demand to the extent possible.

7.5.4 Energy draws from CGS and other Stations:

Power Purchase approved by the Commission in its MYT Order dated 27.02.2015, projected by P&ED and now approved by the Commission for FY 2016-17 is detailed in Table below:

Table: 7.7: Power Purchase approved by the Commission for FY 2016-17

(MU)				
Sl. No	Source	Approved in TO dated 27.02.2015	Projected by P&ED	Now Approved by the Commission
A	Central Generating Stations			
I	NTPC			
1	Farakka STPS	14.37	14.37	14.37
2	Kahalgaon STPS	6.53	6.53	6.53
3	Talcher STPS	9.11	9.11	9.11
	NTPC-Total	30.01	30.01	30.01
II	NHPC			
1	Loktak HEP	20.00	20.00	20.00
	NHPC-Total	20.00	20.00	20.00
III	NEEPCO			

Sl. No	Source	Approved in TO dated 27.02.2015	Projected by P&ED	Now Approved by the Commission
1	Kopili HEP	28.00	28.00	28.00
2	Kopili - II HEP	5.00	5.00	5.00
3	Khandong HEP	4.00	4.00	4.00
4	Ranganadi HEP	55.00	55.00	55.00
5	Doyang HEP	10.00	10.00	10.00
6	AGBPP	90.00	90.00	90.00
7	AGTPP	35.00	35.00	35.00
	NEEPCO-Total	227.00	227.00	227.00
IV	TSECL			
1	B`mura -IV	36.00	36.00	36.00
2	B`mura -V	38.00	38.00	38.00
	TSECL-Total	74.00	74.00	74.00
V	OTPC			
1	Palatana	78.00	78.00	78.00
	OTPC-Total	78.00	78.00	78.00
VI	Other Stations/IPPs			
	Others-total	0.00	0.00	0.00
	State Generating Stations-Total	66.52	66.52	66.52
C	RPO	14.00	14.00	14.00
	RPO Total	14.00	14.00	14.00
E	Supplementary Bills			
F	Grand Total	509.53	509.53	509.53

Source: Extract of Form F1 of petition

The Commission approves power purchase of 509.53 MU FY 2016-17.

7.6 Energy Balance:

The Energy balance approved by the Commission in its MYT Order dated 27.02.2015 and projected by P&ED are detailed in Table below:

Table 7.8: Energy Balance projected by P&ED for FY 2016-17

		(MU)	
Sl. No.	Energy Balance	As Approved by Commission dated 27.02.2015	As Projected by P&ED
A	Energy Requirement		
1	Energy Sales	382.11	382.11
2	Distribution Loss (%)	19.40%	19.40%
3	Distribution Loss (MUs)	91.97	91.97
4	Total Energy Requirement	474.08	474.08
B	Energy Availability		
5	Own Generation	66.52	66.52

Sl. No.	Energy Balance	As Approved by Commission dated 27.02.2015	As Projected by P&ED
6	Energy Purchase from ER	30.01	30.01
7	Less: ER Pool Loss (%)	2.12%	2.12%
8	Less: ER Pool Loss (MUs)	0.65	0.65
9	Net Energy for ER (6-8)	29.36	29.36
10	Energy Purchase from NER	399.00	399.00
11	Sub Total (9+10)	428.36	428.36
12	Less: NER Pool Loss (%)	2.99%	2.99%
13	Less: NER Pool Loss (MUs)	12.81	12.81
14	Net Energy at NERLDC (11-13)	415.55	415.55
15	UI / RPO Purchase	14.00	14.00
16	Energy Available (5+14+15)	496.07	496.07
17	Less: Intra State Tr. Loss (%)	3.00%	3.00%
18	Less: Intra State Tr. Loss (MUs)	14.66	14.66
19	Net Energy Available (18-20)	474.08	474.08
20	Less: Energy requirement	474.08	474.08
21	ENERGY SURPLUS/(DEFICIT)	0.00	0.00
22	Grossed up by 3%	7.33	7.33

Commission's analysis

P&ED has considered inter-state transmission loss in ER at 2.12% and NER at 2.99%.

But as per weekly losses in ER during the period from 30.03.2015 to 10.01.2016 the average transmission loss in ER region is 2.20% and in respect of NER the average transmission loss is 3.25% as per weekly loss during the period from 30.03.2015 to 20.12.2015.

After considering the revised losses, the energy balance has been revised as detailed in table below:

Table 7.9: Energy Balance Approved by the Commission for 2016-17

Sl. No.	Energy Balance	Now Approved by Commission
A	Energy Requirement	
1	Energy Sales	382.11
2	Distribution Loss (%)	19.40%
3	Distribution Loss (MUs)	91.97
4	Total Energy Requirement	474.08
B	Energy Availability	
5	Own Generation	66.52

Sl. No.	Energy Balance	Now Approved by Commission
6	Energy Purchase from ER	30.01
7	Less: ER Pool Loss (%)	2.20%
8	Less: ER Pool Loss (MUs)	0.96
9	Net Energy for ER (6-8)	29.05
10	Energy Purchase from NER	399.00
11	Sub Total (9+10)	428.05
12	Less: NER Pool Loss (%)	3.25%
13	Less: NER Pool Loss (MUs)	13.91
14	Net Energy at NERLDC (11-13)	414.14
15	UI / RPO Purchase	14.00
16	Energy Available (5+14+15)	494.66
17	Less: Intra State Tr. Loss (%)	3%
18	Less: Intra State Tr. Loss (MUs)	14.84
19	Net Energy Available (16-18)	480.13
20	Less: Energy requirement	474.08
21	ENERGY SURPLUS/(DEFICIT)	5.74
22	Surplus at State Periphery (5.74 grossed up by 3%)	5.91

As seen from the above, there is a surplus power of 5.91 MU during FY 2016-17 which the P&ED shall sell outside the state under U.I.

7.7 Cost of DSN program

P&ED while projecting Aggregate Revenue Requirement for FY 2016-17, as approved by the Commission in its MYT order dated 27.02.2015, has now proposed additional item of “Cost of DSM Program”.

The P&ED has submitted that it proposes to undertake DSM based efficient lighting program (DELP) and a petition was already submitted to the Commission for approval. The programme is over a period of three years starting from FY 2016-17. The cost to be incurred in FY 2016-17 is about Rs. 1.54 Crore.

Commission Analysis

The proposed expenditure towards providing DSM based efficient lighting program (DELP) has been approved in principle and the proposed expenditure of Rs. 1.54 Crore during FY 2016-17 is approved.

The Commission approves Rs. 1.54 Crore under DSM programme for FY 2016-17 as projected.

7.8 Aggregate Revenue Requirement for FY 2016-17

P&ED has projected Aggregate revenue requirement for FY 2016-17. ARR as approved by the Commission in its MYT order dated 27.02.2015 and as projected by P&ED in the present petition are as detailed in table below:

Table 7.10 ARR Projected by P&ED for FY 2016-17

(Rs.Crore)			
SI No	Category	Approved by the Commission in MYT order dated 27.02.2015	Projected by P&ED
1	Cost of Fuel	0.07	0.07
2	Cost of Generation	8.75	8.75
3	Cost of Power Purchase	145.86	145.86
4	Transmission Charges	20.46	20.46
5	Intrastate Transmission	19.73	19.73
6	Cost of DSM Program	-	1.54
7	Employee Cost	43.36	43.36
8	R&M Expenses	6.58	6.58
9	Admn & General Expenses	1.07	1.07
10	Depreciation	1.94	1.94
11	Interest Charges	2.68	2.68
12	Interest on Working Capital	3.47	3.47
13	Provision for Bad Debts	-	-
14	Return on Equity	-	-
15	Total ARR	253.77	255.51
16	Less Non Tariff Income	2.58	2.58
17	Net ARR	251.39	252.93

Commissions analysis

After considering Rs. 3.10 Crore being the one third of surplus amount of Rs. 9.31 Crore resulted in true-up of FY 2014-15 as discussed in para 5.10 supra, the net aggregate revenue requirement is Rs. 249.83 Crore as detailed in the table below.

Table 7.11 Aggregate Revenue Requirement approved by the Commission for FY 2016-17

SI No	Category	Approved by the Commission in MYT order dated 27.02.2015	Projected by P&ED	Now approved by the Commission
1	Cost of Fuel	0.07	0.07	0.07
2	Cost of Generation	8.75	8.75	8.75
3	Cost of Power Purchase	145.86	145.86	145.86
4	Transmission Charges	20.46	20.46	20.46

5	Intrastate Transmission	19.73	19.73	19.73
6	Cost of DSM Program	-	1.54	1.54
7	Employee Cost	43.36	43.36	43.36
8	R&M Expenses	6.58	6.58	6.58
9	Admn & General Expenses	1.07	1.07	1.07
10	Depreciation	1.94	1.94	1.94
11	Interest Charges	2.68	2.68	2.68
12	Interest on Working Capital	3.47	3.47	3.47
13	Provision for Bad Debts	-	-	-
14	Return on Equity	-	-	-
15	Total ARR	253.77	255.51	255.51
16	Less Non Tariff Income	2.58	2.58	2.58
17	Less Surplus from True-up for FY 2014-15	-	-	-3.10
17	Net ARR (15-16-17)	251.39	252.93	249.83

7.9 Revenue from Existing Tariff

Based on the approved sales at 382.11 MU, the revenue from existing Tariff works out to Rs. 153.90 Crore as detailed in table below which includes revenue from sale of surplus power of 5.91 MU.

The average rate of realisation of revenue from surplus power is considered at Rs. 3.19 per kWh as proposed by P&ED in its review petition for FY 2015-16.

Table 7.12 Revenue from Existing Tariff for FY 2016-17 approved by the Commission
(Rs. Crore)

Sl.No	Category	Sales (MU)	Average Revenue	Total Revenue
A	LT Supply			
1	Kutir Jyothi	4.00	1.95	0.78
2	Domestic	250.00	3.37	84.15
3	Commercial	31.00	4.77	14.79
4	Public Lighting	9.00	4.94	4.45
5	Public Water Works	1.00	5.69	0.57
6	Irrigation & Agriculture	0.01	2.40	0.002
7	Industrial	3.00	5.10	1.53
	Total LT	298.01	3.57	106.28
B	HT Supply			
1	Domestic	4.00	4.62	1.85
2	Commercial	2.00	5.61	1.12
3	Public water works	50.00	5.61	28.03
4	Irrigation & Agriculture	0.10	2.28	0.02
5	Industrial	3.00	5.90	1.77
6	Bulk Supply	25.00	5.18	12.95

Sl.No	Category	Sales (MU)	Average Revenue	Total Revenue
7	Total HT	84.10	5.44	45.74
8	Total (HT + LT)	382.11	3.98	152.02
9	Outside Sales	5.91	3.19	1.88
10	Total (8+9)	388.02	3.97	153.90

7.10 Revenue Gap

Based on the Net Aggregate Revenue Requirement and revenue from existing tariffs for FY 2016-17, the resultant GAP is as shown in the table below:

Table 7.13: Revenue Gap with Existing Tariff for FY 2016-17

Sl. No	Particulars	Unit	Projected by P&ED	(Rs. Crore)
				Approved by the Commission
1	2	3	4	5
1	Net Revenue Requirement	Rs. Crore	252.93	249.83
2	Revenue from sale of power with existing tariff	Rs. Crore	156.05	152.02
3	Revenue from sale of surplus power	Rs. Crore	2.34	1.88
4	Total Revenue (2+3)	Rs. Crore	158.39	153.90
5	Net Gap (1-4)	Rs. Crore	94.54	88.72
6	Energy sales(MU)	MU	382.11	382.11
7	Surplus Power	MU	7.33	5.91
8	Total sales (6+7)	MU	389.44	388.02
9	Average cost $(1 \div 8) \div 10$	Rs. kWh	6.56	6.44
10	Average realisation on $(2 \div 6) \div 10$	Rs. kWh	4.08	3.98

7.11 Recovery of Revenue Gap for FY 2016-17

As seen from para 7.10 above as against revenue gap of Rs. 94.54 Crore projected by P&ED, after Commission's analysis the revenue gap works out to Rs.88.72 Crore during FY 2016-17 which is about 35.51% of net ARR for FY 2016-17. The previous tariffs are revised from 01.04.2015.

P&ED does not propose to recover the entire Gap as this may result in huge burden on the consumers. Tariff is a sensitive subject having substantial impact on social, economic and financial well-being of the public at large as well as the viability and growth of power sector. Recovery of entire Gap through tariff increase is not feasible as this would make power unaffordable to the general consumers. P&ED being a Government Department is funded by budgetary support from State Government. Hence P&ED does not propose to absorb the unrecovered gap but

proposed an average increase in tariff by 8% to bridge the gap partially.

Table 7.14: Revenue from revised Tariff for FY 2016-17 approved by the Commission

Sl No	Category	Approved Sales (MU)	Average Revenue (Rs/kWh)	Total Cost (Rs/Crore)
A	LT Supply			
1	Kutir Jyoti	4.00	2.26	0.90
2	Domestic	250.00	3.51	87.87
3	Commercial	31.00	5.62	17.43
4	Public Lighting	9.00	5.14	4.63
5	Public water works	1.00	5.89	0.59
6	Agriculture	0.01	3.60	0.004
7	Industrial	3.00	5.15	1.55
	Total	298.01	3.84	112.974
B	HT Supply			
8	Domestic	4.00	4.85	1.94
9	Commercial	2.00	5.74	1.15
10	Public water works	50.00	5.48	27.39
11	Agriculture	0.10	2.40	0.02
12	Industrial	3.00	6.22	1.87
13	Bulk supply	25.00	5.11	12.78
	Total HT	84.10	5.60	45.15
	Total LT + HT	382.11	4.23	158.12
14	Sale of Surplus power	5.91	3.19	1.88
15	Grand Total	388.02	4.21	160.00

Note: Detailed calculation is given in Annexure - III

With the revision of tariff the P&ED will generate additional revenue of Rs. 6.10 Crore as against Rs. 10.13 Crore projected by P&ED. Thereby the revenue gap is reduced to Rs 82.62 Crore (i.e. Rs 88.72 – 6.10) which the P&ED shall meet from Government subsidy and by improving internal efficiency.

The Commission accordingly approves revenue from revised tariffs at Rs. 160.00 Crore with the energy sales of 388.02 MU inclusive of UI sales of 5.91 MU.

7.12 Government Subsidy

As seen from the above it is clear that the revenue from sale of power is not sufficient to meet the expenditure and the P&ED shall continue to depend upon the subsidy from Government of Mizoram. So, out of the net revenue gap of Rs. 82.62 Crore arrived in para 7.11 supra, P&ED Mizoram shall generate additional revenue of Rs 0.62 Crore by improving internal efficiency and meet the balance Rs 82 Crore from Government subsidy as against Rs. 84.41 Crore projected by P&ED.

8 Tariff Principles and Design

8.1 Background

The Commission, while determining the revenue requirement of P&ED, Mizoram for the year 2016-17 and the retail tariff has been guided by the provisions of the Electricity Act, 2003, the National Tariff Policy (NTP), CERC Regulations on Terms and Conditions of Tariff and JERC Regulations for Manipur and Mizoram (Multi Year Tariff) Regulation, 2014. Section 61 of the Act lays down the broad principles, which shall guide determination of retail tariff. As per these statutory provision, the tariff shall “Progressively reflect cost of supply” and also reduce cross subsidies “within the period to be specified by the Commission”. The Act also lays special emphasis on safeguarding consumer interests and 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 and also in 2011 provides comprehensive guidelines for determination of tariff as also working out the revenue requirement for power utilities. The Commission has endeavoured to follow these guidelines as far as possible.

NTP mandates that the Multi-Year-Tariff (MYT) framework be adopted for determination of tariff from 1st April 2006. Accordingly the Commission has introduced MYT Regime in the State from 2015-16.

The mandate of the NTP on cross subsidy is that the tariff should be within plus / minus 20% of the average cost of supply by 2010-11. This could not be achieved due to high cost of power, low paying capacity of the consumers and lack of industrialization. The P&ED has not furnished the voltage-wise cost of supply. A directive has been issued to build up data to arrive at cost of supply at various voltage levels etc. Hence, in working out the cost of supply, the Commission has taken as basis the average cost of supply in the absence of relevant data to work out consumer category wise cost of supply. In this tariff order an element of

performance target has been indicated to maintain the set target for distribution loss reduction for the year 2016-17. The P&ED shall show better performance by reduction of loss level, which will result in substantial reduction in average cost of supply. The existing and proposed tariff of P&ED is a two-part tariff under telescopic billing.

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

1. In accordance with the National Electricity Policy, consumers below poverty line who consume below a specified level, say 30 units per Month, may receive a special support through cross subsidy. Tariffs for such group of consumers will be at least 50% of the average cost of supply. This provision will be re-examined after five years.
2. For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the SERC would notify the roadmap, within six Months with a target that latest by the end of the year 2010-11 tariffs are within $\pm 20\%$ of the average cost of supply. The road map would have intermediate milestones, based on the approach of a gradual reduction in cross subsidy.
3. For example if the average cost of service is Rs.3 per unit, at the end of year 2010-11 the tariff for the cross subsidized categories excluding those referred to in para-1 above should not be lower than Rs. 2.40 per unit and that for any of the cross subsidizing categories should not go beyond Rs.3.60 per unit.
4. 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.”

NEP aims at increased access to electricity, supply of reliable and quality power at reasonable rates, minimum lifeline consumption, financial turnaround of consumer interest. The Commission has considered factors as far as possible which aim at

achieving the objectives of NEP while determining the revenue requirement of the P&ED and designing the retail tariff for its consumers. The Commission considered for special treatment to Kutir Jyoti connection and agricultural sector. It has also aimed at to raise the per capita consumption of the State from the existing level of 270 kWh to 350 kWh by the end of 2018. The Commission endeavours that the tariff progressively reflects cost of supply in a shortest period and the government subsidy is reduced gradually. The tariff has been rationalized with regards to inflation, paying capacity and avoid tariff shock.

8.2 Tariff Proposed by P&ED and Approved by the Commission

8.2.1 Tariff Categories

In the ARR and Tariff Petition of FY 2016-17, P&ED has not proposed any changes in the existing categories of consumers and tariff structure.

The Commission considers to retain the existing categories as follows:

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

8.2.2 Existing & Proposed Tariff

P&ED in its tariff petition for FY 2016-17 has proposed for revision of the existing two part retail tariffs to various categories of consumers to earn additional revenue of Rs. 12.47 Crore to meet the gap partially.

The P&ED has proposed tariff revision of both energy charges and Fixed Charges, which are in existence since 1.4.2015 with an average increase of 8% over the existing charges. The proposed hike will be within the range varying from 3% to 15% across all categories of consumers to bridge the revenue gap partially.

The summary of the tariff proposal by P&ED for FY 2016-17 is tabulated below:

Table 8.1: Existing v/s Proposed Tariff for FY 2016-17

Sl. No.	Category	Existing		Proposed	
		Energy Charges (Rs./kWh)	Fixed Charges (Rs./con./contracted load/Billing demand)	Energy Charges (Rs./Kwh)	Fixed Charges (Rs./con./contracted load/Billing demand)
		A	B	C	D
1	Kutir Jyothi				
i)	First 15 Kwh	1.20	10/Conn.	1.40	15/Conn.
ii)	Next 15 Kwh	1.80	10/Conn.	2.00	15/Conn.
iii)	Balance above 30 Kwh	2.10	10/Conn.	2.30	15/Conn.
2	Domestic				
A	LT				
i)	First 50 Kwh	2.10	30/ Kw	2.30	40/ Kw
ii)	Next 50 Kwh	3.00	30/ Kw	3.25	40/ Kw
iii)	Next 100 Kwh	3.90	30/ Kw	4.15	40/ Kw
iv)	Balance above 200 kWh	4.60	30/ Kw	4.80	40/ Kw
B	HT	4.50	30/ KVA	4.60	40/ KVA
3	Commercial				
A	LT				
i)	First 100 kWh	3.35	60/Kw	3.50	70/ Kw
ii)	Next 100 kWh	4.35	60/Kw	4.50	70/ Kw
iii)	Balance above 200 kWh	5.30	60/Kw	5.45	70/ Kw
B	HT	5.20	60/KVA	5.20	70/ KVA
4	Public Lighting	4.80	60/Kw	5.00	70/ Kw
5	Irrig. & Agriculture				
A	LT	1.75	30/ Kw	1.80	40/ Kw
B	HT	1.75	30/ KVA	1.75	40/ KVA
6	Public Water Works				
A	LT	4.80	75/ Kw	5.00	80/ Kw
B	HT	4.75	70/ KVA	4.80	80/ KVA
7	Industrial				
A	LT				
i)	First 400 kWh	3.50	60/ Kw	3.75	70/ Kw
ii)	Balance above 400 kWh	4.20	60/ Kw	4.45	70/ Kw
B	HT	4.10	60/KVA	4.30	70/ KVA
8	Bulk Supply	3.90	70/ KVA	4.15	70/ KVA

Commission's analysis

The Commission considers to revise the tariffs at an average increase of 4.02% from average rate of Rs. 3.98/unit during FY 2015-16 under telescopic billing without giving much tariff shock to consumers to bridge the gap partially. Owing to revision of tariffs the P&ED is expected to get additional revenue of Rs. 6.10 Crore.

8.2.3 Tariff Approved by the Commission

Having considered the petition of P&ED Mizoram for approval of Annual Revenue Requirement (ARR) and determination of Retail Tariff for supply of energy and having approved the Annual Revenue Requirement (ARR) with a gap of Rs. 88.72 Crore vide para 7.10 of Chapter-7, the Commission considers to revise the tariffs under Telescopic billing within an average increase of 4.02% from current average rate of Rs 3.98 per unit as detailed below:

Table 8.2: Category wise Tariff approved by the Commission for FY 2016-17

Sl.No	Category	Approved	
		*** Fixed Charges per month (Rs)	Variable Charges (Rs/kwh)
1	Kutir Jyoti		
i)	First 15 kWh	12	1.40
ii)	Next 15 kWh	12	2.05
iii)	> 30	12	2.35
2	Domestic LT		
i)	First 50 Units	35	2.35
ii)	Next 50 Units	35	3.25
iii)	Next 100 Units	35	4.20
iv)	Balance above 200 Units	35	4.80
3	Domestic HT	35	4.70
4	Non-domestic/ Commercial LT		
i)	First 100 Units	65	3.60
ii)	Next 100 Units	65	4.60
iii)	Balance above 200 Units	65	5.50
5	Commercial HT	65	5.30
6	Public Lighting LT	60	5.00
7	PWW LT	75	5.00
8	PWW HT	75	4.80
9	Irrigation & Agri LT	35	1.85
10	Irrigation & Agri HT	35	1.80
11	Industrial LT		
i)	First 400 Units	65	3.75
ii)	Balance above 400 Units	65	4.45
12	Industrial HT	65	4.30
13	Bulk Supply HT	70	4.15

*** Fixed charge in LT supply except kj is per kW of contracted load and in HT supply is per kVA of Billing Demand.

Common Items

P&ED has proposed some changes in general conditions of supply of electricity to consumers. The Commission has approved the same as given in Tariff Schedule appended.

Wheeling Charges

8.3 Background

The net distribution expenses as approved in chapter 7 table 7.10 is, Rs 29.58 Crore. The distribution ARR approved is segregated into wire business and retail supply business in accordance with the matrix prescribed in Regulation 3.3 of JERC for Manipur and Mizoram (Multi Year Tariff) Regulation, 2014. The allocation matrix is detailed in table below.

Table 9.1: Allocation Matrix

Sl. No	Particulars	Wire Business	Retail Supply Business
1	2	3	4
1	Cost of Power Purchase	0%	100%
2	Stand by Charges	0%	100%
3	Employee Expenses	60%	40%
4	Administration & General Expenses	50%	50%
5	Repair & Maintenance Expenses	90%	10%
6	Depreciation	90%	10%
7	Interest & Finance Charges	90%	10%
8	Interest on Working Capital	10%	90%
9	Provision for Bad Debt	0%	100%
10	Income Tax	90%	10%
11	Intra- state Transmission Charges	0%	100%
12	Contribution to contingency reserves	100%	0%
13	Return on Equity	90%	10%
14	Non-Tariff Income	10%	90%

The net distribution expenses are segregated into wire business and retail supply business as per the above matrix as detailed in table below.

Table 9.2: Segregated of wires and Retail Supply costs for FY2016-17

(Rs. Crore)				
Sl. No	Particular	Total Cost	Wire cost	Retail supply cost
1	Employee cost	43.36	26.01	17.35
2	R&M cost	6.58	5.92	0.66
3	Adm & Gen. expenses	1.07	0.53	0.54
4	Depreciation	1.94	1.75	0.19
5	Interest & Fin. Charges	2.68	2.41	0.27
6	Int. on working capital	3.47	0.35	3.12
7	Cost of DSM program	1.54	-	1.54
8	Less Non-tariff income	2.58	0.26	2.32

9	Total	58.06	36.71	21.35
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8.4 Wheeling Tariff

The wheeling charges have been computed on the basis of approved costs of Discom for its distribution wire business and the total energy expected to be wheeled through its network. In the absence of segregated data on costs of operation of 33kV and 11kV networks and sales wheeling charges are not segregated voltage wise. Combined wheeling charges approved are given in table below:

The Commission has calculated wheeling tariff on approved wire cost energy sales as detailed in table below.

Table 9.3: Wheeling Tariff approved by the Commission

Sl. No	Particular	FY2016-17
1	ARR for wheeling function approved by the Commission (Rs. Crore)	36.71
2	Total Energy sale approved(MU)	382.11
3	Wheeling Tariff (Rs/kWh)	0.96

The Commission approves wheeling Tariff at Rs.0.96/kWh for FY 2016-17.

9 Fuel and Power Purchase Cost Adjustment

9.1 Background

Section 62 sub-section 4 of the Electricity Act, 2003 provides that no tariff or part of any tariff may ordinarily be amended more frequently than once in a financial year, except in respect of any changes expressly permitted under the terms of any fuel surcharge formula as may be specified. This provision in the Act requires the Commission to specify the formula for fuel surcharge.

Accordingly, the Commission has specified the formula for working out the Fuel and Power Purchase Cost Adjustment (FPPCA) charges and terms and conditions for levy of FPPCA. Accordingly, the Commission has directed the distribution licensee to recover the FPPCA charges as per the formula specified below.

$$\text{FAC (Rs./kWh)} = \frac{Q_c(RC_2 - RC_1) + Q_0(RO_2 - RO_1) + Q_{pp}(R_{pp2} - R_{pp1}) + V_z + A}{(QP_{g1} + Q_{pp1} + Q_{pp2})} \times \left[1 - \frac{L}{100} \right] \times 100$$

Where,

Q_c = Quantity of coal consumed during the adjustment period in Metric Tons (MT).

= $(SHR \times Q_{pg}) (1 + TSL) / GCV$, or actual whichever is less.

R_{c1} = Weighted average of base rate of coal supplied ex-power station coal yard as approved by the Commission for the adjustment period in Rs./MT

R_{c2} = Weighted average of base rate of coal supplied ex-power station coal yard for the adjustment period in Rs./MT

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- Q_o = Actual Quantity of oil (in KL) consumed during the adjustment period or normative oil consumption as per Tariff order whichever is less.
- R_{o1} = Weighted average of base rate of oil ex-power station (Rs./KL) approved by the Commission for the adjustment period.
- R_{o2} = Weighted average of actual rate of oil ex-power station supplied (Rs. / KL) during the adjustment period.
- Q_{pp} = Total power purchased from different sources (kWh) = $Q_{pp2} + Q_{pp3}$
- Q_{pp1} = $Q_{pp3} \left[1 - \frac{TL}{100} \right]$ in kWh
- TL = Transmission loss (CTU) (in percentage terms).
- Q_{pp2} = Power Purchase from sources with delivery point within the state transmission or distribution system (in kWh)
- Q_{pp3} = Power Purchase from sources on which CTU transmission loss is applicable (in kWh)
- R_{pp1} = Average rate of Power Purchase as approved by the Commission (Rs./kWh)
- R_{pp2} = Average rate of Power Purchase during the adjustment period (Rs./kWh)
- Q_{pg} = Own power generation (kWh)
- Q_{pg1} = Own Power generation (kWh) at generator terminal – approved auxiliary consumption
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- L = Percentage of T&D loss as approved by the Commission or actual, whichever is lower.
- SHR = Station Heat Rate as approved by the Commission (Kcal / kWh)
- TSL = Percentage of Transit and Stacking Loss as approved by the Commission
- GCV = Weighted average of gross calorific value of coal as fired basis during the adjustment period (Kcal / Kg)
- V_z = Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable factors not envisaged at the time of Tariff fixation as approved by the Commission (Rs.)
- A = Adjustment, if any, to be made in the current period for any excess / shortfall in recovery of fuel of Power Purchase cost in the past adjustment period, as approved by the Commission (Rs.)

PSE = Power sold to exempted categories (Presently Agriculture and BPL- Kutir Jyoti Consumers)

If there are more than one power stations owned by the Licensee Qc, Rc1, Rc2, Qo, Ro1, Ro2, Qpg and Qpg1 the cost will be computed separately for each power station and the sum of the increase/ decrease in cost of all power stations shall be taken into consideration. Discom can levy FPPCA charges with prior approval of the Commission. Levy of FPPCA charges which shall be subject to the following terms and conditions detailed here under.

9.2 Terms and conditions for application of the FPPCA formula

- 1) The basic nature of FPPCA is 'adjustment' i.e. passing on the increase or decrease in the fuel costs and power purchase cost to the consumer , as the

case may be, compared to the approved fuel costs and power purchase costs in this Tariff Order.

- 2) The operational parameters / norms fixed by the Commission in the Tariff Regulations / Tariff Order shall be the basis of calculating FPPCA charges.
- 3) The FPPCA will be recovered every month in the form of an Incremental energy charge (Rs/kwh) in proportion to the energy consumption and shall not exceed 10% of the approved avg. cost of supply in the Tariff order and balance amount, if any, in the FPPCA over and above the ceiling shall be carried forward to be included in the subsequent month.
- 4) Incremental cost of power purchase due to deviation in respect of generation mix or power purchase at higher rate shall be allowed only if it is to the satisfaction of the Commission.
- 5) Any cost increase by the licensee by way of penalty, interest due to delayed payments, etc. due to operational inefficiencies shall not be allowed.
- 6) FPPCA charges shall be levied on all categories of consumers.
- 7) Distribution licensee shall file detailed computation of actual fuel cost in Rs/kWh for each month for each of the power stations in the state as well as cost of power purchase (Fixed and Variable) from each source/station and a separate set of calculations with reference to permitted level of these costs.
- 8) The data in support of the FPPCA claims shall be duly authenticated by an officer of the licensee, not below the rank of Chief Engineer through an affidavit supported with the certified copy of energy bills of power purchase, transmission charges, RLDC charges, coal purchase and its transportation cost, oil purchase bill and the quantity of coal and oil consumed during the month.
- 9) Levy of FPPCA charge will be allowed only when up to a maximum ten (10) paise per unit. If it is less than 10 (ten) paise/unit, the same shall be carried forward for adjustment in the next month.
- 10) The Incremental cost per kWh due to the FPPCA arrived at for a month shall be recovered in the energy bill of the month subsequent to the order of the Commission approving FPPCA with full details of rate and unit(s) on which

FPPCA charges have to be billed.

- 11) The Generating Company and the Distribution Companies shall provide along with the proposal of FPPCA (as applicable to them) for a month, a compliance report of the previous order of the Commission in respect of levy of FPPCA.

10 Aggregate Revenue Requirement of Transmission function for FY 2016-17

10.1 Background

The P&ED has not proposed changes to the transmission Tariff approved by the Commission in its MYT order for FY 2015-16 to FY 2017-18.

10.2 Capacity allocation and Energy Requirement

The energy requirement for P&ED is of the range 500 MU to 600 MU P.A. It is having mini hydel stations of total capacity 29.35 MW and diesel set of capacity 0.5 MW and HFO set of capacity 22.92 MW and total own generation from these station is about 66.52 MU. So the P&ED has to draw power from central generating stations and other sources such as NTPC, NEEPCO, NHPC, TSECL and OTPC from whom it has a share of 132.44 MW to meet its energy requirement as detailed in table below.

Table 11.1: Power Availability

Sl. No	Source	Plant Capacity (MW)	P&ED Share in %	P&ED Share in MW
A	Central Generating Stations			
I	NTPC			
1	Farakka STPS	1600	0.14	2.24
2	Kahalgaon STPS	840	0.14	1.18
3	Talcher STPS	1000	0.14	1.40
	NTPC-Total	3440		4.82
II	NHPC			
1	Loktak HEP	105	5.02	5.27
	NHPC-Total	105		5.27
III	NEEPCO			
1	Kopili HEP	200	4.618	9.24
2	Kopili - II HEP	25	6.04	1.51
3	Khandong HEP	50	3.94	1.97
4	Ranganadi HEP	405	5.7	23.09
5	Doyang HEP	75	5.25	3.94
6	AGBPP	291	5.41	15.74
7	AGTPP	84	5.98	5.02
	NEEPCO-Total	1130		60.50

Sl. No	Source	Plant Capacity (MW)	P&ED Share in %	P&ED Share in MW
IV	TSECL			
1	B'mura - IV	21	25	5.25
2	B'mura - V	21	25	5.25
	TSECL-Total	42		10.50
V	OTPC			
1	Palatana	726	3.03	22.00
	OTPC-Total	726		22.00
VI	Own Generation	29.35	100	29.35
	Total	5472.35		132.44

To transmit power within the State, P&ED has the following transmission network:

Table 11.2: Transmission Network

Sl. No	Particulars	Ckt kM	Nos.	Capacity (MVA)
1	132 kV	728.961	7	121.80
2	66 kV	117.00	2	12.60
3	33 kV	972.26	45	208.70

10.3 Transmission Loss

P&ED is currently not equipped to measure the energy flow at various levels due to the inadequate metering equipment. So the transmission loss has been considered at 3% as approved by the Commission in its MYT order for FY control period FY 2015-16 to FY 2017-18.

10.4 Aggregate Revenue Requirement

Based on the provisions of the tariff regulations, the Aggregate Revenue Requirement (ARR) will comprise of the following elements.

- Operation and maintenance expenses.
- Depreciation
- Interest and Finance charges on Loan Capital.
- Interest on working capital.
- Return on equity.

The Aggregate Revenue Requirement (ARR) is netted off with non- tariff income for determining net ARR.

Aggregate Revenue Requirement for FY 2016-17 approved by the Commission in MYT Order dated 27.02.2015 is as detailed in table below.

Table 11.3: Aggregate Revenue Requirement approved by the Commission for FY2016-17 (Rs. Crore)

SI No	Particulars	FY2016-17
1	Return on equity	-
2	Int.& Finance charges	-
3	Depreciation	0.34
4	O&M expenses	18.29
5	Int. on working capital	0.34
6	Interest & Finance Charges	0.76
7	Contribution to contingency reserve	-
8	less Non-Tariff income	-
9	Other Income	-
10	ARR	19.73

Transmission tariff approved by the Commission for FY 2016-17 with allocated capacity of 132.44 MW considering PLF at 80% is furnished in table below:

Table 11.4: Transmission charges approved by the Commission for FY2016-17

Sl. No	Particulars	FY2016-17
1	ARR(Rs.Crore)	19.73
2	Total MW allocation(MW)	132.44
3	Transmission charges(Rs/MW/Day)	4081.46
4	Transmission Tariff(Rs/kWh)	0.21

The Commission approves transmission tariff at Rs.0.21/kWh for FY2016-17.

11 ARR of Generation Function for FY 2016-17

11.1 Background

The Commission had approved Aggregate Revenue Requirement for Generation Function at Rs. 8.55 Crore for FY 2016-17 in its MYT Order dated 27.02.2015. The P&ED has not proposed any changes in the ARR already approved.

11.2 Own Generating Stations

P&ED owns 10 mini hydel stations of below 5 MW capacity each with a total installed capacity of 17.35 MW and one hydel station at Serlui 'B' with installed capacity of 12 MW which is yet to be Commissioned. Thus, after Commissioning of this Serlui 'B' station, the total installed capacity of hydel stations will be 29.35 MW.

The station-wise details are furnished in the table below.

Tables 12.1: Details of SHPS

Sl. No.	Name of Station	Installed Capacity (MW)	Date of COD
1	Serlui 'A'	1.00	24.04.1984
2	Tuirivang	0.30	14.08.1989
3	Khawiva	1.05	08.12.1988
4	Tuipui	0.50	15.12.1991
5	Maicham-I	2.00	05.01.1996
6	Teirei	3.00	12.10.1999
7	Tuipanglui	3.00	17.12.2004
8	Kau-Tlabung	3.00	05.05.2005
9	Lamsial	0.50	26.08.2008
10	Maicham-II	3.00	11.11.2009
11	Serlui 'B'		Not yet Commissioned

11.3 Aggregate Revenue Requirement

The Aggregate Revenue Requirement for the generating function for FY 2016-17 and approved by the Commission is detailed in the table below.

**Table 12.2 Aggregate Revenue Requirement of generation function for FY 2016-17
approved by the Commission**

Sl. No.	Particulars	FY2016-17
1.	O&M expenses	7.42
2.	Depreciation	0.92
3.	Returns on equity	-
4.	Interest & financial charges	-
5.	Interest on W.C.	0.41
6.	Total ARR	8.75

The Commission approves ARR for the generation function for FY 2016-17 and at 8.75 Crore.

12 Directives

12.1 General

While examining the information and data contained in the proposed ARR and Tariff Petition for the FY 2016-17, 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 P&ED require substantial improvement within a specified time frame.

Similar situation was noticed in the ARR & Tariff petition for the FY 2015-16. 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 14 directives were given for compliance in the Tariff Order 2010-11 out of which some directives were fully complied with. Seven fresh Directives were issued in tariff order for FY 2012-13. The Commission expected that P&ED 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 seriousness with which the directives were issued by the Commission does not appear to have been realized by the P&ED Mizoram.

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

Directive 4: Management Information System

Compliance Status

As already pointed out in the previous compliance report that the department is evolving IT enabled information system under R-APDRP scheme and implemented at Kolasib town as a pilot project and it is likely to cover the remaining part of the

project will be recovered within a short span of time with MIS. Meanwhile, the Department needs to invest huge amount of money for hardware, software, data for decision making, design & develop for documentation etc. for which the Department is seeking required assistance from other agency (not specified).

Commission's comments

P&ED shall ensure the data updation as required for Regulatory system and the Management review and submit the latest position. Directive is therefore not complied with.

Directive 5: Pilferage of Energy**Compliance Status**

The Department has taken various measures to mitigate pilferage of energy from theft by replacing defective and tampered meters with reliable energy meters and realized revenue from theft to the maximum extent.

The theft report for FY 2014-15 and Quarterly report for 1st & 2nd Quarter of FY 2015-16 are enclosed in the Annexure.

Commission's comments

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

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

As stated in the compliance report under directive 5, various measures are yet taken to install and to maintain all Energy Meters installed at the Consumer premises in good condition. No new connection be released without meter. Further, as provided

under R-APDRP, replacement of existing energy meters is being carried out within the Department.

Commission's comments

The Directive is partially complied with. Compliance report on 100% metering and replacement of defective meters shall be submitted by 30.09.2016.

Directive 7: Contribution by Consumers for Capital investment

Compliance Status

It is submitted that the cost of Asset reflected in the petition and for calculation of depreciation does not include any consumer contribution. Further while calculating depreciation for ARR in the petition, consumer's contribution is excluded and only net cost is considered. Appropriate action will be taken to maintain books of accounts as per ARR Format-23.

Commission's comments

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

Thus the expenditure so recovered will be classified as Consumer's Contribution towards Capital investment. The costs so recovered as per the Reg. 3.5 of JERC (electricity Supply Code) Regulation 2013 shall be capitalised after the service connections are released. The total sum recovered, and capitalized during the year, will not be considered for calculation of Depreciation on assets during that year and the sum will be reduced while calculating the interest on Debt. Action may be taken for recovery of such expenditure from the consumers and maintain such details.

P&ED shall maintain the books of accounts with specific classification as required in ARR Format-23. Directive is not complied with.

Directive 8: Transmission and Distribution Losses**Compliance Status**

The Department has taken necessary steps to get reliable circle wise energy audit by improving existing metering instruments at the important points/sub-stations under the Scheme of '*Renovation of System Metering for improvement of Circle wise Energy Accounting*' under SPA. Basic materials like CT/PTs are being procured.

Commission's comments

Commission directs to get energy audit conducted by providing meters in all 132kV, 33 kV and 11 kV feeders and distribution transformers to identify the high loss areas and take appropriate measures to reduce the loss. P&ED has not complied with this direction. The loss level is still as high as 29%. P&ED Mizoram shall expedite the measures initiated like replacement of dysfunctional meters, providing high accuracy energy meters, while continuing the process of providing AB cables. The directive is partially complied

Directive 9: Consumers bills**Compliance Status**

It is submitted that the Department has initiated various measures to make the billing and collection system efficient. However, more time would be required to implement the measures across the State. Attempt is being made for introducing the spot billing under the RAPDRP scheme and the project like IPSD which are likely to be taken up in the near future.

Commission's comments

As per Section 56 (1) of electricity Act 2003, the P&ED may allow 15 days time to consumers for Payment of Charges for supply of Electricity and in lieu of the notice the same may be displayed on the monthly bills. P&ED Mizoram may consider outsourcing the activity of spot billing by which the collection of Consumer bills will be realized within 15 days of issue of bill. Many utilities are implementing spot billing and found to be beneficial in avoiding delays in taking readings, preparation of manual bills and serving of such bills. P&ED may review & analyze the cost effective

benefits for implementation of the spot billing system and take action on priority. The existing system of billing entails delay in collection of revenue by two months for the energy consumed. The directive is not complied with.

Directive 10: Investment and Capping of Capital Expenditure**Compliance Status**

It is submitted that P&ED has projected the investment plan for the control period in line with the 5 year perspective plan of the department and achievable targets.

Commission's comments

The investment plan for the FY 2012-13, as per the document is Rs. 183.59 Crore covering 22 Hydel Projects (spill over works), new works, R&M of existing projects, 3 Nos. Transmission schemes (New works), 7 Nos Transmission line works and 7 Nos. Transformation works. The plan envisages the Distribution works which include erection of 33 kV lines DTRs, Metering etc. The projected plan seems to be a difficult task since achievement of physical progress is stated to be subject to fund tie up. P&ED shall consider realistic investments in the FY 2016-17. Directive is complied partially.

Directive 11: High Employee Cost of the Department**Compliance Status**

It is submitted that the P&ED being a government department employee cost cannot be reduced in short run. However, new recruitments are done after proper analysis of requirement vis-a-vis cost. Further steps have been taken rationalizing the workforce for effective utilization.

Commission's comments

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

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

Under R-APDRP scheme, all new energy meters procured were equipped with MDI facilities. At the same time, it is submitted that the P&ED is taking steps to introduce MDIs in all high consumption consumers.

Commission's comments

HT consumers are high revenue yielding cases. For such consumers P&ED can procure and provide meters.

Cost of metering equipment can be compensated by increase in revenue. Directive is partially complied.

Directive 15: Contract Demand**Compliance Status**

As per this office letter No. T-23011/02/13/EC (p)/Com/61 dated 17.06.2014, the Subordinate Offices (CE-SO & CE-Distribution) were also informed to submit monthly reports on inspection of consumers installations to ascertain that actual consumers connected/contracted load and categories are updated/ recorded in the data base for billing and to ensure that the inspection is completed within October, 2014. The number of Consumers to whom survey is conducted so far is 1,54,107. It is requested that the department may be allowed more time to comply with the direction to submit the report.

Commission's comments

The licensee is directed to complete the survey at the earliest and report compliance.

The directive is partially complied

Directive 16: Restructuring of Staff**Compliance Status**

Restructuring of staff within the department is under process. Particularly restructuring in Aizawl power circle is completed. Other areas also will be done in

the same way to have more impact.

Commission's comments

Restructuring of the staff shall be done at the earliest for best utilization of available manpower.

The directive is partially complied

Directive 19: Survey and physical verification of consumers connections.**Compliance Status**

Action is being taken by the department. However, report will be submitted as and when the reports of compliance are received from field offices. As submitted in reply to Directive-15 above, P&ED is has initiated an exercise to collect the details. The same shall be analysed and report shall be submitted to the Commission as directed. It is requested that the department may kindly be allowed more time to comply with the direction to submit the report.

Commission's comments

The P&ED has been allowed ample time to complete the survey. Keeping in view the importance of the work the P&ED shall complete it at the earliest by 30.09.2016 and report compliance with details. The directive is partially complied.

Directive 20: Introduction of spot billing system

P&ED should introduce spot billing system at least in 9 (nine) towns covered under R-APDRP. This will also enable the consumers to pay up-to- date consumption bill.

Compliance Status

10 Nos. of Spot Billing Machines were received by the Department under R-APDRP scheme. The Department will evolve utilization of this machine shortly.

Commission Comments

Immediate steps shall be initiated to get the software to operate the spot billing machines and put them into operation at once besides procuring required machines to implement spot billing throughout the state. Progress on implementation should

be reported quarterly from 30.06.2016 onwards

The directive is partially complied.

Directive 21: Introduction of Energy meter with MDI facility

By introducing MDI facility, consumer fixed charge can be levied based on the maximum demand. It can avoid recorded physical verification of connected load and to initiate action to regularise unauthorised loads if any.

Compliance Status

Replacement of existing energy meters by energy meters compatible with MDI facility is being carried out in some areas of the Department.

Commission's Comments

All high value LT industrial and commercial connections be provided with MDI compatible energy meters wherever the Discom feels it necessary progress on providing MDI meter be reported quarterly from 30.06.2016 onwards.

The directive is partially complied.

Directive 23: To introduce Instrumental reading system of Energy Meter.

Most of the billing complaints are attributable to the reliability of Reader. P&ED is advised to introduce a system to avoid human interface in meter readings.

Compliance Status

Introduction of instrumental reading system like Spot Billing machine is being started as mentioned in the directive no. 20 above.

Commission's Comments

Instrumental reading system is different from spot billing. However spot billing may be introduced in the 1st instance to all consumers and report compliance quarterly from 30.06.2016 onwards. The directive is partially complied with.

Directive 24: Scraping of Heavy fuel plants lying idle :-

Heavy fuel plant of capacity 22.93 MW at Bairabi is lying idle. P&ED is advised either to operate the generator or write off the plant and utilise the man power elsewhere in the Department for better output.

Compliance Status

Heavy fuel plant of capacity 22.93 MW is lying idle since few years back. It is under consideration whether; this plant may be converted into gas based plant which may give better results from the commercial point of view. As and when gas is available nearby the plant site, this plant may be converted to pithead gas based project or the department may initiate for its retirement. Staffs utilized for running the plant were already engaged in other works like maintenance of lines etc.

Commission's Comments

The proposal under consideration may be expedited. The directive is partially complied with.

Directives 25: Filling of ARR and tariff petition with full details.

As verified from the MYT ARR and Tariff petition filed by the P&ED for FY16 to FY18 it is observed that most of the crucial information to be submitted in the petition is furnished in formats only.

For example- the category-wise, year-wise connected load is furnished in the formats but not in the main text of the petition. The formats are prescribed to give detailed information to the main text. The main text of the petition should be elaborated clearly with support of formats. Thus the petition should be self-explanatory. The P&ED is directed to file the next ARR & Tariff petition with full details as indicated supra.

Commission's Comments

In spite of specific directive the ARR and tariff petition for FY 2016-17 the petition is submitted without required data. If it is not rectified the next petition will not be admitted.

Directive 26: Power & Electricity Department should formulate Terms and Conditions (Guidelines) for levy of pole / tower usage charges for supporting or stringing of telephone cable, internet cable, visual media cable and placing of advertisement hoardings for approval of the Commission.

Compliance Status

The proposal will be submitted to the Commission expeditiously.

Commission's Comments

The directive is partially complied.

Directive 27: Reconciliation of value of Gross Fixed Assets

As verified from schedule 19 of Annual accounts, the growth of GFA is as detailed in table below.

Growth of GFA gap of P&ED (Schedule 19)

(Rs. Crore)				
Sl.No	Particulars	FY2010-11	FY2011-12	FY2012-13
1	Opening GFA	734.80	947.84	963.36
2	Additions during the year	213.04	155.17	59.06
3	Closing GFA	947.84	963.36	1022.42

But as verified from function wise break up of Net fixed Assets of P&ED as per schedule 20, the position is as detailed in table below.

Function wise breakup of Net fixed Assets of P&ED (Schedule 20)

(Rs. Crore)				
Sl.No	Assets	FY2010-11	FY2011-12	FY2012-13
1	Generation	329.98	306.81	286.30
2	Transmission	55.37	51.24	72.06
3	Distribution	146.40	149.36	166.72
4	Total	531.75	507.41	525.08

Compliance Status

It is submitted that the value of additions to various functions is not uniform over the years while the same is being depreciated at uniform rate depending on the category of Assets. In certain cases depreciation for the year is more than the addition during the period. Therefore YOY growth for GFA and NFA is not uniform. The GFA and NFA for the FY 2010-11, 2011-12 & 2012-13 is reconciled in the tables below:

Gross Fixed Assets						
Function	GFA As On 01-04-2010	Additions during period	Total GFA at the end of the year	Accumulated Depr. as on 01-04-2010	Depr. during period	NDV as at 31-03-2011
Total Distribution	33934	1159	35093	19337	1116	14640
Total Generation	24840	19722	44561	9281	2283	32997
Total Transmission	14707	424	15131	9100	494	5537
Grand Total	73480	21304	94785	37717	3893	53175
Function	GFA As On 01-04-2011	Additions during period	Total GFA at the end of the year	Accumulated Depr. as on 01-04-2011	Depr. during period	NDV as at 31-03-2012
Total Distribution	35093	1459	36552	20453	1163	14936
Total Generation	44561	10	44571	11564	2326	30681
Total Transmission	15131	83	15213	9593	496	5124
Grand Total	94785	1552	96336	41610	3985	50741
Function	GFA As On 01-04-2012	Additions during period	Total GFA at the end of the year	Accumulated Depr. as on 01-04-2012	Depr. during period	NDV as at 31-03-2013
Total Distribution	36552	2969	39522	21616	1233	16673
Total Generation	44571	244	44815	13890	2295	28630
Total Transmission	15213	2693	17906	10089	610	7206
Grand Total	96336	5906	102243	45595	4139	52509

Commission's Comments

Function wise gross fixed assets for FY 2013-14 and FY 2014-15 may also be finalized and submitted to the Commission and later it should be continued Year on Year. The directive is partially complied with.

12.2 New Directives

Directive 28: Segregation of expenses among generation, transmission and distribution.

In the annual accounts from FY 2015-16 onwards all expenses such as employee cost, R&M expenses and Administration & General expenses and interest charges and depreciation shall be segregated among the three functions, viz generation, transmission and Distribution.

Directive 29: Function-wise segregation of capital investment and capitalization.

In future ARR & Tariff petitions capital investment and capitalization shall be segregated function-wise, viz generation, transmission and Distribution.

Directive 30: Reduction of billing slabs.

The Power & Electricity Department, Mizoram is directed to reduce the billing slabs of the following categories as indicated in the next ARR Petition for FY 2017-18::

1. Kurti Jyoti category from three to two slabs
2. LT Domestic category from four to three slabs
3. LT Non-domestic/commercial category from three to two slabs
4. LT Industrial category from two to one slab

Directive 31: Inhouse development of IT enabled system:

The Power & electricity Department, Mizoram is directed to take steps for development of inhouse IT enabled system so that all software issues can be attended departmentally instead of depending on consultants.

Directive 32: Metering of all incoming and outgoing feeders from 132 kV to 11 kV

The P&ED, Mizoram is directed to provide meters to all feeders right from 132 kV to 11 kV both at incoming and outgoing ends before submission of next tariff petition for FY 2017-18. In respect of towns covered under RAPDRP metering of all the DT's and 11 kV feeders be completed by 30.09.2016. Sample study should be conducted

to know the highest feeder loss and highest DT loss and report compliance. This will facilitate to measure the energy flow and to arrive at actual transmission losses. In the next ARR petition the actual transmission loss arrived based on feeder readings should be furnished.

Directive 33: Installation of meters with MDI facility

P&ED should start using meters having MDI facility as CEA Meter Regulation, 2006. Contracted load/demand as well as connected load/demand should be recorded for consumers and fixed charge billed based on contracted load/demand. Contracted load/demand should be reviewed annually based on MDI record and as supply code, 2013. All consumers under RAPDRP towns should be completed by 30.09.2016. Quarterly progress should be submitted to the Commission.

Directive 34: Updating of software programmes

P&ED should update computerised billing programmes to facilitate adoption of power factor rebate/surcharge as indicated in the tariff schedule.

TARIFF SCHEDULE

APPENDIX

Tariff Schedule

1. General Conditions of Supply (For all categories of Consumers):

1.1 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 up to 50 kW – If the supply is given at HV/EHV, a rebate of 5 % would be admissible on the rate of energy charge and fixed charge of the applicable tariff.

(ii) For consumers having contracted load above 50 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 (Energy charge + Fixed charge) calculated at the applicable tariff.

(iii) All voltages mentioned above are nominal rated voltages as per clause 3.2 of the JERC for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013.

1.2 Payment: All payments shall be made by way of Cash (up to the amount as acceptable to the licensee), Banker's Cheque, Demand Draft or Money Order or e- transfer on line.

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

1.4 Single Point Delivery: This tariff is based on the supply being given through a single point of delivery and metering at one voltage. Supply at other points at other voltage shall be separately metered and billed for and shall be considered as separate connection.

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

1.6 Power Factor Incentive / Surcharge:-

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

For each one percent increase by which his average monthly power factor is above 95%, up to unity power factor	One percent (1%) of the total amount of the bill under the head 'energy charge'
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- b) If the average monthly power factor of the consumer falls below 90%, he shall pay a surcharge in addition to his normal tariff, at the following rate:

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

For each one percent by which his average monthly power factor falls below 85%.	Two percent (2%) of the total amount of the bill under the head 'energy charge'
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- d) If the average monthly power factor of the consumer falls below 70%, then the utility 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 Utility. This is, however, without prejudice to the levy of surcharge for low power factor in the event of supply not being disconnected.
- e) For this purpose, the "average monthly power factor" is defined as the ratio of total 'Kilo Watt hours' to the total 'Kilo Volt Ampere hours' recorded during the month. This ratio will be rounded off to two figures after decimal. Figure 5 or above, in the third place after decimal being rounded off to the next higher figure in the second place after decimal.

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

1.7 Transformation loss: The consumers getting their supply at HT and metered on the LT side shall be charged transformation loss in kWh as per clause 5.7 JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. The same is reproduced for convenience sake:

- (1) The average losses in the transformer shall be calculated as follows and added to the energy consumption indicated by the meter:

$$\text{Average loss (kWh)} = \frac{730 \times 1.0 \times C}{100} = \text{Units Per month}$$

where C = KVA rating of the transformer.

- (2) The transformer loss arrived at by the above formula shall be added to the energy consumption, even when the recorded energy consumption is nil.

- (3) 1% of the transformer capacity for transformer above 63 KVA will be added to the recorded maximum demand on the Low Tension side to arrive at the equivalent High Tension demand.

1.8 Rounding of Contracted Load/billing demand: For the purpose of calculation of fixed/demand charge in the monthly billing, the contracted load/billing **demand shall be taken on actual basis (not to be rounded), except for load less than 500 W. Load less than 500 W shall be taken as 0.5 kW** for calculation of fixed/demand charge in the monthly billing. Fixed/Demand charge in the monthly billing shall be calculated as follows:-
 Fixed/Demand charge per month = Contracted load (in kW) / Billing demand (in kVA) x Rate of fixed charge per month per kW/kVA (as the case may be).

Sample calculation for Domestic Purpose (1) 1.24KW (2) 0.36 kW, Fixed charge for Domestic is Rs 35.00 per kW of contracted load. Sample 1;- Fixed charge = $1.24 \times 35 = \text{Rs } 43.40 = \text{Rs } 43.00$. Sample 2 ;- Fixed charge = $0.36 \text{ kW } (=0.50 \text{ kW after rounding}) \times 35 = \text{Rs } 17.50 = \text{Rs. } 18.00$. *Note Fraction of rupees is rounded as per clause 1.9 of this tariff schedule and load below 0.5 kW is rounded to 0.5 kW as per clause 1.8 of this tariff schedule.*

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

1.10 System of LT supply

1.10.1 LT supply

- i) Alternating current, 50 Hz, single phase 230 Volts up to 8kW
- ii) Alternating current, three phase, 400 Volts for loads above 8 kW, subject to the availability of supply. Wherever 3-phase connection is required for load less than or equal to 8 kW, necessary justification shall be provided along with such request for consideration of licensee for extending such supply.

1.10.2 HT Supply;- Supply of Electricity to the Consumers at voltage above 400V as per clause 3.2 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

1.11 The maximum demand:- The maximum demand means the highest load measured in average kVA or kW at the point of supply of a consumer during any consecutive period of 30 (thirty) minutes during the month or the maximum demand recorded by the MDI during the month.

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

1.13 Tax or Duty

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

1.14 Contingency :- 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 content of the said Code shall prevail.

2. LT Supply

2.1 LT Category-1: Kutir Jyoti

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

Permitted Load: Initially single light point connection which can be extended by one or two light points or as per norms specified by the competent authority from time to time.

Tariff Rates:

a) Fixed charge : Rs 12.00 per month per connection.

b) Energy charge per month:-

- | | |
|-----------------|----------------------|
| 1) First 15 kWh | : @ Rs 1.40 per kWh. |
| 2) Next 15 kWh | : @ Rs 2.05 per kWh. |
| 3) Above 30 kWh | : @ Rs 2.35 per kWh. |

2.2 LT Category - 2: Domestic.

Applicability: Applicable for supply of energy exclusively for domestic purposes only in domestic premises. The Tariff is applicable to 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 tariff is also applicable to orphanage/recognized charitable institutions where no fees/rental of any kind are charged whatsoever. This will not be applicable to institutions conducting commercial activities of any nature.

Tariff Rates:

a) Fixed charge : Rs 35.00 per month per kW of contracted load.

b) Energy charge per month:-

1) First 50 kWh	: @ Rs 2.35 per kWh.
2) Next 50 kWh	: @ Rs 3.25 per kWh.
3) Next 100 kWh	: @ Rs 4.20 per kWh.
4) Above 200 kWh	: @ Rs 4.80 per kWh.

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.*

2.3 LT Category - 3: Non-Domestic/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 tariff includes power loads for non-domestic purposes like Government/semi- government/non-government offices, shops, hospitals, nursing homes, clinics, dispensaries, health centers, restaurants, bars, hotels, clubs, guest houses, circuit houses/rest houses, tourist lodges, picnic spots, resorts, farm/garden houses, clubs, markets, optical houses, public buildings, community halls/YMA halls, stadiums, meeting/conference halls, religious premises like churches, temples, mosques, gurudwaras, religious offices, all types of studios, tea stalls, professional chambers (like Advocates, chartered Accountants, consultants, Doctors, etc.), private trusts, marriage houses, public halls, show rooms, centrally air-conditioning units, commercial establishments, X-ray plants, diagnostic centers, pathological labs,

carpenters and furniture makers, repair workshops, laundries, typing institutes, internet cafes, STD/ISD PCO's, FAX/photocopy shops, tailoring shops, Government/Non-Government Institutions, schools, colleges, libraries, research institutes, boarding/lodging houses, railway stations, fuel/oil stations/pumps, bottling or filling stations /plants, service stations, Railway/Bus stations/terminals, All India radio/T.V. installations, printing presses, commercial trusts, societies, banks, financial institutions, theatres, cinema halls, circus, coaching institutes, common facilities in multi-storeyed commercial offices/buildings, public museums, Crematoriums, graveyards, orphanages/recognized charitable institutions where rental or fees of any kind are charged, non-recognized charitable institutions, power supply to telecommunication system/towers and others applications not covered under any other categories.

Tariff Rates:

a) Fixed charge : Rs 65.00 per month per kW of contracted load.

b) Energy charge per month:-

1) First 100 kWh	:	@ Rs 3.60 per kWh
2) Next 100 kWh	:	@ Rs 4.60 per kWh
3) Above 200 kWh	:	@ Rs 5.50 per kWh

2.4 LT Category - 4: Public Lighting

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

Tariff Rates:

a) Fixed charge : Rs 60.00 per month per kW of contracted load.

b) Energy charge per month:-

All kWh : @ Rs 5.00 per kWh.

2.5 LT Category - 5: Public Water Works

Applicability: Applicable to all public water supply system and sewerage pumping.

Tariff Rates:

a) Fixed charge : Rs75.00 per month per kW of contracted load.

b) Energy charge per month:-

All kWh : @ Rs 5.00 per kWh

2.6 LT Category - 6: Irrigation & Agriculture

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

Tariff Rates:

a) Fixed charge : Rs 35.00 per month per kW of contracted load.

b) Energy charge per month:-

All kWh : @ Rs 1.85 per kWh

2.7 LT Category - 7: Industrial

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

Tariff Rates:

a) Fixed charge : Rs 65.00 per month per kW of contracted load.

b) Energy charge per month:-

1) First 400 kWh : @ Rs 3.75 per kWh

2) Above 400 kWh : @ Rs 4.45 per kWh

3. HT Supply:- The tariffs are applicable for Consumer availing supply at voltage above 400 V irrespective of connected load/contracted demand. It is mandatory to supply with voltage above 400 V, to consumer having a contracted Load of above 50 kW or Contract

Demand of above 59 kVA, as per clause 3.2 of JERC for M&M (Electricity Supply Code) Regulations, 2013

3.1 HT Category - I: Domestic

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

Tariff Rates:

a) Demand charge : Rs 35.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 4.70 per kWh

3.2 HT Category - 2: Non- domestic/Commercial

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

Tariff Rates:

a) Demand charge : Rs 65.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 5.30 per kWh

3.3 Category 3 : Public Water Works(PWW)

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

Tariff Rates:

a) Demand charge : Rs 75.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 4.80 per kWh

3.4 HT Category - 4: Irrigation & Agriculture

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

Tariff Rates:

a) Demand charge : Rs 35.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 1.80 per kWh

3.5 HT Category - 5: Industrial

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

Tariff Rates:

a) Demand charge : Rs 65.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 4.30 per kWh

3.6 HT Category - 6: Bulk supply within the State

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

Tariff Rates:

a) Demand charge : Rs 70.00 per month per kVA of Billing demand.

b) Energy charge per month:-

All kWh : @ Rs 4.15 per kWh

4. Temporary Supply:

Applicability: Temporary power supply shall be given through correct meter and carried out as per procedure laid down in clause 4.56 to 4.70 of the JERC for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013. Bill shall be served at the following rates:

Tariff Rates:

a) Fixed / Demand charge : 1.5 times the rate of fixed/demand charge of the applicable tariff category for which power supply is given.

b) Energy charge per month: 1.5 times the rate of the highest rated slab of the applicable tariff category for which energy is supplied.

5. Computation of un-metered energy:

(1) This shall be applicable to consumer (inclusive of street lightings) without meter from initial connection and have not been covered under any of the metering schemes. The monthly energy consumption shall be computed as below which shall be evaluated as per tariff of the applicable category of consumer:

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

Where

L = Contracted load in kW/Billing Demand in kVA, (as per clause 1.8 of this tariff schedule)

H =

a. For consumer in general:- Total number of hours in a month during which power is actually supplied to that consumer through that feeder / through that DT concerned, whichever is less, (after taking into account all interruptions of power feeding that) or (730 minus total hours interruptions of power feeding that consumer). where 730 is average number of hours in a month in a non-leap year. (Note:- Interruption shall mean breakdowns of Feeders, Part of feeder, Distribution Transformer, load sheddings, all types of shut downs which should be recorded and informed to concerned billing station)

b. For street lights:- Total number of hours in a month during which power is actually supplied to street lights through that feeder / through that DT concerned, whichever is less, (after taking into account all interruptions of power feeding that) or (365 minus total hours interruptions of power feeding that street light). where 365 is average number of hours between 5 pm to 5 am in a month in a non-leap year. (Note:- Interruption shall mean breakdowns of Feeders, Part of feeder, Distribution Transformer, load sheddings, all types of shut downs which occurs between 5 pm and 5 am. which should be recorded and informed to concerned billing station)

F = Load Factor shall be as stipulated for theft cases in ANNEXURE 11.19 of the Joint Electricity Regulatory Commission for Manipur & Mizoram (Electricity Supply Code) Regulations, 2013. Which is reproduced for convenience sake:-

S. No.	Particulars	Load factor
1.	Domestic (LT/HT)	40%
2.	Non-domestic/Commercial (LT/HT)	50%
3.	Industrial (LT/HT)	75%
4.	Public Water supply(LT/HT)	50%
5.	Bulk supply	50%
6.	Agriculture/Irrigation(LT/HT)	50%
7.	Street light	50%
8.	Direct theft – All categories	100%

D = Demand factor which shall be taken as

(1) 50 %. In case of street lighting, (2) 35 % in case of other consumption.

(2) **Short period of unmetered supply:-** For un-meter (meter not available) supply as a result of defective, burnt, lost meter shall be treated as per 6.11 – 6.13 Of the JERC for Manipur and 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 FY 2016-17 and regularize the assessed consumption based on average three (3) months record of metered consumption and adjustment of bill shall be done accordingly.

(3) **For Un-authorized consumer/theft (includes by-pass of meter)/pilferage and cases cover by section 135 of the Act:-** The energy consumed shall be computed as per Annexure 11.1.19 Of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. The energy so computed shall be evaluated as follows:-

(a) Load less than 10 kW

(1) First instance:- Three (3) times of the rate of the applicable tariff (fixed and variable charges) for which the stolen energy was utilized.

(2) Second and subsequent instance:- Six (6) times of the rate of the applicable tariff (fixed and variable charges) for which the stolen energy was utilized.

(b) Load exceeding 10 kW

(1) First instance:- Three (3) times of the rate of the applicable tariff (fixed and variable charges) for which the stolen energy was utilized.

(2) Second and subsequent instance:- Six (6) times of the rate of the applicable tariff (fixed and variable charges) for which the stolen energy was utilized.

Note;- Additional punishment of theft shall be as per Electricity Act 2003 (with latest amendment) and as per the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

6. Miscellaneous Charges (Part of Non-Tariff Income)

6.1 Meter Rent for non-prepaid meters: Monthly charges for hiring of the meter, indicator shall be as follows:

6.1.1 LT Metering:

a) AC, Single phase Energy meter whole current	: Rs.20.00 per Month
b) AC, Three phase Energy meter, whole current	: Rs.35.00 per Month.
c) AC, Three phase Energy meter, CT operated	: Rs.50.00 per Month
d) Any other type of meter/indicator	: Rs.100.00 per Month

6.1.2 HT Metering:

a) AC, Three phase Energy meter, CT & PT operated	: Rs.200.00 per Month.
b) Any other type of meter/indicator	: Rs.300.00 per Month.

6.2. Pole/Tower usage charge per month

6.2.1 For supporting of internet/media/telephone cables:-

This charge shall be borne by Operator/Distributor of visual media network.

- a) Rs 2.50 per pole per cable per month in case of internet cable/ media cables/visual media cables
- b) Rs 3.00 per pole per month per cable in case of landline telephone cable. (a cable having up to 5 pair of lines shall be taken as one cable for this purpose) Telephone cable having more than 5 pairs shall be considered as 2, 3 etc, by dividing actual number of pairs by 5 to arrive at equivalent number of cables. Any fraction shall be rounded to next higher integer.

6.2.2 For Hoarding for display of Advertisement (Maximum size 3'x2').

This charge shall be borne by the interested party.

- a) Commercial area of city/town @ Rs 60.00 per hoarding per month per pole/tower.
- b) Residential area of city/town @ Rs 30.00 per hoarding per month per pole/tower.
- c) National/State highway (outside city/town limit) @ Rs 20.00 per hoarding per month per pole/tower.

6.3. Other charges for meter:

(a) Meter shifting charge:

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

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

(b) The cost of replacement and execution charge:

Utility shall have stock of energy meter as per clause 5.51 of the JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. Replacement of meter shall be carried out as per clause 5.31 to 5.50 of the same code mentioned above. Charges for other materials will be extra.

i) Execution charge for re-installation/installation of meter:-

- a) For existing consumer shall be Free of cost.
- b) For disconnected consumer with meter removed:- Rs 100.00
- c) For new consumer, it shall be included in the cost of service connection as under execution charges.

ii) Cost of Energy Meters supplied by Licensee:

As per the Licensee's purchase rate plus 15% Licensee's charge if supplied from the Licensee (energy meters approved / tested by the Licensee only shall be used. However, when the cause leading to subsequent replacement is either manufacturing defect or

fault of licensee then, it shall be free of cost.

c) Testing charge of Meter at the request of consumers: (Testing charge is inclusive of costs of meter re-sealing materials/equipment).

- i) For AC single phase LT energy meter: Rs.75.00 per meter per testing.
- ii) For AC three phase LT energy meter, whole current: Rs.100.00 per meter per testing.
- iii) For AC three phase LT energy meter, CT operated: Rs.200.00 per meter per testing.
- iv) For energy meter AC three phase, CT & PT operated: Rs.300.00 per meter per testing.
- v) For any other type of meter HT supply: Rs.300.00 per meter per testing.

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

6.4 Testing charge of Consumer's Installation:

The first test and inspection will be carried out free of cost as per Clause 4.47 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. Should any further test or inspection is necessitated due to fault in the installation or due to non-compliance with the condition of supply by the consumer an extra charge of Rs.150.00 per test, payable in advance, shall be levied. In the event of the consumer failing to pay the testing charge in advance within stipulated time, the Licensee will be at liberty to disconnect the consumer's premise from the supplier's main.

6.5 Disconnection and Reconnection:

(1) **Disconnection:-** Disconnection of an installation in all cases will be free of charges.

(2) **Reconnection:-** Reconnection charge shall be as follow:-

(a) Disconnected consumer due to safety measures shall be free of charge. (b) is connection due to non-payment any kind of liabilities shall be:-

- (i) For AC single phase LT supply : Rs.100.00
- (ii) For AC three phase LT supply : Rs.150.00
- (iii) For AC HT supply : Rs.400.00

Note: - Extra material required will be chargeable.

6.6 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.

6.7 Mutation Fee:- Mutation fee i.e fee for change of name shall be Rs 50.00 per change. This shall be carried out as per clause 4.81 to 4.84 of the Joint Electricity Regulatory Commission for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013.

6.8 Charges for Replacement of Connection Wire, Cut-out, Fuse, etc.:

Cost of replacement after initial fixation of connection wire, cut-out, fuses, etc. will be borne by the consumers and shall be payable by the consumer in advance as per purchase rate of the Licensee plus 15% Licensee's charges if the Licensee supplies the materials, or the consumer may arranged required materials as per the required specifications of the Licensee. The execution charge shall be as follows:

(1) For Cable and wire:-

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

(2) For Cut out & Fuse:-

- (a) Rs 10.00 per cut out.
- (b) Rs 3.00 per fuse

6.9 Testing charge of Consumer's Installation: The first test and inspection will be carried out free of cost as per Clause 4.47 of JERC for Manipur and Mizoram (Electricity Supply Code) Regulations, 2013. Should any further test or inspection is necessitated due to fault in the installation or due to non- compliance with the condition of supply by the consumer an extra charge of Rs.150.00 per test, payable in advance, shall be levied. In the event of the consumer failing to pay the testing charge in advance within stipulated

time, the Licensee will be at liberty to disconnect the consumer's premise from the supplier's main.

6.10 Meter Security (*if Licensee's meter is used*):

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

6.11 Charges for Replacement of temper proof Meter Housing Box:

For AC single phase LT or three phases LT without CT or with CT, the energy meter box if replaced from Licensee's store: The charge will be as per Licensee's purchase rate plus 15% towards Licensee's charge.

6.12 Charges for Testing of Transformer Oil:

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

6.13 Service Lines & Service Connection:

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

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

6.14 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.

6.15 Load Security:

The amount of load/meter security shall be calculated as per the procedure prescribed in

clause 4.123 – 4.127 and determine as per Annexure 11.18 of the JERC for M&M (Electricity Supply Code) Regulations, 2013.

ANNEXURES



**JOINT ELECTRICITY REGULATORY COMMISSION
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AIZAWL : MIZORAM**

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Fax: 0389-2336299/ 2335523, Tel. No. : 0389-2335625/2336555

Website: www.jerc.mizoram.gov.in, Email: jerc.mm@gmail.com

No. H.11019/27/12-JERC

Dated Aizawl, the 29th February, 2016

MINUTES OF THE 18TH MEETING OF THE STATE ADVISORY COMMITTEE OF MIZORAM

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

Date & Time : 15th February, 2016, 11:00 a.m.

The Chairman of the Committee and Chairperson of the Commission, Mr. R. K. Kishore Singh due to his urgent works at Manipur could not attend the Meeting and he authorised Er. L. Pachuau, Chief (Engineering) of the Commission to Chair the Committee on his behalf.

The list of Members and Participants who attended the Committee is appended.

Agenda No. 1. Confirmation on the Minutes of the SAC Mizoram held on 16th

February, 2015.

The Chairman requested the Members to give their comments on the Minutes of the Meeting, on agenda No.2 of the Minute, the name of Er. F. Liantluanga, S.E, P.H.E Department was inadvertently mentioned as Er. F. Lalliantluanga S.E, P.H.E Department, hence the name stands corrected.

After obtaining nods from the Members, the Meeting minute was then declared as confirmed.

Agenda No. 2. Determination of Tariff for Power & Electricity Department, Mizoram for FY 2016-17.

The Chairman requested, Er. L. Pachuau, E-in-C, P & E Department to highlight the important points of the Tariff Petition for information of the Committee. The E-in-C stated that the over-all increase of the proposed Tariff for FY 2016-17 is about 8.21% from the existing Tariff. He further stated that the proposed increase in the tariff is required so as to decrease the amount of support as subsidy received from the Government.

The Joint Secretary, P & E Department, Er. Lalduhzuala Sailo, representing the Secretary, P&E Department enquired the amount of the revenue gap for FY 2016-17 and the amount of Government subsidy. To which it was stated that revenue gap with existing tariff is Rs. 94.54 Crores and with the proposed 8.21% tariff like it is expected to receive additional revenue of Rs. 10.13 cr. and the balance Rs. 84.41 cr is required to be borne by the State Government as subsidy. Pu Vanlalruata, Vice President representing President, CYMA also stated that the decreasing trend of the revenue gap is very good. And also the decreasing trend on the number of employees. He also stated that high cost on employee is not favoured.

The E-in-C informed the Committee that the Department plans to start using the energy meter with MDI facility with effect from 1st April, 2016 on all the towns covered under R-APDRP. Computerised billing he is being started from Kolasib town and the North East Data Center is at Guwahati with Data Recovery Center at Agartala, which is yet to function in full swing. The next computerised billing is to start from Lunglei. The target completion date is June, 2016. After completion of the computerised billing system, spot billing system will be started. Er. F. Liantluanga S.E, P.H.E Department representing E-in-C, P.H.E Department stated that huge amount of bill has been given by PHE Department monthly towards the cost of power supply and enquired whether billing based on maximum demand for fixed charge can be applied in their power which is very much now needed by their Department. The E-in-C, replied that with MDI energy meter it could be done. He further stated that maximum demand shall be revised from time to time and they shall not be allowed to draw power more than contracted maximum demand. Mr. Vanlalruata, Vice

President, CYMA stated that incentives on tariff is required to promote industries in Mizoram. Mr. Lalbiakzuala Aihneh, IPO representing Director, Industries Department also stated that energy meter with MDI facility is very much needed for their industrial complexes as they are paying huge amount on electricity without utilizing power.

Sections of the Members of the Committee were of the opinion that the P&E Department being a Government Department, the increase in the tariff is to be borne by the Government and not by the public.

The Chairman informed the Committee Members that increase in the tariff is very much required so as to enable the Department to sustain itself in the long run. The consumers shall borne only a small portion of the increase in the tariff and the balance is to be borne by the State Government as subsidy. And after ascertaining in the views of the Members, it was agreed that increase in tariff is required.

Agenda No. 3. Corporatisation of Power & Electricity Department, etc. proposed by Mizoram Consumers' Union Headquarters.

The agenda proposed by the MCU Headquarters. was read out by the Chairman. Mr. Vanlalruata expressed the view that corporatization of the P&E Department is very much needed for better service facility to the consumers. The E-in-C, P&E Department informed the Members that clear demarcations on Transmission, Generation and Distribution is being made in the Department for better functioning and efficiency.

The Members proposes to request the Government to constitute a Team of Experts to study corporatization of our neighbouring states like Manipur, Tripura, Assam, etc and the team may comprises of members representing CYMA, MCU, MHIP Gen. Hqrs, MJA, P&E Department, Law & Judicial, Finance Department, etc. And submit their report to the Government for needful action.

On the Consumer Grievances Redressal Mechanism for more effective set up proposed by the MCU was deliberated. The E-in-C, informed the Committee that Customer Care Center is being operationalised and that Internal Grievances Redressal Cells along with Consumer Grievances Redressal Forum is in place in the

Department and complaints are as being redressed timely. The Chairman also informed the Committee that time limits are set out for redressal of grievances and that they can even approach the Commission if not satisfied with the decisions of the Forum through Ombudsman. Pu Vanlalruata, Vice President CYMA stated that the services of the P&E Department has improved with the coming up of the Regulatory Commission in Mizoram in the power sector. But, he further stated that street lights are still being put on even during day time. The E-in-C replied that street lightening is under the control of the Aizawl Municipal Corporation and that this matter needs to be taken up with them.

The E-in-C reported that the problems of current fluctuation in voltage and frequency is being improved by installation of 190 numbers of transformers within the Aizawl city and this installation shall be completed very soon. Further, 33KV sub-station is also being proposed at Maumual, Aizawl. Over-loaded conductors are also being replaced with new one, with this, voltage fluctuations, etc will not be there. About 29 villages in Mizoram are yet to be electrified and that 100 electrification of Mizoram will be completed very soon under RGGVY scheme.

Un-athourised collection of money by linesman of P&E Department on pole climbing etc. is against the law and that any fees that are needed to be paid is to be deposited in the office of the Department as stated by the E-in-C.

The Chairman informed that rent on meter of the Department on relisation of actual cost of meter price cannot be stopped, as it is the Department's property. However, the consumers can procure energy meter from vendors and after proper calibration and inspection by the Department, it can be installed and they need not pay any meter rent.

The Meeting ended at 1:50 p.m. with the vote of thanks from the Chair.

Sd/-R.K. KISHORE SINGH
Chairperson

Memo No.H.11019/27/12-JERC : Dated Aizawl, the 29th February, 2016

Copy to:

1. P.S to Hon'ble Chief Minister, i/c P&E Department, Gov't of Mizoram for kind information to the Hon'ble Chief Minister.
2. PS to Secretary, P&E Department, Gov't of Mizoram for kind information to the Secretary and for taking necessary action on the Minutes of the Meeting.
3. All Members / Invitees of the State Advisory Committee for kind information and for taking necessary action on the Minutes of the Meeting.
4. Guard File.

Sd/-Assistant Secretary



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List of Members and Participants who attended the 18th Meeting of State Advisory Committee of Mizoram.

Date & Time : 15th February, 2016(Monday) from 11:00 a.m.

Venue : I & PR Department Conference Hall, Treasury Square, Aizawl.

Sl.No	Name	Designation
1	LALDUHZUAL SAILO	Jt. Secretary for Secretary, Power & Electricity Department.
2	F. LIANTLUANGA	SE for Engineer – in – Chief, PHE Department
3	LALBIAKZUALA AINEH	IPO for Director, Industries Department
4	C. LALZUILIANA	Director, Trade & Commerce Department.
5	ETHEL ROHTHANGPUII	Secretary for Commissioner, Aizawl Municipal Corporation.
6	LALPEKHLUA	President, Mizoram Chamber of Industries & Commerce.
7	DR. THANPUII	Vice- President for President, Mizoram Hmeichhia Insuihkhawm Pawl.Gen. Hqrs.
8	VANLALRUATA	Vice- President for President, Central Young Mizo Association
9	ZAHLIRA RALTE	AGS, for President, Mizoram Upa Pawl, General. Headquarters.
10	R. REMMAWIA	Jt. Director for Director, Transport Department.
11	H. LALCHHUANAWMA	Dy. Director for Director, Local Administration Department.

12	R. LALTLUANGA	Treasurer for President, AMFU, Gen. Hqrs.
13	LIANNHINGLOVA PACHUAU	Engineer – in –Chief, P&ED
14	LALCHHARLIANA PACHUAU	Chief(Engineering), JERC(M&M)
15	RICHARD ZOTHANKIMA	Assistant Secretary, JERC(M&M)
16	H. THANTHANGA	Assistant Chief(Engineering), JERC(M&M)
17	LALA KHOBUNG	Consultant, JERC(M&M)
18	Y. SATYANARAYANA	Consultant, ASCI
19	DAVID RAMNUNSANGA	SE(Commercial) P&ED
20	B.L.TLUMTEA	Sr.EE(Commercial) P&ED
21	LALHMINGHLUA	AE(Commercial) P&ED
22	VANLALTHLENGLIANA	JE(Commercial), P&ED
23	SANJIB MAJHI	Consultant, P&ED
24	ARVIN TEWARI	Consultant, P&ED



JOINT ELECTRICITY REGULATORY COMMISSION
FOR MANIPUR AND MIZORAM
AIZAWL : MIZORAM

LIST OF PERSONS WHO ATTENDED PUBLIC HEARING ON ARR & TARIFF PROPOSAL FOR FY 2016-17 IN
 RESPECT OF POWER & ELECTRICITY DEPARTMENT, GOVT OF MIZORAM

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

Date & Time : 16th February, 2016 (Tuesday) from 11:00 a.m to 03:00 p.m

SI.NO.	NAME	DESIGNATION & ORGANISATION
1	Zahlira Ralte	AGS, MUP
2	Lala Khobung	Consultant, JERC
3	Lalpekhlua	MCI, GS
4	H.Lalchhuanawma	Dy. Director, KAD
5	ZD. Lalvunga	HRIATNA Journalist
6	Y.Satyanarayana	Consultant ASCI
7	H. Thanthianga	Asst. Chief (Engg) JERC(M&M)
8	David Ramnunsanga	S.E (Commercial)
9	B.L. Tlumtea	Sr. E.E (Commercial)
10	Lalhminghlua	Asst. Engineer (Commercial)
11	Vanlalruata	Vice President, CYMA
12	Arvind Tewari	Consultant P&ED
13	Vanlalthlengliana	JE, P&ED (Commercial)
14	Dr. Thanpuii	Vice President, MHIP Gen.HQRS
15	Lalramliana	C.E, P&E Dept.

16	F. Rualzakhuma	C.E (SO), P&E
17	Lalchharliana Pachuau	C.E , JERC (M&M)
18	Richard Zothankima	Asst. Secy, JERC (M&M)
19	Sanjib Majhi	P&ED, Consultant
20	R. Vanramchhuanga	Vice President, MCU Hqrs.
21	Dr. Chawngsailova	Gen. Secretary, MCU Hqrs.

Mizoram - Expected Revenue from Revised Tariff effective from 01.04.2016

Sl. No.	Category	Consumers	Contracted Load (in kW)	Annual energy Sales (in MU)	Sales/Consumer/Month (in kWh)	Existing Tariff		Revenue /month				Annual Revenue (in Rs lakh)	Av. realisation (Rs/kWh)
						Fixed Charge (Rs/kW)	Energy charge (Rs./kWh)	Total Fixed Charges (in Rs lakh)	Energy charge per Consumer (in Rs)	Total energy charge (in Rs lakh)	Total Revenue (in Rs lakhs)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	KJ(Domestic)												
i)	First 15 kWh	6962		0.81	9.70		1.40		13.58	0.95			
ii)	Next 15 kWh	5264		1.50	23.75		2.05		38.94	2.05			
iii)	Balance above 30 kWh	4415		1.69	31.90		2.35		56.22	2.48			
	Sub Total	16981	1921.00	4.00	19.63	12/connection		2.04	108.74	5.48	7.52	90.24	2.26
2	Domestic												
i)	First 50 kWh	73977		35.00	39.43		2.35		92.66	68.55			
ii)	Next 50 kWh	50616		45.00	74.09		3.25		195.79	99.10			
iii)	Next 100 kWh	46722		65.00	115.93		4.20		346.91	162.08			
iv)	Balance above 200 kWh	42829		105.00	204.30		4.80		720.64	308.64			
	Sub Total	194675	268158.00	250.00	107.02	35		93.86	1356.00	638.37	732.23	8786.76	3.51
3	Domestic HT	6	1373.00	4.00	55555.56	35	4.70	0.48	261111.13	15.67	16.15	193.80	4.85
	Total Domestic	211662	271452.00	258.00	101.58			96.38	262575.87	659.52	755.90	8980.56	3.48
4	Commercial												
i)	First 100 kWh	3700		3.50	78.83		3.60		283.79	10.50			
ii)	Next 100 kWh	2190		5.00	190.26		4.60		775.20	16.98			
iii)	Balance above 200 kWh	1661		22.50	1128.84		5.50		5928.62	98.47			
	Sub Total	7551	29683.00	31.00	342.12	65		19.29	6987.61	125.95	145.24	1742.88	5.62
5	Commercial HT	65	1134.00	2.00	2564.10	65	5.30	0.74	13589.73	8.83	9.57	114.84	5.74
	Total Commercial	7616	30817.00	33.00	361.08			20.03	20577.34	134.78	154.81	1857.72	5.63
6	Public Lighting	788	1794.00	9.00	951.78	60	5.00	1.08	4758.90	37.50	38.58	462.96	5.14
7	PWS LT	14	986.00	1.00	5952.38	75	5.00	0.74	29761.90	4.17	4.91	58.92	5.89
8	PWS HT	41	37702.00	50.00	101626.02	75	4.80	28.28	487804.90	200.00	228.28	2739.36	5.48
9	Agl LT	21	26.00	0.01	39.68	35	1.85	0.01	73.41	0.02	0.03	0.36	3.60
10	Agl HT	1	134.00	0.10	8333.33	35	1.80	0.05	14999.99	0.15	0.20	2.40	2.40
11	Industrial LT												
i)	First 400 kWh	620		1.03	138.44		3.75		519.15	3.22			
ii)	Balance above 400 kWh	118		1.97	1391.24		4.45		5911.02	6.98			
	Total Industrial	738	4130.00	3.00	338.75	65		2.68	6430.17	10.20	12.88	154.56	5.15
12	Industrial HT	15	7398.00	3.00	16666.67	65	4.30	4.81	71666.68	10.75	15.56	186.72	6.22
13	Bulk Supply HT	274	28607.00	25.00	7603.41	70	4.15	20.02	31554.15	86.46	106.48	1277.76	5.11
	Grand Total	221170	383046.00	382.11	143.97			174.08	930203.31	1143.55	1317.63	15811.56	4.14



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