

**AGGREGATE REVENUE
REQUIREMENT
FOR
MYT FY 2017 TO FY 2019**

AND

**TARIFF PROPOSAL PETITION
FOR
FY 2017-18**

Submitted By:

Madhya Pradesh Power Management Company Limited
Shakti Bhawan, Vidyut Nagar, Jabalpur



Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Limited
Block No. 7, Shakti Bhawan, Vidyut Nagar, Jabalpur

Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Limited
GPH Compound, Pologround, Indore

Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Limited
Bijlee Nagar Colony, Nishtha Parisar, Govindpura, Bhopal

**BEFORE THE HON'BLE MADHYA PRADESH
ELECTRICITY REGULATORY COMMISSION, BHOPAL**

Petition No. _____ of 2017

- (1) Madhya Pradesh Power Management Company Limited (MPPMCL)
Shakti Bhawan, Vidyut Nagar, Jabalpur (MP) ----- **Petitioner**
- (2) Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Limited (MPPoKVVCL)
Shakti Bhawan, Vidyut Nagar, Jabalpur (MP) ----- **Petitioner**
- (3) Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Limited (MPPaKVVCL)GPH, Polo
Ground, Indore (MP) ----- **Petitioner**
- (4) Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Limited (MPMKVVCL)
Nishtha Parisar, Bijlee Nagar, Govindpura, Bhopal (MP) ----- **Petitioner**

IN THE MATTER OF:

Filing of ARR application for the distribution and retail supply business for the MYT period FY 2016-17 to FY 2018-19and tariff proposal petition for FY 2017-18under tariff principles laid down in "The Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for supply and wheeling of Electricity and Methods and Principles of Fixation of Charges) Regulations, 2015 (RG -35 (II) of 2015)" No. 2256-MPERC,2015 Dated 17-12-2015 communicated to MPPMCL vide Commission's letter no. 2265dated Dec. 18, 2015 by MPPMCL and MPPoKVVCL, MPPaKVVCL & MPMKVVCL as the Distribution Licensees.

The Petitioners above respectfully submit as under:-

1. Madhya Pradesh Power Management Company Ltd., (hereinafter referred to as the 'Petitioner', MPPMCL, 'the Company' or 'the Licensee'), is a Company incorporated under the Companies Act, 1956 (now Companies Act 2013) and having its registered office at Block No.15, Shakti Bhawan, Vidyut Nagar, Jabalpur.
2. Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Ltd., (hereinafter referred to as the 'Petitioner', MPPKVVCL, 'the Company' or 'the Licensee' or 'East Discom'), is a Company incorporated under the Companies Act, 1956 (now Companies Act 2013) and having its registered office at Block No.7, Shakti Bhawan, Vidyut Nagar, Jabalpur. The Petitioner is a deemed licensee under the Fifth Proviso to Section 14 of the Electricity Act, 2003. The area of supply of the Petitioner comprises Jabalpur, Rewa, Sagar and Shahdol Commissionary within the State of Madhya Pradesh ('MP').

3. Madhya Pradesh Paschim Kshetra Vitaran Company Ltd., (hereinafter referred to as the 'Petitioner', MPPaKVVCL, 'the Company' or 'the Licensee' or 'West Discom'), is a Company incorporated under the Companies Act, 1956 (now Companies Act 2013) and having its registered office at GPH, Polo Ground, Indore. The Petitioner is a deemed licensee under the Fifth Proviso to Section 14 of the Electricity Act, 2003. The area of supply of the Petitioner comprises Indore and Ujjain Commissionary within the State of Madhya Pradesh ('MP').
4. Madhya Pradesh Madhya Kshetra Vitaran Company Ltd. (MPMKVVCL), (hereinafter referred to as the 'Petitioner', MPMKVVCL, 'the Company' or 'the Licensee' or 'Central Discom'), is a Company incorporated under the Companies Act, 1956 (now Companies Act 2013) and having its registered office at Nishtha Parisar, Bijlee Nagar Colony, Govindpura, Bhopal. The Petitioner is a deemed licensee under the Fifth Proviso to Section 14 of the Electricity Act, 2003. The area of supply of the Petitioner comprises Bhopal, Gwalior, Hoshangabad and Chambal Commissionary within the State of Madhya Pradesh ('MP').
5. The Government of Madhya Pradesh ('GoMP' or 'State Government'), vide an Order No. 3679-FRS-18-13-2002 dated 31st May, 2005, published in the gazette of Madhya Pradesh dated 31st May 2005, have restructured the functions and undertakings of Generation, Transmission, Distribution and Retail Supply of electricity earlier carried out by the Madhya Pradesh State Electricity Board ('MPSEB' or the 'Board') and transferred the same to five Companies to function independently. The five Companies are as under: -
 - a) M.P. Power Generating Company Ltd., Jabalpur (MPPGCL)
 - b) M.P. Power Transmission Company Ltd., Jabalpur (MPPTCL)
 - c) M.P. Poorv Kshetra Vitaran Company Ltd., Jabalpur (MPPoKVVCL)
 - d) M.P. Paschim Kshetra Vitaran Company Ltd., Indore (MPPaKVVCL)
 - e) M.P. Madhya Kshetra Vitaran Company Ltd. Bhopal (MPMKVVCL)
6. With effect from 1st June 2005, the Operation and Management Agreement that existed between Madhya Pradesh State Electricity Board and the Five Companies came to end with the issue of the said Order dated 31-05-2005. The three Discoms viz. MPPoKVVCL, Jabalpur, MPPaKVVCL, Indore and MPMKVVCL, Bhopal started functioning independently as Distribution Licensees in their respective area of license and from the said date, they are no longer operating as an agent of or on behalf of the Board, subject to Cash Flow Mechanism (CFM) provided in the said Order.
7. On June 3, 2006 GoMP, in exercise of its powers under Section 23 (Sub-section (1), (2) and (3)) and Section 56 (Sub-section (2)) of Madhya Pradesh Vidyut Sudhar Adhiniyam, 2000 read with Section 131 (Sub-sections (1), (2), (5), (6) and (7) of Electricity Act, 2003, effected the transfer of and vesting of the functions, properties, interests, rights and obligations of MPSEB relating to the Bulk Purchase and Bulk Supply of Electricity in the State and simultaneously re-transferred and re-vested the same to MP Power Trading Company Ltd. ('Tradeco' or 'MP Tradeco'). Since then, MP Tradeco discharged the responsibilities of procurement of power in bulk and supplying to the three Electricity Distribution Companies (DISCOMs), including the Petitioner herein. The transfer was affected through "M.P. Electricity Reforms Transfer Scheme Rules 2006" (Transfer Scheme Rules) vide Notification No.3474 /FRS/17/XIII/2002 dtd 3rd June 2006 (Transfer Scheme Rules).

8. In accordance with GoMP decision, the name of MP Power Trading Company Ltd has been changed to MP Power Management Company Ltd. MPPMCL is the holding Company of the three electricity distribution companies (Discoms) of MP State, viz., M. P. Poorv Kshetra Vitaran Company Ltd., M. P. Paschim Kshetra Vitaran Company Ltd. and M. P. Madhya Kshetra Vitaran Company Ltd. The Petitioner (MPPMCL) has been vested with several of functions and powers that were earlier vested with the erstwhile Madhya Pradesh State Electricity Board. The Registrar of Companies MP has issued the Certificate of Incorporation Consequent upon Change of Name on 10.04.2012.
9. GoMP has entrusted the MPPMCL with the responsibility inter alia of representing the Discoms before the Commission with regard to filing the tariff petition and facilitating all proceedings thereon. The Management and Corporate functions agreement signed by the MPPMCL with the three Discoms of MP also provide for the same.
10. MPPMCL has signed “Management and Corporate Functions Agreement” on 5th June 2012, with the three Discoms of the State, wherein it has been agreed that the Petitioner shall perform inter alia the following functions of common nature for the Discoms:
 - In consultation with Discoms, undertake long-term/ medium-term/short-term planning and assessment of the power purchase requirements for the three Discoms and explore opportunities for power procurement as per the regulations of MPERC;
 - Allocation of power among the Discoms from the forthcoming projects as per retail tariff order and as per the GoMP notification and further instructions in this regard;
 - Economic, reliable and cost effective power procurement of Short-term, Medium-term and Long-term and sale of surplus power, if any, for the purpose of Banking / maximization of revenue;
 - Exploring opportunities for procurement of power on long-term and medium-term basis, procure power and finalizing Power Purchase Agreements (PPAs);
 - The expenses of MPPMCL have been considered to be included as part of power purchase cost of the Discoms.
11. In the backdrop of the above facts and circumstances, the present application is being made by the MPPMCL along with the three Distribution Companies of MP State under Section 61 and Section 62 (1) (d) of the Electricity Act 2003 for determination of the tariff for distribution and Retail Supply Business for the period FY 2017-18 following the regulations laid down by the Hon'ble Commission.
12. While filing the present ARR under the prevailing Regulation, MPPMCL along with the Discoms has endeavored to comply with the various legal and regulatory directions and stipulations applicable, including the directions given by the Hon'ble Commission in the Business Rules of the Commission, the Guidelines, previous ARR and Tariff Orders and the Madhya Pradesh Electricity

Regulatory Commission (Terms & Conditions for determination of Tariff) Regulation 2015 (hereinafter referred to as the “Regulations”).

13. It is submitted that as soon as the retail tariff order becomes applicable, the voltage level and consumer category wise cross subsidy surcharge, additional surcharge, wheeling charges and transmission charges in respect of open access customers should also be notified and made effective from the tariff application date.
14. This petition is filed on the basis of normative parameters as provided by Hon’ble MPERC in Regulation no: 2256-MPERC.2015 dated 17/12/2015 regarding MPERC (Terms and Conditions for Determination of Tariff for Supply and Wheeling of Electricity and Methods and Principles for Fixation of Charges) Regulations 2015.

The Hon’ble MPERC in the previous year’s order has referred to an Appellate Tribunal for Electricity (APTEL) judgment to determine the voltage level wise Cost of Supply in the state of MP. However, this judgment is to determine the voltage level wise cross subsidy surcharge and not consumer tariff. In the present petition, the Petitioners have proposed consumer category wise tariff in line with the National Tariff Policy 2016. The Hon’ble Commission is requested to determine the voltage level and consumer category wise cross subsidy surcharge on the basis of the available data with the Distribution Licensees in accordance with the methodology suggested by the APTEL and also approved by Hon’ble Commission in its Retail Supply Tariff Order for FY 2016-17.

15. Based on the information available, the Petitioners have made sincere efforts to comply with the Regulations of the Hon’ble Commission and discharge its obligations to the best of its ability and resources at its command. However, should any further information of material significance becomes available during the process of determination, the petitioners may be permitted to reserve the right to file such additional information and consequently amend/ revise the petition.
16. In consequences of the APTEL’s judgement, the Hon’ble Commission has approved the balance amount of true- up costs for all the three Discoms for FY 2006-07. The approved true up amount has also been considered while filing the total ARR for FY 2017-18. Further it is submitted that the balance amount of true-up cost for 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12 has been approved by Hon’ble Commission by order dt.12.01.2017. Rs.1969.47 Crore has been approved Hon’ble Commission. In concluding para it is mentioned “this amount may be claimed by the respondent through the petition to be filed for determination of ARR and Retail supply tariff for future years.” Therefore the same will be considered in the ARR of 2018-19.

The salient features of the ARR for FY 2017-18 are as under:-

S.No .	ARR Items		East	Central	West	Total-State
1	Total ARR (excluding True Up)	Rs Crs	9,877	10,504	11,419	31,800
2	Revenue at current tariffs	Rs Crs	8,376	9,114	10,054	27,545
3	Gap (excluding true-up)	Rs Crs	1,500	1,390	1,365	4,255
4	Average Cost of Supply (excluding true-up)	Rs/kW h	6.47	6.56	6.19	6.40
	Impact of True-Up Amounts of Past Years					
A	Impact of True Up for Discoms for FY 2006-07	Rs Crs	119.25	135.92	167.78	422.85
B	Impact of True Up for MPGenco for FY 2014-15	Rs Crs	-169.19	-186.13	-207.46	-562.78
C	Impact of True-Up for MPTransco for FY 2014-15	Rs Crs	123.631	131.73	157.64	413.00
5	Total ARR (Including True Up)	Rs Crs	9,950	10,586	11,537	32,073
6	Total Revenue Gap (including True-up)	Rs Crs	1,574	1,472	1,483	4,528
7	Average Cost of Supply (including true-up)	Rs/kW h	6.52	6.61	6.26	6.45

17. However, despite the various measures taken to improve commercial and technical efficiencies, Discoms are unable to recover the costs incurred, which are compelling the Discoms to propose for an increase in the existing tariff.
18. The petitioners would like to reiterate their proposal to alter the mechanism for deriving Fuel Cost Adjustment (FCA) for recovery/adjustment of uncontrollable costs due to increase or decrease in the cost of fuel in case of coal, oil and gas based generating stations. The petitioners would like to resubmit that the existing mechanism to calculate FCA does not have any provision to recover the incremental power purchase. The petitioners also urge that the average power purchase cost should be considered in the formula instead of only variable costs, thus passing on the complete fixed costs on to the consumers as a legitimate cost.
19. Shri F.K. Meshram, Chief General Manager (Revenue Management) of MPPMCL; Shri G.P. Singh, Chief Engineer (Commercial) of MPPoKVVCL; Shri Pavan Kumar Jain, ASE (Commercial) of MPPaKVVCL and Shri A.R. Verma, General Manager & Superintending Engineer (Commercial) of MPMKVVCL have been authorized to execute and file all the documents on behalf of the respective petitioners in this regard. Accordingly, the current filing is signed and verified by, and backed by the affidavit of respective authorized signatories.

PRAAYER

In view of the aforesaid facts and circumstances, the Applicants request that the Hon'ble Commission may be pleased to:

- (a) Take the accompanying ARR/Tariff petition of the above petitioners on record and treat it as complete;
- (b) Consider and approve petitioners' ARR (including true-up amounts of all companies previous years) amounting to **Rs.9,950 Cr** for East Discom, **Rs. 10,586 Cr** for Central Discom and **Rs. 11,537 Cr** for West Discom for the year FY 2017-18;
- (c) Consider and approve petitioner's claim of Rs 1,603 towards regulatory assets (Rs 699 Cr for East Discom, Rs 499 Cr for Central Discom and Rs 405 Cr for West Discom) for the year FY 2017-18.
- (d) Considering the aforesaid facts and circumstances the Hon'ble Commission may be pleased to allow expenses of MPPMCL as stated to be allowed and include them as a part of power purchase cost of three Discoms, to meet the ends of justice;
- (e) Consider and approve Petitioners' tariff proposal for FY 2017-18 to recover the costs for the ensuing year;
- (f) Consider and determine the wheeling charges, voltage level and consumer category wise cross subsidy surcharge, additional surcharge and transmission charges for open access customers on the basis of ARR petition for FY 2017-18 and make applicable w.e.f the application date of the revised tariff;
- (g) Condone any inadvertent omissions/ errors/ shortcomings and permit the petitioners to add/ change/ modify/ alter portion(s) of this filing and make further submissions as may be required at a later stage; and
- (h) Pass such an order as the Hon'ble Commission deems fit and proper as per the facts and circumstances of the case.

Date: - 20th January 2017

Shri F.K. Meshram, Chief General Manager
(Revenue Management)
MPPMCL, Jabalpur

Shri G.P. Singh, Chief Engineer
(Commercial)
MP Poorv Kshetra Vidyut Vitaran Co.
Ltd.,Jabalpur

Shri Pavan Kumar Jain, ASE
(Commercial)
MP Paschim Kshetra Vidyut Vitaran Co.
Ltd.,Indore.

Shri A.R. Verma, GM & SE
(Commercial)
MP Madhya Kshetra Vidyut Vitaran Co.
Ltd.,Bhopal.

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1. Estimation of sales

1.1 Method adopted for Estimation of Sales

For the purpose of projection of sales, the distribution licensees have considered category wise and slab wise actual data of the sale of electricity, number of consumers, connected / contracted load, etc. of the preceding four years i.e. FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16 and available data of the FY 2016-17 i.e. up to the month of August 2016.

The licensees, in the previous year's filing for FY 2016-17, had projected the Sales based on the actual data of FY 2014-15. Since the actual data of FY 2015-16 is now available and it has been observed that the actual sales during FY 2015-16 have variations from the sales forecasted by the Licensee and those allowed by the Hon'ble Commission during the previous filings, the licensees feel that it will be appropriate to revise the sales forecast for FY 2016-17 and thereafter project the sales for FY 2017-18.

The sales for FY 2017-18 have been projected on the basis of the actual data of Number of Consumers, Connected Load and Consumption during the last 4 years and on the basis of revised estimate for FY 2016-17.

The approach being followed is to analyze 3 year and 2 year Compound Annual Growth Rates (CAGRs) and year on year growth rate of each category and its sub-categories in respect of urban & rural consumers separately. After analysis of the data, appropriate / reasonable growth rates have been assumed for future consumer forecasts from the past CAGRs of the Category/Sub-category by the three Discoms.

The past CAGR on sales per consumer / sales per kW and connected load has been applied while forecasting the connected load and sales in each category/sub-category. The use of specific consumption i.e. consumption per consumer and / or consumption per unit load is the basic forecasting variable and is widely used in load and energy sales forecasting. The basic intent in using this model is that, the specific consumption per consumer and / or consumption per unit load captures the trends and variations in the usage of electricity over a growth cycle more precisely. This method has been recommended by the C.E.A. also. The projections for each tariff category and the relevant assumptions of the three Discoms have been discussed in the following sections. The overall sales forecast is as follows:

Table 1: Sales _ MYT Period FY 2017 to FY 2019

(figures in MU)

TC	Category	East Discom			Central Discom			West Discom			MP State		
		FY 17 (RE)	FY 18	FY 19	FY 17 (RE)	FY 18	FY 19	FY 17 (RE)	FY 18	FY 19	FY 17 (RE)	FY 18	FY 19
LV 1	Domestic	4,067	4,540	5,109	3,815	4,283	4,653	3,686	3,939	4,209	11,568	12,762	13,971
LV 2	Non-Domestic	916	1,037	1,174	850	956	1,082	938	1,015	1,099	2,703	3,008	3,355
LV 3	WW & Street Light	357	408	469	335	361	391	417	455	497	1,109	1,224	1,357
LV 4	LT Industrial	332	365	404	270	283	299	572	591	611	1,174	1,239	1,313
LV 5.1	Agriculture Irrigation Pumps	5,625	5,920	6,324	6,118	6,286	6,550	7,984	8,544	9,147	19,727	20,750	22,021
LV 5.2	Agriculture related Use	8	9	11	127	127	127	1	1	1	137	138	140
Total (LT)		11,305	12,279	13,491	11,515	12,298	13,101	13,598	14,545	15,564	36,418	39,122	42,156
HV 1	Railway Traction	0	0	0	0	0	0	0	0	0	0	0	0
HV 2	Coal Mines	443	443	443	35	35	35	0	0	0	477	477	477
HV 3.1	Industrial	1,854	1,865	1,876	2,336	2,632	2,980	2,127	2,149	2,171	6,317	6,646	7,027
HV 3.2	Non-Industrial	228	236	244	400	426	455	355	359	363	983	1,021	1,062
HV 3.3	Shopping Mall	9	10	10	18	19	20	49	50	51	76	78	30
HV 3.4	Power Intensive industries	32	32	33	213	231	252	790	803	817	1,035	1,067	1,102
HV 4	Seasonal	8	9	9	2	2	2	12	12	12	22	22	23
HV 5.1	Public Water Works, Irrigation & LIS	91	97	104	179	194	211	464	478	493	734	769	808
HV 5.2	Other Agricultural	14	15	17	8	10	12	7	7	7	29	32	35
HV 6	Bulk Residential Users	285	286	287	167	174	180	31	31	31	483	490	498
HV 7	Start Up Power	0	0	0	0	0	0	1	1	1	1	1	2
Total (HT)		2,964	2,993	3,023	3,359	3,722	4,146	3,834	3,889	3,945	10,157	10,604	11,064
TOTAL LT+HT		14,269	15,271	16,514	14,873	16,020	17,247	17,432	18,434	19,508	46,575	49,725	53,220

* Digits rounded off to the nearest integer

1.2 Category-wise sales projection

1.2.1. LV -1: Domestic

1.2.1.1. Assumptions for Projecting Unmetered Domestic Sales

In the tariff order for FY 2014-15, Hon'ble Commission had revised the benchmark of billing to unmetered domestic connections in rural areas to 75 units per month per connection and had continued the same for FY 2015-16 and ensuing years also. Therefore, the petitioners have considered the same for projecting consumption of unmetered domestic connections.

The projections of consumption of un-metered domestic connections in this petition have been considered as **NIL for urban areas** (since all domestic consumers in urban areas have been metered).

After factoring the growth in consumers the following projections has been arrived at for LV-1 category:

Table 2: LV-1 Domestic Unit Projection

(figures in MU)

Area	Sub Category	East Discom			Central Discom			West Discom			MP State		
		FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Urban	Metered	2,095	2,325	2,577	2,616	2,885	3,179	2,267	2,420	2,584	6,978	7,630	8,340
Urban	Un-metered	2	0	0	1	0	0	0	0	0	3	0	0
Urban	Temporary	19	19	19	21	21	21	22	23	24	62	63	64
Urban	Total	2,115	2,343	2,595	2,638	2,906	3,201	2,290	2,444	2,608	7,043	7,693	8,404
Rural	Metered	1,658	2,048	2,438	1,096	1,336	1,411	1,393	1,492	1,598	4,147	4,877	5,447
Rural	Un-metered	291	145	73	79	40	40	0	0	0	371	185	113
Rural	Temporary	3	3	3	1	1	1	3	3	3	7	7	7
Rural	Total	1,952	2,196	2,513	1,176	1,377	1,452	1,396	1,495	1,601	4,524	5,069	5,567
Total	Metered	3,753	4,373	5,014	3,712	4,221	4,590	3,660	3,913	4,182	11,126	12,507	13,787
Total	Un-metered	293	145	73	81	40	40	0	0	0	374	185	113
Total	Temporary	22	22	22	22	22	23	25	26	27	68	70	71
Total	Total	4,067	4,540	5,109	3,815	4,283	4,653	3,686	3,939	4,209	11,568	12,762	13,971

1.2.1.2. East Discom

The growth percentages assumed for the category for the MYT period are as shown below:

Area	Category	Urban			Rural			
Metered	Consumer	4.78%	3 year CAGR has been considered			8.52%	1 year growth has been considered	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered			0.00%	No growth rate has been considered	
	Average consumption per consumer per month	16.48%	2 Year CAGR rate has been considered			12.00%	2 year CAGR has been considered	
Un-metered	Consumer	0.00%	No growth rate has been considered			0.00%	No growth rate has been considered	
	Average Load per Consumer	0.00%				0.00%		

Area	Category	Urban		Rural	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.1.3. Central Discom

The growth percentages assumed for the category are as shown below

Area	Category	Urban		Rural	
Metered	Consumer	7.56%	YoY growth rate considered	4.12%	YoY growth rate considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	2.46%	YoY growth rate considered	7.90%	5 month variation considered
Un-metered	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	1.91%	2 year CAGR considered	0.00%	No growth rate considered
	Average Load per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	No growth rate considered

1.2.1.4. West Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Metered	Consumer	3.68%	5 month variation considered	5.00%	Nominal growth has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered

Area	Category	Urban		Rural	
	Average consumption per consumer per month	2.96%	2 Year CAGR considered	2.00%	Nominal growth has been considered
Un-metered	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	3.00%	5 month variation considered	6.77%	3 year CAGR taken
	Average Load per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	

1.2.2. LV -2: Non-Domestic

The future projections are as below

Table 3: LV-2 Non-Domestic Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Metered	892	1,013	1,150	788	886	1,002	895	972	1,056	2,575	2,871	3,208
Temporary	24	24	24	61	70	80	42	42	42	128	136	146
Total	916	1,037	1,174	850	956	1,082	938	1,015	1,099	2,703	3,008	3,355

1.2.2.1. East Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Metered	Consumer	4.12%	2 year CAGR has been considered	14.56%	3 year CAGR has been considered
	Average Load (kW) per Consumer	4.36%	YoY growth rate	0.30%	3 year CAGR has been considered
	Average consumption per kW per month	4.08%	2 year CAGR has been considered	0.00%	No growth rate has been considered
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.2.2. Central Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Metered	Consumer	3.62%	5 month variation considered	4.34%	5 month variation considered
	Average Load (kW) per Consumer	3.72%	5 month variation considered	4.28%	5 month variation considered
	Average consumption per kW per month	5.00%	Nominal growth considered	0.73%	2 year CAGR considered
Temporary	Consumer	0.00%	No growth rate has been considered	7.57%	2 year CAGR considered
	Average Load (kW) per Consumer	0.00%	No growth has been considered	1.12%	2 year CAGR considered
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered

1.2.2.3. West Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Metered	Consumer	3.46%	YoY growth rate	6.32%	3 year CAGR has been considered
	Average Load (kW) per Consumer	4.00%	Nominal growth rate considered	0.00%	No growth rate has been considered
	Average consumption per kW per month	1.30%	5 month variation considered	0.49%	2 year CAGR has been considered
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.3. LV – 3.1: Public Water Works

Considering the anticipated increase in supply hours, the future projections are as follows:

Table 4: LV-3.1 PWW Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Municipal Corp.	53	56	59	84	89	95	41	44	47	177	189	201
Nagar Panchayat	64	75	87	86	94	102	58	62	66	208	230	255
Gram Panchayat	99	121	148	57	64	71	149	165	182	305	349	401
Temporary	6	6	6	3	3	2	5	6	6	14	14	14
Total	222	257	300	229	249	271	253	276	301	704	782	872

1.2.3.1. *East Discom*

The growth percentages assumed for the category are as shown below:

Area	Category	Urban			Rural		
Municipal Corporation	Consumer	3.32%	YoY growth rate has been considered		0.00%	No growth rate has been considered	
	Average Load (kW) per Consumer	2.45%	3 Year CAGR considered		10.10%	2 year CAGR has been considered	
	Average consumption per kW per month	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered	
Nagar Panchayat	Consumer	9.02%	YoY Variation considered		6.88%	3 year CAGR has been considered	
	Average Load (kW) per Consumer	6.39%	2 year growth rate has been considered		10.44%	YoY growth has been considered	
	Average consumption per consumer per month	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered	
Gram Panchayat	Consumer	0.00%	No growth rate has been considered		10.43%	YoY growth rate	

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	8.88%	3 year CAGR has been considered	11.98%	2 year CAGR has been considered
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.3.2. Central Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	0.19%	YoY growth considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	1.35%	YoY growth considered	0.00%	
	Average consumption per kW per month	5.02%	3 year CAGR considered	0.00%	
Nagar Panchayat	Consumer	9.01%	3 year CAGR considered	10.00%	Custom growth rate taken
	Average Load (kW) per Consumer	0.00%	No growth rate considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	3.47%	3 year CAGR considered	3.31%	2 year CAGR considered
Gram Panchayat	Consumer	0.00%	No growth rate considered	5.84%	5 month variation considered
	Average Load (kW) per Consumer	4.07%	5 month variation considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	4.77%	3 year CAGR considered	6.33%	5 month variation considered
Temporary	Consumer	0.00%	No growth rate considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	6.31%	2 year CAGR considered	0.00%	
	Average consumption per consumer per month	0.00%	No growth rate considered	0.00%	

1.2.3.3. West Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	2.39%	2 year growth rate has been considered	5.26%	5 month variation considered
	Average Load (kW) per Consumer	4.97%	5 month variation considered	2.41%	2 year CAGR has been considered
	Average consumption per kW per month	0.00%	No growth rate has been considered	10.00%	Custom growth rate has been considered
Nagar Panchayat	Consumer	6.97%	5 month variation considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.45%	5 month variation considered	0.00%	
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	
Gram Panchayat	Consumer	6.02%	2 year CAGR considered	8.61%	YoY growth rate
	Average Load (kW) per Consumer	-3.92%	5 month variation considered	0.44%	2 year CAGR has been considered
	Average consumption per consumer per month	19.84%	3 year CAGR considered	0.00%	No growth rate has been considered
Temporary	Consumer	4.07%	YoY growth considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.4. LV -3.2: Street Light

Considering the anticipated increase in supply hours, the future projections are as below:

Table 5: LV-3.2 Street Light Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Municipal Corp.	64	74	84	48	49	50	63	67	71	176	190	205
Nagar Panchayat	56	61	68	52	54	56	42	46	51	149	161	175
Gram Panchayat	15	16	17	6	9	14	58	66	74	79	91	105
Total	135	151	169	106	112	120	163	179	195	405	442	485

1.2.4.1. *East Discom*

The growth percentages assumed for the category are as shown below.

Area	Category	Urban			Rural		
Municipal Corporation	Consumer	9.98%	YoY growth rate		0.00%	No growth rate has been considered	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered		15.00%	Custom growth rate has been considered	
	Average consumption per kW per month	3.78%	3 year CAGR has been considered		0.00%	No growth rate has been considered	
Nagar Panchayat	Consumer	7.71%	1 year growth rate has been considered		17.84%	3 year CAGR has been considered	
	Average Load (kW) per Consumer	2.10%	5 month variation has been considered		14.49%	5 month variation considered	
	Average consumption per consumer per month	0.00%	No growth rate has been considered		2.35%	5 month variation considered	
Gram Panchayat	Consumer	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered	
	Average Load (kW) per Consumer	12.56%	5 month variation considered		6.60%	No growth rate has been considered	

Area	Category	Urban		Rural	
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	5 month variation considered

1.2.4.2. Central Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	4.00%	2 year CAGR considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.26%	3 year CAGR considered	0.00%	
	Average consumption per kW per month	-2.03%	3 year CAGR considered	10.00%	Custom growth rate considered
Nagar Panchayat	Consumer	2.70%	YoY growth considered	10.00%	5 month variation considered
	Average Load (kW) per Consumer	0.38%	YoY growth considered	1.00%	Nominal growth rate considered
	Average consumption per consumer per month	1.29%	2 year CAGR considered	5.00%	Nominal growth rate considered
Gram Panchayat	Consumer	6.12%	3 year CAGR considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	10.00%	Custom growth rate considered	10.00%	YoY Growth rate considered
	Average consumption per consumer per month	5.00%	Custom growth rate has been considered	10.00%	Custom growth rate considered

1.2.1.3 West Discom

The growth percentages assumed for the category are as shown below:

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	5.57%	5 month variation considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	
	Average consumption per kW per month	0.00%	No growth rate has been considered	0.00%	
Nagar Panchayat	Consumer	10.01%	YoY growth considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	5.14%	

Area	Category	Urban			Rural		
	Average consumption per consumer per month	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered	
Gram Panchayat	Consumer	2.48%	YoY growth considered		4.42%	YoY Growth rate considered	
	Average Load (kW) per Consumer	2.68%	5 month variation considered		2.83%	YoY Growth rate considered	
	Average consumption per consumer per month	13.79%	YoY growth considered		5.04%	YoY Growth rate considered	

1.2.5. LV -4.1: Non- Seasonal Industrial

The future projections are as below:

Table 6: LV-4.1 Non-Seasonal Industrial Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Upto 25HP	168	177	187	154	156	158	252	259	267	574	593	612
Above 25HP to 100HP	123	143	167	103	110	117	234	241	248	460	493	532
Above 100HP	24	28	32	11	14	19	78	83	88	113	125	139
Temporary LT Ind.	13	13	13	0	1	1	2	2	2	15	15	15
Total	328	361	400	268	281	295	566	584	604	1,162	1,226	1,299

1.2.5.1. East Discom

The assumptions for sales forecast for the category are given below:

Area	Category	Urban			Rural		
Upto 25HP	Consumer	2.70%	2 year CAGR has been considered		5.20%	2 year CAGR has been considered	
	Average Load (kW) per Consumer	0.98%	1 year growth has been considered		1.94%	1 year growth rate considered	
	Average consumption per kW per month	0.00%	No growth rate considered		0.00%	No growth rate considered	
Above 25HP to	Consumer	8.05%	2 year CAGR has been considered		32.25%	3 year CAGR has been considered	

Area	Category	Urban		Rural	
100HP	Average Load (kW) per Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Average consumption per consumer per month	0.00%	No growth rate considered	0.00%	No growth rate considered
Above 100HP	Consumer	10.00%	Custom growth rate	20.00%	Custom growth rate
	Average Load (kW) per Consumer	0.28%	1 year growth rate considered	2.13%	5 month variation has been considered
	Average consumption per consumer per month	0.00%	No growth rate considered	0.00%	No growth rate has been considered
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.5.2. Central Discom

The growth percentages assumed are as follows

Area	Category	Urban		Rural	
Upto 25HP	Consumer	2.21%	5 month variation considered	1.38%	2 year CAGR considered
	Average Load (kW) per Consumer	0.35%	3 year CAGR considered	-3.67%	5 month variation has been considered
	Average consumption per kW per month	0.19%	2 year CAGR considered	0.77%	2 year CAGR considered
Above 25HP to 100HP	Consumer	5.86%	YoY variation considered	5.00%	Nominal growth considered
	Average Load (kW) per Consumer	0.21%	3 year CAGR considered	-1.50%	3 year CAGR considered
	Average consumption per consumer per month	0.85%	3 year CAGR considered	0.18%	3 year CAGR considered
Above 100HP	Consumer	10.00%	Custom growth considered	2.00%	Nominal Growth considered
	Average Load (kW) per Consumer	0.26%	3 year CAGR considered	0.00%	No growth rate considered
	Average consumption per consumer per month	0.00%	No growth rate has been considered	10.00%	Custom growth rate considered
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate considered

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	0.00%		2.19%	YoY growth rate considered
	Average consumption per consumer per month	11.70%	2 year CAGR considered	10.00%	Custom growth rate considered

1.2.5.3. West Discom

The growth percentages assumed are as follows:

Area	Category	Urban		Rural	
Upto 25HP	Consumer	0.26%	YoY Growth rate considered	3.24%	5 month variation has been considered
	Average Load (kW) per Consumer	0.68%	YoY Growth rate considered	0.66%	YoY growth considered
	Average consumption per kW per month	1.48%	5 month variation considered	0.00%	No growth rate has been considered
Above 25HP to 100HP	Consumer	2.75%	5 month variation considered	3.73%	5 month variation has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	1.44%	5 month variation has been considered
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
Above 100HP	Consumer	5.00%	Custom growth rate	1.00%	Custom growth rate
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	1.30%	3 year CAGR considered	0.00%	No growth rate has been considered
Temporary	Consumer	0.00%	No growth rate has been considered	3.48%	5 month variation has been considered
	Average Load (kW) per Consumer	0.00%		6.98%	2 year CAGR has been considered
	Average consumption per consumer per month	0.00%		0.00%	No growth rate has been considered

1.2.6. LV -4.2: Seasonal Industrial

The future projections are as follows:

Table 7: LV-4.2 Seasonal Industrial Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Upto 25HP	1	1	1	0	0	0	3	3	3	4	4	4
Above 25HP to 100HP	2	2	2	2	2	3	4	4	4	8	8	9
Above 100HP	1	1	1	0	0	0	0	0	0	1	1	2
Total	4	4	4	2	3	3	7	7	7	12	13	14

1.2.6.1. East Discom

The growth percentages assumed are as follows:

Area	Category	Urban			Rural				
Upto 25HP	Consumer	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered			
	Average Load (kW) per Consumer	0.00%			0.00%				
	Average consumption per kW per month	0.00%			0.00%				
Above 25HP to 100HP	Consumer	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered			
	Average Load (kW) per Consumer	0.00%			0.00%				
	Average consumption per consumer per month	0.00%			0.00%				
Above 100HP	Consumer	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered			
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered		2.04%	5 month variation considered			
	Average consumption per consumer per month	13.99%	5 month variation considered		0.00%	No growth rate has been considered			

1.2.6.2. Central Discom

The growth percentages assumed are as follows

Area	Category	Urban		Rural	
Upto 25HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	10.00%	Custom growth rate considered
	Average consumption per kW per month	10.00%	Nominal Growth considered	0.00%	No growth rate has been considered
Above 25HP to 100HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	8.52%	3 year CAGR considered	10.91%	3 year CAGR considered
	Average consumption per consumer per month	10.00%	Custom growth rate considered	10.00%	Custom growth rate considered
Above 100HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.13%	2 year CAGR considered	0.00%	
	Average consumption per consumer per month	33.88%	YoY growth rate considered	0.00%	

1.2.6.3. West Discom

The growth rates assumed are as follows

Area	Category	Urban		Rural	
Upto 25HP	Consumer	0.00%	No growth rate has been considered	5.00%	Nominal growth considered
	Average Load (kW) per Consumer	1.29%	5 month variation considered	1.21%	5 month variation considered
	Average consumption per kW per month	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
Above 25HP to 100HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	3.28%	YoY growth considered
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
Above 100HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.7. LV -5.1: Agricultural

The projections for LV 5.1 Agricultural category are as follows

Table 8: LV-5.1 Agriculture Unit Projection

(figures in MU)

Area	Sub Category	East Discom			Central Discom			West Discom			MP State		
		FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Urban	Metered General	4	4	4	8	8	9	2	2	2	13	14	15
Urban	Metered Temporary	1	1	1	3	3	3	0	0	0	4	4	4
Urban	Unmetered General	375	401	429	256	267	279	196	202	207	828	871	916
Urban	Unmetered Temporary	10	11	13	18	18	18	13	14	14	42	42	44
Urban	Total	390	417	447	285	296	309	212	217	223	887	931	979
Rural	Metered General	4	4	4	18	18	18	1	1	1	22	22	22
Rural	Metered Temporary	2	2	2	0	0	0	0	0	0	2	2	2
Rural	Unmetered General	4,949	5,295	5,666	5,363	5,602	5,852	7,288	7,837	8,430	17,599	18,735	19,947
Rural	Unmetered Temporary	281	202	206	452	370	370	484	489	494	1,218	1,061	1,070
Rural	Total	5,235	5,503	5,877	5,833	5,990	6,241	7,772	8,327	8,924	18,841	19,820	21,042
Total	Metered General	7	7	7	25	26	28	2	2	2	35	36	37
Total	Metered Temporary	3	3	3	3	3	3	0	0	0	6	6	6
Total	Unmetered General	5,324	5,697	6,095	5,619	5,869	6,131	7,484	8,039	8,637	18,427	19,605	20,863
Total	Unmetered Temporary	291	213	219	471	387	387	497	502	507	1,259	1,103	1,113
Total	Total	5,625	5,920	6,324	6,118	6,286	6,550	7,984	8,544	9,147	19,727	20,750	22,021

For unmetered temporary agriculture consumers under this category, the assessed consumption is considered as per the norms stipulated by Hon'ble Commission in the tariff order for FY 2016-17. The same is shown as below:

		Figures in Unit			
		Urban	Urban	Rural	Rural
		2016-17	2017-18	2016-17	2017-18
Three Phase		220	220	195	195
Single Phase		230	230	205	205

The month-wise segregation of norms for assessed consumption of unmetered permanent agricultural connections are as shown below

Months	Three Phase				Single Phase			
	Urban	Urban	Rural	Rural	Urban	Urban	Rural	Rural
	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18
April	90	90	80	80	90	90	90	90
May	90	90	80	80	90	90	90	90
June	90	90	80	80	90	90	90	90
July	90	90	80	80	90	90	90	90
Aug	90	90	80	80	90	90	90	90
Sept	90	90	80	80	90	90	90	90
Oct	170	170	170	170	180	180	180	180
Nov	170	170	170	170	180	180	180	180
Dec	170	170	170	170	180	180	180	180
Jan	170	170	170	170	180	180	180	180
Feb	170	170	170	170	180	180	180	180
March	170	170	170	170	180	180	180	180

1.2.7.1. East Discom

The growth rates assumed for future projections and revised estimates for this category by East Discom are as follows:

Area	Category	Urban		Rural	
Metered General	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load	0.00%		0.00%	
	Consumption per HP	0.00%		0.00%	
Unmetered Permanent	Consumer	5.00%	Nominal growth rate has been considered	4.87%	Nominal growth rate has been considered
	Load	7.00%	Nominal growth rate has been considered	7.00%	Nominal growth rate has been considered
	Consumption per HP	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
Metered Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load/ consumer	0.00%		0.00%	
	Consumption per HP	0.00%		0.00%	

1.2.7.2. Central Discom

The growth rates assumed for future projections and revised estimates for this category by Central Discom are as follows:

Area	Category	Urban		Rural	
Metered General	Consumer	2.40%	Nominal growth rate has been considered	8.03%	Nominal growth rate has been considered
	Load	2.30%	Nominal growth rate has been considered	3.54%	Nominal growth rate has been considered
	Consumption per HP	1.76%	Nominal growth rate has been considered	2.11%	Nominal growth rate has been considered
Unmetered Permanent	Consumer	8.95%	Nominal growth rate has been considered	9.12%	Nominal growth rate has been considered
	Load	4.38%	Nominal growth rate has been considered	4.46%	Nominal growth rate has been considered
	Consumption per HP	4.38%	No growth rate has been considered	4.46%	Nominal growth rate has been considered
Metered Temporary	Consumer	0.00%	No growth rate considered	0.00%	No growth rate has been considered
	Load/ consumer	5.93%	Nominal growth rate has been considered	0.00%	No growth rate has been considered

Area	Category	Urban		Rural	
	Consumption per HP	2.91%	Nominal growth rate has been considered	0.00%	No growth rate has been considered

1.2.7.3. West Discom

The growth rates assumed for future projections and revised estimates for this category by West Discom are as follows:

Area	Category	Urban		Rural	
Metered General	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load	0.00%		0.00%	
	Consumption per HP	0.00%		0.00%	
Unmetered Permanent	Consumer	4.32%	Nominal growth rate has been considered	8.67%	Nominal growth rate has been considered
	Load	2.73%		7.54%	
	Consumption per HP	0.00%		0.00%	
Metered Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load/ consumer	0.00%		0.00%	
	Consumption per HP	0.00%		0.00%	

1.2.8. LV -5.2: Other allied agricultural Use

The projections for LV 5.2 Agricultural category are as follows

Table 9: LV-5.2 Other allied Agriculture Unit Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Upto 20HP	6	8	9	126	126	126	1	1	1	133	134	136
greater than 20HP	1	2	2	1	1	1	1	1	1	3	3	3
Temporary	0	0	0	0	0	0	0	0	0	1	1	1
Total	8	9	11	127	127	127	1	1	1	137	138	140

1.2.8.1. East Discom

The growth rates assumed for future projections and revised estimates for this category by East Discom are as follows:

Area	Category	Urban			Rural			
Upto 3HP	Consumer	11.04%	YoY Variation has been considered			14.61%	2 year CAGR considered	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered			0.00%	No growth rate has been considered	
	Average consumption per kW per month	0.00%				0.00%		
Above 3HP to 5HP	Consumer	2.04%	YoY variation has been considered			19.81%	2 year CAGR considered	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered			0.00%	No growth rate has been considered	
	Average consumption per consumer per month	0.00%				0.00%		
Above 5HP to 10HP	Consumer	42.86%	YoY variation considered			31.03%	2 Year CAGR considered	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered			0.00%	No growth rate has been considered	
	Average consumption per consumer per month	0.00%				0.00%		
Above 10HP to	Consumer	5.00%	YoY variation rate has been considered			6.07%	2 year CAGR considered	

Area	Category	Urban		Rural	
20HP	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	
Above 20HP	Consumer	0.00%	No growth rate has been considered	12.82%	2 Year CAGR considered
	Average Load (kW) per Consumer	0.00%		0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

1.2.8.2. Central Discom

The growth rates assumed for future projections and revised estimates for this category by Central Discom are as follows:

Area	Category	Urban		Rural	
Upto 3HP	Consumer	5.00%	Nominal Growth rate considered	5.00%	Nominal growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per kW per month	0.00%		0.00%	
Above 3HP to 5HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Above 5HP to 10HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Above 10HP to 20HP	Consumer	4.00%	Nominal Growth rate considered	4.00%	Nominal growth rate has been considered

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	
Above 20HP	Consumer	5.00%	Nominal Growth rate considered	5.00%	Nominal Growth rate considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	6.00%	Nominal Growth rate considered	6.00%	Nominal Growth rate considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	

1.2.8.3. West Discom

The growth rates assumed for future projections and revised estimates for this category by West Discom are as follows:

Area	Category	Urban		Rural	
Upto 3HP	Consumer	5.00%	1 Year growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	
	Average consumption per kW per month	0.00%		0.00%	
Above 3HP to 5HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Above 5HP to 10HP	Consumer	5.00%	Custom growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Above 10HP to 20HP	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%		0.00%	

Area	Category	Urban		Rural	
	Average consumption per consumer per month	0.00%		0.00%	
Above 20HP	Consumer	5.00%	Custom growth rate has been considered	-18.18%	5 month variation considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	5.00%	Custom growth rate has been considered	0.00%	No growth rate has been considered
	Average Load (kW) per Consumer	0.00%	No growth rate has been considered	0.00%	
	Average consumption per consumer per month	0.00%	No growth rate has been considered	0.00%	

1.2.9. HV -1: Railway Traction

The petitioners are not expecting any sales as the no railway consumer exists for the petitioners. Hence the forecast of sales by all petitioners are NIL for railway traction. The projection of sales for this category is as follows:

Table 10: HV-1 Railway Traction Projection

(figures in MU)

Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
HV-1 Railway Traction	0	0	0	0	0	0	0	0	0	0	0	0

1.2.10. HV -2: Coal Mines

The projection of sales for this category is as shown below:

Table 11: HV-2 Coal Mines Projection

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
132 kV	190	190	190	0	0	0	0	0	0	190	190	190
33 kV	249	249	249	33	33	33	0	0	0	282	282	282
11 kV	4	4	4	1	1	1	0	0	0	5	5	5
Total	443	443	443	35	35	35	0	0	0	477	477	477

1.2.10.1. East Discom

Revised estimates for FY 2016-17 has been considered based upon the year on year trend. On the estimated sales of FY 2016-17 no growth rate has been considered for the sales for FY 2017-18.

1.2.10.2. Central Discom

Growth rate of 3.01% (year on year growth rate) for 11 kV consumption has been considered, while for other categories, no growth rate has been considered.

1.2.10.3. West Discom

West Discom lacks any consumer base for this category.

1.2.11. HV-3: Industrial and Non-Industrial

The future projections are as follows:

Table 12: HV-3 Industrial and Non-Industrial Projection

Sub Category		East Discom			Central Discom			West Discom			MP State		
		FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Industrial - Unit (MU)	220 kV	101	101	101	0	0	0	1	1	1	101	101	101
	132 kV	1215	1215	1215	1113	1326	1580	168	173	179	2497	2715	2973
	33 kV	433	440	448	1168	1246	1334	1812	1829	1846	3414	3516	3628
	11 kV	105	109	113	55	60	66	146	146	146	305	314	324
	Total	1854	1865	1876	2336	2632	2980	2127	2149	2171	6317	6646	7027
Non Industrial - Unit (MU)	132 kV	0	0	0	3	3	3	37	38	39	40	41	42
	33 kV	139	143	148	276	289	304	198	202	205	613	634	657
	11 kV	90	93	96	122	134	148	119	119	119	330	346	363
	Total	228	236	244	400	426	455	355	359	363	983	1021	1062
Shopping Mall (MU)	132 kV	0	0	0	0	0	0	0	0	0	0	0	0
	33 kV	9	9	9	15	16	17	46	47	48	70	72	74
	11 kV	1	1	1	2	2	3	3	3	3	6	6	7
	Total	9	10	10	18	19	20	49	50	51	76	78	81
Power Intensive Industries (MU)	132 kV	0	0	0	32	38	45	290	298	307	321	336	352
	33 kV	32	32	33	182	194	208	500	505	510	714	731	750
	Total	32	32	33	213	231	252	790	803	817	1035	1067	1102

1.2.11.1. East Discom

The assumptions for sales forecast for the **Industrial category HV 3.1** are as given below:

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	No growth rate has been considered
33 kV	Consumer	1.97%	5 month variation considered	6.09%	3 Year CAGR considered
	Load (kW)	0.00%	No growth rate has been considered	2.33%	2 Year CAGR considered
	Units (MUS)	0.00%	No growth rate has been considered	5.00%	Nominal Growth considered
11 kV	Consumer	5.51%	5 month variation considered	6.98%	3 Year CAGR considered
	Load (kW)	1.13%	1 Year Growth rate considered	10.57%	3 Year CAGR considered
	Units (MUS)	2.81%	1 Year Growth rate considered	8.40%	5 month variation considered

The assumptions for sales forecast for the **Non-Industrial category HV 3.2** are as given below:

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
33 kV	Consumer	9.82%	3 year CAGR considered	17.57%	3 year CAGR has been considered
	Load (kW)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered

Area	Category	Urban		Rural	
	Units (MUS)	3.73%	2 year CAGR considered	12.08%	5 month variation considered
11 kV	Consumer	7.63%	5 month variation considered	7.72%	3 year CAGR considered
	Load (kW)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Units (MUS)	2.38%	2 year CAGR considered	13.93%	2 year CAGR considered

1.2.11.2. Central Discos

The assumptions for sales forecast for the **Industrial category** HV 3.1 are as given below:

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
132 kV	Consumer	15.87%	3 year CAGR considered	0.00%	No growth rate has been considered
	Load (kW)	23.32%	2 year CAGR considered	0.00%	No growth rate has been considered
	Units (MUS)	19.01%	3 year CAGR considered	0.00%	No growth rate has been considered
33 kV	Consumer	8.98%	3 year CAGR considered	12.80%	3 year CAGR considered
	Load (kW)	6.77%	2 year CAGR considered	7.79%	2 year CAGR considered
	Units (MUS)	2.12%	2 year CAGR considered	15.78%	5 month variation considered
11 kV	Consumer	7.75%	2 year CAGR considered	20.00%	Year on year Growth considered
	Load (kW)	6.97%	2 year CAGR considered	60.51%	3 year CAGR considered
	Units (MUS)	5.71%	5 month variation considered	42.39%	5 month variation considered

The assumptions for sales forecast for the **Non-Industrial category** HV 3.2 are as given below:

Area	Category	Urban		Rural	
132 kV	Consumer	25.99%	3 year CAGR considered	0.00%	No growth rate has been considered
	Load (kW)	6.27%	3 year CAGR considered	0.00%	
	Units (MUS)	0.00%	No growth rate has been considered	0.00%	
33 kV	Consumer	2.48%	5 month variation considered	11.54%	YoY growth considered
	Load (kW)	5.32%	2 year CAGR considered	14.49%	3 year CAGR considered
	Units (MUS)	4.60%	2 year CAGR considered	12.83%	2 year CAGR considered
11 kV	Consumer	4.74%	YoY growth considered	18.56%	3 year CAGR considered
	Load (kW)	4.97%	5 month variation considered	15.73%	YoY growth considered
	Units (MUS)	9.64%	YoY growth considered	29.21%	3 year CAGR considered

1.2.11.3. West Discom

The assumptions for sales forecast for the **Industrial category** HV 3.1 are as given below:

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
132 kV	Consumer	5.00%	Nominal growth considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%	No growth rate has been considered	0.00%	
	Units (MUS)	3.00%	Nominal growth considered	0.00%	
33 kV	Consumer	1.00%	Nominal growth considered	11.81%	YoY growth considered
	Load (kW)	0.48%	5 month variation considered	0.00%	No growth rate has been considered
	Units (MUS)	1.07%	2 year CAGR considered	0.00%	No growth rate has been considered

Area	Category	Urban			Rural	
11 kV	Consumer	1.66%	YoY growth considered		0.00%	No growth rate has been considered
	Load (kW)	0.00%	No growth rate has been considered		0.00%	
	Units (MUS)	0.00%	No growth rate has been considered		0.00%	

The assumptions for sales forecast for the **Non- Industrial category HV 3.2** are as given below:

Area	Category	Urban			Rural	
132 kV	Consumer	0.00%	No growth rate has been considered		0.00%	No growth rate has been considered
	Load (kW)	0.00%	No growth rate has been considered		0.00%	
	Units (MUS)	2.47%	5 month variation considered		0.00%	
33 kV	Consumer	6.13%	YoY growth considered		0.00%	No growth rate has been considered
	Load (kW)	5.00%	Nominal growth rate considered		0.00%	No growth rate has been considered
	Units (MUS)	1.78%	3 year CAGR considered		1.18%	YoY growth considered
11 kV	Consumer	1.33%	5 month variation considered		0.00%	No growth rate has been considered
	Load (kW)	2.40%	YoY growth considered		10.00%	Custom growth rate considered
	Units (MUS)	0.00%	No growth rate has been considered		0.71%	2 year CAGR considered

1.2.12. HV -4: Seasonal

The future projections are as follows:

Table 13: HV-4 Seasonal – Projections

(figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
33 kV	7	8	8	1	1	1	9	9	9	18	18	19
11 kV	1	1	1	0	0	0	2	2	2	4	4	4

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Total	8	9	9	2	2	2	12	12	12	22	22	23

1.2.12.1. East Discom

The assumptions for sales forecast for the category are given below:

Area	Category	Urban			Rural	
132 kV	Consumer	0.00%	No growth rate has been considered			0.00%
	Load (kW)	0.00%				0.00%
	Units (MUS)	0.00%				0.00%
33 kV	Consumer	0.00%	No growth rate has been considered			0.00%
	Load (kW)	0.00%				0.00%
	Units (MUS)	0.00%				8.89% 2 year CAGR considered
11 kV	Consumer	5.00%	Custom growth rate has been considered			0.00%
	Load (kW)	0.00%	No growth rate has been considered			0.00%
	Units (MUS)	16.84%	5 month variation			-10.99% 5 month variation

1.2.12.2. Central Discom

No growth has been considered for this consumer category

1.2.12.3. West Discom

Nominal growth of 5% has been considered to project consumers and load in rural area, while 11% has been considered to project rural sales @ 33 kV.

1.2.13. HV -5 Water Works, Lift Irrigation & Other allied Agricultural use

The future projections are as follows:

Table 14: HV-5 Water Works, Lift Irrigation & Other allied Agricultural use – Projections

(figures in MU)

	Sub Category	East Discom			Central Discom			West Discom			MP State		
		FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Irrigation - Units (MU)	132 kV	0	0	0	0	0	0	0	0	0	0	0	0
	33 kV	4	4	5	3	5	8	88	97	107	95	106	119
	11 kV	0	0	0	1	1	2	0	0	0	1	1	2
	Total	4	4	5	4	6	10	88	97	107	96	108	121
Water Works - Units (MU)	132 kV	0	0	0	58	64	71	279	283	288	337	347	358
	33 kV	77	82	87	104	110	116	84	85	87	265	277	289
	11 kV	10	11	12	13	14	15	12	12	12	35	38	40
	Total	87	93	99	175	188	201	376	381	387	637	661	687
Other than Agricultural - Units (MU)	132 kV	0	0	0	0	0	0	0	0	0	0	0	0
	33 kV	14	15	17	7	7	8	5	5	5	26	28	30
	11 kV	0	0	0	2	2	4	2	2	2	3	4	5
	Total	14	15	17	8	10	12	7	7	7	29	32	35

1.2.13.1. East Discom

The growth percentages for sales forecast for the **HT Water Works** category are given below:

Area	Category	Urban			Rural		
		Consumer	Load (kW)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%					

Area	Category	Urban		Rural	
	Units (MUS)	0.00%		0.00%	No growth rate has been considered
33 kV	Consumer	0.00%	No growth rate considered	14.29%	5 month variation considered
	Load (kW)	0.00%		7.37%	5 month variation considered
	Units (MUS)	9.73%	3 year CAGR considered	12.56%	3 year CAGR considered
11 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate has been considered	0.00%	
	Units (MUS)	8.69%	3 year CAGR considered	3.03%	No growth rate has been considered

3 year CAGR growth rate of 11.46% has been considered to project rural sales @ 33 kV for the **HT Irrigation**.

The growth percentages for sales forecast for the **HT – Other allied Agricultural** category are given below

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
33 kV	Consumer	12.50%	1 year growth considered	20.00%	1 year growth considered
	Load (kW)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Units (MUS)	8.13%	3 year CAGR considered	10.05%	5 month variation considered
11 kV	Consumer	0.00%	No growth considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%	No growth considered	0.00%	
	Units (MUS)	0.00%	No growth considered	0.00%	

1.2.13.2. Central Discom

The growth percentages for sales forecast for the **HT water works** category are given below:

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate has been considered
	Load (kW)	0.33%	3 year CAGR considered	0.00%	
	Units (MUS)	10.75%	2 year CAGR considered	0.00%	
33 kV	Consumer	13.19%	3 year CAGR considered	22.47%	2 year CAGR considered
	Load (kW)	2.24%	3 year CAGR considered	7.74%	2 year CAGR considered
	Units (MUS)	5.03%	3 year CAGR considered	15.98%	3 year CAGR considered
11 kV	Consumer	6.90%	2 year CAGR considered	0.00%	No growth rate considered
	Load (kW)	2.71%	3 year CAGR considered	0.00%	No growth rate considered
	Units (MUS)	6.68%	5 month variation considered	0.00%	No growth rate has been considered

The growth percentages for sales forecast for the **HT Irrigation** category are given below:

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
33 kV	Consumer	10.00%	Custom growth considered	15.47%	2 year CAGR considered
	Load (kW)	0.00%	No growth considered	14.71%	2 year CAGR considered
	Units (MUS)	7.08%	5 month variation considered	15.62%	3 year CAGR considered
11 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	

Area	Category	Urban		Rural	
		Units (MUS)	0.00%		21.01% 5 month variation considered

The growth percentages for sales forecast for the **HT- Other allied Agricultural** category are given below

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
33 kV	Consumer	6.90%	2 year CAGR considered	0.00%	No growth rate has been considered
	Load (kW)	9.19%	2 year CAGR considered	0.00%	
	Units (MUS)	9.64%	YoY growth considered	12.94%	2 year CAGR considered
11 kV	Consumer	44.22%	3 year CAGR considered	0.00%	No growth rate has been considered
	Load (kW)	10.00%	Nominal growth considered	10.00%	Custom growth rate taken
	Units (MUS)	10.00%	Nominal considered	10.00%	Custom growth rate taken

1.2.13.3. West Discom

It has been assumed that no growth would be considered to forecast sales for the **HT- Water Works** are given below:

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%		0.24%	YoY growth rate considered
	Units (MUS)	0.00%		1.51%	YoY growth rate considered
33 kV	Consumer	23.91%	5 month variation considered	4.17%	YoY growth rate considered
	Load (kW)	0.00%	No growth considered	3.38%	YoY growth rate considered
	Units (MUS)	0.00%	No growth considered	5.63%	5 month variation considered
11 kV	Consumer	0.00%	No growth considered	0.00%	No growth rate has been considered

Area	Category	Urban			Rural		
	Load (kW)	0.00%	No growth considered			0.00%	5 month variation considered
	Units (MUS)	0.00%	No growth considered			0.76%	

A growth rate of 10% has been taken for projecting urban load 33 (kV) and 10% each for projecting 33kV urban and rural sales for **HT Irrigation**. Further, it has been assumed that no growth will be achieved in **HT Other Agriculture** category.

1.2.14. HV -6: Bulk Residential users

The future projections are as follows:

Table 15: HV-6 Bulk Residential user – Projections (figures in MU)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
33 kV	258	258	258	153	158	163	24	24	24	435	440	445
11 kV	27	28	29	15	16	18	7	7	7	48	50	53
Total	285	286	287	167	174	180	31	31	31	483	490	498

1.2.14.1. East Discom

5 % growth has been assumed for projecting 11kV urban sales.

1.2.14.2. Central Discom

The assumptions for sales forecast for the category are given below:

Area	Category	Urban			Rural	
33 kV	Consumer	0.00%	No growth rate considered		0.00%	No growth rate considered

	Load (kW)	1.57%	Year on Year Growth considered	2.41%	2 year CAGR considered
	Units (MUS)	3.14%	2 year CAGR considered	5.00%	Nominal growth considered
11 kV	Consumer	11.87%	3 year CAGR considered	5.00%	Nominal growth considered
	Load (kW)	7.18%	3 year CAGR considered	5.00%	Nominal growth considered
	Units (MUS)	18.16%	3 year CAGR considered	5.00%	Nominal growth considered

West Discom

Nominal growth rate of 1.83% has been assumed in 33kV Rural Sales.

2. Energy Requirement at Discom Boundary and Ex-Bus Energy Requirement

2.1. *Conversion of annual sales to monthly sales*

The annual sales of the Discoms have been converted into monthly sales using the sales profile observed in the past years for each Discom. This profile is then used to compute monthly sales for the FY 2017-18. The profiling for all Discoms is given in the table below:

Table 16: Month-Wise Sales Profiles of Discoms

FY 17	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
East Discom	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%
Central Discom	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%
West Discom	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%
FY 18	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
East Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%
Central Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%
West Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%
FY 19	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
East Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%
Central Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%
West Discom	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%

2.2. MPPTCL Losses

For computation of Intra-State Transmission Losses (MPPTCL Losses), the actual data has been taken from the MP-SLDC online portal for the period October 2015 to September 2016 (52 weeks) and the average of the same has been considered for the ensuing years. The computed average MPPTCL losses work out to be 2.87 % and the same has been assumed to be constant for the MYT period FY 2016-17 to FY 2018-19.

Table 17: MPPTCL Losses: Past Data from MP-SLDC

	Sep-16	Aug-16	Jul-16	Jun-16	May-16	Apr-16	Mar-16	Feb-16	Jan-16	Dec-15	Nov-15	Oct-15	Average
MPPTCL Losses	3.08%	2.84%	2.69%	2.68%	2.74%	2.59%	2.83%	2.95%	3.03%	3.00%	3.25%	3.00%	2.87%

2.3. Distribution Losses

The Commission in its Regulations on “Terms and conditions for determination of tariff for supply and wheeling of electricity and methods and principles of fixation of charges” communicated to MPPMCL vide Commission’s Regulation no. 2256 – MPERC.2015 dated 17/12/2015 has notified distribution loss levels for the MYT period FY 2016-17 to FY 2018-19. The distribution loss level trajectory as specified in the Regulations is given in the table below:

Table 18: Loss level targets (%) for Discoms (as per MPERC regulations)

Loss Targets	FY 17	FY 18	FY 19
East Discom	18.00%	17.00%	16.00%
Central Discom	19.00%	18.00%	17.00%
West Discom	16.00%	15.50%	15.00%

The actual losses of the Discoms are observed at 22.65% for East Discom, 25.13% for Central Discom and 22.58 % for West Discom. However for the purpose of this petition the loss targets specified by the Commission in its Regulations on “Terms and conditions for determination of tariff for supply and wheeling of electricity and methods and principles of fixation of charges” have been considered for the calculation of Energy Balance and calculation of power purchase costs of the Discoms.

2.3.1. Conversion of annual Distribution loss levels to monthly losses

The annual distribution loss trajectory is converted into monthly loss trajectory based on the standard deviations of monthly losses from the cumulative annual losses during the past 5 years. In this method, the actual monthly loss levels and the cumulative annual losses of the Discom for the past years are taken and standard deviation of loss levels of each month from the cumulative annual average is calculated. The monthly standard deviations are then used to calculate the monthly loss levels using the annual MPERC loss level trajectory.

As a result, the annual energy requirement at the Discom boundary is grossed up by a higher loss figure than observed as per the MPERC loss trajectory.

The energy requirement is computed for all three Discoms and MP state at the state boundary as shown in tables below:

Table 19: Monthly energy requirement at State Boundary (MU) for FY 17- FY 19

East Discom	Monthly Ex bus Energy requirement - FY '17													Total
	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total	
Sales profile	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%	100%	
Sales (MUs)	1,142	1,142	999	999	1,070	1,213	1,427	1,356	1,213	1,284	1,284	1,142	14,269	
Distribution loss	20.78%	20.37%	14.39%	16.25%	19.58%	20.65%	19.42%	18.84%	19.78%	16.66%	15.01%	14.27%	18.00%	
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,483	1,476	1,201	1,228	1,370	1,574	1,823	1,720	1,557	1,587	1,556	1,371	17,944	
External Loss	38	38	31	31	35	40	47	44	40	41	40	35	460	
Exbus energy requirement (MU)	1,522	1,514	1,232	1,259	1,405	1,614	1,870	1,764	1,597	1,627	1,596	1,406	18,404	
Central Discom														
Central Discom	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total	
Sales profile	8%	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	100%	
Sales (MUs)	1,190	1,190	1,041	1,041	1,115	1,264	1,487	1,413	1,264	1,339	1,339	1,190	14,873	
Distribution loss	19.55%	19.06%	17.59%	17.11%	19.09%	20.13%	20.36%	20.03%	19.30%	20.02%	18.45%	17.30%	19.00%	
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,523	1,514	1,301	1,293	1,419	1,630	1,923	1,819	1,613	1,723	1,690	1,481	18,928	
External Loss	39	39	33	33	36	42	49	47	41	44	43	38	485	
Exbus energy requirement (MU)	1,562	1,552	1,334	1,326	1,456	1,671	1,972	1,866	1,654	1,767	1,733	1,519	19,413	
West Discom														
West Discom	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total	
Sales profile	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%	100%	
Sales (MUs)	1,395	1,395	1,220	1,220	1,307	1,482	1,743	1,656	1,482	1,569	1,569	1,395	17,432	
Distribution loss	16.07%	22.33%	17.60%	7.01%	4.90%	7.88%	22.22%	23.01%	22.13%	22.27%	14.88%	11.69%	16.00%	
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,711	1,849	1,525	1,351	1,415	1,656	2,307	2,215	1,959	2,078	1,898	1,626	21,589	
External Loss	44	47	39	34	36	42	59	57	50	53	48	42	551	
Exbus energy requirement (MU)	1,754	1,896	1,564	1,385	1,452	1,698	2,366	2,271	2,009	2,131	1,946	1,667	22,141	
MP state														
MP state	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total	
Sales (MUs)	3,726	3,726	3,260	3,260	3,493	3,959	4,657	4,425	3,959	4,192	4,192	3,726	46,575	
Energy requirement at state boundary	4,717	4,838	4,027	3,872	4,205	4,859	6,053	5,753	5,129	5,388	5,143	4,478	58,462	
External Loss	121	124	103	99	108	124	155	147	131	138	132	115	1,496	

Exbus energy requirement (MU)	4,838	4,962	4,130	3,971	4,312	4,983	6,208	5,900	5,260	5,525	5,275	4,593	59,958
Monthly energy requirement - FY '18													
East Discom	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
Sales profile	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%	100%
Sales (MUs)	1,222	1,222	1,222	1,222	1,222	1,222	1,374	1,374	1,374	1,374	1,222	1,222	15,271
Distribution loss	19.78%	19.37%	13.39%	15.25%	18.58%	19.65%	18.42%	17.84%	18.78%	15.66%	14.01%	13.27%	17.00%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,568	1,560	1,452	1,484	1,545	1,565	1,735	1,722	1,742	1,678	1,463	1,450	18,965
External Loss	41	40	38	38	40	41	45	45	45	43	38	38	491
Exbus energy requirement (MU)	1,609	1,600	1,490	1,523	1,585	1,606	1,780	1,767	1,787	1,721	1,501	1,488	19,456
Central Discom	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
Sales profile	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%	100%
Sales (MUs)	1,282	1,282	1,282	1,282	1,282	1,282	1,442	1,442	1,442	1,442	1,282	1,282	16,020
Distribution loss	18.55%	18.06%	16.59%	16.11%	18.09%	19.13%	19.36%	19.03%	18.30%	19.02%	17.45%	16.30%	18.00%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,620	1,610	1,582	1,573	1,611	1,632	1,841	1,833	1,817	1,833	1,598	1,577	20,127
External Loss	42	42	41	41	42	42	48	47	47	47	41	41	521
Exbus energy requirement (MU)	1,662	1,652	1,623	1,614	1,653	1,674	1,889	1,881	1,864	1,881	1,640	1,617	20,648
West Discom	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
Sales profile	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	8%	8%	100%
Sales (MUs)	1,475	1,475	1,475	1,475	1,475	1,475	1,659	1,659	1,659	1,659	1,475	1,475	18,434
Distribution loss	15.57%	21.83%	17.10%	6.51%	4.40%	7.38%	21.72%	22.51%	21.63%	21.77%	14.38%	11.19%	15.50%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,798	1,942	1,832	1,624	1,588	1,639	2,182	2,204	2,180	2,183	1,773	1,710	22,657
External Loss	46	50	47	42	41	42	56	57	56	56	46	44	586
Exbus energy requirement (MU)	1,845	1,993	1,879	1,666	1,629	1,682	2,238	2,261	2,236	2,240	1,819	1,754	23,242
MP state	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
Sales (MUs)	3,978	3,978	3,978	3,978	3,978	3,978	4,475	4,475	4,475	4,475	3,978	3,978	49,725
Energy requirement at state boundary	4,986	5,113	4,866	4,681	4,744	4,836	5,758	5,760	5,739	5,694	4,835	4,736	61,749
External Loss	129	132	126	121	123	125	149	149	148	147	125	123	1,598

Exbus energy requirement (MU)	5,115	5,245	4,992	4,802	4,867	4,961	5,907	5,909	5,887	5,842	4,960	4,859	63,347
Monthly energy requirement - FY '19													
East Discom	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
Sales profile	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%	100%
Sales (MUs)	1,321	1,321	1,321	1,321	1,321	1,321	1,486	1,486	1,486	1,486	1,321	1,321	16,514
Distribution loss	18.78%	18.37%	12.39%	14.25%	17.58%	18.65%	17.42%	16.84%	17.78%	14.66%	13.01%	12.27%	16.00%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,675	1,666	1,552	1,586	1,650	1,672	1,853	1,840	1,861	1,793	1,564	1,550	20,264
External Loss	43	43	40	41	43	43	48	47	48	46	40	40	522
Exbus requirement (MU)	1,718	1,709	1,592	1,627	1,693	1,715	1,901	1,887	1,909	1,839	1,604	1,590	20,786
Central Discom	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
Sales profile	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%	100%
Sales (MUs)	1,380	1,380	1,380	1,380	1,380	1,380	1,552	1,552	1,552	1,552	1,380	1,380	17,247
Distribution loss	17.55%	17.06%	15.59%	15.11%	17.09%	18.13%	18.36%	18.03%	17.30%	18.02%	16.45%	15.30%	17.00%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,723	1,713	1,683	1,673	1,713	1,735	1,958	1,950	1,932	1,949	1,700	1,677	21,408
External Loss	44	44	43	43	44	45	50	50	50	50	44	43	552
Exbus requirement (MU)	1,768	1,757	1,726	1,717	1,758	1,780	2,008	2,000	1,982	2,000	1,744	1,721	21,960
West Discom	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
Sales profile	8%	8%	7%	7%	8%	9%	10%	10%	9%	9%	9%	8%	100%
Sales (MUs)	1,561	1,561	1,561	1,561	1,561	1,561	1,756	1,756	1,756	1,756	1,561	1,561	19,509
Distribution loss	15.07%	21.33%	16.60%	6.01%	3.90%	6.88%	21.22%	22.01%	21.13%	21.27%	13.88%	10.69%	15.00%
Transmission loss	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Energy requirement at state boundary	1,892	2,043	1,927	1,710	1,672	1,726	2,295	2,318	2,292	2,296	1,866	1,799	23,835
External Loss	49	52	50	44	43	44	59	60	59	59	48	46	613
Exbus requirement (MU)	1,941	2,095	1,976	1,754	1,715	1,770	2,354	2,378	2,351	2,355	1,914	1,846	24,448
MP state (excluding AKVN)	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
Sales (MUs)	4,262	4,262	4,262	4,262	4,262	4,262	4,794	4,794	4,794	4,794	4,262	4,262	53,271
Energy requirement at state boundary	5,290	5,422	5,162	4,969	5,036	5,133	6,105	6,108	6,086	6,039	5,130	5,027	65,507
External Loss	136	140	133	128	130	132	157	157	157	155	132	129	1,687
Exbus requirement (MU)	5,426	5,561	5,295	5,097	5,166	5,265	6,263	6,265	6,243	6,194	5,262	5,156	67,193

The ex-bus energy to be purchased during the MYT period FY 17 – FY 19 is shown in the following table:

Table 20: Ex-bus energy purchases to be done during MYT FY 17-19 (Normative Losses)

Particulars	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Total Units sold to LT category (MU)	11,305	12,279	13,491	11,515	12,298	13,101	13,598	14,545	15,564	36,418	39,122	42,156
Total Units sold to HT category (MU)	2,964	2,993	3,023	3,359	3,722	4,146	3,834	3,889	3,946	10,157	10,604	11,064
Total Units Sold by Discom (MU)	14,269	15,271	16,514	14,873	16,020	17,247	17,432	18,434	19,509	46,575	49,725	53,271
Distribution loss (%)	18.00%	17.00%	16.00%	19.00%	18.00%	17.00%	16.00%	15.50%	15.00%	17.67%	16.83%	16.00%
Distribution loss (MU)	3,160	3,149	3,167	3,512	3,529	3,545	3,537	3,572	3,641	10,210	10,249	10,354
Units Input at Distribution Interface (MU)	17,429	18,420	19,681	18,385	19,549	20,793	20,970	22,006	23,150	56,784	59,975	63,625
Transmission loss (%)	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Transmission loss (MU)	515	545	582	543	578	615	620	651	685	1,678	1,774	1,882
Input at G-T interface (MU)	17,944	18,965	20,264	18,928	20,127	21,408	21,589	22,657	23,835	58,462	61,749	65,507
WR-PGCIL Lossess	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%
ER-PGCIL Lossess	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%
External Loss (MU)	460	491	522	485	521	552	551	586	613	1,496	1,598	1,687
Total Units Purchased (MU)	18,404	19,456	20,786	19,413	20,649	21,960	22,141	23,242	24,448	59,958	63,347	67,193

Table 21: Ex-bus energy purchases to be done during MYT FY 17-19 (Actual Losses)

Particulars	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Total Units sold to LT category (MU)	11,305	12,279	13,491	11,515	12,298	13,101	13,598	14,545	15,564	36,418	39,122	42,156
Total Units sold to HT category (MU)	2,964	2,993	3,023	3,359	3,722	4,146	3,834	3,889	3,946	10,157	10,604	11,064
Total Units Sold by Discom (MU)	14,269	15,271	16,514	14,873	16,020	17,247	17,432	18,434	19,509	46,575	49,725	53,271
Actual Distribution loss (%)	22.65%	22.65%	22.65%	25.13%	25.13%	25.13%	22.58%	22.58%	22.58%	23.45%	23.45%	23.45%
Distribution loss (MU)	4,178	4,472	4,836	4,992	5,377	5,789	5,084	5,376	5,690	14,255	15,225	16,315
Units Input at Distribution Interface (MU)	18,447	19,743	21,350	19,866	21,397	23,037	22,517	23,811	25,199	60,829	64,951	69,586

Particulars	East Discom			Central Discom			West Discom			MP State		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Transmission loss (%)	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%	2.87%
Transmission loss (MU)	546	584	631	588	633	681	666	704	745	1,799	1,921	2,058
Input at G-T interface (MU)	18,993	20,327	21,981	20,453	22,030	23,718	23,183	24,515	25,945	62,628	66,872	71,644
WR-PGCIL Lossess	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%
ER-PGCIL Lossess	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%	2.09%
External Loss (MU)	460	491	522	485	521	552	551	586	613	1,496	1,598	1,687
Total Units Purchased (MU)	19,453	20,818	22,503	20,938	22,551	24,270	23,734	25,101	26,557	64,125	68,470	73,331

3. Assessment of Availability

This section details the availability of power and related costs for the ensuing years for the state of Madhya Pradesh. The forecast takes into account the following aspects:

- Existing long term allocated generation capacity of MP
- New generation capacity additions during the period FY 18 and FY 19 for MPPGCL , Central Sector, Joint venture, UMPP Sasan and by private players awarded through competitive bidding
- Impact of generation capacity allocation in WR and ER

Based on the above available information, power purchase for the ensuing years has been forecasted. The same has been detailed in the subsequent sections.

3.1. Details of Generation Capacities allocated to MPPMCL

The various stations in which MP has been allocated share and which are further allocated to MPPMCL are listed in the table below. Allocation to the state of MP from Central Sector stations is as per **Western Regional Power Committee in their letter No. WRPC/Comml-I/6/Alloc/2016/9205 dated 30th August 2016** and for **Eastern Region NTPC Kahalgaon 2 vide GoI MoP letter no. 5/31/2006-Th.2 dated 21st February 2007**. As regards DVC, the availability of 500 MW has been mentioned on the basis of following Power Purchase Agreements:

- 400 MW power as per PPA dated March 3rd, 2006 (200 MW each from MTPS units and CTPS units)
- 100 MW power as per PPA dated May 14th, 2007 (Durgapur Steel TPS).

It also includes the specific allocation of 200 MW to Bundelkhend Region (vide GoMP letter dated May 21st March, 2016)

Table 22 Stations allocated to MP and their respective share in capacity (MW)

Station	Region	Ownership	Capacity (MW)	MP Share (%)	MP Share (MW)
Central Sector					
NTPC-Korba	WR	NTPC	2,100.00	23%	481.91
NTPC Korba -III	WR	Central	500.00	15%	76.33
NTPC-Vindyachal I	WR	NTPC	1,260.00	35%	443.39
NTPC-Vindyachal II	WR	NTPC	1,000.00	32%	318.21
NTPC-Vindyachal III	WR	NTPC	1,000.00	25%	245.21
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1 & Unit 2	WR	Central	1,000.00	28%	284.06
NTPC Vindhyanchal MTPS, Stage - 5	WR	Central	500.00	28%	141.69
NTPC Sipat Stage - 1	WR	Central	1,980.00	17%	337.75
NTPC - Sipat Stage II	WR	NTPC	1,000.00	19%	187.23
NTPC Mouda STPS, Stage -1 Unit 1 & Unit 2	WR	Central	1,000.00	18%	184.06
NTPC-Kawas	WR	NTPC	656.20	21%	140.17

Station	Region	Ownership	Capacity (MW)	MP Share (%)	MP Share (MW)
NTPC-Gandhar	WR	NTPC	657.39	18%	117.19
NTPC - Kahalgaon 2	ER	NTPC	1,500.00	5%	74.00
KAPP	WR	NPC	440.00	26%	114.13
TAPS	WR	NPC	1,080.00	21%	231.83
NTPC Lara STPS, Raigarh Unit 1	WR	Central	800.00	8%	63.80
NTPC Lara STPS, Raigarh Unit 2	WR	Central	800.00	8%	63.80
NTPC Gadarwara STPS, Unit 1	WR	Central	800.00	50%	400.00
MP GENCO					
ATPS - Chachai-Extn	State	MPPGCL	210.00	100%	210.00
STPS - Sarani-PH 1, 2 & 3	State	MPPGCL	830.00	100%	830.00
MPPGCL - Satpura TPS Extension Unit 10	State	State	250.00	100%	250.00
MPPGCL - Satpura TPS Extension Unit 11	State	State	250.00	100%	250.00
SGTPS - Bir'pur - PH 1 & 2	State	MPPGCL	840.00	100%	840.00
SGTPS - Bir'pur - Extn	State	MPPGCL	500.00	100%	500.00
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	State	State	600.00	100%	600.00
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	State	State	600.00	100%	600.00
Bargi HPS	State	MPPGCL	90.00	100%	90.00
Banasgar Tons HPS	State	MPPGCL	315.00	100%	315.00
Banasgar Tons HPS-Silpara	State	MPPGCL	30.00	100%	30.00
Banasgar Tons HPS-Devloned	State	MPPGCL	60.00	100%	60.00
Banasgar Tons HPS-Bansagar IV (Jhinna)	State	MPPGCL	20.00	100%	20.00
Birsighpur HPS	State	MPPGCL	20.00	100%	20.00
Marhi Khera HPS	State	MPPGCL	60.00	100%	60.00
Rajghat HPS	State	MPPGCL	45.00	51%	23.00
CHPS-Gandhi Sagar	State	MPPGCL	115.00	50%	58.00
CHPS-RP Sagar & Jawahar Sagar	State	MPPGCL	271.00	50%	136.00
Pench THPS	State	MPPGCL	160.00	67%	107.00
JV Hydel & Other Hydel					
NHDC - Indira Sagar	State	JV	1,000.00	100%	1,000.00
Omkareswar HPS	State	JV	520.00	100%	520.00
Sardar Sarovar	WR	JV	1,450.00	57%	827.00
Others(mini micro)	State	Others	30.00	100%	30.00
UPPMCL(Rihand Matatila)	State	Others	330.60	17%	55.00
DVC					
DVC (MTPS, CTPS)	ER	DVC	1,000.00	40%	400.00
DVC DTPS Unit 1	ER	JV	50.00	100%	50.00
DVC DTPS Unit 2	ER	JV	50.00	100%	50.00
IPPs					
Torrent Power GPP	WR	Private	1,147.50	9%	100.00
BLA Power Unit 1 & Unit 2	State	Private	32.00	100%	32.00

Station	Region	Ownership	Capacity (MW)	MP Share (%)	MP Share (MW)
Jaypee Bina Power Unit 1 & Unit 2	State	Private	500.00	70%	350.00
Lanco Amarkantak	WR	Private	300.00	100%	300.00
UMPP Sasan Unit 1 to Unit 6	WR	Private	3,960.00	38%	1,485.00
Jhabua Power	WR	Private	1,600.00	13%	210.00
Jaiprakash Power, Nigri Unit 1 & Unit 2	WR	Private	1,320.00	38%	495.00
MB Power Unit 1	WR	Private	600.00	35%	210.00
MB Power Unit 2	WR	Private	1,600.00	13%	210.00
Captive	State	-	17.00		17.00
Renewables					
Renewable Energy - Solar	State	Private	1,025.00		1,025.00
Renewable Energy - Other than Solar	State	Private	2,218.00		2,218.00

The Government vide gazette notification dated 21st March 2016 has allocated all the stations to MPPMCL and accordingly the Petitioners in order to maintain equitable allocation of the power purchased cost among all the three Discoms, the Petitioners have allocated the costs to the three Discoms as per their monthly energy requirement.

For allocation of the overall availability and costs to the Discoms, the Petitioners have considered the monthly energy requirement of the three Discoms at the state boundary level for the period FY 17, FY 18 and FY 19 as provided in the table below:

Table 23 Allocation percentage for FY 17

FY 17	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total
East (MU)	1,483	1,476	1,201	1,228	1,370	1,574	1,823	1,720	1,557	1,587	1,556	1,371	17,944
Central (MU)	1,523	1,514	1,301	1,293	1,419	1,630	1,923	1,819	1,613	1,723	1,690	1,481	18,928
West (MU)	1,711	1,849	1,525	1,351	1,415	1,656	2,307	2,215	1,959	2,078	1,898	1,626	21,589
In MU	4,717	4,838	4,027	3,872	4,205	4,859	6,053	5,753	5,129	5,388	5,143	4,478	58,462
East	31.45%	30.51%	29.83%	31.71%	32.58%	32.38%	30.12%	29.89%	30.35%	29.45%	30.25%	30.61%	30.69%
Central	32.28%	31.28%	32.30%	33.40%	33.76%	33.54%	31.76%	31.62%	31.45%	31.98%	32.86%	33.08%	32.38%
West	36.27%	38.21%	37.87%	34.89%	33.66%	34.08%	38.12%	38.49%	38.20%	38.57%	36.90%	36.31%	36.93%

Table 24: Allocation percentage for FY 18

FY 18	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
East (MU)	1,568	1,560	1,452	1,484	1,545	1,565	1,735	1,722	1,742	1,678	1,463	1,450	18,965
Central (MU)	1,620	1,610	1,582	1,573	1,611	1,632	1,841	1,833	1,817	1,833	1,598	1,577	20,127
West (MU)	1,798	1,942	1,832	1,624	1,588	1,639	2,182	2,204	2,180	2,183	1,773	1,710	22,657
In MU	4,986.47	5,112.76	4,865.90	4,681.01	4,744.02	4,836.29	5,757.59	5,760.08	5,738.93	5,694.31	4,834.74	4,736.47	61,749
East	31.44%	30.51%	29.85%	31.71%	32.57%	32.37%	30.13%	29.90%	30.36%	29.47%	30.26%	30.62%	30.71%
Central	32.49%	31.50%	32.51%	33.60%	33.96%	33.74%	31.97%	31.83%	31.66%	32.19%	33.06%	33.28%	32.60%
West	36.07%	37.99%	37.64%	34.69%	33.48%	33.90%	37.90%	38.27%	37.98%	38.34%	36.68%	36.10%	36.69%

Table 25: Allocation percentage for FY 19

FY 19	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
East (MU)	1,675	1,666	1,552	1,586	1,650	1,672	1,853	1,840	1,861	1,793	1,564	1,550	20,264
Central (MU)	1,723	1,713	1,683	1,673	1,713	1,735	1,958	1,950	1,932	1,949	1,700	1,677	21,408
West (MU)	1,892	2,043	1,927	1,710	1,672	1,726	2,295	2,318	2,292	2,296	1,866	1,799	23,835
In MU	5,290	5,422	5,162	4,969	5,036	5,133	6,105	6,108	6,086	6,039	5,130	5,027	65,507
East	31.66%	30.73%	30.07%	31.92%	32.77%	32.57%	30.35%	30.13%	30.58%	29.69%	30.48%	30.84%	30.93%
Central	32.57%	31.59%	32.60%	33.68%	34.02%	33.80%	32.06%	31.92%	31.75%	32.28%	33.15%	33.37%	32.68%
West	35.77%	37.67%	37.32%	34.40%	33.20%	33.62%	37.58%	37.95%	37.66%	38.02%	36.37%	35.79%	36.39%

3.2. Details of Generation Capacities allocated to MPPMCL – Existing and Capacity Addition for the MYT period FY 17-FY 19

The following table lists various stations in which MP has an allocated share. The following tables show the existing MPPMCL allocated stations as well as the future capacity additions which are expected to become operational till end of MYT period i.e. FY 19.

Table 26: Stations allocated to MPPMCL – Existing Capacity till FY 19 (MW)

Existing	FY 16	FY 17	FY 18	FY 19
Central Sector	3,235	3,377	3,377	3,377
NTPC-Korba	482	482	482	482
NTPC Korba -III	77	77	77	77
NTPC-Vindyachal I	443	443	443	443
NTPC-Vindyachal II	318	318	318	318
NTPC-Vindyachal III	245	245	245	245
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	142	142	142	142
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	142	142	142	142
NTPC Vindhyanchal MTPS, Stage – 5	-	142	142	142
NTPC Sipat Stage - 1	338	338	338	338
NTPC - Sipat Stage II	187	187	187	187
NTPC Mouda STPS, Stage -1 Unit 1	92	92	92	92
NTPC Mouda STPS, Stage -1 Unit 2	92	92	92	92
NTPC-Kawas	140	140	140	140
NTPC-Gandhar	117	117	117	117
NTPC - Kahalgaon 2	74	74	74	74
KAPP	114	114	114	114
TAPS	232	232	232	232
MP GENCO	4997	4997	4997	4997
ATPS - Chachai-Extn	210	210	210	210
STPS - Sarani-PH 2 & 3	980	830	830	830
MPPGCL - Satpura TPS Extension Unit 10	250	250	250	250
MPPGCL - Satpura TPS Extension Unit 11	250	250	250	250
SGTPS - Bir'pur - PH 1 & 2	840	840	840	840
SGTPS - Bir'pur – Extn	500	500	500	500
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	600	600	600	600
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	600	600	600	600
Bargi HPS	100	90	90	90
Banasgar Tons HPS	315	315	315	315
Banasgar Tons HPS-Silpara	30	30	30	30
Banasgar Tons HPS-Devloned	60	60	60	60
Banasgar Tons HPS-Bansagar IV (Jhinna)	20	20	20	20
Birsingpur HPS	20	20	20	20
Marhi Khera HPS	60	60	60	60
Rajghat HPS	23	23	23	23
CHPS-Gandhi Sagar	58	58	58	58

Existing	FY 16	FY 17	FY 18	FY 19
CHPS-RP Sagar & Jawahar Sagar	136	136	136	136
Pench THPS	107	107	107	107
JV Hydel & Other Hydel	2,432	2432	2432	2432
NHDC - Indira Sagar	1,015	1,000	1,000	1,000
Omkareswar HPS	520	520	520	520
Sardar Sarovar	827	827	827	827
Others (Mini Micro)	30	30	30	30
UPPMCL(Rihand Matatila)	55	55	55	55
DVC	500	500	500	500
DVC (MTPS, CTPS)	400	400	400	400
DVC DTPS Unit 1	50	50	50	50
DVC DTPS Unit 2	50	50	50	50
IPPs	3,019	3,019	3,019	3,019
Torrent Power	100	100	100	100
BLA Power Unit 1	16	16	16	16
BLA Power Unit 2	16	16	16	16
Jaypee Bina Power Unit 1	175	175	175	175
Jaypee Bina Power Unit 2	175	175	175	175
Lanco Amarkantak	300	300	300	300
UMPP Sasan Unit 1	247	247	247	247
UMPP Sasan Unit 2	248	248	248	248
UMPP Sasan Unit 3&4	495	495	495	495
UMPP Sasan Unit 5&6	495	495	495	495
Concessional Energy from Essar Power	30	30	30	30
Jaiprakash Power, Nigri Unit 1	248	248	248	248
Jaiprakash Power, Nigri Unit 2	247	247	247	247
MB Power Unit 1	210	210	210	210
Captive	17	17	17	17
Renewables	1,397	2,768	3,244	3,244
Renewable Energy - Solar	550	550	1025	1025
Renewable Energy - Other than Solar	847	2,218	2,218	2,218
Total	15,580	17,093	17,568	17,568

Table 27 Capacity Addition Plan (Stations with their capacity allocated to MPPMCL) in MW

Stations	CoD	FY 17	FY 18	FY 19
NTPC Lara STPS, Raigarh Unit 1	Jun-17	-	64	64
NTPC Lara STPS, Raigarh Unit 2	Sep-17	-	64	64
NTPC Lara STPS, Raigarh Unit 3	Apr-18	-	-	64
NTPC Lara STPS, Raigarh Unit 4	Sep-18	-	-	64
NTPC Lara STPS, Raigarh Unit 5	Apr-19	-	-	0
NTPC Gadarwara STPS, Unit 1	Sep-17	-	400	400
NTPC Gadarwara STPS, Unit 2	Apr-18	-	-	400
MPPGCL - Shri Singaji Phase-2, Unit 1	Sep-18	-	-	594
MPPGCL - Shri Singaji Phase-2, Unit 2	Dec-18	-	-	594

Stations	CoD	FY 17	FY 18	FY 19
Jhabua Power	May-16	210	210	210
MB Power Unit 2	Apr-16	210	210	210
Total		420	948	2,727

Table 28 Summary of Capacity in MW

Particulars	FY 17	FY 18	FY 19
Existing Capacity (in MW)	17,093	17,568	17,568
Additional Capacity (in MW)	420	948	2,727
Total Capacity (in MW)	17,513	18,516	20,295

3.2.1 Availability from all allocated stations

The basis of projections for all the allocated stations for MYT period FY 17- FY 19 are mentioned in the following table:

Station	Basis
MPPGCL - Shri Singaji STPS Phase -1 (Unit 1 & Unit 2)	PLF Taken at 82.5%
MPPGCL - Satpura TPS Extension (Unit 10 & 11)	PLF Taken at 75%
UMPP Sasan	PLF Taken at 90%
Jaiprakash Power, Nigri	PLF Taken at 82.5%
MB Power	PLF Taken at 82.5%
BLA Power	PLF Taken at 65%
Jhabua Power	PLF Taken at 82.5%
NTPC Lara STPS, Raigarh (Unit 1 & Unit 2)	PLF Taken at 82.5%
NTPC Gadarwara STPS, (Unit 1)	PLF Taken at 82.5%

Table 29: Past and Projected ex-bus availability of Stations allocated to MP (MU)

Station	Actual Ex-Bus Availability	Projected Ex-Bus Availability		
	FY 16	FY 17	FY 18	FY 19
Central Sector	19,535	21,231	22,877	25,002
NTPC-Korba	3,621	3,534	3,524	3,560
NTPC Korba –III	573	553	558	557
NTPC-Vindyachal I	2,639	2,714	2,701	2,685
NTPC-Vindyachal II	2,010	2,111	2,063	2,061
NTPC-Vindyachal III	1,779	1,732	1,749	1,753
NTPC Vindhyanchal MTPS, Stage - 4 Unit1	2,050	922	1,013	1,014
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	-	922	1,013	1,014
NTPC Vindhyanchal MTPS, Stage – 5	396	762	976	830
NTPC Sipat Stage – 1	2,210	2,220	2,408	2,242
NTPC - Sipat Stage II	1,480	1,302	1,365	1,382
NTPC Mouda STPS, Stage -1 Unit 1	94	615	615	615
NTPC Mouda STPS, Stage -1 Unit 2	-	615	615	615
NTPC-Kawas	50	298	298	298
NTPC-Gandhar	29	249	249	249
NTPC - Kahalgaon 2	387	309	360	352
KAPP	449	777	704	643
TAPS	1,767	1,598	1,608	1,658
NTPC Lara STPS, Raigarh Unit 1	-	-	249	299
NTPC Lara STPS, Raigarh Unit 2	-	-	111	300
NTPC Lara STPS, Raigarh Unit 3	-	-	-	300
NTPC Lara STPS, Raigarh Unit 4	-	-	-	174
NTPC Gadarwara STPS, Unit 1	-	-	697	1201
NTPC Gadarwara STPS, Unit 2	-	-	-	1201
MP GENCO	19,067	25,359	25,506	28,025
ATPS - Chachai-Extn	1,611	1,524	1,529	1,555
STPS - Sarani-PH 2 & 3	3,139	3,760	3,345	3,415

Station	Actual Ex-Bus Availability		Projected Ex-Bus Availability	
	FY 16	FY 17	FY 18	FY 19
MPPGCL - Satpura TPS Extension Unit 10	945	1,171	1,470	1,177
MPPGCL - Satpura TPS Extension Unit 11	945	1,171	1,470	1,202
SGTPS - Bir'pur - PH 1 & 2	3,066	3,347	3,347	3,254
SGTPS - Bir'pur – Extn	3,350	3,313	3,313	3,367
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	3,978	4,038	4,038	4,038
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	-	4,038	4,038	4,038
MPPGCL - Shri Singaji Phase-2, Unit 1	-	-	-	1,999
MPPGCL - Shri Singaji Phase-2, Unit 2	-	-	-	1332
Bargi HPS	270	468	481	406
Banasgar Tons HPS	553	1,133	1,166	949
Banasgar Tons HPS-Silpara	53	108	118	99
Banasgar Tons HPS-Devloned	105	216	128	121
Banasgar Tons HPS-Bansagar IV (Jhinna)	58	105	99	99
Birsingpur HPS	15	33	36	28
Marhi Khera HPS	95	105	100	100
Rajghat HPS	18	33	35	28
CHPS-Gandhi Sagar	188	159	168	172
CHPS-RP Sagar & Jawahar Sagar	429	376	362	389
Pench THPS	251	263	262	259
JV Hydel & Other Hydel	4,124	6,663	6,157	5,900
NHDC - Indira Sagar	1,968	3,035	2,646	2,550
Omkareswar HPS	953	1,296	1,273	1,174
Sardar Sarovar	1,193	2,245	2,059	2,059
Others (Mini Micro)	10	42	64	64
UPPMCL(Rihand Matatila)	-	45	114	53
DVC	2,355	2,622	2,611	2,364
DVC (MTPS, CTPS)	2,081	2,096	2,084	2,087
DVC DTPS Unit 1	137	263	263	139

Station	Actual Ex-Bus Availability		Projected Ex-Bus Availability		
	FY 16	FY 17	FY 18	FY 19	
DVC DTPS Unit 2	137	263	263	139	
IPPs	17,637	21,376	22,949	22,110	
Torrent Power	70	710	710	710	
BLA Power Unit 1	52	49	79	49	
BLA Power Unit 2	0	49	79	49	
Jaypee Bina Power Unit 1	925	842	842	842	
Jaypee Bina Power Unit 2	-	842	842	842	
Lanco Amarkantak	1,993	1,992	2,012	1,952	
UMPP Sasan Unit 1	5,433	1,604	1,805	1,805	
UMPP Sasan Unit 2	5,433	1,604	1,805	1,805	
UMPP Sasan Unit 3&4	-	3,209	3,610	3,209	
UMPP Sasan Unit 5&6	-	3,209	3,610	3,209	
Concessional Energy from Essar Power	-	-	-	-	
Jhabua Power	-	1,281	1,404	1,404	
Jaiprakash Power, Nigri Unit 1	2,818	1,608	1,655	1,696	
Jaiprakash Power, Nigri Unit 2	-	1,608	1,655	1,696	
MB Power Unit 1	878	1,361	1,404	1,404	
MB Power Unit 2	-	1,361	1,404	1,404	
Captive	34	47	36	36	
Renewables	2,220	3,294	5,501	5,365	
Renewable Energy – Solar	804	912	1,314	1,336	
Renewable Energy - Other than Solar	1,416	2,382	4,187	4,299	
Total Availability	64,938	80,448	85,601	89,037	

3.2.2 Overall Availability

Table 30: Overall Availability (MU)

Particulars	FY 16	FY 17	FY 18	FY 19
Total Availability	64,938	80,448	85,601	89,037

3.3. Backdown of Power

After fully meeting the requirement of the State and selling power on the power exchange, the Petitioners still have to partially back-down plants so as to save on the variable costs being incurred. The Petitioners have applied month-wise merit order dispatch principle on the basis of variable costs for FY 2017-18 and thereafter, after considering all generating stations allocated to MPPMCL The Petitioners have also considered partial backing down of units/stations which are higher up in the MoD (provided the variable costs of such stations are higher than Rs. 2.43 per unit) , during those periods when their running is not required to meet the demand in that period and the market rates do not justify their running either. This addresses demand fluctuations and ensures that power procured from cheaper sources is fully utilized and avoids procurement of power from costlier sources. The resultant benefit of reduced power procurement cost or sale at a higher rate, whichever the case maybe, is in turn being passed on to the consumers.

The following table shows the stations which are considered for partial backdown:

Table 31: Backdown of Power – Power Station

Stations	Normative Availability (MU)			Backdown (MU)			Net Availability (MU)		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
Jaypee Bina Power Unit 1	842	842	842	648	691	592	194	150	249
Jaypee Bina Power Unit 2	842	842	842	677	691	641	165	150	200
MPPGCL - Shri Singaji STPS Phase -1, Unit 1	4,038	4,038	4,038	2,344	3,316	3,316	1,694	721	721
MPPGCL - Shri Singaji STPS Phase -1, Unit 2	4,038	4,038	4,038	2,344	3,316	3,316	1,694	721	721
STPS - Sarani-PH 2 & 3	3,760	3,345	3,415	2,812	2,007	1,606	948	1,338	1,808
NTPC Mouda Unit 1	615	615	615	472	430	268	143	185	347

Stations	Normative Availability (MU)			Backdown (MU)			Net Availability (MU)		
	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19	FY 17	FY 18	FY 19
NTPC Mouda Unit 2	615	615	615	615	430	210	-	185	405
BLA Power Unit 1	49	79	49	49	79	29	-	-	20
BLA Power Unit 2	49	79	49	49	79	49	-	-	-
Jhabua Power	1,281	1,404	1,404	1,140	1,263	1,226	141	141	178
MPPGCL - Shri Singaji Phase-2, Unit 1	-	-	1,999	-	-	1,285	-	-	714
MPPGCL - Shri Singaji Phase-2, Unit 2	-	-	1,332	-	-	1,332	-	-	-
Torrent Power	710	710	710	710	710	710	-	-	-
Total	16,838	16,606	19,947	11,859	13,013	14,582	4,979	3,592	5,365

Further, the following table shows the availability of stations allocated to MP after application of merit order dispatch and backdown for the period FY 2017 to FY 2019:

Category	FY 17	FY 18	FY 19
Ex Bus Availability before backdown (MU)	80,448	85,601	89,037
Less Backdown of Stations (MU)	11,859	13,013	14,582
Availability from Stations (MU)	68,590	72,588	74,455

3.4. Inter-State Transmission Losses

The Inter-State transmission losses have been computed separately for Eastern Region and Western Region stations. For the Western Region, data for past 52 weeks (27-Jul-15 to 07-Aug-16) as available on the POSOCO/ NLDC website has been taken and an average loss level of **3.77%** has been considered for FY 2015-16 and for MYT period FY 2016-17-FY 2018-19. Similarly, for Eastern Region, average transmission line loss of **2.09%** has been considered for FY 2016-17 to FY 2018-19.

3.5. Management of Surplus Energy

As per the power supply position, the state is expected to have surplus energy in most of the months in the ensuing year. Currently MPPMCL disposes the surplus power through power exchange (IEX) at the prevailing rates. MPPMCL tries to sell such surplus power at a cost which is determined by the market conditions prevailing at that time.

The IEX rate for the past Thirty Six Months (Oct'13 to Sep'16) is observed to be at Rs. 2.43. For the purpose of computation of revenue from surplus energy, the IEX rate is taken at Rs 2.43 per unit.

The energy surplus of the Discoms vis-à-vis overall energy availability and energy requirement as well as the details of revenue from sale of energy are shown in the table below. This revenue has been subtracted from the variable power purchase costs of MPPMCL allocated stations, while computing the total power purchase costs of the Discoms.

Table 32: Management of Surplus Energy with MPPMCL for the MYT period FY 17-FY 19

Particulars	Units	FY17	FY18	FY19
Ex-bus energy available after backdown	MU	68,590	72,588	74,455
Ex-bus energy required by Discoms	MU	59,958	63,347	67,193
Surplus Energy available after backdown	MU	8,631	9,241	7,262
Additional surplus due to RPO obligation	MU	1,515	247	740
Management of Surplus energy				
Sale of total surplus energy via IEX	MU	10,147	9,488	8,002
Rate of Sale of Surplus Energy				
IEX	Rs. per unit	2.43	2.43	2.43
Revenue from Sale of Surplus Energy through IEX	Rs. Cr.	2,466	2,306	1,945

3.6. Energy Balance

3.6.1. Energy Requirement vis-à-vis Availability and Management of Shortfall

It is submitted that the energy requirement at Ex-bus of the three Discoms have been estimated to ensure that Discom-wise shortfall or surplus of energy could be ascertained for planning the power procurement. Accordingly, the Discom-wise energy requirement and the corresponding exbus purchase envisaged to be procured is shown in table below:

Table 33: Ex-Bus Purchases by Discoms from Various Sources (in MU)

Particulars	East Discom (in MU)		
	FY17	FY18	FY19
Energy Requirement Ex-Bus	18,404	19,456	20,786
Purchase from Stations allocated to MP	18,404	19,456	20,786
Shortfall	-	-	-
Balance through STPP	-	-	-
Particulars	Central Discom (in MU)		

	FY17	FY18	FY19
Energy Requirement Ex-Bus	19,413	20,649	21,960
Purchase from Stations allocated to MP	19,413	20,649	21,960
Shortfall	-	-	-
Balance through STPP	-	-	-
Particulars	West Discom (in MU)		
	FY17	FY18	FY19
Energy Requirement Ex-Bus	22,141	23,242	24,448
Purchase from Stations allocated to MP	22,141	23,242	24,448
Shortfall	-	-	-
Balance through STPP	-	-	-
Particulars	MP State (in MU)		
	FY17	FY18	FY19
Energy Requirement Ex-Bus	59,958	63,347	67,193
Purchase from Stations allocated to MP	59,958	63,347	67,193
Shortfall	-	-	-
Balance through STPP	-	-	-

4. Power Purchase Cost

4.1. Details of Costs for Stations allocated to MPPMCL

The fixed and variable costs of all stations have been considered as per the following methodology:

- The cost of the allocated stations to the state of MP have been taken as per the last 12 months bills i.e. from Sep 15 to Aug 16.
- Further, the Petitioners also request the Hon'ble Commission to consider the same and allow the FCA for the period April'17-June'17.

The following table provides a summary of fixed and variable costs for the MPPMCL allocated stations:

Table 34: Fixed and Variable Costs of Stations allocated to MPPMCL for the period FY 17- FY 19

Station	Fixed Charges (Rs Cr)	Remarks	Variable Charges (Rs/unit)	Remarks
Central Sector				
NTPC-Korba	175.48	As per actual bills from Sep 15 to Aug 16	1.30	As per actual bills from Sep 15 to Aug 16
NTPC Korba -III	92.63	As per actual bills from Sep 15 to Aug 16	1.30	As per actual bills from Sep 15 to Aug 16
NTPC-Vindyachal I	182.92	As per actual bills from Sep 15 to Aug 16	1.78	As per actual bills from Sep 15 to Aug 16
NTPC-Vindyachal II	135.91	As per actual bills from Sep 15 to Aug 16	1.78	As per actual bills from Sep 15 to Aug 16
NTPC-Vindyachal III	226.45	As per actual bills from Sep 15 to Aug 16	1.72	As per actual bills from Sep 15 to Aug 16
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1&2	302.26	As per actual bills from Sep 15 to Aug 16	1.81	As per actual bills from Sep 15 to Aug 16
NTPC Vindhyanchal MTPS, Stage - 5	96.15	As per actual bills from Sep 15 to Aug 16	1.75	As per actual bills from Sep 15 to Aug 16
NTPC Sipat Stage - 1	320.91	As per actual bills from Sep 15 to Aug 16	1.37	As per actual bills from Sep 15 to Aug 16
NTPC - Sipat Stage II	213.31	As per actual bills from Sep 15 to Aug 16	1.24	As per actual bills from Sep 15 to Aug 16
NTPC Mouda STPS, Stage -1 Unit 1&2	213.91	As per actual bills from Sep 15 to Aug 16	2.49	As per MOD for Oct 16
NTPC-Kawas	74.67	As per actual bills from Sep 15 to Aug 16	2.19	As per actual bills from Sep 15 to Aug 16
NTPC-Gandhar	72.26	As per actual bills from Sep 15 to Aug 16	2.44	As per actual bills from Sep 15 to Aug 16
NTPC - Kahalgaon 2	80.34	As per actual bills from Sep 15 to Aug 16	2.08	As per actual bills from Sep 15 to Aug 16
KAPP	-	-	2.41	As per actual bills from Sep 15 to Aug 16
TAPS	-	-	2.90	As per actual bills from Sep 15 to Aug 16
NTPC Lara STPS, Raigarh Unit 1	57.56	Taken proportionately as per NTPC Korba III (92.63/77X63.80)/12x9	1.30	taken equal to NTPC Korba III
NTPC Lara STPS, Raigarh Unit 2	28.78	Taken proportionately as per NTPC Korba III (92.63/77X63.80)/12x6	1.30	taken equal to NTPC Korba III

Station	Fixed	Remarks	Variable	Remarks
NTPC Gadarwara STPS, Unit 1	240.61	Taken proportionately as per NTPC Korba III (92.63/77X 400)/12x6	1.30	taken equal to NTPC Korba III
MP GENCO				
ATPS - Chachai-Extn	204.25	As per actual bills from Sep 15 to Aug 16	1.73	As per actual bills from Sep 15 to Aug 16
STPS - Sarani-PH 2 & 3	367.14	As per actual bills from Sep 15 to Aug 16	2.55	As per actual bills from Sep 15 to Aug 16
MPPGCL - Satpura TPS Extension Unit 10	260.85	As per actual bills from Sep 15 to Aug 16	2.22	As per actual bills from Sep 15 to Aug 16
MPPGCL - Satpura TPS Extension Unit 11	260.85	Taken as per unit 1	2.22	Taken as per unit 1
SGTPS - Bir'pur - PH 1 & 2	382.34	As per actual bills from Sep 15 to Aug 16	2.47	As per actual bills from Sep 15 to Aug 16
SGTPS - Bir'pur - Extn	441.56	As per actual bills from Sep 15 to Aug 16	2.19	As per actual bills from Sep 15 to Aug 16
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	440.58	As per MPERC order dated 10.11.2014	2.69	As per actual bills from Sep 15 to Aug 16
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	420.80	As per MPERC order dated 18.03.2015	2.69	Taken as per unit 1
Bargi HPS	8.20	As per actual bills from Sep 15 to Aug 16	0.63	As per actual bills from Sep 15 to Aug 16
Banasgar Tons HPS	66.26	As per actual bills from Sep 15 to Aug 16	0.92	As per actual bills from Sep 15 to Aug 16
Banasgar Tons HPS-Silpara	2.26	As per actual bills from Sep 15 to Aug 16	0.90	As per actual bills from Sep 15 to Aug 16
Banasgar Tons HPS-Devloned	2.49	As per actual bills from Sep 15 to Aug 16	1.27	As per actual bills from Sep 15 to Aug 16
Banasgar Tons HPS-Bansagar IV (Jhinna)	3.75	As per actual bills from Sep 15 to Aug 16	1.21	As per actual bills from Sep 15 to Aug 16
Birsingpur HPS	1.53	As per actual bills from Sep 15 to Aug 16	1.06	As per actual bills from Sep 15 to Aug 16
Marhi Khera HPS	11.06	As per actual bills from Sep 15 to Aug 16	2.17	As per actual bills from Sep 15 to Aug 16
Rajghat HPS	0.96	As per actual bills from Sep 15 to Aug 16	2.25	As per actual bills from Sep 15 to Aug 16
CHPS-Gandhi Sagar	2.81	As per actual bills from Sep 15 to Aug 16	0.77	As per actual bills from Sep 15 to Aug 16
CHPS-RP Sagar & Jawahar Sagar	-	-	1.51	As per actual bills from Sep 15 to Aug 16
Pench THPS	9.85	As per actual bills from Sep 15 to Aug 16	0.50	As per actual bills from Sep 15 to Aug 16
JV Hydel & Other Hydel				
NHDC - Indira Sagar	548.53	As per actual bills from Sep 15 to Aug 16	0.47	As per actual bills from Sep 15 to Aug 16
Omkareswar HPS	404.45	As per actual bills from Sep 15 to Aug 16	0.38	As per actual bills from Sep 15 to Aug 16
Sardar Sarovar	162.96	As per actual bills from Sep 15 to Aug 16	0.82	As per actual bills from Sep 15 to Aug 16
Others(mini micro)	29.50	As per actual bills from Sep 15 to Aug 16 (Rs 4.61X64)/10	-	-
UPPMCL(Rihand Matatila)	-		0.40	As per actual bills from Sep 15 to Aug 16
DVC				

Station	Fixed	Remarks	Variable	Remarks
DVC (MTPS, CTPS)	389.83	As per actual bills from Sep 15 to Aug 16	2.23	As per actual bills from Sep 15 to Aug 16
DVC DTPS Unit 1	53.35	As per actual bills from Sep 15 to Aug 16	2.41	As per actual bills from Sep 15 to Aug 16
DVC DTPS Unit 2	53.35	As per actual bills from Sep 15 to Aug 16	2.41	As per actual bills from Sep 15 to Aug 16
IPPs				
BLA Power Unit 1	19.52	As per actual bills from Sep 15 to Aug 16	2.43	As per actual bills from Sep 15 to Aug 16
Jaypee Bina Power Unit 1	267.87	As per actual bills from Sep 15 to Aug 16	2.71	As per actual bills from Sep 15 to Aug 16
Jaypee Bina Power Unit 2	267.87	Taken as per unit 1	2.71	Taken as per unit 1
Lanco Amarkantak	285.12	As per actual bills from Sep 15 to Aug 16	1.68	As per actual bills from Sep 15 to Aug 16
UMPP Sasan Unit 1	31.64	As per quoted tariff	1.56	As per actual bills from Sep 15 to Aug 16
UMPP Sasan Unit 2	31.76	As per quoted tariff	1.56	Taken as per unit 1
UMPP Sasan Unit 3&4	63.40	As per quoted tariff	1.56	Taken as per unit 1
UMPP Sasan Unit 5&6	63.40	As per quoted tariff	1.56	Taken as per unit 1
Jhabua Power	246.49	As per MB power unit 1	2.80	As per MOD Oct'16
Jaiprakash Power, Nigri Unit 1	202.10	As per actual bills from Sep 15 to Aug 16	0.84	As per actual bills from Sep 15 to Aug 16
Jaiprakash Power, Nigri Unit 2	202.10	Taken as per unit 1	0.84	Taken as per unit 1
MB Power Unit 1	246.49	As per actual bills from Sep 15 to Aug 16	1.92	As per actual bills from Sep 15 to Aug 16
MB Power Unit 2	246.49	Taken as per unit 1	1.92	Taken as per unit 1
Torrent Power	52.00	As per actual bills from Sep 15 to Aug 16	-	-
Captive	-	-	2.29	As per actual bills from Sep 15 to Aug 16
Renewables				
Renewable Energy - Solar	844.58	Calculated as per the weighted average cost (Rs 6.43*1314 MU)/10	-	-
Renewable Energy - Other than Solar	2344.83	Calculated as per the weighted average cost (Rs 5.60*4187 MU)/10	-	-

4.2. *Merit Order Dispatch (MoD)*

As already explained above, all plants have been considered to be allocated to MPPMCL and a common MoD has been applied to all the plants after considering the backdown of selected stations as explained above. However, for the ease of understanding, costs for each of the stations have been given separately for MPPMCL allocated stations. The MoD applied for FY 18 is given in the following table:

Table 35: MoD of station for FY 18

Stations	Rs per KWh	Availability (MU)
KAPP	2.41	704
TAPS	2.90	1,608
Others (Mini Micro)	4.61	64
Renewable Energy – Solar	6.43	1314
Renewable Energy - Other than Solar	5.60	4187
Omkareswar HPS	0.38	1,273
UPPMCL(Rihand Matatila)	0.40	114
NHDC - Indira Sagar	0.47	2,646
Pench THPS	0.50	262
Bargi HPS	0.63	481
CHPS-Gandhi Sagar	0.77	168
Sardar Sarovar	0.82	2,059
Jaiprakash Power, Nigri Unit 1	0.84	1655
Jaiprakash Power, Nigri Unit 2	0.84	1655
Banasgar Tons HPS-Silpara	0.90	118
Banasgar Tons HPS	0.92	1,166
Birsinghpur HPS	1.06	36
Bansagar Tons HPS-Bansagar IV (Jhinna)	1.21	99
Banasgar Tons HPS-Devloned	1.27	128
NTPC - Sipat Stage II	1.24	1,365
NTPC Korba –III	1.30	558
NTPC Lara STPS, Raigarh Unit 1	1.30	249
NTPC Lara STPS, Raigarh Unit 2	1.30	111
NTPC Gadarwara STPS, Unit 1	1.30	697
NTPC-Korba	1.30	3,524
NTPC Sipat Stage - 1	1.37	2408
CHPS-RP Sagar & Jawahar Sagar	1.51	362
UMPP Sasan Unit 1	1.56	1805
UMPP Sasan Unit 2	1.56	1805
UMPP Sasan Unit 3&4	1.56	3610
UMPP Sasan Unit 5&6	1.56	3610
ATPS - Chachai-Extn	1.73	1,529
Lanco Amarkantak	1.68	2012
NTPC-Vindyachal III	1.72	1,749
NTPC Vindhyanchal MTPS, Stage - 5	1.75	976
NTPC-Vindyachal I	1.78	2,701
NTPC-Vindyachal II	1.78	2,063
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	1.81	1013
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	1.81	1013
MB Power Unit 1	1.92	1404
MB Power Unit 2	1.92	1404
NTPC - Kahalgaon 2	2.08	360

Stations	Rs per KWh	Availability (MU)
Marhi Khera HPS	2.17	100
SGTPS - Bir'pur – Extn	2.19	3,313
MPPGCL - Satpura TPS Extension Unit 10	2.22	1470
MPPGCL - Satpura TPS Extension Unit 11	2.22	1470
Rajghat HPS	2.25	35
NTPC-Kawas	2.19	298
DVC (MTPS, CTPS)	2.23	2,084
Captive	2.29	34
DVC DTSPS Unit 1	2.41	263
DVC DTSPS Unit 2	2.41	263
SGTPS - Bir'pur - PH 1 & 2	2.47	3,347
NTPC-Gandhar	2.44	249
STPS - Sarani-PH 1, 2 & 3	2.55	1,338
NTPC Mouda STPS, Stage -1 Unit 1	2.49	185
NTPC Mouda STPS, Stage -1 Unit 2	2.49	185
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	2.69	721
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	2.69	721
Jaypee Bina Power Unit 1	2.71	150
Jaypee Bina Power Unit 2	2.71	150
Jhabua Power	2.80	141
Total		72,588

The following table shows the Total costs (fixed costs and variable costs) of allocated stations to the three Discoms:

Table 36 Fixed and Variable costs of allocated stations to all Discoms

Stations	FY 17							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
Central Sector	673	805	710	2,187	1,076	1,134	1,287	3,497
NTPC-Korba	54	65	57	175	142	149	169	461
NTPC Korba -III	28	34	30	93	22	23	26	72
NTPC-Vindyachal I	56	67	59	183	148	156	177	482
NTPC-Vindyachal II	42	50	44	136	116	122	138	376
NTPC-Vindyachal III	70	83	73	226	92	97	110	298
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	46	56	49	151	51	54	62	167
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	46	56	49	151	51	54	62	167
NTPC Vindhyanchal MTPS, Stage - 5	30	35	31	96	41	43	49	133
NTPC Sipat Stage - 1	99	118	104	321	94	99	112	304
NTPC - Sipat Stage II	66	78	69	213	50	52	59	161
NTPC Mouda STPS, Stage -1 Unit 1	33	39	35	107	11	12	13	36
NTPC Mouda STPS, Stage -1 Unit 2	33	39	35	107	-	-	-	-
NTPC-Kawas	23	27	24	75	20	21	24	65
NTPC-Gandhar	22	24	28	72	19	20	22	61
NTPC - Kahalgaon 2	25	20	23	80	20	21	24	64
KAPP	-	-	-	-	58	61	69	187
TAPS	-	-	-	-	143	150	170	463
MP GENCO	888	937	1,063	2,888	1,159	1,224	1,391	3,774
ATPS - Chachai-Extn	63	66	75	204	81	86	97	264
STPS - Sarani-PH 1, 2 & 3	113	119	135	367	76	80	85	241
MPPGCL - Satpura TPS Extension Unit 10	80	85	96	261	80	84	96	260
MPPGCL - Satpura TPS Extension Unit 11	80	85	96	261	80	84	96	260

Stations	FY 17							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
SGTPS - Bir'pur - PH 1 & 2	118	124	141	382	254	268	305	827
SGTPS - Bir'pur - Extn	136	143	162	442	222	235	267	724
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	136	143	162	441	138	147	170	455
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	129	137	155	421	138	147	170	455
Bargi HPS	3	3	3	8	9	10	11	29
Banasgar Tons HPS	20	21	24	66	32	34	38	104
Banasgar Tons HPS-Silpara	1	1	1	2	3	3	3	9
Banasgar Tons HPS-Devloned	1	1	1	2	5	5	6	16
Banasgar Tons HPS-Bansagar IV (Jhinna)	1	1	1	4	4	4	5	13
Birsingpur HPS	0	0	1	2	1	1	1	4
Marhi Khera HPS	3	4	4	11	7	7	8	23
Rajghat HPS	0	0	0	1	2	2	3	7
CHPS-Gandhi Sagar	1	1	1	3	4	4	5	12
CHPS-RP Sagar & Jawahar Sagar	0	0	0	0	17	18	21	57
Pench THPS	3	3	4	10	4	4	5	13
JV Hydel & Other Hydel	352	372	421	1,145	116	123	139	378
NHDC - Indira Sagar	169	178	202	549	44	46	52	142
Omkareshwar HPS	124	131	149	404	15	16	18	50
Sardar Sarovar	50	53	60	163	57	60	68	184
Others (Mini Micro)	9	10	11	30	-	-	-	-
UPPMCL(Rihand Matatila)	-	-	-	-	1	1	1	2
DVC	153	161	183	497	183	193	219	595
DVC (MTPS, CTPS)	120	126	143	390	144	152	172	468
DVC DTPS Unit 1	16	17	20	53	20	21	23	64
DVC DTPS Unit 2	16	17	20	53	20	21	23	64
IPPs	685	722	819	2,226	855	901	1,025	2,781

Stations	FY 17							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
Torrent Power	16	17	19	52	-	-	-	-
BLA Power Unit 1 & Unit 2	6	6	7	20	-	-	-	-
Jaypee Bina Power Unit 1	82	87	99	288	16	17	20	53
Jaypee Bina Power Unit 2	82	87	99	288	13	14	17	45
Lanco Amarkantak	88	93	105	310	103	109	123	335
UMPP Sasan Unit 1	10	10	12	32	77	81	92	251
UMPP Sasan Unit 2	10	10	12	32	77	81	92	251
UMPP Sasan Unit 3&4	20	21	23	63	154	163	185	502
UMPP Sasan Unit 5&6	20	21	23	63	154	163	185	502
Jhabua Power	76	80	91	246	12	13	15	39
Jaiprakash Power, Nigri Unit 1	62	66	74	237	41	44	50	135
Jaiprakash Power, Nigri Unit 2	62	66	74	237	41	44	50	135
MB Power Unit 1	76	80	91	105	80	85	96	261
MB Power Unit 2	76	80	91	105	80	85	96	261
Captive	-	-	-	-	3	3	4	11
Renewables	591	623	707	1,920	-	-	-	-
Renewable Energy – Solar	180	190	216	586	-	-	-	-
Renewable Energy - Other than Solar	410	433	491	1,334	-	-	-	-
Total Costs	3,342	3,524	3,997	10,863	3,389	3,575	4,061	11,025

Stations	FY 18							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
Central Sector	773	821	920	2,514	1,162	1,234	1,386	3,782
NTPC-Korba	54	57	64	175	141	150	168	459
NTPC Korba -III	28	30	34	93	22	24	27	72
NTPC-Vindyachal I	56	60	67	183	147	156	176	480
NTPC-Vindyachal II	42	44	50	136	113	120	135	368
NTPC-Vindyachal III	70	74	83	226	92	98	110	301
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	46	49	55	151	56	60	67	184
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	46	49	55	151	56	60	67	184
NTPC Vindhyanchal MTPS, Stage - 5	30	31	35	96	52	56	63	171
NTPC Sipat Stage - 1	99	105	117	321	101	108	121	330
NTPC - Sipat Stage II	66	70	78	213	52	55	62	169
NTPC Mouda STPS, Stage -1 Unit 1	33	35	39	107	14	15	17	46
NTPC Mouda STPS, Stage -1 Unit 2	33	35	39	107	14	15	17	46
NTPC-Kawas	23	24	27	75	20	21	24	65
NTPC-Gandhar	22	24	26	72	19	20	22	61
NTPC - Kahalgaon 2	25	26	29	80	23	24	27	75
KAPP	-	-	-	-	52	55	62	169
TAPS	-	-	-	-	144	152	170	466
NTPC Lara STPS, Raigarh Unit 1	18	19	21	58	10	11	12	32
NTPC Lara STPS, Raigarh Unit 2	9	9	11	29	4	5	5	14
NTPC Gadarwara STPS, Unit 1	74	79	88	241	28	29	33	90
MP GENCO	888	943	1,056	2,888	1,068	1,132	1,288	3,488
ATPS - Chachai-Extn	63	67	75	204	81	86	98	265
STPS - Sarani-PH 1, 2 & 3	113	120	134	367	104	109	128	341
MPPGCL - Satpura TPS Extension Unit 10	80	85	95	261	100	106	120	326

Stations	FY 18							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
MPPGCL - Satpura TPS Extension Unit 11	80	85	95	261	100	106	120	326
SGTPS - Bir'pur - PH 1 & 2	118	125	140	382	254	270	303	827
SGTPS - Bir'pur - Extn	136	144	162	442	222	236	266	724
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	136	144	161	441	58	62	74	194
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	129	137	154	421	58	62	74	194
Bargi HPS	3	3	3	8	9	10	11	30
Banasgar Tons HPS	20	22	24	66	33	35	39	108
Banasgar Tons HPS-Silpara	1	1	1	2	3	3	4	11
Banasgar Tons HPS-Devloned	1	1	1	2	5	5	6	16
Banasgar Tons HPS-Bansagar IV (Jhinna)	1	1	1	4	4	4	4	12
Birsingpur HPS	0	0	1	2	1	1	1	4
Marhi Khera HPS	3	4	4	11	7	7	8	22
Rajghat HPS	0	0	0	1	2	3	3	8
CHPS-Gandhi Sagar	1	1	1	3	4	4	5	13
CHPS-RP Sagar & Jawahar Sagar	-	-	-	-	17	18	20	55
Pench THPS	3	3	4	10	4	4	5	13
JW Hydel & Other Hydel	352	374	419	1,145	107	114	125	346
NHDC - Indira Sagar	169	179	201	549	38	41	45	124
Omkareshwar HPS	124	132	148	404	15	16	18	49
Sardar Sarovar	50	53	60	163	52	55	61	169
Other (Mini Micro)	9	10	11	30	-	-	-	-
UPPMCL(Rihand Matatila)	-	-	-	-	1	1	2	5
DVC	153	162	182	497	182	193	217	592
DVC (MTPS, CTPS)	120	127	143	390	143	152	170	465
DVC DTPS Unit 1	16	17	20	53	20	21	23	64
DVC DTPS Unit 2	16	17	20	53	20	21	23	64

Stations	FY 18							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
IPPs	685	727	815	2,226	916	972	1,090	2,979
Torrent Power	16	17	19	52	-	-	-	-
BLA Power Unit 1 & Unit 2	6	6	7	20	-	-	-	-
Jaypee Bina Power Unit 1	82	87	98	268	13	13	15	41
Jaypee Bina Power Unit 2	82	87	98	268	13	13	15	41
Lanco Amarkantak	88	93	104	285	104	110	124	338
UMPP Sasan Unit 1	10	10	12	32	87	92	103	282
UMPP Sasan Unit 2	10	10	12	32	87	92	103	282
UMPP Sasan Unit 3&4	20	21	23	63	174	185	206	565
UMPP Sasan Unit 5&6	20	21	23	63	174	185	206	565
Jhabua Power	76	80	90	246	12	13	15	39
Jaiprakash Power, Nigri Unit 1	62	66	74	202	43	45	51	139
Jaiprakash Power, Nigri Unit 2	62	66	74	202	43	45	51	139
MB Power Unit 1	76	80	90	246	83	88	99	270
MB Power Unit 2	76	80	90	246	83	88	99	270
Captive	-	-	-	-	2	3	3	8
Renewables	981	1,041	1,167	3,189	-	-	-	-
Renewable Energy – Solar	260	276	309	845	-	-	-	-
Renewable Energy - Other than Solar	721	766	858	2,345	-	-	-	-
Total Costs	3,833	4,068	4,558	12,459	3,435	3,646	4,107	11,188

Stations	FY 19							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
Central Sector	898	949	1,052	2,899	1,283	1,355	1,507	4,145
NTPC-Korba	54	57	64	175	144	152	168	464
NTPC Korba -III	29	30	34	93	22	24	26	72
NTPC-Vindyachal I	57	60	66	183	148	156	174	477
NTPC-Vindyachal II	42	44	49	136	114	120	134	367
NTPC-Vindyachal III	70	74	82	226	93	99	110	302
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	47	49	55	151	57	60	67	184
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	47	49	55	151	57	60	67	184
NTPC Vindhyanchal MTPS, Stage - 5	30	31	35	96	45	47	53	145
NTPC Sipat Stage - 1	99	105	116	321	95	101	111	307
NTPC - Sipat Stage II	66	70	77	213	53	56	62	171
NTPC Mouda STPS, Stage -1 Unit 1	33	35	39	107	26	28	32	86
NTPC Mouda STPS, Stage -1 Unit 2	33	35	39	107	31	32	38	101
NTPC-Kawas	23	24	27	75	20	21	24	65
NTPC-Gandhar	22	24	26	72	19	20	22	61
NTPC - Kahalgaon 2	25	26	29	80	23	24	27	73
KAPP	-	-	-	-	48	51	56	155
TAPS	-	-	-	-	149	157	174	481
NTPC Lara STPS, Raigarh Unit 1	18	19	21	58	12	13	14	39
NTPC Lara STPS, Raigarh Unit 2	18	19	21	58	12	13	14	39
NTPC Lara STPS, Raigarh Unit 3	18	19	21	58	12	13	14	39
NTPC Lara STPS, Raigarh Unit 4	18	19	21	58	12	13	14	39
NTPC Gadarwara STPS, Unit 1	75	79	87	241	48	51	56	156
NTPC Gadarwara STPS, Unit 2	75	79	87	241	48	51	56	156
MP GENCO	1,003	1,175	1,060	3,238	1,124	1,187	1,332	3,642
ATPS - Chachai-Extn	63	67	74	204	83	88	98	270
STPS - Sarani-PH 1, 2 & 3	114	120	133	367	143	150	168	460
MPPGCL - Satpura TPS Extension Unit 10	81	85	95	261	81	85	95	261

Stations	FY 19							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
MPPGCL - Satpura TPS Extension Unit 11	81	85	95	261	83	87	97	267
SGTPS - Bir'pur - PH 1 & 2	118	125	139	382	249	263	293	804
SGTPS - Bir'pur - Extn	137	145	160	442	228	241	268	736
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	137	144	160	441	59	62	73	194
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	130	138	153	421	59	62	73	194
MPPGCL - Shri Singaji Phase-2, Unit 1	65	69	76	210	58	61	72	192
MPPGCL - Shri Singaji Phase-2, Unit 2	43	46	51	140	-	-	-	-
Bargi HPS	3	3	3	8	8	8	9	25
Banasgar Tons HPS	21	22	24	66	27	29	32	88
Banasgar Tons HPS-Silpara	1	1	1	2	3	3	3	9
Banasgar Tons HPS-Devloned	1	1	1	2	6	6	7	19
Banasgar Tons HPS-Bansagar IV (Jhinna)	1	1	1	4	4	4	4	12
Birsingpur HPS	0	0	1	2	1	1	1	3
Marhi Khera HPS	3	4	4	11	7	7	8	22
Rajghat HPS	0	0	0	1	2	2	2	6
CHPS-Gandhi Sagar	1	1	1	3	4	4	5	13
CHPS-RP Sagar & Jawahar Sagar	-	-	-	-	18	19	21	59
Pench THPS	3	3	4	10	4	4	5	13
JW Hydel & Other Hydel	355	375	416	1,145	105	110	121	336
NHDC - Indira Sagar	170	180	199	549	37	39	43	119
Omkareswar HPS	125	132	147	404	14	15	16	45
Sardar Sarovar	50	53	59	163	53	56	61	169
Others (Mini Micro)	9	11	10	30	-	-	-	-
UPPMCL(Rihand Matatila)	-	-	-	-	1	1	1	2
DVC	154	163	180	497	165	174	193	533
DVC (MTPS, CTPS)	121	128	141	390	144	152	169	466
DVC DTPS Unit 1	17	17	19	53	10	11	12	33
DVC DTPS Unit 2	17	17	19	53	10	11	12	33
IPPs	690	729	808	2,226	899	950	1,057	2,906
Torrent Power	16	17	19	52	-	-	-	-

Stations	FY 19							
	Fixed Costs (Rs. Crore)				Variable Costs (Rs. Crore)			
	East	Central	West	Total	East	Central	West	Total
BLA Power Unit 1 & Unit 2	6	6	7	20	2	2	2	5
Jaypee Bina Power Unit 1	83	88	97	268	21	22	26	68
Jaypee Bina Power Unit 2	83	88	97	268	16	17	21	54
Lanco Amarkantak	88	93	103	285	102	107	119	328
UMPP Sasan Unit 1	10	10	11	32	88	93	102	282
UMPP Sasan Unit 2	10	10	12	32	88	93	102	282
UMPP Sasan Unit 3&4	20	21	23	63	156	164	182	502
UMPP Sasan Unit 5&6	20	21	23	63	156	164	182	502
Jhabua Power	76	81	89	246	15	16	19	50
Jaiprakash Power, Nigri Unit 1	63	66	73	202	44	47	52	142
Jaiprakash Power, Nigri Unit 2	63	66	73	202	44	47	52	142
MB Power Unit 1	76	81	89	246	83	88	98	270
MB Power Unit 2	76	81	89	246	83	88	98	270
Captive	-	-	-	-	2	3	3	8
Renewables	1,012	1,069	1,185	3,267	-	-	-	-
Renewable Energy – Solar	266	281	312	859	-	-	-	-
Renewable Energy - Other than Solar	746	788	874	2,408	-	-	-	-
Total Costs	4,130	4,3,63	4,836	13,329	3,575	3,776	4,210	11,561

Table 37: Total Fixed Costs and Variable Costs of Allocated Stations

Station	FY 17		FY 18		FY 19	
	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)
Central Sector	2,187	3,497	2,514	3,782	2,899	4,145
NTPC-Korba	175	461	175	459	175	464
NTPC Korba –III	93	72	93	72	93	72

Station	FY 17		FY 18		FY 19	
	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)
NTPC-Vindyachal I	183	482	183	480	183	477
NTPC-Vindyachal II	136	376	136	368	136	367
NTPC-Vindyachal III	226	298	226	301	226	302
NTPC Vindhyanchal MTPS, Stage - 4 Unit 1	151	167	151	184	151	184
NTPC Vindhyanchal MTPS, Stage - 4 Unit 2	151	167	151	184	151	184
NTPC Vindhyanchal MTPS, Stage – 5	96	133	96	171	96	145
NTPC Sipat Stage - 1	321	304	321	330	321	307
NTPC - Sipat Stage II	213	161	213	169	213	171
NTPC Mouda STPS, Stage -1 Unit 1	107	36	107	46	107	86
NTPC Mouda STPS, Stage -1 Unit 2	107	-	107	46	107	101
NTPC-Kawas	75	65	75	65	75	65
NTPC-Gandhar	72	61	72	61	72	61
NTPC - Kahalgaon 2	80	64	80	75	80	73
KAPP	-	187	-	169	-	155
TAPS	-	463	-	466	-	481
NTPC Lara STPS, Raigarh Unit 1	-	-	58	32	58	39
NTPC Lara STPS, Raigarh Unit 2	-	-	29	14	58	39
NTPC Lara STPS, Raigarh Unit 3	-	-	-	-	58	39
NTPC Lara STPS, Raigarh Unit 4	-	-	-	-	58	23
NTPC Gadarwara STPS, Unit 1	-	-	241	90	241	156
NTPC Gadarwara STPS, Unit 2	-	-	-	-	241	156
MP GENCO	2,888	3,774	2,888	3,488	3,238	3,642
ATPS - Chachai-Extn	204	264	204	265	204	270
STPS - Sarani-PH 1, 2 & 3	367	241	367	341	367	460
MPPGCL - Satpura TPS Extension Unit 10	261	260	261	326	261	261
MPPGCL - Satpura TPS Extension Unit 11	261	260	261	326	261	267
SGTPS - Bir'pur - PH 1 & 2	382	827	382	827	382	804
SGTPS - Bir'pur – Extn	442	724	442	724	442	736
MPPGCL - Shri Singaji STPS Phase -1 Unit 1	441	455	441	194	441	194
MPPGCL - Shri Singaji STPS Phase -1 Unit 2	421	455	421	194	421	194

Station	FY 17		FY 18		FY 19	
	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)
MPPGCL - Shri Singaji Phase-2, Unit 1	-	-	-	-	210	192
MPPGCL - Shri Singaji Phase-2, Unit 2	-	-	-	-	140	-
Bargi HPS	8	29	8	30	8	25
Banasgar Tons HPS	66	104	66	108	66	88
Banasgar Tons HPS-Silpara	2	9	2	11	2	9
Banasgar Tons HPS-Devloned	2	16	2	16	2	19
Banasgar Tons HPS-Bansagar IV (Jhinna)	4	13	4	12	4	12
Birsingpur HPS	2	4	2	4	2	3
Marhi Khera HPS	11	23	11	22	11	22
Rajghat HPS	1	7	1	8	1	6
CHPS-Gandhi Sagar	3	12	3	13	3	13
CHPS-RP Sagar & Jawahar Sagar	-	57	-	55	-	59
Pench THPS	10	13	10	13	10	13
JV Hydel & Other Hydel	1,145	378	1,145	346	1,145	336
NHDC - Indira Sagar	549	142	549	124	549	119
Omkareshwar HPS	404	50	404	49	404	45
Sardar Sarovar	163	184	163	169	163	169
Others(mini micro)	30	-	30	-	30	-
UPPMCL(Rihand Matatila)	-	2	-	5	-	2
DVC	497	595	497	592	497	533
DVC (MTPS, CTPS)	390	468	390	465	390	466
DVC DTPS Unit 1	53	64	53	64	53	33
DVC DTPS Unit 2	53	64	53	64	53	33
IPPs	2,226	2,781	2,226	2,979	2,226	2,906
Torrent Power GPP	52	-	52	-	52	-
BLA Power unit 1 & unit 2	20	-	20	-	20	5
Jaypee Bina Power Unit 1	268	53	268	41	268	68
Jaypee Bina Power Unit 2	268	45	268	41	268	54
Lanco Amarkantak	285	335	285	338	285	328
UMPP Sasan Unit 1	32	251	32	282	32	282

Station	FY 17		FY 18		FY 19	
	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)	Fixed Costs (Rs Cr)	Variable Costs (Rs Cr)
UMPP Sasan Unit 2	32	251	32	282	32	282
UMPP Sasan Unit 3&4	63	502	63	565	63	502
UMPP Sasan Unit 5&6	63	502	63	565	63	502
Jhabua Power	246	39	246	39	246	50
Jaiprakash Power, Nigri Unit 1	202	135	202	139	202	142
Jaiprakash Power, Nigri Unit 2	202	135	202	139	202	142
MB Power Unit 1	246	261	246	270	246	270
MB Power Unit 2	246	261	246	270	246	270
Captive	-	11	-	8	-	8
Renewables	1,920	-	3,189	-	3,267	-
Renewable Energy – Solar	586	-	845	-	859	-
Renewable Energy - Other than Solar	1,334	-	2,345	-	2,408	-
Total	10,863	11,025	12,459	11,188	13,272	11,561

The above costs after being adjusted for Surplus are again distributed among the three Discoms according to the monthly energy requirement at state boundary for individual Discom .The following table shows the segregation of costs among the three Discoms as per the allocation for FY 17, FY 18 and FY 19 specified in, Table 24: Allocation percentage for FY 18,Table 25: Allocation percentage for FY 19

Table 38: Segregation of Costs

Costs	Amount in Rs Cr		
	FY 17	FY 18	FY 19
Fixed Cost	10,863	12,459	13,372
Variable Cost	11,025	11,188	11,561
Total Costs	21,888	23,647	24,833
Less: Revenue from sale of surplus including RPO	(2,466)	(2,306)	(1,945)
Net Costs	19,423	21,341	22,888
Additional RPO obligation	848.63	138.37	414.53
MPPMCL ARR	(175)	(194)	(214)

Costs	Amount in Rs Cr		
Total Power Purchase Costs	20,096	21,285	23,089
Share of :			
East Discom	6,172	6,538	7,143
Central Discom	6,510	6,939	7,548
West Discom	7,414	7,808	8,398
Total	20,096	21,285	23,089

4.3. RPO Cost

The Commission has notified Fifth Amendment to MPERC (Co-generation and generation of electricity from Renewable sources of energy) (Revision-I) regulation, 2010 [ARG-33(I)(v) of 2015] vide notification dated October 02, 2015. The Commission has considered procurement of power from renewable energy sources through PPA or short term market to ensure RPO compliance.

As per regulation 4.1 of notified MPERC (Co-generation and generation of electricity from Renewable sources of energy) (Revision-I) regulation, 2010 [ARG-33(I)(v) of 2015], the minimum quantum of electricity is 1.25% for Solar and 6.50% for Non-Solar for FY 2016-17, 1.50% for Solar and 7.00% for Non-Solar for FY 2017-18 and 1.75% for Solar and 7.50% for Non-Solar for FY 2018-19.

Accordingly the Petitioners have calculated the RPO requirement which is (already included in the power purchase cost) is shown in the following table:

Table 39: RPO Obligation for MYT FY 17-FY 19

Renewable Purchase Obligation Computations		FY 17	FY 18	FY 19
Solar	%	1.25%	1.50%	1.75%
Other than Solar	%	6.50%	7.00%	7.50%
Total	%	7.75%	8.50%	9.25%
Exbus renewable energy requirement to fulfill RPO (MU)				
Solar	MU	749	950	1,176
Other than Solar	MU	3,897	4,434	5,040
	MU	4,647	5,384	6,215
Energy Available from existing Renewable Sources				
Solar	MU	912	1,314	1,336
Other than Solar	MU	2,382	4,187	4,299
	MU	3,294	5,501	5,635
Shortfall				
Solar	MU	-	-	-
Other than Solar	MU	1,515	247	740
Extra Surplus available after meeting RPO obligations	MU	1,515	247	740
IEX rate	Rs/unit	2.43	2.43	2.43
Additional revenue from sale of surplus due to RPO obligation	Rs Cr	368	60	180
Renewable Energy purchase Rates				
Solar	Rs./unit	6.43	6.43	6.43
Other than Solar	Rs./unit	5.60	5.60	5.60
Additional Cost due to RPO Obligation				
Solar	Rs. Cr.	-	-	-
Other than Solar	Rs. Cr.	848.63	138.37	414.53
RE Power Purchase from new/other sources to fulfill RPO	Rs. Cr.	848.63	138.37	414.53

Note: It can be observed from the above table that the energy required from renewable sources to meet out the RPO is 5384 MU (Solar- 950 & Non Solar- 4434) whereas the availability is 5501MU (Solar- 1314 & Non Solar- 4187).

4.4. Estimation of Other Power Purchase Costs

4.4.1. Inter-State Transmission Charges

The Inter-State transmission charges to be paid by MP consist of charges to be paid for transmission system of WR and ER. The actual inter-state transmission charges for FY 2014-15 amounted to Rs 1,419 Cr and the actual interstate transmission charges for FY 2015-16 amounted to Rs 1406 Cr. This suggests the interstate transmission charges were almost the same over a period of one year .However, only 2% has been considered for projecting the Interstate transmission charges for FY 17 –FY 19.

Thus, the estimated Interstate transmission charges for FY 2016-17 –FY 2018-19 amounts to Rs 1,434 Cr, Rs. 1,463 Cr and Rs. 1,492 Cr respectively. These costs have then been allocated to Discoms based on past trend of actual costs have been mentioned below:

Table 40: Inter-State Transmission Charges

Discom	Inter-State Transmission Charges (Rs. Crore)		
	FY 17	FY 18	FY 19
East Discom	443	452	461
Central Discom	428	437	445
West Discom	563	574	586
Total	1434	1463	1492

4.4.2. Intra-State Transmission Charges – MPPTCL fixed costs excluding Terminal Benefits (Cash Outflow)

For the purpose of calculation of intra-state transmission costs, **the various expense items of MPPTCL (other than terminal benefits liabilities)** have been taken as approved by MPERC via **MYT Tariff Order for MPPTCL dated 10th June 2016**.

The table below consists of two main components:

1. **MPPTCL fixed costs** as approved by MPERC in its order dated 10th June 2016 for FY 2016-17
2. **SLDC charges** as approved by MPERC via its order dated April 05, 2016 to the tune of Rs 10.19 Cr have been considered for FY'17. For the period FY'17,-FY 19 the annual SLDC charges have been computed based on the transmission capacity of Discoms and the rate for Long-term Access Customers of Rs. 5567.53/ MW as approved by MPERC in the SLDC tariff order for FY 16.

Table 41: Intra-state Costs – excluding Terminal Benefits

MPPTCL and SLDC charges				
Sr. No.	Particulars	FY16-17 (MPERC order)	FY17-18 (MPERC order)	FY18-19 (MPERC order)
1.00	O&M Expenses	407.66	446.58	495.49
2.00	Expenses towards payment of PPP Licensee	37.80	37.80	37.80
3.00	Depreciation	320.14	324.22	345.84
4.00	Interest & Finance charges	121.33	131.26	143.12
5.00	Interest on working capital	61.63	67.33	73.40
6.00	Return on Equity	340.19	364.33	388.46
7.00	MPERC Fees & Taxes	1.22	1.33	1.47
8.00	Less Non- tariff income	-19.00	-20.00	-21.00
A	MPPTCL charges approved by MPERC (excluding terminal benefits)	1,270.97	1,352.85	1,464.58
B	Terminal Benefits	1,047.09	1,177.90	1,282.38
C	MPPTCL charges	2,318.06	2,530.75	2,746.96
D	SLDC Charges	10.19	10.76	11.50
E	Total Intra-State Transmission Charges allocated to Discoms	2,328	2,542	2,758

4.4.3. Intra-State Transmission Charges – Terminal Benefits (Cash Outflow) to be included in MPPTCL costs

As per the provisions of the regulations, **the liability towards pension and other Terminal Benefits of the Pensioners and Personnel of the Board and its Successor Entities shall comprise of cash outflow in each fiscal year** for making payment to all the Pensioners including Existing Pensioners subject to the provision of Regulation 3 (8)

As per the regulations, the **aforementioned terminal benefits cash outflow has three parts:**

- For employees who have retired up to 01.06.2005 for services rendered up to 01.06.2005
- For employees who will retire after 01.06.2005 for services rendered up to 01.06.2005
- For employees who will retire after 01.06.2005 for services rendered after 01.06.2005

In the Multi Year Transmission Tariff for the control period FY 2016-17 to FY 2018-19 based on the tariff application filed by Madhya Pradesh Power Transmission Company Limited (MPPTCL), Jabalpur under Section 62 and 86(1)(a) of the Electricity Act, 2003, Hon'ble Commission has stated as below:

"The Commission has considered the current terminal benefits and pension expenses of Rs 1047.09 Crore, Rs 1177.90 Crore and Rs 1282.38 Crore for FY 2016-17 to FY 2018-19 respectively in this order on provisional basis and on 'pay as you go' principle as claimed by MPPTCL in the subject petition subject to true-up in each year on availability of the actual figures"

The following table shows the detail of total Intra-state Transmission Costs including the Terminal Benefits (Cash Outflow) and its allocation amongst Discoms based on the past trend:

Table 42: Total Intra-State Transmission Costs and Allocation to Discoms (Rs Cr)

Sr.No.	Particulars	FY 17	FY 18	FY 19
	Total Intra-State Transmission Charges (including Terminal Benefits)	2,328	2,542	2,758
	Allocation to Discoms			
	East Discom	696	760	825
	Central Discom	733	800	868
	West Discom	900	982	1,066

Any difference over and above the claimed amount towards Terminal Benefits is proposed to be filed as true-up petitions for the respective years.

4.4.4. MPPMCL Costs

The details of the MPPMCL expenses that have been allocated to Discoms for the MYT years are related to the various roles, responsibilities and administrative functions of MPPMCL and have been detailed in the **Chapter 8**. These expenses are allocated to the three Discoms based on the total energy requirement at state boundary.

The details of these expenses and Discoms allocation are given in the table below:

Table 43: MPPMCL Costs: Details and Discoms Allocation (Rs Cr)

Particulars	FY '17 (estimated)	FY '18 (estimated)	FY '19 (estimated)
	FY '17	FY '18	FY '19
Purchase of Power	(0.09)	(0.14)	(0.19)
Inter-State Transmission Charges	50.19	54.18	58.47
Depreciation Expenses	5.29	4.86	4.47
Interest and Finance Charges	33.49	42.77	27.23
Repairs and Maintenance Expenses	3.44	3.72	4.01
Employee Expenses	62.90	64.79	66.73
A&G Expenses	40.83	44.07	47.57
Other Expenses	2.29	2.47	2.67
MPPMCL Costs	198.36	216.72	238.39
Less: Other Income	373.84	411.22	452.34
Net MPPMCL costs	(175.48)	(194.50)	(213.95)
	FY '17	FY '18	FY '19
East Discom	(53.86)	(59.74)	(66.18)
Central Discom	(56.81)	(63.40)	(69.92)
West Discom	(64.80)	(71.37)	(77.85)
Total	(175.48)	(194.50)	(213.95)

4.4.5. Total Power Purchase Costs

Based on the various cost components discussed above, the tables below detail the total power purchase cost for MP state and for each of the Discoms.

Table 44: Total Power Purchase Costs - FY'17 to FY'19

Particulars	East Discom
-------------	-------------

		FY '17	FY '18	FY '19
A	Ex-bus Units Purchased (MU)	18,404	19,456	20,786
B	Fixed Cost (Rs. Crs.)	3,342	3,833	4,112
C	Variable Cost (Rs. Crs.)	2,884	2,765	3,098
D	MPPMCL costs (Rs. Crs.)	(53.86)	(59.74)	(66.18)
E = B+C+D	Total Power Purchase Cost - Ex Bus (Rs. Crs.)	6,172	6,538	7,143
E/A	Rate of Power Purchase (Rs. / kWh)	3.35	3.36	3.44
H	External Losses (MU)	460	491	522
I	Inter State Transmission Cost (Rs. Crs.)	443	452	461
J = (A - H)	Units Purchased at State Periphery (MU)	17,944	18,965	20,264
K = (I + E)	Total Power Purchase Cost at State Boundary (Rs. Crs.)	6,615	6,990	7,604
J/K	Rate of Power Purchase at State Boundary (Rs. / kWh)	3.69	3.69	3.75
L	Intra State Transmission Cost - MPTransco including SLDC (Rs. Crs.)	696	760	824
M = (K+L)	Total Power Purchase Cost at Discom Interface (Rs. Crs.)	7,311	7,749	8,429
N	Transmission Loss (MU)	515	545	582
O = (K - N)	Units Purchased at Discom Boundary (MU)	17,429	18,420	19,681
O/M	Rate of Power Purchase at Discom Boundary (Rs. / kWh)	4.19	4.21	4.28
Central Discom				
	Particulars	FY '17	FY '18	FY '19
A	Ex-bus Units Purchased (MU)	19,413	20,649	21,960
B	Fixed Cost (Rs. Crs.)	3,524	4,068	4,344
C	Variable Cost (Rs. Crs.)	3,043	2,935	3,273
D	MPPMCL costs (Rs. Crs.)	(57)	(63)	(70)
E = B+C+D	Total Power Purchase Cost - Ex Bus (Rs. Crs.)	6,510	6,939	7,548
E/A	Rate of Power Purchase (Rs. / kWh)	3.35	3.36	3.44
H	External Losses (MU)	485	521	552
I	Inter State Transmission Cost (Rs. Crs.)	428	437	445
J = (A - H)	Units Purchased at State Periphery (MU)	18,928	20,127	21,408
K = (I + E)	Total Power Purchase Cost at State Boundary (Rs. Crs.)	6,938	7,376	7,993
J/K	Rate of Power Purchase at State Boundary (Rs. / kWh)	3.67	3.66	3.73
L	Intra State Transmission Cost - MPTransco including SLDC (Rs. Crs.)	733	800	868
M = (K+L)	Total Power Purchase Cost at Discom Interface (Rs. Crs.)	7,671	8,175	8,861
N	Transmission Loss (MU)	543	578	615
O = (K - N)	Units Purchased at Discom Boundary (MU)	18,385	19,549	20,793
O/M	Rate of Power Purchase at Discom Boundary (Rs. / kWh)	4.17	4.18	4.26
West Discom				
	Particulars	FY '17	FY '18	FY '19
A	Ex-bus Units Purchased (MU)	22,141	23,242	24,448
B	Fixed Cost (Rs. Crs.)	3,997	4,558	4,815

C	Variable Cost (Rs. Crs.)	3,481	3,321	3,661
D	MPPMCL costs (Rs. Crs.)	(65)	(71)	(78)
E = B+C+D	Total Power Purchase Cost - Ex Bus (Rs. Crs.)	7,414	7,808	8,398
E/A	Rate of Power Purchase (Rs. / kWh)	3.35	3.36	3.44
H	External Losses (MU)	551	586	613
I	Inter State Transmission Cost (Rs. Crs.)	563	574	586
J = (A - H)	Units Purchased at State Periphery (MU)	21,589	22,657	23,835
K = (I + E)	Total Power Purchase Cost at State Boundary (Rs. Crs.)	7,977	8,383	8,984
J/K	Rate of Power Purchase at State Boundary (Rs. / kWh)	3.69	3.70	3.77
L	Intra State Transmission Cost - MPTransco including SLDC (Rs. Crs.)	900	982	1,066
M = (K+L)	Total Power Purchase Cost at Discom Interface (Rs. Crs.)	8,877	9,365	10,050
N	Transmission Loss (MU)	620	651	685
O = (K - N)	Units Purchased at Discom Boundary (MU)	20,970	22,006	23,150
O/M	Rate of Power Purchase at Discom Boundary (Rs. / kWh)	4.23	4.26	4.34
MP State				
		FY '17	FY '18	FY '19
A	Ex-bus Units Purchased (MU)	59,958	63,347	67,193
B	Fixed Cost (Rs. Crs.)	10,863	12,459	13,272
C	Variable Cost (Rs. Crs.)	9,408	9,020	10,032
D	MPPMCL Costs (Rs. Crs.)	(175)	(194)	(214)
E = B+C+D	Total Power Purchase Cost - Ex Bus (Rs. Crs.)	20,096	21,285	23,089
E/A	Rate of Power Purchase (Rs. / kWh)	3.35	3.36	3.44
H	External Losses (MU)	1,496	1,598	1,687
I	Inter State Transmission Cost (Rs. Crs.)	1,434	1,463	1,492
J = (A - H)	Units Purchased at State Periphery (MU)	58,462	61,749	65,507
K = (I - E)	Total Power Purchase Cost at State Boundary (Rs. Crs.)	21,530	22,748	24,581
J/K	Rate of Power Purchase at State Boundary (Rs. / kWh)	3.68	3.68	3.75
L	Intra State Transmission Cost - MPTransco including SLDC (Rs. Crs.)	2,328	2,541	2,758
M = (K+L)	Total Power Purchase Cost at Discom Interface (Rs. Crs.)	23,858	25,290	27,340
N	Transmission Loss (MU)	1,678	1,774	1,882
O = (K - N)	Units Purchased at Discom Boundary (MU)	56,784	59,975	63,625
O/M	Rate of Power Purchase at Discom Boundary (Rs. / kWh)	4.20	4.22	4.30

4.4.6. Increasing Power Purchase Costs

Power Purchase Costs contribute more than 80% of total ARR of the State. Any increase in power purchase cost directly gets reflected in the consumer tariff.

The following table provides the details of source wise Average Power Purchase Cost for FY 2015-16:

Table 45: Details of source wise average power purchase cost – FY 16

Source	Energy in MU	Rs. In Cr.	APPC Rs./kWh
MP GenCo	18961	7576.23	4.00
NTPC	21950	4648.56	2.12
IPPs	6737	2724.64	4.04
UMPP	10866	1725.77	1.59
Solar Energy	809	573.42	7.09
Wind Energy	1290	683.31	5.30
Others	4319	3032.07	7.02
MP State	64932	20964	3.23
PGCIL etc.	64932	1300	0.20
MP Transco	64932	1246	0.19
Total	64932	23510	3.62

As per MPERC regulations – RG -38 of 2012, the pension liability of the employees retired comes as part of the MP Transco Cost. For the year FY 2015-16, the approved amount by Hon'ble Commission was INR 677 Cr in this regard. The amount as shown in the above table is excluding this pension liability.

With new generating stations being added up in near future, power purchase costs shall increase further. Average Power Purchase Cost has increased by 71% over last five years from Rs 2.11 in FY 2010-11 to Rs 3.62/ kWh in FY 2015-16. The year wise average power purchase cost is given as per the table below:

Table 46: Details of year wise average power purchase cost

Financial Year	Power purchased (MUs)	Power Purchase Cost (Rs. Cr.)	Average Power Purchase Cost (Rs/kWh)
FY 2010-11	38285	8097	2.11
FY 2011-12	44030	11442	2.60
FY 2012-13	49037	14693	3.00
FY 2013-14	53714	18500	3.44
FY 2014-15	57977	19365	3.34
FY 2015-16	64932	23510	3.62

- **Reasons for Increase in APPC**

- Growth in demand as expected is not commensurate with energy generation added.
- Most of the PPAs are cost plus basis, the rise in cost of fuel/transportation, taxation etc. is pass through to the buyer;

- Due to high surplus, scheduling of costlier power plants for less no. of days, whereas their fixed cost had to be paid for the entire entitlement;
- Addition of renewable energy to meet RPO targets;
- **Hurdles in reduction of power purchase cost**

Some of the uncontrollable reasons which have been restricting MPPMCL from reduction of power purchase costs are as listed below:

- **Payment of Fixed Cost in case of Back down of Surplus Capacity:** It needs to be highlighted that the payment of fixed charges is required to be made for such generators in accordance with the PPAs even if the capacity is backed down. In FY 2014-15 a quantum of 7,099 MUs had to be backed down, having a fixed cost of around Rs. 870 crores which rose to 17,130 MU's in FY 2015-16, having a fixed cost of around Rs. 2,158 Cr.
- **Increase in Wind Capacity from 489 MW in FY 15 to 1290 MW in FY 16:** In FY 15-16, MP contributes around 37% of the total Wind Capacity added in FY 2015-16 in India which was 3423 MW. Wind Capacity has doubled in the current year compared to the previous year. The per unit cost of Wind Energy is Rs. 5.30 /kWh which is much higher than the APPC, thus contributing towards high Power Purchase Cost.
- **Contingent Liability payment to Sasan Power Ltd. and other thermal generators:**
 - As per CERC order bills amounting to Rs 523 Cr were received for Electricity Duty and EDC (Energy Development Cess), Claim of excise duty, clean energy cess and royalty on coal charges of prior period for supply of power from M/s Sasan power.
 - As per APTEL's Order dtd. 31.03.2016 an amount of Rs.430 Cr. has been due on account of acceptance of COD as 31.03.2013 in place of 16.08.2013, though the matter is being heard by Hon'ble Supreme Court and only Rs 29 Cr has been paid out of the billed amount.
 - Increase in duty, cess, royalty etc. on coal has increased the cost of all thermal power stations.

5. O&M Expenses - Discoms

The O&M expenses based on the provisions of the regulation are as below:-

5.1. Employee Costs

As per the provision of the regulations, employee costs have been calculated as below:-

Table 47: Employee Cost (Rs. Crs.)

Particular	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Employees Expenses excluding arrears, DA, terminal benefits and incentives	385	396	408	359	370	381	403	415	428
DA	504	566	632	470	529	591	528	593	663
Leave encashment	16	17	18	43	46	49	12	13	14
NPS/GTIS/EPF/PF and Others	17	18	19	62	67	73	6	6	7
Incentives	0	0	0	0	0	0	0	0	1
Total	922	998	1,078	934	1,012	1,094	950	1,029	1,113

*Values rounded off to the nearest integers.

Major assumptions considered for calculation of Employee Costs for three Discoms are:

- a. For the calculation of the DA, basic pay has been taken at the same level as notified in the MPERC regulations. For computation of Dearness allowance, a 6% increase has been considered for every six months for all three Discoms (every year in January and July). Based on this, the DA as a percentage of Basic Salary (approved by MPERC) is shown in the table below:

	FY '17	FY '18	FY '19
DA as percentage of Basic for first quarter - Apr to June	125%	137%	149%
DA as percentage of Basic for 2nd and 3rd quarter - July to Dec	131%	143%	155%
DA as percentage of Basic for 4th quarter - Jan to March	137%	149%	161%

- b. Incentive/ Bonus to be paid to the employees have been considered as per the previous trend in the Audited Accounts.
- c. Leave Encashment and PF/CFA/GTIS/NPS:
 - It is pertinent to mention that MPPTCL is providing fund to Discoms, only to meet out Terminal Benefits liability of Gratuity, Pension and Commutation of pension.
 - Other than these components, Discoms make payment of Leave Encashment and PF/CFA/GTIS/NPS. Hence, expenses incurred on account of Leave Encashment and PF/CFA/GTIS/NPS have been claimed separately in addition to the terminal benefits costs claimed as part of Intra-State Transmission Charges in the total Power Purchase Costs of Discoms.
- d. The employee cost arising due to the eligibility of 3rd higher pay scale under assured career progression scheme cannot be ascertained at this stage. Hence expenditure on this account is not being considered in this petition. However, the same shall be accounted for in true-up petition.

- e. The petitioners further submit that the impact of Seventh Central Pay Commission recommendations has not been considered in the computation of employee costs payable by the petitioners to its employees/pensioners. Petitioners further submit that the impact of seventh pay commission recommendations, to the extent applicable, will be impending on it and is mandatory from the petitioner's side to pay the difference (in pay as notified) as arrears to its employees. Hence the petitioners pleads to the Hon'ble Commission to allow the impact of seventh commission pay structure also during the tariff determination exercise for FY 2017-18 or allow the petitioners to claim it during the true up filing exercise. The petitioners again requests Hon'ble Commission's kind cognizance to this matter and treat it in a manner it deems appropriate during the tariff determination exercise for FY 2017-18.

5.2. Administrative & General Expenses

As per the provision of regulation, A&G expenses have been calculated as below:-

Table 48: Administrative and General Expenses-As per Regulation (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
A&G Expenses excluding MPERC fees and Taxes	168	179	192	96	103	110	129	138	147
Taxes payable to Government	4	5	5	2	2	2	13	14	15
MPERC Fees	0.35	0.37	0.39	0.37	0.39	0.42	0.42	0.44	0.46
Total	173	184	197	98	105	113	143	153	163

Major assumption considered for calculation of above A&G Expenses:

- As per the provision of the para 34.1 of the regulation, norms of A&G expenses notified in the regulation excludes Fees paid to the MPERC and Taxes payable to the government.
- In view of above, Fees paid to the MPERC and Taxes payable to the government are considered over & above the cost notified in the regulation.

Additional Submission by petitioners:

In line with the recent policy of the Government of India, the petitioners are proposing to move towards cash less economy. However, currently the cashless modes of payment entails levy of service charges. The petitioners propose that the service charges be not recovered from the consumers at the time of payment. As such it is proposed that the service charge payable to cash less bill payment intermediaries be separately allowed as permissible expenses for ARR. Assuming a cost of Rs. 5 per transaction and further assuming about 25% of non-agricultural consumers shall avail cash less payment services, Hon'ble MPERC may please be requested to approve additional estimated cost of Rs. 15 crore per year ($100,00,000 * .25 * 5 * 12$) in the ARR. Detailed information of actual cost incurred on this account shall be submitted by the Discom at the time of true-up.

The petitioners hence plead to Hon'ble Commission that an amount of 15 Cr may be kindly allowed further towards encouraging cashless transaction in the license area of petitioners. This amount will be used by the petitioner to bear the service charges to be paid by the consumers applicable on various online payment gateways.

5.3. Repair and Maintenance Expenses

As per the provision of regulation, R&M expenses have been calculated as below:-

Table 49: Repair and Maintenance Expenses-As per Regulation (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Opening GFA of FY year	6,170	7,201	8,835	7,464	7,995	9,192	5,369	5,889	6,868
R&M Expenses as 2.3% of GFA	142	166	203	172	184	211	123	140	166

5.4. Gist of O&M Expenses

The Gist of O&M expenses as per the provisions of the regulation is summarized as below:-

Table 50: Gist of O&M expenses-As per Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Employee Cost (including arrears, DA and others)	922	998	1,078	934	1,012	1,094	950	1,029	1,113
A&G Expenses	172	184	197	98	105	112	142	152	162
R&M expenses	142	166	203	172	184	211	123	140	166
Terminal Benefits (Cash Outflow)	-	-	-	-	-	-	-	-	-
MPERC Fees	0.35	0.37	0.39	0.37	0.39	0.42	0.42	0.44	0.46
Total O&M expenses	1,237	1,347	1,479	1,204	1,302	1,418	1,216	1,322	1,442

6. Investment Plan – Discoms

6.1 Capital Investment Plan

The three Discoms are undertaking various projects in the coming years for system strengthening and reduction of distribution losses. The focus is on creation of new 33/11 kV S/s, bifurcation of overloaded 33 kV feeders, feeder bifurcation of agricultural feeder at 11 kV level, Addl. / Aug of PTRs, Installation of DTRs, conversion of bare LT line into AB Cables and replacement of service lines etc.

The overall distribution loss of the system is the sum of technical and commercial losses. The technical losses are mainly due to poor infrastructure which needs strengthening, renovation and upgradation of the capacity of lines, sub-stations and associated infrastructures. The commercial losses are mainly due to pilferage of energy which can also be reduced to a large extent by re-engineering of the system which requires capital investment and directed efforts. Discoms are working on both the issues and the distribution losses have considerably come down but not up to the normative loss levels.

Scheme wise Capital Expenditure Plan of Discoms for FY'17 to FY'19 is given in table below:

Table 51: Capital expenditure Plan (Rs. Crores)

Name of Scheme	East Discom		
	FY '17	FY '18	FY '19
ST&D (GoMP)	220	339	431
Feeder Separation Scheme	112	348	234
New Agricultural Pumps	76	103	105
Renovation of 33/11kV SS & DTR Metering	48	36	6
RAPDRP	40	10	0
RGGVY	100	169	185
DDUGVY	32	168	200
DDUGVY Phase II	0	0	0
IPDS	52	171	226
Coversion of TC to PC	251	572	636
Procurement of DTR against failure	2	29	7
Procurement of smart meters	16	84	97
Balance Urban Households Connections (147509 no) not covered elsewhere	0	0	0
Total	950	2,029	2,126
Name of Scheme	Central Discom		
	FY '17	FY '18	FY '19
SYSTEM STRENGTHENING	-	-	-
FEEDER SEPARATION	196	209	53
NEW PUMP CONNECTION	163	288	312
ADB-II	11	5	-
ADB-III	-	-	-
RGGVY	80	182	213
RAPDRP PART A	-	-	-
RAPDRP PART B	10	4	-

HUDCO		-	-
IPDS	68	184	67
DDUGJY	126	463	175
ST&D (GoMP)	81	143	138
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	63	99	109
Procurement of Distribution Transformers against Failure	23	66	86
Procurement of Smart Meters	14	21	23
Total	835	1,666	1,176
	Name of Scheme	West Discom	
		FY '17	FY '18
ADB		49	91
TSP and SCSP		46	99
GOMP (Equity)		11	110
FSP - ADB Loan		21	9
Grant Scheme (Govt Contribution)		27	11
Mukyamantri Sthai Krishi Puump Connection Scheme		72	145
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution)		51	685
Transformer failure reduction Scheme		35	51
Procurement of Smart Meters		14	34
RAPDRP (GOI)		79	34
JBIC		-	-
Others (New EAP)		-	-
RGGVY		49	182
IPDS		102	166
DDUGVY		73	220
Central Govt. Assistance (FS)		-	-
REC(Departmental Works)		-	-
Equity for Nepa Ltd, Napanagar		-	-
Total		628	1,837
			1,628

6.2 Scheme Wise Capitalization

Following is the proposed scheme wise Capitalization Plan of Discoms:

Table 52: Scheme Wise Capitalization (Rs. Crores)

Name of Scheme	East Discom		
	FY '17	FY '18	FY '19
Opening CWIP	556.73	334.04	222.69
ST&D (GoMP)	110	236	361
Feeder Separation Scheme	56	208	244
New Agricultural Pumps	38	74	99
Renovation of 33/11kV SS & DTR Metering	24	32	23
RAPDRP	20	17	11
RGGVY	50	115	163
DDUGVY	16	94	157
DDUGVY Phase II	-	-	-

IPDS	26	101	175
Coversion of TC to PC	126	361	540
Procurement of DTR against failure	1	15	13
Procurement of smart meters	8	47	77
Balance Urban Households Connections (147509 no) not covered elsewhere	-	-	-
Total	1,032	1,633	2,084
Name of Scheme		Central Discom	
		FY '17	FY '18
SYSTEM STRENGTHING	-	-	-
FEEDER SEPERATION	98	163	128
NEW PUMP CONNECTION	81	193	275
ADB-II	6	6	4
RGGVY	40	115	177
RAPDRP PART A	-	-	-
RAPDRP PART B	5	5	3
HUDCO	-	-	-
IPDS	34	112	102
DDUGJY	63	269	252
Others	-	-	-
ST&D (GoMP)	41	96	128
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	32	68	97
Procurement of Distribution Transformers against Failure	12	40	67
Procurement of Smart Meters	7	15	20
Capitalisation out of CWIP	113	113	113
Total	531	1,197	1,368
Name of Scheme		West Discom	
		FY '17	FY '18
ADB	12	35	43
TSP and SCSP	11	36	67
GOMP (Equity)	3	30	71
FSP - ADB Loan	5	8	8
Grant Scheme(Govt. Contribution)	7	10	10
New Agricultural pumps	-	-	-
Mukyamantri Sthai Krishi pump Connection Scheme (Govt. Contribution)	18	54	100
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution)	13	184	296
Transformore failuer reduction Schenme	9	21	35
Procurement of Smart Meters	4	12	27
RAPDRP (GOI)	20	28	28
JBIC	-	-	-
Others (New EAP)	-	-	-
RGGVY	12	58	87
IPDS	25	67	111
DDUGVY	18	73	143
Central Govt. Assistance (FS)	-	-	-
REC(Departmental Works)	-	-	-
Equity for Nepa Ltd, Napanagar	-	-	-
Capitalization of opening CWIP	363	363	363

Total		520	979	1,386
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6.3 CWIP

Following table shows the year wise bifurcation of CWIP of the three Discoms.

Table 53: CWIP (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Opening Balance of CWIP	1,114	1,033	1,428	567	871	1,340	1,816	1,924	2,781
Fresh Investment during the year	950	2,029	2,126	835	1,666	1,176	628	1,837	1,628
Investment capitalized	1,032	1,633	2,084	531	1,197	1,368	520	979	1,386
Closing Balance of CWIP	1,033	1,428	1,470	871	1,340	1,148	1,924	2,781	3,023

6.4 Fixed Assets Addition

The year wise fixed assets addition is as follows:

Table 54: Fixed Assets Addition (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Land & land rights	0	0	0	0	0	0	0	0	0
Buildings	10	15	20	5	10	12	12	20	28
Hydraulic works	0	0	0	0	0	0	0	0	0
Other civil works	0	0	0	0	0	0	0	0	0
Plant & machinery	321	508	648	174	393	450	165	287	391
Lines, cables, networks	594	941	1200	291	655	749	277	479	654
Vehicles	0	0	0	0	0	0	0	0	0
Furniture & fixtures	0	0	0	0	0	0	0	1	1
Office equipments	4	6	8	16	37	42	35	61	84
RGGVY	103	163	208	44	100	114	30	131	230
Intangible Assets									
Total	1,032	1,633	2,084	531	1,197	1,368	520	979	1,386

7. Other Costs/ Income – Discoms

7.1. Depreciation

According to the applicable norms, Discoms have developed detailed depreciation model based on rates specified by the Hon’ble commission in annexure-II of said regulation. The depreciation during the year so worked out for FY’17 till FY’19 is shown below:

Table 55: Depreciation – as per regulation (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Land under Lease	0	0	0	0	0	0	0	0	0
Building	2	2	3	3	3	3	3	4	4
Hydraulic Works	0	0	0	1	1	1	0	0	0
Other Civil Works	0	0	0	0	0	0	0	0	0
Plant & Machinery	80	98	129	136	151	138	86	93	103
Line Cable Networks etc.	168	193	249	170	154	184	110	123	140
Vehicles	0	0	0	0	0	0	0	0	0
Furniture & fixtures	0	0	0	0	0	0	0	0	0
Office Equipments	4	5	5	9	10	14	3	5	8
RGGVY	23	26	26	26	30	36	23	26	32
Intangible Assets	0	0	0				2	2	2
Total	278	324	412	345	349	376	228	254	291

7.2. Interest and Finance Charges

7.2.1. Interest on Project Loans

Regulation 31 provides the method of calculation of interest and finance charges on loan capital.

The methodology adopted for calculating Interest and Finance charges on project loan in tariff order FY’16 has been adopted for projecting the interest and finance charges on project loan. The details are elaborated in following table:

Table 56: Interest on Project Loans (Rs. Cr.)

Particulars	East Discom		
	FY '17	FY '18	FY '19
1. Opening balance of GFA identified as funded through debt	1,202	1,390	1,627
2. Addition to GFA during the year	1,032	1,633	2,084
3. Consumer contribution during the year/ Asset Constructed Under RGGVY During the year	366	832	945
4. Net addition to GFA during the year (2-3)	666	802	1,140
5. 30% of addition to net GFA considered as funded through equity (5=4*30%)	200	241	342
6. Balance addition to net GFA during the year funded through debt (6=4-5)	466	561	798

7. Debt Repayment due during the year (equal to the depreciation claim)	278	324	412
8. Closing balance of GFA identified as funded through debt	1,390	1,627	2,013
9. Average of loan balances	1,296	1,509	1,820
10. Weighted average rate of interest % on all loans	11.89%	11.91%	9.96%
11. Total Interest on project loans(11=9*10)	154	180	181
12. Finance Charges	11	12	12
13. Total Interest on project loan and Finance charges	166	191	193
Particulars	Central Discom		
	FY '17	FY '18	FY '19
1. Opening balance of GFA identified as funded through debt	2,605	2,632	3,120
2. Addition to GFA during the year	531	1,197	1,368
3. Consumer contribution during the year/ Asset Constructed Under RGGVY During the year	-	-	-
4. Net addition to GFA during the year (2-3)	531	1,197	1,368
5. 30% of addition to net GFA considered as funded through equity (5=4*30%)	159	359	410
6. Balance addition to net GFA during the year funded through debt (6=4-5)	372	838	957
7. Debt Repayment due during the year (equal to the depreciation claim)	345	349	376
8. Closing balance of GFA identified as funded through debt	2,632	3,120	3,702
9. Average of loan balances	2,618	2,876	3,411
10. Weighted average rate of interest % on all loans	10.19%	9.93%	9.93%
11. Total Interest on project loans(11=9*10)	268	310	367
12. Finance Charges	21	19	17
13. Total Interest on project loan and Finance charges	290	329	385
Particulars	West Discom		
	FY '17	FY '18	FY '19
1. Opening balance of GFA identified as funded through debt	1,137	1,274	1,705
2. Addition to GFA during the year	520	979	1,386
3. Consumer contribution during the year/ Asset Constructed Under RGGVY During the year	-	-	-
4. Net addition to GFA during the year (2-3)	520	979	1,386
5. 30% of addition to net GFA considered as funded through equity(5=4*30%)	156	294	416
6. Balance addition to net GFA during the year funded through debt(6=4-5)	364	686	970
7. Debt Repayment due during the year (equal to the depreciation claim)	228	254	290
8. Closing balance of GFA identified as funded through debt	1,274	1,705	2,385
9. Average of loan balances	1,205	1,490	2,045
10. Weighted average rate of interest % on all loans	9.85%	9.93%	9.86%
11. Total Interest on project loans(11=9*10)	119	148	202
12. Finance Charges	10	11	12
13. Total Interest on project loan and Finance charges	129	159	214

7.2.2. Interest on Working Capital

The interest on working capital has been calculated on the basis of provisions of the Regulation and shown in the table given below.

Hon'ble Commission while calculating working capital requirement deducts the amount of closing balance of consumer security deposit from the gross requirement of working capital resulting which the net working capital requirement for the Discoms is coming as negative. The Commission while considering the negative working capital requirement has not allowed any amount towards interest on working capital. Further it is prayed to the commission that consumer security deposit received during the year can only be used as one of the component to calculate working capital, therefore it is prayed to the commission to consider the consumer security deposit received during the year only for the purpose of computing working capital requirement. Thus the licensees pray to allow expenses on account of Working Capital interest after deducting the consumer security deposit received only during the year.

Table 57: Interest on Working Capital (Rs. Cr.)

	Particulars	East Discom		
		FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	9.77	11.40	13.99
B)	O&M expenses			
	R&M expenses	141.90	165.63	203.20
	A&G expense	172.67	183.97	197.33
	Employee expenses	922.09	997.25	1,077.75
B)i)	Total of O&M expenses	1,236.66	1,346.85	1,478.28
B)ii)	1/12th of total	103.06	112.24	123.19
C)	Receivables	0.00	0.00	0.00
C)i)	Annual Revenue from wheeling charges**	0.00	0.00	0.00
C)ii)	Receivables equivalent to 2 months average billing of wheeling charges	0.00	0.00	0.00
D)	Total Working capital	112.82	123.64	137.18
	(A), B) ii), C) ii))			
E)	Rate of Interest *	14.05%	14.05%	14.05%
F)	Interest on Working capital	15.85	17.37	19.27
	For Retail Sale activity			
	Particulars	FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	0.51	0.60	0.74
B)	Receivables	0.00	0.00	0.00
B)i)	Annual Revenue from Tariff and charges**	7,869.66	8,376.49	9,040.01
B)ii)	Receivables equivalent to 2 months average billing	1,311.61	1,396.08	1,506.67
C)	Power Purchase expenses	7,310.71	7,749.42	8,428.85
C)i)	1/12th of power purchase expenses	609.23	645.79	702.40
D)	Consumer Security Deposit	455.72	469.42	483.54
E)	Total Working capital (A+B ii) - C i) - D)	247.18	281.47	321.46
F)	Rate of Interest *	14.05%	14.05%	14.05%
G)	Interest on Working capital	34.73	39.55	45.17
	Total Interest on working capital from wheeling activities	15.85	17.37	19.27
	Total Interest on working capital from retail activities	34.73	39.55	45.17

	Net Interest from working capital	50.58	56.92	64.44
	Particulars	Central Discom		
		FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	10.40	11.82	12.66
B)	O&M expenses			
	R&M expenses	171.68	183.89	211.41
	A&G expense	98.10	105.36	112.68
	Employee expenses	934.49	1,012.34	1,093.52
B)i)	Total of O&M expenses	1,204.28	1,301.59	1,417.60
B)ii)	1/12th of total	100.36	108.47	118.13
C)	Receivables			
C)i)	Annual Revenue from wheeling charges**	0.00	0.00	0.00
C)ii)	Receivables equivalent to 2 months average billing of wheeling charges	0.00	0.00	0.00
D)	Total Working capital	110.76	120.28	130.79
	(A), (B) ii), (C) ii))			
E)	Rate of Interest *	14.05%	14.05%	14.05%
F)	Interest on Working capital	15.56	16.90	18.38
	For Retail Sale activity			
	Particulars	FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	0.55	0.62	0.67
B)	Receivables			
B)ii)	Annual Revenue from Tariff and charges**	9,114.19	9,874.88	10,796.10
B)ii)	Receivables equivalent to 2 months average billing	1,519.03	1,645.81	1,799.35
C)	Power Purchase expenses	7,671.09	8,175.42	8,877.32
C)i)	1/12th of power purchase expenses	639.26	681.28	739.78
D)	Consumer Security Deposit	764.87	832.00	899.13
E)	Total Working capital (A+B ii) - C i) - D)	115.45	133.15	161.11
F)	Rate of Interest *	14.05%	14.05%	14.05%
G)	Interest on Working capital	16.22	18.71	22.64
	Total Interest on working capital from wheeling activities	15.56	16.90	18.38
	Total Interest on working capital from retail activities	16.22	18.71	22.64
	Net Interest from working capital	31.78	35.61	41.01
	Particulars	West Discom		
		FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	7.16	7.85	9.16
B)	O&M expenses			
	R&M expenses	123.48	140.38	165.90
	A&G expense	142.79	152.72	162.72
	Employee expenses	949.85	1,028.66	1,112.98
B)i)	Total of O&M expenses	1,216.12	1,321.76	1,441.60
B)ii)	1/12th of total	101.34	110.15	120.13
C)	Receivables			
C)i)	Annual Revenue from wheeling charges**	3.26	3.26	3.26
C)ii)	Receivables equivalent to 2 months average billing of wheeling charges	0.54	0.54	0.54
D)	Total Working capital	109.05	118.54	129.83

	(A), B) ii), C) ii))			
E)	Rate of Interest *	14.05%	14.05%	14.05%
F)	Interest on Working capital	15.32	16.66	18.24
	For Retail Sale activity			
	Particulars	FY '17	FY '18	FY '19
A)	1/6th of annual requirement of inventory for previous year	1.79	1.96	2.29
B)	Receivables			
B)i)	Annual Revenue from Tariff and charges**	9,727.03	10,204.65	10,793.71
B)ii)	Receivables equivalent to 2 months average billing	1,621.17	1,700.78	1,798.95
C)	Power Purchase expenses	7,413.73	7,808.19	8,415.60
C)i)	1/12th of power purchase expenses	617.81	650.68	701.30
D)	Consumer Security Deposit	768.26	807.34	854.83
E)	Total Working capital (A+B ii) - C i) - D)	236.89	244.71	245.11
F)	Rate of Interest *	14.05%	14.05%	14.05%
G)	Interest on Working capital	33.28	34.38	34.44
	Total Interest on working capital from wheeling activities	15.32	16.66	18.24
	Total Interest on working capital from retail activities	33.28	34.38	34.44
	Net Interest from working capital	48.60	51.04	52.68

7.2.3. Interest on Consumer Security Deposit

Interest on consumer security deposit has been paid to the consumers according to the Hon'ble Commission's regulation for security deposit. The table below shows the projections of Interest on Consumer Security Deposit:

Table 58: Interest on consumer security deposit as per regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Interest on Consumer Security Deposit	35	36	37	59	64	70	60	63	66

As per regulations, interest on consumer security deposit has been calculated as per the bank rate of RBI as on 1st April of relevant year which is at present 7.75% p.a.

7.3. *Other Income*

The main components of Non-Tariff Income are meter rent, wheeling charges, supervision charges, sale of scrape and miscellaneous charges from consumers. Meter rent and miscellaneous charges have been projected as a percentage of tariff income. Discoms have projected their Other Income based on the actual revenue received during the previous years. The following table summarizes the same:

Table 59: Other Income (Rs. Cr.)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Income from Investment, Fixed & Call Deposits	2	4	4	36	43	39	35	25	25
Interest on loans and Advances to staff	0	0	0	0	0	0	0	0	0
Interest on Advances to Suppliers / Contractors	6	6	6	9	9	9	3	3	3
Income/Fee/Collection against staff welfare activities	0	0	0	0	0	0			
Miscellaneous receipts	63	61	62	9	10	9	31	37	34
Misc. charges from consumers (meter rent, etc)	37	38	39	84	88	86	53	55	54
Deferred Income (Consumer Contribution)	0	0	0						
Wheeling charges	0	0	0	0	0	0	3	3	3
Income from Trading other than Power (i.e sale of scrape, tender form)	25	30	32				19	12	12
Supervision charges							16	16	18
Recovery from theft	9	9	9						
Others	28	29	29	1	1	1			
Total	170	177	182	139	150	144	160	151	148

7.4. *Return on Equity*

Based on the provision of regulation, the calculation of return on equity is as follows:

Table 60: Return on equity as per regulation (Rs. Crores)

Sr. no.	Particulars	East Discom		
		FY '17	FY '18	FY '19
A	Gross Fixed Assets at the beginning of year (net of consumer contributions)	2,529	2,917	3,395
A1	Opening balance of GFA identified as funded through equity	1,327	1,527	1,767
A2	Opening balance of GFA identified as funded through debt	1,202	1,390	1,627
B	Proposed capitalisation of assets as per the investment plan (net of consumer contribution)	666	802	1,140
B1	Proportion of capitalised assets funded out of equity, internal reserves	200	241	342
B2	Balance Proportion of capitalised assets funded out of project loans (B - B1)	466	561	798
C1	Normative additional equity (30% of B)	200	241	342
C2	Normative additional debt (70% of B)	466	561	798
D1	Excess / shortfall of additional equity over normative (B1-C1)	0	0	0
D2	Excess / shortfall of additional debt over normative (B2-C2)	0	0	0
E	Equity eligible for Return (A1+(C1/2)) OR (A1+(B1/2)), whichever is lower	1,427	1,647	1,938
	Return on Equity (16% on E)	228	264	310
Sr. no.	Particulars	Central Discom		
		FY '17	FY '18	FY '19
A	Gross Fixed Assets at the beginning of year (net of consumer contributions)	7,464	7,995	9,192
A1	Opening balance of GFA identified as funded through equity	1,591	1,716	2,041
A2	Opening balance of GFA identified as funded through debt	5,225	5,597	6,434
B	Proposed capitalisation of assets as per the investment plan (net of consumer contribution)	417	1,083	1,254
B1	Proportion of capitalised assets funded out of equity, internal reserves	860	597	366
B2	Balance Proportion of capitalised assets funded out of project loans (B - B1)	-443	486	888
C1	Normative additional equity (30% of B)	125	325	376
C2	Normative additional debt (70% of B)	292	758	878
D1	Excess / shortfall of additional equity over normative (B1-C1)	735	272	-10
D2	Excess / shortfall of additional debt over normative (B2-C2)	-735	-272	10
E	Equity eligible for Return (A1+(C1/2)) OR (A1+(B1/2)), whichever is lower	1,653	1,878	2,224
	Return on Equity (16% on E)	265	301	356

Sr. no.	Particulars	West Discom		
		FY '17	FY '18	FY '19
A	Gross Fixed Assets at the beginning of year (net of consumer contributions)	2,435	2,727	3,453
A1	Opening balance of GFA identified as funded through equity	1,298	1,454	1,748
A2	Opening balance of GFA identified as funded through debt	1,137	1,274	1,705
B	Proposed capitalisation of assets as per the investment plan (net of consumer contribution)	520	979	1,386
B1	Proportion of capitalised assets funded out of equity, internal reserves	156	294	416
B2	Balance Proportion of capitalised assets funded out of project loans (B - B1)	364	686	970
C1	Normative additional equity (30% of B)	0	0	0
C2	Normative additional debt (70% of B)	0	0	0
D1	Excess / shortfall of additional equity over normative (B1-C1)	156	294	416
D2	Excess / shortfall of additional debt over normative (B2-C2)	364	686	970
E	Equity eligible for Return (A1+(C1/2)) OR (A1+(B1/2)), whichever is lower	1,376	1,601	1,956
	Return on Equity (16% on E)	220	256	313

7.5. *Bad and Doubtful Debts*

It is submitted that the Commission as per its Tariff Regulations has allowed bad and doubtful debts to the extent of 1% of revenue from sale of power. The same provisions have been provided in the previous year's MYT regulations also. However, the Commission may observe that the Discoms have actually been writing off bad debts of amount more than the prescribed 1% of revenue. Based on the actual bad debts written off during the past years, the Discoms have projected the following as bad and doubtful debts that may arise during the ensuing years.

Table 61: Bad and Doubtful Debts – As per regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Bad and Doubtful Debts	78	84	90	91	99	108	96	101	106

8. Income/Expenses of MPPMCL

As per item No.8 (ii) of State Govt. Notification No.2260-F-3-24-2009-XIII dt. 19/03/2013, M.P. Power Management Company Limited has been supplying power to the Discoms at the tariff determined/approved by MPERC and its own expenses are being distributed on actual basis in proportion to the energy drawn by respective Discoms.

MPPMCL has been operating on “No Profit and No Loss” basis. Therefore, till now at the end of each financial year, all the credits received by MPPMCL which formed the part of income of MPPMCL (shown as “other income” in Form S-1) were being passed on to the Discoms in proportion to the energy drawl by respective Discoms as a part of their Power Purchase Costs. The major components of Annual Revenue Requirement of MPPMCL are detailed in this section.

8.1 Income

8.1.1 Revenue from operations (including Revenue Subsidy)

The revenue from sale of electricity is taken by Discoms in their ARR therefore it is not taken in the ARR of M.P. Power Management Company Ltd. However, Deemed sale to Rajasthan of Rs 192.77 crs has been taken in FY 2015-16 as the credit for the same could not be passed to the Discoms in the monthly bills. However, from FY 2016-17 it is assumed that the same would be passed to the Discoms in the regular monthly bills and thus revenue from operations is NIL from FY 2016-17 onwards.

8.1.2 Other Income

For FY 2015-16 other income is Rs 339.85 crs of MPPMCL .The major components which form part of other income are mainly the rebate received from the long term power suppliers against timely payment made and credit on account of short term & medium term open access received from PGCIL. The details of other income of MPPMCL received in FY 15-16 are as follows:

Table 62: Other Income (Rs. Cr.)

Particulars	Amount(in Crs)
i) Credit on A/c of open access share from long term transmission service providers (PGCIL)	132.80
ii) rebate received on a/c of timely/prompt payments	187.39
iii) Generation based incentive	4.97
iv) Interest received (Includes interest on commitment advances)	2.45
v) Common Expense recoverable	5.07
v) Other Income	7.17
TOTAL	339.85

The other income for FY 2016-17 and onwards is worked out by increasing the income of FY 2015-16 by 10%.

8.2 Expenses

In the Discom-wise ARR, the Discoms have considered power purchase cost station-wise and their own O&M Expenses, Depreciation, Interest Charges etc. as per the provisions of MPERC regulations.

However, there are certain costs pertaining to power purchase (as detailed below) which could not be considered by the Discoms being not in their control/action. Such costs are therefore included in the power purchase costs of Discoms as MPPMCL specific costs and are taken into consideration in the ARR of MPPMCL, the details of which are given hereunder:-

8.2.1 Energy Purchase

For FY 2015-16 it includes:

- a. Bills of power purchase of Rs. 205.66 crs.
- b. Liability for banking of energy of Rs (71.28) crs.
- c. Bills of Transmission charges of Rs. 2.15 crs.
- d. Trading margin on banking of power of Rs. 1.74 crs.

(a) Bills of Power Purchase:

FY 2014-15 includes bills of generators listed above, which could not be passed to Discoms through monthly bills. From FY 2015-16 onwards all the bills are likely to be passed through the monthly bills to the Discoms, hence will be considered in ARR of Discoms.

(b) Liability for banking:

Beginning from the year 2007-08, MPPMCL has started the practice of exchange/banking of energy with third parties outside the State of Madhya Pradesh whereby during availability of surplus power in the state, energy is supplied to the parties facing shortage of power and in case of power deficit in the state the banked energy is taken by the Company. The Banking and Exchange transactions do not involve any payment or receipts in terms of money for the power transacted except the charges related to open access and trading margin payable to the party through which such transaction is facilitated.

(c) Liability for Banking of energy of Rs. (71.28) Crs:

The Company has a liability to return 517.94 MU of banked energy, received during 2015-16, which translates into a financial liability of about Rs 186.56 Cr considering cost per unit of Rs. 3.60 i.e. the average power purchase rate for 2015-16 calculated on the basis of total power purchase cost except banking for FY 2015-16. During FY 2015-16, the Company had returned 743.50 MU of banked power received in 2014-15. This was translated into a financial liability of Rs.257.84 Cr @ Rs 3.47 per unit which was the average cost of power purchase for the year 2014-15. Therefore, a net banking liability of Rs (71.28) crs. is booked in FY 2015-16. For FY 16-17, the liability for banking of energy is calculated as follows:

Table 63: Other Income (Rs. Cr.)

Particulars	Rs Crs
Mus to be returned at the end of FY 2015-16	517.94
Mus to be returned at the end of FY 2016-17 (decreasing the units of FY 2015-16 by 10%)	466.15
Average purchase cost for F.Y. 15-16	3.60
Average purchase cost for F.Y. 16-17 (Increasing the rate of FY 2015-16 by 10%)	3.96
Total amount of Banking Liability for FY 16-17	184.59
Credit for 517.91 Mus billed to Discoms in 2015-16 @ 3.60 Rs/unit	186.56
Net liability to be passed to Discoms for FY 16-17	-1.97
For FY 17-18 (Decreasing cost for FY 16-17 by 10%)	-2.16
For FY 18-19 (Decreasing cost for FY 17-18 by 10%)	-2.38

(d) Interstate Transmission charges

In FY 2015-16, some bills of transmission utilities amounting to Rs 2.15 could not be passed to Discoms through monthly bills. From FY 2016-17 onwards all such bills are likely to be passed through the monthly bills to the Discoms, hence will be considered in ARR of Discoms.

8.2.2. Power procurement cost:

Apart from the direct bill of power purchase as per REA/SEA and other heads under energy purchase, some other expenses like open access charges etc on banking and short term power purchase & sale have been included under this head.

The demand supply gap on day to day basis is managed through short term power procurement and in case of surplus energy, the same is disposed off. Therefore, short term sale of power and short term purchase of power are important activities undertaken to meet the power demand of the State. Similarly, MPPMCL makes arrangements for energy banking with various utilities throughout the year to meet the uneven demand of power in the State during monsoon season and rabi period. Energy banking is a barter system, wherein units of energy are exchanged without any financial transaction between the partners in banking arrangement, although some operational expenses like trading margin, open access charges, RLDC/SLDC permission charges etc. are incurred. The charges towards "banking of energy" reflect the notional cost of the net liability of energy to be returned in the subsequent year and it is based on average power purchase cost of the financial year concerned.

For all such short time arrangements for arranging power and disposing off power, the cost of "open access charges" has also to be paid up to the delivery point.

All the above mentioned costs are included in the item 5 under the head "purchase of power from other sources and Inter State Transmission charges" in Form S-1 submitted herewith in respect of MPPMCL which contains relevant explanatory notes in respect of all the items shown therein.

8.2.3. Depreciation:

Depreciation is calculated as under:

Table 64: Depreciation (Rs. Cr.)

Particulars	FY16	FY17	FY18	FY 19
Fixed assets				
(i) Tangible assets				
Gross Block	86.21	98.15	99.15	100.15
Depreciation*	2.88	3.51	3.26	3.03
(ii) Intangible assets				
Gross Block	2.15	22.05	22.05	22.05
Depreciation**	0.32	1.78	1.60	1.44
Total Depreciation (i + ii)	3.21	5.29	4.86	4.47

*In case of tangible assets, there is assumed to be an addition of Rs. 10.94 crs on account of ERP Hardware in FY 2016-17. This addition is assumed to be in second half of FY 2016-17. Apart from this, an addition of Rs. 1 crs. depreciable @ 10% appox is assumed for FY 2016-17 and onwards.

**In case of intangible assets, there is an addition of Rs. 19.90 crs on account of ERP development in FY 2016-17 in the second half of the year. For FY 2017-18 and onwards, no addition is assumed

8.2.4. Interest and Finance charges for power procurement:

As per the existing power purchase agreements, facility of Letter of Credit is to be provided to power suppliers. The cost towards extending this facility of LC and other bank charges are covered under item "Interest & finance charges" in Form S-1.

Further, interest & Finance charges also include the financing cost towards installment facility in case of power purchase bills, interest due to tariff revision, Bank charges, Guarantee Charges, commitment charges, Stamp duty, processing charges etc. FY 2015-16 these amount to Rs. 56.78 Crs.

Interest paid to NHDC in FY 15-16 is Rs. 50.29 Crs. The total interest payable to NHDC as per the financial arrangement for FY 2016-17 and onwards is as below:-

- FY 2016-17 Rs. 26.49 Crs.
- FY 2017-18 Rs. 35.21 Crs.
- FY 2018-19 Rs. 19.07 Crs.

The interest charges payable to NHDC Ltd from FY 2017-18 onwards is increasing, as an arrangement is proposed to be entered into with NHDC from January 2017 onwards for further providing installment facility of Rs 400 crs

The other interest and finance charges (other than interest to NHDC) for FY 2015-16 is Rs. 6.49 crs. (i.e. Rs.56.78 crs - Rs.50.29 crs.). For FY 16-17 and onwards the interest and finance charges (other than interest to NHDC) are taken by increasing the expenses of FY 15-16 by 7.93% p.a

8.2.5. Repairs and Maintenance:

For FY 2015-16 Repairs and Maintenance expenses consist of expense of Rs. 3.19 cr. The Repairs and Maintenance expenses for FY 2016-17 and onwards is taken by increasing the expenses of FY 2015-16 by 7.93% p.a.

8.2.6. Salary, A&G and Asset management expenses:

(a) Employee expenses:

The employee costs for FY 15-16 is Rs. 55.75 crs. However, the employee cost is lower in FY 15-16 due to reversal of salary of Rs 5.32crs paid for SMHPCL project from FY 2006-07 to FY 2015-16. This was a onetime activity and hence no reversal will be there from FY 2016-17 onwards, as such the employee expenses from FY 2016-17 onwards is taken by increasing the gross expenses of FY 2015-16 of Rs 61.07crs (55.75crs + 5.32crs) by 3%. From FY 17-18 onwards employee expenses are taken by increasing the expenses of FY 16-17 by 3%

(b) Administration and General Expenses:

It includes expenses on sale of power i.e. in case of short term sale of energy by MPPMCL to third parties, MPPMCL incurs:

- i) Open Access Charges to the point of delivery as per agreement.
- ii) Prompt payment rebate to the purchasers as per PPA.

Similarly, in case of sale of power through the power exchanges, MPPMCL bears the:

- i) Transmission open access charges
- ii) Fee of Rs.0.02 per unit payable to the concerned exchange for facilitating trading through the exchange

The total Administration and General expenses for FY 15-16 amounts to Rs 37.83 crs. The administration expenses for FY 16-17 and onwards is taken by increasing the expenses of FY 15-16 by 7.93% p.a.

The rate (7.93% p.a.) by which expenses have been increased each year for projection is equal to the inflation rate given in clause 34.6 of the MPERC regulation " Regulation for the control period from FY 13-14 to FY 15-16 on terms and condition for determination of tariff for supply and wheeling of electricity and methods of principles for fixation of charges."

9. Annual Revenue Requirement

9.1. Annual Revenue Requirement of MPPMCL

The table below details the Annual Revenue Requirement of MPPMCL. The Net Expenses are included as a part of Power Purchase Costs of Discoms.

Table 65: Summary of ARR for MPPMCL (Rs. Cr.)

Particulars	FY '17	FY '18	FY '19
Purchase of Power	(0.09)	(0.14)	(0.19)
Inter-State Transmission Charges	50.19	54.18	58.47
Depreciation Expenses	5.29	4.86	4.47
Interest and Finance Charges	33.49	42.77	27.23
Repairs and Maintenance Expenses	3.44	3.72	4.01
Employee Expenses	62.90	64.79	66.73
A&G Expenses	40.83	44.07	47.57
Other Expenses	2.29	2.47	2.67
Total Expenses	198.36	216.72	238.39
Revenue from Operations	373.84	411.22	452.34
Profit/(Loss) for the period	(175.48)	(194.50)	(213.95)

9.2. Annual Revenue Requirement of Discoms

Summary of the Aggregate Revenue Requirement of the Discoms calculated on the basis of provisions of the regulation (including the impact of true up costs of Discoms for FY 2006-07; Transco true up of FY 2014-15 and MP Genco true-up for FY 2014-15) is detailed in the table on next page.

Table 66: Summary of ARR of Discoms as per the Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom			MP State		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Revenue												
Revenue from sale of power (Incl of tariff subsidy)	7,870	8,376	9,040	8,212	9,114	9,875	9,567	10,054	10,645	25,649	27,545	29,560
Other income (excluding DPS)	170	177	182	139	150	144	160	151	148	468	478	475
Total Revenue or Income	8,040	8,553	9,222	8,351	9,264	10,019	9,727	10,205	10,794	26,117	28,022	30,035
Expenditure												
Purchase of Power cost (Ex-Bus, including MPPMCL costs allocated to Discoms)	6,172	6,538	7,143	6,510	6,939	7,548	7,414	7,808	8,398	20,096	21,285	23,089
Inter-State Transmission charges	443	452	461	428	437	445	563	574	586	1,434	1,463	1,492
Intra-State Transmission charges (MPPTCL and SLDC - incl. Terminal Benefits)	696	760	824	733	800	868	900	982	1,066	2,328	2,541	2,758
Repairs and Maintenance	142	166	203	172	184	211	123	140	166	437	490	581
Employee costs	922	998	1,078	934	1,012	1,094	950	1,029	1,113	2,807	3,039	3,285
Administration and General expenses (incl. MPERC fees)	173	184	197	98	105	113	143	153	163	414	442	473
Other Expenses								-	-	-	-	-
Bad and Doubtful Debts	79	84	90	91	99	108	96	101	106	266	283	305
Less :Expenses Capitalised										-	-	-
Total Expenses	8,626	9,180	9,998	8,967	9,576	10,387	10,188	10,787	11,598	27,781	29,543	31,982
PBDIT	(587)	(627)	(776)	(616)	(311)	(367)	(461)	(582)	(804)	(1,664)	(1,521)	(1,947)
Depreciation and Related debits	278	324	412	345	349	376	228	254	291	850	927	1,079
PBIT	(865)	(951)	(1,188)	(961)	(661)	(743)	(689)	(836)	(1,095)	(2,514)	(2,448)	(3,026)
Interest & Finance Charges	251	285	295	381	429	496	237	272	333	869	986	1,124
Profit/Loss before Tax and ROE	(1,116)	(1,236)	(1,483)	(1,341)	(1,090)	(1,239)	(926)	(1,109)	(1,427)	(3,383)	(3,434)	(4,150)
Tax	-	-	-	-	-	-	-	-	-	-	-	-
RoE	228	264	310	265	301	356	220	256	313	713	820	979
Profit/Loss after Tax and RoE	(1,344)	(1,499)	(1,794)	(1,606)	(1,390)	(1,595)	(1,146)	(1,365)	(1,740)	(4,096)	(4,254)	(5,129)
ARR (Income from Sale of power+Gap)	9,214	9,876	10,834	9,818	10,504	11,470	10,713	11,419	12,386	29,745	31,799	34,689
Average Cost of supply	6.46	6.47	6.56	6.60	6.56	6.65	6.15	6.19	6.37	6.39	6.39	6.52

Particulars	East Discom			Central Discom			West Discom			MP State		
	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19	FY '17	FY '18	FY '19
Impact of True-Up Amounts of Past Years												
Impact of True Up - Discom - FY 2006-07		119			136			168			423	
Impact of True Up-Genco-FY 2014-15		(169)			(186)			(207)			-562	
Impact of True Up-Transco - FY 2014-15		123.63			132			158			414	
Total Impact of True Up	-	74	-	-	82	-	-	119	-	-	275	-
Total ARR (Including True Up)	9,214	9,949	10,834	9,818	10,586	11,470	10,713	11,538	12,386	29,745	32,073	34,689
Total Revenue Gap (including True-up)	(1,344)	(1,573)	(1,794)	(1,606)	(1,472)	(1,595)	(1,146)	(1,484)	(1,740)	(4,096)	(4,529)	(5,129)
Average Cost of Supply (including true-up)	6.46	6.52	6.56	6.60	6.61	6.65	6.15	6.26	6.37	6.39	6.45	6.52

10. Terminal Benefits (Pension, Gratuity and Leave Encashment) Provision

The Terminal Benefit of the employees have been calculated as per the provisions of “MPERC (Terms and Conditions for allowing pension and terminal benefits liabilities of personnel of Board and successor entities) regulations, 2012 (G-38 of 2012)” notified in the MP gazette notification dated 20th April 2012. In view of provisions of the MPERC (Terms and Conditions for allowing pension and terminal benefits liabilities of personnel of Board and successor entities) regulations, 2012, Discoms claim both provision as per the rate prescribed in actuary report & actual cash out flow on account of terminal benefits.

According to actuarial valuation the liability as on 31st March 2009 for the three Discoms was determined. In addition to this liability, the Actuary valuation has prescribed the following percentage for the future contribution rate (as a % age of Basic Pay + Grade pay + DA) required to be made by the three Discoms for meeting the liabilities arising due to future service:

Table 67: Future Contribution rate of liability on account of Actuary

Assumption	East Discom				Central Discom				West Discom			
	Pension	Gratuity	Leave Encashment	Total	Pension	Gratuity	Leave Encashment	Total	Pension	Gratuity	Leave Encashment	Total
Contribution rate	21.73%	4.95%	0.77%	27.45%	20.15%	4.56%	0.54%	25.25%	20.28%	4.67%	0.59%	25.54%
Discount rate	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%

According to the above prescribed methodology, liability for FY 2016-17 to FY 2018-19 has been worked out and this liability is pertaining to all the employees of licensee, eligible for such benefits. Terminal Benefits Provisions calculations are provided in table below:

Table 68: Calculation of Terminal Benefits Provisions (Rs. Crores)

Particular	FY 2017 -East Discom				FY 2017 -West Discom				FY 2017 -Central Discom				FY 2017 -MP State			
	Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment	Total
Provision as on 31.03.2016	1,401.00	282.00	66.00	1,749.00	965.32	204.42	68.08	1,237.82	1,213.00	199.00	71.00	1,483.00	3,579.32	685.42	205.08	4,469.82
Discount @7%	98.07	19.74	4.62	122.43	67.57	14.31	4.77	86.65	84.91	13.93	4.97	103.81	250.55	47.98	14.36	312.89
Current Service cost	193.26	44.02	6.85	244.13	188.79	43.47	5.49	237.76	167.10	37.82	4.48	209.40	549.15	125.31	16.82	691.28

Total Provision for FY 17	291.33	63.76	11.47	366.56	256.37	57.78	10.26	324.41	252.01	51.75	9.45	313.21	799.70	173.29	31.17	1,004.17
Particular	FY 2018 -East Discom				FY 2018 -West Discom				FY 2018 -Central Discom				FY 2018 - MP State			
	Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment		Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment	Total
Provision as on 31.03.2017	1,692.33	345.76	77.47	2,115.56	1,221.69	262.20	78.34	1,562.23	1,465.01	250.75	80.45	1,796.21	4,379.03	858.71	236.26	5,473.99
Discount @7%	118.46	24.20	5.42	148.09	85.52	18.35	5.48	109.36	102.55	17.55	5.63	125.73	306.53	60.11	16.54	383.18
Current Service cost	209.10	47.63	7.41	264.15	204.51	47.09	5.95	257.56	181.17	41.00	4.86	227.02	594.79	135.73	18.21	748.73
Total Provision for FY 18	327.57	71.84	12.83	412.23	290.03	65.45	11.43	366.91	283.72	58.55	10.49	352.76	901.32	195.84	34.75	1,131.91
Particular	FY 2019 -East Discom				FY 2019-West Discom				FY 2019 -Central Discom				FY 2019 - MP State			
	Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment		Pension	Gratuity	Leave encashment	Total	Pension	Gratuity	Leave encashment	Total
Provision as on 31.03.2018	2,019.89	417.60	90.30	2,527.79	1,511.72	327.65	89.77	1,929.15	1,748.73	309.30	90.93	2,148.96	5,280.34	1,054.55	271.01	6,605.90
Discount @7%	141.39	29.23	6.32	176.95	105.82	22.94	6.28	135.04	122.41	21.65	6.37	150.43	369.62	73.82	18.97	462.41
Current Service cost	226.08	51.50	8.01	285.59	221.34	50.97	6.44	278.74	195.77	44.30	5.25	245.32	643.18	146.77	19.70	809.65
Total Provision for FY 19	367.47	80.73	14.33	462.54	327.16	73.90	12.72	413.78	318.18	65.95	11.61	395.74	1,012.81	220.59	38.67	1,272.06

The Discoms are mandated to contribute an annual contribution towards the Trust for the purpose of Terminal Benefits. An amount of Rs. 4,508 crores is expected to have got accumulated until FY2016. However, the Discoms have not been able to contribute the same towards the Trust as the Hon'ble Commission has not allowed any amount for the same. The table given below indicates the actual provisions that are to be made by the Discoms against this liability in the annual accounts of the company from FY 2009-10 till FY 2015-16 and projected for FY 2016-17 and FY 2017-18.

Table 69: Terminal Benefits Provisions Liability for Discoms (Rs. Cr.)

Particular	East Discom				West Discom				Central Discom				MP State			
	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability

Particular	East Discom				West Discom				Central Discom				MP State			
	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability	Pension	Gratuity	Leave Encashment	Total Liability
Past Service Liability as determined by actuary (From 1.6.2005 to 31.3.2009)	362.00	58.00	21.00	441	349	52	20	421	326.00	53.00	21.00	400.00	1,036.76	163.41	61.95	1,262.12
2009-10	101.00	21.00	4.00	126	102	23	3	128	103.00	17.00	7.00	127.00	305.60	61.40	13.96	380.96
2010-11	119.00	25.00	5.00	149	74	17	2	93	80.00	13.00	5.00	98.00	272.64	55.08	12.21	339.93
2011-12	139.00	30.00	6.00	175	79	18	2	99	78.00	13.00	5.00	96.00	295.65	61.36	13.44	370.44
2012-13	157.00	34.00	6.00	197	83	20	10	113	90.00	15.00	6.00	111.00	329.91	68.71	21.94	420.56
2013-14	185.00	40.00	7.00	232	90	23	12	126	170.00	26.00	11.00	207.00	444.72	89.48	30.41	564.61
2014-15	205.00	44.00	8.00	257	94	25	11	130	190.00	39.00	7.00	236.00	489.09	107.85	25.96	622.90
2015-16	133.00	30.00	9.00	172	96	25	7	128	176.00	23.00	9.00	208.00	404.96	78.13	25.21	508.30
Total upto 2016	1,401	282	66	1,749	965	204	68	1,238	1,213	199	71	1,483	3,579	685	205	4,470
2016-17	291	64	11	367	256	58	10	324	252	52	9	313	799.70	173.29	31.17	1,004
2017-18	328	72	13	412	290	65	11	367	284	59	10	353	901.32	195.84	34.75	1,132
Total up 2018	2,020	418	90	2,178	1,512	328	90	1,496	1,749	309	91	1,927	5,280	1,055	271	5,601

The Discoms humbly pray to the Hon'ble Commission to allow at least a nominal amount towards the Trust so as to enable the Discoms to contribute to the Trust and avoid a one-time burden on the Discoms. It is pertinent to mention that such **terminal benefits liabilities provision has not been included in the computation of final Annual Revenue Requirement for Discoms**. Instead, the terminal benefits (Cash Outflow), based on actual trends have been included as part of Intra-State Transmission Charges in the total Power Purchase Costs of Discoms.

11. Power Purchase Cost Adjustment (PPCA)

- 11.1. The Hon'ble Commission in Tariff Order for FY'17 has specified formula for deriving Fuel Cost Adjustment ("FCA") for recovery/adjustment of un-controllable costs due to increase or decrease in the cost of fuel in case of **coal, oil, and gas for generating plants only**. The petitioners in their last year petition also submitted that the then existing PPCA calculation mechanism did not cover the recovery of incremental power purchase, which includes shortage in supply from identified power supply sources in the tariff order requiring distribution licensee to purchase power at higher price from the power market or other sources to meet the demand.
- 11.2. Distribution licensee has to meet the power demand of the consumers, as per the relevant provisions of the Electricity Act, 2003 under the obligation to supply. Therefore, quantum of power purchase may not be restricted on the basis of normative loss levels. Under any given operating conditions of the power system, the quantum of energy and the power demand are more or less uncontrollable variables. For the purpose of tariff determination, the average power purchase cost per unit based on the prudent cost may be considered. This means that the cost based on the average power purchase cost per unit on the quantum of power based on normative loss should be passed on to the consumer and any cost in excess of that shall be borne by the licensee. In any case, the full fixed cost element of the power purchase cost should also be passed on to the consumer as a legitimate cost. This methodology shall maintain proper balance between the interests of the consumers and the licensee, as it is based on overall averaging method, so that impact of all the factors over an annual cycle are covered and distributed equitably.
- 11.3. The Commission however on the analysis of the same has come out with the following formula

$$FCA \text{ for billing quarter } \left(\frac{p}{u} \right) = \frac{IVC \text{ (Rs. in Cr.)} \times 1000}{\text{Normative Sale (MUs)}}$$

- Where,
- IVC = sum of – (a) difference in per unit variable cost actually billed by each long term coal or gas based power generator and variable cost as allowed in the Tariff Order, multiplied by (b) units availed from each such generating station in the preceding quarter. Variable costs of Hydel Generating Stations shall not be considered for the purpose of working out the increase in variable Cost of Power Purchase.
- Preceding Quarter = the period of preceding three months excluding the period of two months immediately preceding to the billing quarter,
- BillingQuarter = the period of three months for which FCA is to be billed and shall be a period commencing on first day to last day of quarter for the quarter commencing from 1st April ending 30th June and so on

- *Normative Sale:* the sale grossed down from the total actual ex-bus drawal from all sources (Generators + Other sources) during preceding quarter by the normative PGCIL, transmission and distribution losses for the months of the preceding quarter provided in the tariff order.

11.4. However the petitioners feel that the average power purchase cost should be considered instead of the variable costs only. Hence, the Distribution Licensee, in line with the above provision resubmits the following formula for computation of Power Purchase Cost Adjustment (PPCA) factor for Hon'ble Commission's kind consideration:

$$\text{PPCA for billing quarter } \left(\frac{p}{u} \right) = \frac{\text{APPC (Rs. in Cr.)} \times 1000}{\text{Normative Sale (MUs)}}$$

- Wherein,
- “*APPC*” shall mean Average Power Purchase Cost which is sum of – (a) difference in per unit average cost actually billed by each power generator/sources and as allowed in the tariff order, multiplied by (b) units availed from each such generating station in the preceding quarter.
- “*Preceding Quarter*” means period of preceding three months excluding the period of two months immediately preceding to the billing quarter.
- “*Billing quarter*” means the period of three months for which PPCA is to be billed and shall be a period commencing on first day to last day of quarter for the quarter commencing from 1st April ending 30th June and so on.
- “*Normative Sale*” means the sale grossed down from the total actual ex-bus drawal from all sources (Generators + Other sources) during preceding quarter by the normative PGCIL, transmission and distribution losses for the months of the *preceding* quarter as provided in the tariff Order.

- 11.5. PPCA charge shall be in the form of paise per unit (kWh) rounded off to the nearest integer. For this purpose, fraction up to 0.5 shall be ignored and fraction higher than 0.5 shall be rounded off to the next higher integer. This charge shall be added to or deducted from, as the case may be, the energy charges as per the existing tariff for the energy billed to every consumer and shall be treated as part of energy charge.
- 11.6. The PPCA charge shall be uniformly applicable to all categories of consumers of the Distribution Companies in the State. The PPCA charge shall also be uniformly applicable to all categories of open access consumers for the quantum of such supply as is availed by them from the Distribution Companies.
- 11.7. The National Tariff Policy 2016 prescribes the following formula for determination of cross- subsidy surcharge for various categories of consumers.

“8.5 Cross-subsidy surcharge and additional surcharge for open access

Surcharge formula:

$$S = T - [C / (1-L/100) + D + R]$$

Where,

S is the surcharge

T is the Tariff payable by the relevant category of consumers, including reflecting the Renewal Purchase Obligation;

C is the per unit Weighted average cost of power purchase by the Licensee, including meeting the Renewal Purchase Obligation

D is the aggregate of transmission, distribution and wheeling charge applicable to the relevant voltage level

L is the aggregate of transmission, distribution and commercial losses, expressed as a percentage applicable to the relevant voltage level

R is the per unit cost of carrying regulatory assets

Since on PPCA charge is a part of energy charge and uniformly applicable to all categories of consumers, therefore average tariff will change to the tune of applicable PPCA charge. Therefore it will be more appropriate to add per unit PPCA rate in the formula for determination of cross subsidy surcharge for various categories of consumers under the term “T”.

- 11.8. The M.P. Power Management Co. Ltd., Jabalpur is a holding company and has been authorized by the Distribution Companies to procure power on behalf of them for retail supply to consumers. The responsibility of working out the rate of PPCA every quarter shall rest with the M.P. Power management Co. Ltd., Jabalpur.
- 11.9. The M.P. Power management Co. Ltd., Jabalpur shall workout change in average cost of power purchase during the preceding quarter based on the bills received by them from the Generators. The information shall be prepared in the manner as decided by Commission in the Tariff Order for every month of the “preceding quarter” and summated thereafter for the quarter:
- 11.10. The M.P. Power management Co. Ltd., Jabalpur shall workout “normative sale”. For this purpose normative PGCIL, transmission and distribution loss (percentage /quantum) for the months of preceding quarter, as provided in the Tariff Orders, shall be subtracted from the total ex-bus power drawn during the preceding quarter to arrive at normative sale.
- 11.11. PPCA charge shall be worked out by the M.P. Power management Co. Ltd., Jabalpur based on the formula provided by the Commission. The Distribution Companies of the State shall be advised by them from time to time to incorporate the PPCA charge for billing purposes for the billing quarter. This exercise should be completed at least 15 days before the commencement of the billing quarter. The M.P. Power management Co. Ltd., Jabalpur shall simultaneously submit all relevant details of calculations along with supporting details to the Commission within 7 days of the completion of the exercise.
- 11.12. If the Commission finds after reviewing the details submitted by the M.P. Power management Co. Ltd. Jabalpur, any over or under recovery of PPCA charge, it may direct the M.P. Power management Co. Ltd., Jabalpur and the Distribution Companies of the State to make required changes in PPCA charge billing and any further adjustments in consumer bills that it may consider appropriate.
- 11.13. The Distribution Companies of the State shall commence billing of PPCA charge from the first day of the billing quarter.
- 11.14. Following illustration is given for the purpose of understanding:

If the “billing quarter” is say “July to Sept”, then the “preceding quarter” shall mean the period “Feb to April” and the period of May and June months is allowed to collect the data/ details and finalization of PPCA charge.

- 11.15. The details of the normative losses for PGCIL System and MPPMCL System and normative distribution losses may be provided by the Commission in the Tariff Orders.

12. Tariff Proposal for FY 2017-18

It is submitted that there has not been any substantial tariff hike for the years FY14 and FY15 in the state of Madhya Pradesh which has severely affected the financial health of the Discoms. For FY16, the Hon'ble Commission had approved tariff hike of 9.83% and for FY17, Hon'ble Commission approved a tariff hike of 8.4%. However the Discoms are finding it extremely difficult to sustain its operations at the present tariff levels because of intrinsic rise in expenditure due to inflationary pressures, and consistent rise in power and energy demands, an ambitious normative loss reduction trajectory and benchmarks set by the Hon'ble Commission, and obligations to be met under the policy objectives of the State and Central governments.

The state of MP has a total installed capacity of 17169 MW as on 1st June 2016. And, with a vision of 24x7 electricity supply for all the consumers in the state and keeping in view the expected increase in demand, the state has planned capacity additions in advance. However, the demand has not kept pace due to various reasons like Open Access, Railways exercising it right under a deemed distribution licensee status, slow industrial growth due to reasons well known, etc. over the last few years, resulting in a situation where most of the states (particularly in Western Region) including M.P. are saddled with surplus capacity which is not getting utilized

Due to this situation, it is essential to highlight that as per the current capacity available to state, the thermal plants form almost 80% of the scheduling. Further, MPPMCL follows the Merit Order Dispatch principle as prescribed by Hon'ble Commission. It is important to mention that Renewable, Nuclear and major part of hydel have a must-run status and therefore all the backing down has to be on thermal power stations. The surplus situation has led to back down of the available capacity as the prices in the exchange also are not attractive and also due to capacity constraint for inter-regional power transfer. However, the payment of fixed charges is required to be made for such generators in accordance with the PPAs. In the previous years it was observed that heavy quantum of power had to be backed down and the petitioners ended up in paying the fixed costs to the generators against power which was not availed just because the petitioners had to respect the power purchase agreements entered with such generators. Going by absolute numbers

- In FY 2014-15 a quantum of 7,099 MUs had to be backed down, having a fixed cost of around Rs. 870 crores and
- And a quantum of 17,130 MU's in FY 2015-16, having a fixed cost of around Rs. 2,158 Cr.

With the current realization from short-term sale being lesser than the average power purchase cost, there is a need for comprehensive strategy for dealing with surplus power. As a first step to manage the surplus power, a proposal to surrender MP's share in **NTPC Mouda Stage I, ATPS Chachai –Ph 1 & Ph 2, NTPC Kawas and NTPC Gandhar** is underway. The proposal has already been sent to GoI and until these capacities are allocated to a willing state/utility, the state of MP has to bear the fixed cost. It is relevant to mention here that, about 15 states have also requested MoP for cancellation of their respective share in the above stations.

Moreover, in order to increase its sales base and bring in new consumers under its ambit, several rounds of discussions have been held with Captive and Open Access consumers. The price of electricity, both in absolute and in relative terms, is an important factor in the competitiveness of industry. All Captive and Open Access Consumers have mentioned that to retain the competitiveness the power is sourced from options other than Discoms. If the Discom can provide competitive power, they will be willing to shift their demand to Discoms. With the increase in availability of power in the State, it is necessary to increase the sale also. Hence, in the current petition several rebates have been introduced to encourage Captive and Open Access Consumers to shift their demand to Discoms. MPPMCL assumes that if rebates are provided many Captive and OA consumers will show an intent to shift their demand to Discoms. It is important to mention that increase in the consumer base would have a ripple effect on the entire consumer base of the Discom as the costs get spread over and the revenue of Discoms increases.

Furthermore, discussions have been held with Railways to bring them back to the Discom. Accordingly, rebates have been proposed for Railways in the current petition, if the same intends to buy power from Discoms.

In view of the above submission, the Petitioners are proposing rebates for Railways, Captive and Open Access consumers. It is believed that it would not be possible for the Discoms to maintain its operational viability without increasing its sale and also obtaining an appropriate hike in the retail tariff sought through this petition.

Therefore, it is necessary for the licensee to seek an appropriate hike in the tariff, up to the level as proposed and detailed in this petition. An analysis of the tariff proposal will reveal that a small portion of the gap has been left uncovered by the petitioners through tariff hike. It is submitted to the Hon'ble Commission that the Petitioners have proposed sale of surplus energy at the prevailing IEX rates. The current rates are reflective of the ongoing demand-supply scenario in the country, however, in case these rates improve during the ensuing years, the Petitioners would leverage the opportunity to increase their revenue from sale of surplus power by better rates and increased sale. However, the petitioners plead to Hon'ble Commission to consider the unmet revenue gap left even after the proposed tariff hike by the petitioners as regulatory assets which may be considered for tariff hike in ensuing years after the compliance of MPERC directives. The petitioners have always tried to reduce the costs incurred by them to serve the consumers in its license area. The costs as mentioned in this tariff proposal petition for the year FY 2017-18 are already on the lower side and is based on the normative loss levels as specified by Hon'ble Commission in the MYT regulations. Petitioners submit that the actual costs run higher based on the actual loss levels experienced in its distribution network and the external network. The petitioners request Hon'ble Commission to consider and approve the unmet revenue gap as proposed by petitioners towards regulatory assets in order to avoid a tariff shock to the consumers in FY 2017-18.

In view of the above submission, the Petitioners are proposing a hike lesser than the actual revenue gap estimated. It would just not be possible for the Discoms to maintain its operational viability at the least, without an appropriate hike in the retail tariff sought through this petition.

A summary of the proposed tariff hike and resultant additional revenue is given in the table below:

Table 70: Summary of proposed tariff for FY 2017-18(Rs. Crs.)

	Particulars	East Discom	Central Discom	West Discom	Total MP State
A	Total ARR excluding True-Up Impact	9,877	10,504	11,419	31,800
B	True-Up Impact	74	82	118	273
C=A+B	Total ARR including True-Up Impact	9,950	10,586	11,537	32,073
D	Revenue at Existing Tariffs	8,376	9,114	10,054	27,545
E=C-D	Gap to be recovered	1,574	1,472	1,483	4,528
	Average Cost of Supply	6.52	6.61	6.26	6.45
	Proposed average tariff	6.06	6.30	6.04	6.13
F	Additional Revenue from Proposed Tariffs	874	973	1078	2925
G=F+D	Total Revenue at Proposed Tariff	9251	10087	11132	30470
H=G-C	Remaining revenue Gap	699	499	405	1603

The Discoms request the Hon'ble Commission to consider and approve the said tariff proposal for FY 2017-18 to recover the costs for the ensuing year for the State as a whole. Even after the increased revenue of Discoms as per proposed tariff hike, any remaining gap is proposed to be approved as regulatory assets and may be recovered during annual true-up by the Discoms.

The detailed category-wise tariff proposal is being submitted in the tariff schedules as part of Chapter 15 of the current petition. The impact on category-wise revenue due to the proposed tariff is given below:

Table 71: Category-wise proposed revenue for FY 2017-18 (in Cr.)

Sales Category	East Discom		Central Discom		West Discom		MP State	
	Revenue at current tariffs	Revenue at proposed tariffs	Revenue at current tariffs	Revenue at proposed tariffs	Revenue at current tariffs	Revenue at proposed tariffs	Revenue at current tariffs	Revenue at proposed tariffs
LT Categories								
LV-1: Domestic	2,405	2,650	2,424	2,684	2,103	2,338	6,933	7,672
LV-2: Non-Domestic	777	860	766	844	810	892	2,354	2,596
LV 3: Public Waterworks and Street Light	214	239	188	208	247	274	648	721
LV 4: LT Industry	281	301	214	229	435	464	930	994
LV 5.1: Agriculture	2,698	3,018	3,086	3,458	4,062	4,547	9,846	11,023
LV 5.3: Other allied agricultural use	5	5	55	62	1	1	61	68
Total LT	6,379	7,073	6,734	7,485	7,657	8,517	20,771	23,075
HT CATEGORIES								
HV1: Railway Traction	-	-	-	-	-	-	-	-
HV 2: Coal Mines	322	348	28	30	-	-	350	379
HV 3.1: Industrial Use	1,230	1,342	1,660	1,816	1,428	1,557	4,318	4,714
HV 3.2: Non-Industrial and Shopping Mall	193	212	341	375	305	336	839	923
HV 3.4: Power Intensive Industries	19	21	147	158	396	424	562	603
HV 4 Seasonal & Non Seasonal	10	10	1	1	9	9	19	20
HV 5: HT Irrigation and Water Works	60	67	103	114	241	268	405	449
HV 6: Bulk Residential Users	163	178	99	108	18	19	280	306
HV 7: Synchronization/Start Up Power	-	-	0	0	1	1	1	1
Total HT	1,997	2,178	2,380	2,603	2,397	2,614	6,774	7,395
Total (LT+HT)	8,376	9,251	9,114	10,087	10,054	11,132	27,545	30,470

12.1. Salient Features of the Tariff Proposal

The licensees have proposed increase in tariff rates along with certain changes in general terms and conditions of LT and HT tariff. The proposed schedule of the Retail Tariff for FY 2017-18 is enclosed with this petition.

The salient features of the proposed changes are as elaborated below:

12.1.1. Merging of sub categories in LV 3.1 Public Water Works and LV 3.2 Street Light categories

Reasons for proposed changes: The consumer sub category of Municipal Corporation/Cantonment Board and Municipality/Nagar Panchayat in LV 3.1 Public Water Works is proposed to be merged. Similarly the consumer sub category of Municipal Corporation/Cantonment Board and Municipality/Nagar Panchayat in LV 3.2 Street Light is proposed to be merged also. The reason behind the proposed merger of sub categories is that the tariff structure for both the sub-categories was similar and there was a marginal difference between the tariffs of the two categories. Also, both these sub-categories belonged to government owned organizations. Thus, in order to make the tariff structure simpler, the two sub categories are proposed to be merged. All urban sub categories are being merged into one subcategory.

12.1.2. Rebate to all LT consumers for online payment of bills

Reasons for proposed changes: It is proposed that all LT consumers who have no arrears shall be given rebate of INR 5 per bill for online payment of the energy bill in full. This is being done to encourage online payment of bills among consumers. It is also estimated to improve timely payment by consumers and simultaneously cash in hand for the Discoms.

12.1.3. Rebate of 20 paise per unit for all LV 1 – Domestic and LV 2 – Non Domestic consumers having prepaid meters.

Reasons for proposed changes: In order to promote prepaid metering in the state, it is proposed that the Discoms shall offer a rebate of 20 paise per unit for all domestic and non-domestic consumers having or opting prepaid meters.

12.1.4. Addition of apartments/colonies/townships in HV 6.2 Bulk Residential Use

Reasons for propose changes: it is proposed to extend the benefit of this category to apartments, colonies, townships also. These establishments are used for residential purposes and hence stand eligible for this category. This shall be subject to the term that common facilities like lifts, pumps, etc and all non-domestic loads shall not be more than 20% of the total connected load /sanctioned demand of the establishment.

12.1.5. Merging of HV 3.2 Non Industrial use and HV 3.3 Shopping Mall

Reasons for proposed changes: The tariff structure for both the sub-categories was similar and there was a marginal difference between the tariffs of the two categories. Also, the nature of business under both the categories belonged to non-industrial or commercial use. Thus, in order to make the tariff structure simpler, the two categories are proposed to be merged.

12.1.6. Rebate for online bill payment by HT consumers

Reasons for proposed changes: In order to encourage online bill payment by HT consumers it is proposed that all HT consumers who have no arrears shall be given a rebate Rs 100 per bill for online payment of energy bill in full. This facility shall also improve the cash in hand for the Discoms.

12.1.7. Augmenting the limits for Additional Charges for fixed charges for Excess Demand by HT consumers and LT consumers

Reasons for proposed changes: The HT consumers shall not be charged additional fixed charges in case their maximum demand recorded in any month is upto 115% of their contract demand. They shall be billed at the same tariff for fixed charge as per their schedule. However, the fixed charges shall be levied as per the existing terms and conditions.

The existing limits of 105% of no extra charges, 115% to 125% for 1.3 times fixed charges and greater than 125% for 2 times fixed charges may be revised to 115% for no extra charges, 115% to 130% for 1.3 times fixed charges and greater than 130% for 2 times fixed charges respectively.

This change may be made applicable for both demand based tariff and connected load based tariff in LT and HT.

12.1.8. Tariff for Charging of Electric Vehicles:

Reasons for introduction of this proposal: There is no provision in the existing Tariff Order for charging the batteries utilized for hybrid electric vehicles (2/4 Wheelers) through existing LT / HT Connections. It is necessary to clarify the tariff for electrical charging of batteries of hybrid vehicles in i) Residential premises ii) Commercial, Office premises iii) Industrial premises, as the case may be, through the existing electrical connections at these sites is permissible at the respective tariffs, so as to avoid any misunderstanding or hardship to consumers who intend to use such hybrid vehicles in the near future.

Therefore, it is proposed to the Hon'ble Commission that the commercial outlets charging Hybrid vehicles may be charged as per the Commercial tariff, and individuals charging the Hybrid Vehicles at residential, commercial or industrial premises may be charged as per the parent category of their usage.

12.1.9. Rebate for incremental consumption under HV 3 category

Reasons for proposed changes: It is proposed that a rebate of INR 50 paisa per unit on energy charges be provided to HV 3 tariff category consumers for incremental month consumption w.r.t consumption of previous years same month.

12.1.10. Rebate for new HT connections under HV 3 category

Reasons for proposed changes: It is proposed that a rebate of INR 1 / unit on energy charges be provided to new HV 3 tariff category consumers. This rebate shall also be provided to new connections issued in HV 3.1 tariff category, during FY 2016-17. This benefit is provided to support the economic development of the state and also to encourage the HT consumers to consume more energy at reduced prices.

Thus the existing rebate of INR 1/unit or 20% whichever is less for new consumers in HV 3.1 tariff category is proposed to be revised to INR 1 per unit for new consumers in entire HV 3 tariff category.

12.1.11. Rebate for existing Open Access Consumers:

Reasons for introduction of this rebate: the petitioners are proposing a rebate to the existing open access consumers in their respective license areas, in order to promote competition and encourage consuming more electricity from the petitioners. This rebate is being proposed to make competitive rates of power available to the existing open access consumers and to enable them to resort back to Discoms on account of attractive power rates. The petitioners are experiencing a power surplus situation in the state and losing the consumers on account of open access is creating a dent in the financials of them. This measure will be within the spirits of provisions of Electricity Act 2003 as the petitioners are promoting competition only and is ensuring measures to show its open access consumers the lost shore.

The petitioners are proposing a rebate of INR 1 per unit applicable only on those units which the open access consumers have reduced from their wheeling and has instead taken from the distribution licensees (petitioners). The proposed rebate is applicable to only such consumers in the license area of the petitioners,

- a) Who have availed open access in the last financial year and have wheeled through the licensee's distribution network.
- b) Who have recorded an incremental consumption i.e an increase in the units consumed from the distribution licensee in any month of the current fiscal (FY 18) compared to the same month in last year (FY17).

The quantum of units upon which this proposed rebate is applicable will be decided as

1. Y, if $X > Y$,
2. X, if $X = Y$ and
3. X, if $X < Y$ where

X = the incremental consumption recorded by the existing open access consumer in any month of the current year compared to the same month in last year.

And

Y = the quantum of reduction in wheeled units achieved by the open access consumer in any month of the year compared to the same month in the last year

For all other cases of incremental consumption (where $X > Y$, on quantum $X - Y$ units), the existing rebate of 50 paisa per unit will be applicable.

The sample calculation as shown below details the methodology by which the units consumed by the existing open access consumers, on which Rs 1 rebate will be applicable.

	FY 17		FY 18		Incremental Consumption from Discom X= A2-A1	Reduction in OA units Y = B1-B2	50 paisa rebate applicable units Z= X-XX	1 rupee rebate applicable unit XX
	Consumption from Discom (Units) (A1)	Wheeled Units (B1)	Consumption from Discom (Units) (A2)	Wheeled Units (B2)				
Scenario 1	100	90	110	90	10	0	10	0
Scenario 2	100	90	110	80	10	10	0	10
Scenario 3	100	90	110	70	10	20	0	10
Scenario 4	100	90	100	80	0	10	0	0
Scenario 5	100	90	120	80	20	10	10	10

12.1.12. Rebate for captive consumers

Reasons for introduction of this rebate: the petitioners are proposing a rebate of INR 2 per unit for the incremental consumption of power, by the captive consumers from petitioners, recorded during any month of the current year compared to the corresponding month of the last year.

The petitioners are proposing a rebate to the existing captive consumers in their respective license areas, in order to encourage consuming more electricity from the petitioners. This rebate is being proposed to make competitive rates of power available to the captive consumers and to enable them to resort back to Discoms on account of attractive power rates. The petitioners are experiencing a power surplus situation in the state and any increase in the sale will improve the financial viability. This measure will be within the spirits of provisions of Electricity Act 2003 as the petitioners are promoting competition only.

The petitioners are proposing a rebate of INR 2 per unit applicable only on those units which the captive consumers have reduced from their captive consumption and has instead taken from the distribution licensees (petitioners). The proposed rebate is applicable to only such consumers in the license area of the petitioners,

- a) Who have been captive consumers in the last financial year.
- b) Who have recorded an incremental consumption i.e an increase in the units consumed from the distribution licensee in any month of the current fiscal (FY 18) compared to the same month in last year (FY17).

The quantum of units upon which this proposed rebate is applicable will be decided as

1. Y, if $X > Y$,
2. X, if $X = Y$ and
3. X, if $X < Y$ where

X = the incremental consumption recorded by the captive consumer in any month of the current year compared to the same month in last year.

And

Y = the quantum of reduction in units generated from captive plant (self-consumption) achieved by the captive consumer in any month of the year compared to the same month in the last year. For all other cases of incremental consumption (where $X>Y$, on quantum $X-Y$ units), the existing rebate of 50 paisa per unit will be applicable.

The sample calculation as shown below details the methodology by which the units, consumed by the captive consumers, on which INR 2 per unit rebate will be applicable.

	FY 17		FY 18		Incremental Consumption from Discom X= A2-A1	Reduction in Captive Generated units Y = B1-B2	50 paisa rebate applicable units Z= X-XX	2 rupee rebate applicable unit XX
	Consumption from Discom (Units) (A1)	Captive Generation Units (B1)	Consumption from Discom (Units) (A2)	Captive Generation Units (B2)				
Scenario 1	100	90	110	90	10	0	10	0
Scenario 2	100	90	110	80	10	10	0	10
Scenario 3	100	90	110	70	10	20	0	10
Scenario 4	100	90	100	80	0	10	0	0
Scenario 5	100	90	120	80	20	10	10	10

12.1.13. Change in Definition of Rural Area

Reasons for the proposed change: Currently, (as per Tariff Order FY 17) rural area is defined with reference to areas notified by the GoMP vide notification no. 2010/F13/05/13/2006 dated 25th March 2006. It is submitted that the state government issued the said notification in exercise of power conferred by section 14 of the Electricity Act for the purpose of licensing and said notification should not be made applicable for the purpose of tariff fixation which is exclusive area of the Hon'ble MPERC. As per provision of the Electricity Act 2003 tariff can be differentiated only on the basis of the factor defined in the section 62 of the Electricity Act 2003. At present in the state of Madhya Pradesh continuous good quality power is being supplied to the both urban and rural area. Accordingly there should be no material difference in the tariff of urban and rural area. Based on the present definition of the rural area even the places adjoining the urban areas are being billed as per the rural area tariff. To remove such ambiguity following amendment in definition of rural area is proposed.

“Rural Areas” shall be the places other than and beyond Municipal towns and places with population less than 5,000 and are located more than 8 kms away from the nearest Municipal Committee/ Notified Area Committee/Municipal Corporation limits. This will also include village Covered by SADA (Special Area Development Authority) where industrial development activities have not been started. The decision of the Executive Engineer of the distribution company for the area concerned whether or not the Industrial development activities have started shall be final.

“Urban Areas” shall be the places other than those covered under “Rural Areas”.

12.1.14. Rebate in Energy Charges for Railway Connections

Reasons for the proposed Change: Railways were once a proud consumer for the petitioners. However, after the Railways were determined deemed distribution licensees, the petitioners have witnessed the loss of Railways as a consumer from its supply areas. Consumers like Railways are prime for any distribution licensee since they are bulk consumers and draws power at HT voltage level. Railways consumed close to 2300MU annually from the petitioners and was a significant contributor to the revenue (to the extent of INR 700 Crores) from sale of power for the petitioners.

It is a misfortune that the railways have moved out and this have had tremendous impact on the financials of the already ailing petitioners. The petitioners has hence contemplated to offer a rebate to the consumption by railway consumers primarily for the following reasons -

- To ensure an attractive tariff for the railways encouraging competition.
- To effectively address the power surplus situation and encourage consumption of power within the state itself.

The petitioners are proposing a rebate of INR 2 per unit on energy charges for the railway consumers to encourage the railways to come back to petitioners for consumption of power.

12.1.15. Additional Expenditure on account of cashless transaction.

Reasons for proposed changes: In line with the recent policy of the Government of India, the petitioners are proposing to move towards cash less economy. However, currently the cashless modes of payment entails levy of service charges. The petitioners propose that the service charges be not recovered from the consumers at the time of payment. As such it is proposed that the service charge payable to cash less bill payment intermediaries be separately allowed as permissible expenses for ARR. Assuming a cost of Rs. 5 per transaction and further assuming about 25% of non-agricultural consumers shall avail cash less payment services, Hon'ble MPERC may please be requested to approve additional estimated cost of Rs. 15 crore per year ($100,00,000 * .25 * 5 * 12$) in the ARR. Detailed information of actual cost incurred on this account shall be submitted by the Discom at the time of true-up.

12.1.16. Revising the norms of assessed consumption for temporary unmetered agriculture consumers

Reasons for proposed changes: Petitioners submit that the existing norms for assessed consumption as specified by Hon'ble Commission is understated and that actual consumption by temporary consumers of agriculture unmetered category are well above the existing norms. Petitioners submit to the Hon'ble Commission that there is an urgent need to revise the existing norms so that a more realistic billing norms will be applicable for the unmetered temporary agriculture category consumers.

The proposed norms for assessed consumption of unmetered temporary agriculture consumers under LV 5.1 category is as follows.

Particulars	No. of units per HP or part thereof of sanctioned load per month	
Type of Pump Motor	Urban Area	Rural Area
Three Phase	250	210
Single Phase	250	220

12.1.17. Additional charge paid by HT consumers who want to avail supply at same voltage level with contract demand exceeding of that particular voltage level is proposed to be reduced (Reference – Clause 1.18 to 1.20 in other General Terms and Conditions of HT Tariff)

Reasons for proposed change: the existing norm of additional charge at 5% (11kV level), 3% (33kV level) and 2% (132kV level) on total amount of fixed charges and energy charges billed in the month is proposed to be reduced 3% (11kV level), 2% (33kV level) and 1% (132kV level) respectively.

This proposal is suggested to encourage the consumers to avail more power at the same voltage level.

13. Voltage-Wise Cost of Supply

13.1. Commission Directives

The Hon'ble MPERC has directed the Discom's of MP to determine the voltage wise cost of supply vide its letter dated 25 October 2013 with memo no. MPERC/RE/2013/2780. The Hon'ble Commission referred to the judgment passed by Appellate Tribunal for Electricity (APTEL) in Appeal No. 103 of 2010 & IA Nos. 137 & 138 of 2010 regarding determination of voltage level wise Cost of Supply.

The extract of APTEL's order is elaborated as below.

Extract of APTEL's order

“32. Ideally, the network costs can be split into the partial costs of the different voltage level and the cost of supply at a particular voltage level is the cost at that voltage level and upstream network. However, in the absence of segregated network costs, it would be prudent to work out the voltage-wise cost of supply taking into account the distribution losses at different voltage levels as a first major step in the right direction. As power purchase cost is a major component of the tariff, apportioning the power purchase cost at different voltage levels taking into account the distribution losses at the relevant voltage level and the upstream system will facilitate determination of voltage wise cost of supply, though not very accurate, but a simple and practical method to reflect the actual cost of supply.

33. The technical distribution system losses in the distribution network can be assessed by carrying out system studies based on the available load data. Some difficulty might be faced in reflecting the entire distribution system at 11 KV and 0.4 KV due to vastness of data. This could be simplified by carrying out field studies with representative feeders of the various consumer mix prevailing in the distribution system. However, the actual distribution losses allowed in the ARR which include the commercial losses will be more than the technical losses determined by the system studies. Therefore, the difference between the losses allowed in the ARR and that determined by the system studies may have to be apportioned to different voltage levels in proportion to the annual gross energy consumption at the respective voltage level. The annual gross energy consumption at a voltage level will be the sum of energy consumption of all consumer categories connected at that voltage plus the technical distribution losses corresponding to that voltage level as worked out by system studies. In this manner, the total losses allowed in the ARR can be apportioned to different voltage levels including the EHT consumers directly connected to the transmission system of GRIDCO. The cost of supply of the appellant's category who are connected to the 220/132 KV voltage may have zero technical losses but will have a component of apportioned distribution losses due to difference between the loss level allowed in ARR (which includes commercial losses) and the technical losses determined by the system studies, which they have to bear as consumers of the distribution licensee.

34. Thus Power Purchase Cost which is the major component of tariff can be segregated for different voltage levels taking into account the transmission and distribution losses, both commercial and technical, for the relevant voltage level and upstream system. As segregated network costs are not available, all the other costs such as Return on Equity, Interest on Loan, depreciation, interest on working capital and O&M costs can be pooled and apportioned equitably, on pro-rata basis, to all the voltage levels including the appellant's category to determine the cost of supply. Segregating Power Purchase cost taking into account voltage-wise transmission and distribution losses will be a major step in the right direction for determining the actual cost of supply to various consumer categories. All consumer categories connected to the same voltage will have the same cost of supply. Further, refinements in formulation for cost of supply can be done gradually when more data is available."

It is most humbly submitted that the above mentioned order of APTEL has been challenged in the Hon'ble Supreme Court of India by the Respondents in the case and the matter is under consideration before the Apex Court. However, as per the directives of the Hon'ble Commission the Discoms submit the details of calculation of the voltage wise cost of supply as per the methodology provided by the APTEL.

13.2. Voltage-wise Losses

It is submitted that the MPERC Tariff Regulations do not provide segregation of normative losses for the Distribution Licensees into voltage wise normative losses in respect of technical and commercial losses. Therefore, the Petitioners face difficulty in segregation of normative losses in voltage level wise technical and commercial losses.

Determination of voltage-wise losses would require detailed technical studies of the Distribution network of the three Discoms. For the purposes of illustrative computation of voltage-wise Cost of Supply, the petitioners have assumed voltage-wise losses, the data therein is not verified and so, should not be relied upon.

13.2.1. Methodology

The Discoms have proposed the methodology for Voltage-wise Cost of Supply computation for three categories, namely:

- c. EHT System (400 kV, 220 kV and 132 kV)
- d. 33 KV System
- e. 11 KV + LT System

For determination of Voltage-wise Cost of Supply, the proposed methodology involved the following steps:

1. Determine the voltage-wise Sales for three voltage levels.

2. Projection of voltage-wise loss levels based on historical numbers. It is pertinent to mention here that the loss levels so determined are on assumption basis and it would require a detailed technical study of the Distribution Network for the technical verification of the same. The Inter-state PGCIL and Intra-state MPPTCL losses are allocated to the EHT System (400 kV, 220 kV and 132 kV).
 - a. It may also be noted that the percentage of EHT losses allocated to the three Discoms are different due to the fact that different generating stations are assigned to the different Distribution company and each draws its power from different 132 kV substation.
3. Determine the voltage-wise energy input based on sales and the losses. The sales numbers have been escalated by the T&D loss% of the current voltage level as well as the next higher voltage level.
4. Since the breakup of technical and commercial losses at 11 kV +LT system is not available, 50% of the total loss at this voltage level has been assumed as purely technical loss and remaining 50% loss has been assumed as commercial loss which has been loaded to various voltage levels in the proportion of their sales.
5. The total Power Purchase Costs of each Discom is allocated to the three voltage levels based on the voltage-wise input energy. All other costs of the Discom are allocated based on the sales to each voltage-level.
6. Non-tariff income has been assumed to be part of the revenue from 11 kV + LT, 33kV and EHT voltage levels.
7. Sum of total costs (less non-tariff income) divided by net energy input gives the voltage wise cost of supply for the respective voltage level.

13.3. Calculation

The calculation for Voltage wise Cost of Supply for MP state is as shown below:

Table 72: Cost of Supply Calculation for East Discom for FY18

East Discom		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
Sales	MU	1,507	1,240	12,524	15,271
Loss %	%	5.36%	6.62%	13.90%	21.51%
Energy Input	MU	1592	1,404	16460	19,456
Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MU	85	163	3936	
Commercial Loss assumed as 50% of 11 kV and LT overall losses	MU	-	-	1,967.98	-
Balance 50% Commercial loss for all voltage in proportion to Sales	MU	194	160	1,614	-

East Discom		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
Net Energy Input	MU	1786	1564	16106	19,456
Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr	711	623	6,415	7,749
Other costs - allocated based on voltage-wise sales	Rs Cr	227	187	1,890	2,305
Less: Other income - allocated based on voltage-wise sales	Rs Cr	17	14	145	177
Total Costs (ARR requirement excluding true up impact)	Rs Cr	921	796	8,160	9,877
Total Costs (including True Up Impact)	Rs Cr	927	801	8222	9950
ACoS excluding true up	Rs/kWh	6.12	6.41	6.52	6.47
ACoS Including true up	Rs/kWh	6.16	6.46	6.56	6.52

Table 73: Cost of Supply Calculation for Central Discom for FY18

Central Discom		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
Sales	MU	1,430	2,059	12,530	16,020
Loss %	%	5.37%	6.09%	16.18%	22.42%
Energy Input	MU	1512	2,317	16820	20,649
Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MU	81	258	4290	0
Commercial Loss assumed as 50% of 11 kV and LT overall losses	MU			2,145	-
Balance 50% Commercial loss for all voltage in proportion to Sales	MU	191.51	275.72	1,677.53	-
Net Energy Input	MU	1703	2593	16352	20,649
Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr	674	1,027	6,474	8,175
Other costs - allocated based on voltage-wise sales	Rs Cr	221	319	1,939	2,479
Less: Other income - allocated based on voltage-wise sales	Rs Cr	13	19	118	150
Total Costs (ARR requirement)	Rs Cr	882	1,326	8,296	10,504
Total Costs (including True Up Impact)	Rs Cr	888	1335	8363	10586
ACoS excluding true up	Rs/kW h	6.17	6.44	6.62	6.56
ACoS Including true up	Rs/kWh	6.21	6.48	6.67	6.61

Table 74: Cost of Supply Calculation for West Discom for FY18

West Discom		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
Sales	MU	794	2,808	14,833	18,434
Loss %	%	5.35%	5.47%	13.98%	20.69%
Energy Input	MU	838	3,138	19,267	23,242
Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MU	45	330	4,434	
Commercial Loss assumed as 50% of 11 kV and LT overall losses	MU			2217	
Balance 50% Commercial loss for all voltage in proportion to Sales	MU	95	338	1784	
Net Energy Input	MU	934	3475	18833	23242
Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr	376	1400	7588	9365
Other costs - allocated based on voltage-wise sales	Rs Cr	95	336	1774	2205
Less: Other income - allocated based on voltage-wise sales	Rs Cr	6	23	121	151
Total Costs (ARR requirement)	Rs Cr	465	1713	9241	11419
Total Costs (including True Up Impact)	Rs Cr	469	1729	9339	11537
ACoS excluding true up	Rs/kW h	5.86	6.10	6.23	6.19
ACoS Including true up	Rs/kW h	5.91	6.16	6.30	6.26

Table 75: Cost of Supply Calculation for MP State for FY18

MP State		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
Sales	MU	3,731	6,107	39,887	49,725
Loss %	%	5.36%	5.91%	14.75%	21.50%
Energy Input	MU	3,942	6,859	52,546	63,347
Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MU	211	751	12,659	
Commercial Loss assumed as 50% of 11 kV and LT overall losses	MU			6,330	
Balance 50% Commercial loss for all voltage in proportion to Sales	MU	481	773	5,075	
Net Energy Input	MU	4,423	7,632	51,292	63,347
Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr	1,762	3,050	20,478	25,290
Other costs - allocated based on voltage-wise sales	Rs Cr	544	842	5,603	6,988
Less: Other income - allocated based on voltage-wise sales	Rs Cr	37	57	384	478
Total Costs (ARR requirement)	Rs Cr	2,268	3,835	25,697	31,800
Total Costs (including True Up Impact)	Rs Cr	2285	3864	25924	32073

MP State		EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
ACoS excluding true up	Rs/kW h	6.08	6.28	6.44	6.40
ACoS Including true up	Rs/kW h	6.13	6.33	6.50	6.45

13.4. Determination of Cross-Subsidy Surcharge

The Tariff Policy provides for the determination of cross- subsidy surcharge for various categories of consumers. It is pertinent to mention here that Discoms have employed Merit-order dispatch while scheduling power from various stations so as to procure the cheapest power available. Also the Petitioners have also considered backing down of units/stations where variable cost is more than Rs 2.50 per unit as decided by MPPMCL to ensure that power procured from cheaper sources is fully utilized and to avoid procurement of power from costlier sources. The resultant benefit of reduced power procurement cost is in turn being passed on to the consumers, along with back down of few stations.

Hence, in light of above, the petitioners submit that the basis for determination of the aforementioned cross-subsidy surcharge to be taken as **per provisions of National Tariff Policy 2016.**

The Hon'ble Commission has determined the average tariff based on the power purchase cost as per previous year's available data. Any variation on account of such change in fuel cost is also passed on to the consumer through FCA, which will result in an increase in average tariff by FCA amount. Therefore, it will be appropriate to **increase the cross subsidy surcharge to the extent of FCA charges** payable for a particular period.

13.5. Determination of Additional surcharge

The National Tariff Policy 2016 also provides for the determination of additional surcharge to be levied from consumers who are permitted open access.

The Petitioner would like to submit that financial position of the Discoms are getting constrained due to eligible consumers opting for open access. There has been an increase in quantum and number of consumers opting for open access over the last few years. With this shift of consumers to open access, the power remains stranded and the Discoms have to bear the additional burden of capacity charges of stranded power to comply with its Universal Supply Obligation. In view of the above, the Petitioner has already filed a separate Petition before the Commission for calculation of levy of additional surcharge.

The Petitioner would like to submit that in other states also, separate orders for levy of additional surcharges have been passed by respective Commission after considering the impact of shift by open access consumers and based on other data with due prudence check.

The Petitioners in this current Petition would like to request the Hon'ble Commission to determine the additional surcharge as per the **provisions of National Tariff Policy 2016**. Any additional data required for the same, if any, will be made available by the Petitioners to the Hon'ble Commission as and when required.

14. Compliance on Tariff Order FY 2016-17

The response of Discoms on the directives issued by Hon'ble Commission in retail supply tariff order for FY-17 is given below:

14.1. Distribution losses

14.1.1. Commission's Directives:

Although the Discoms have shown reducing trend of losses, efforts to reduce losses need to be further intensified. The Discoms should not only endeavour to achieve the benchmarks but to improve further to justify capital invested on loss reduction and system improvement. The Discoms have been directed to prepare and implement appropriate loss reduction strategies and schemes with a focus on prevention of theft of electricity.

Commission's Observation in FY 17 Tariff Order

The Commission has noted the submission of Discom. the Commission directs that a time bound programme be drawn up by the petitioners for segregation of technical and commercial losses through energy audit and further strategize efforts for curbing of distribution losses effectively. The petitioner is directed to furnish their phase wise segregation plan along with methodology within 3 months.

14.1.2. East Discom submission

East Discom vide letter no. EZ/ED (Com) / EA / 1581 dated 06/09/2016 had already submitted that as a first step for segregation two feeders from each circle have been selected as pilot project for Segregation of Technical and Commercial losses.

System strengthening work / Aug. of transmission capacity:

In order to reduce the technical losses, the distribution system is being strengthened / augmented.

Following addition in distribution system has been made till Oct' 2016

Sr.no.	Particulars	Unit	As on Mar'15	Added DY 2015-16	As on Mar'15	Added DY 2016-17 (Upto Oct-16) (Over all)
1	33/11KV S/S	No.	964	29	993	12
2	PTR	No.	1694	74	1768	21
3	PTR capacity	MVA	7493	776.25	8269.25	241
4	33 KV line	Km	16815	678	17493	289
5	11 KV line	Km	113330	6421	119751	4474
6	L.T. line	Km	115554	2773	118327	2486
7	DTR	No.	143280	10246	153526	8226

Sr.no.	Particulars	Unit	As on Mar'15	Added DY 2015-16	As on Mar'15	Added DY 2016-17 (Upto Oct-16) (Over all)
8	DTR Capacity	MVA	7502.60	384.82	7887.42	255

Implementation of Non-RAPDRP Scheme:

The scheme has been closed and further works of these towns have been included in proposed IPDS scheme along with 27 nos. of RAPDRP towns. Total 143 towns / city has been covered under IPDS.

14.1.3. Central Discom submission

It is submitted that for curbing of loss effectively in the area of MPMKVVCL, Bhopal, capital works under various schemes are being carried out. The brief details and their effects are given here under:-

S. No	Name of Work/ Scheme	Area Covered	Impact
1	Meterization of LT unmetered domestic consumers	Rural Area	Increase in sale, thus reduction in T&D and AT&C loss.
2	Cabling of LT network – Removal of bare conductors	Rural /Urban Area	Theft would stop, Input would reduce. Consumers will be forced to take authorized connection. Reduction in AT&C loss.
3	Separation of Irrigation Feeder and Domestic Feeder in Rural areas	Rural Area	Limited supply hours to agriculture sector and 24 hours supply to domestic consumer would reduce input and increase sale to reduce losses.
4	HVDS System	In Urban and Rural Area	Theft will stop. Consumer will not be able to access electricity in unauthorized way thus Loss would reduce.
5	RAPDRP Part-B	Towns/ Cities	Technical losses will be controlled. Commercial aspect is also covered through various works viz. cabling, HVDS, ATP Machine, Meterization, Replacement of old/defective meters, conductor augmentation, additional DTR etc. Over all AT&C loss will be reduced.
6	ADB Scheme for small towns.	130 small towns	Technical losses will be controlled. Commercial aspect is also covered through various works viz. cabling, HVDS, Meterization, Replacement of old/defective meters etc. Over all T&C loss will be limited.
7	Meterization of Agriculture DTRs.	Rural Areas	Would help in identification of theft/malpractice pocket for taking up vigilance activities/remedial measures so as to increase sale. It would further bring down commercial losses.
8	Feeder Metering	33/11KV Substations	To compare load in 11KV feeder as per connected load for detection of theft, vigilance activities, mass checking etc. It would also control commercial losses.
9	Installation of 11KV Capacitor Banks	33/11KV Substations	It would improve system power factor and reduce commercial losses as well as control over loading to some extent to reduce technical losses.
9.	Facility of On-line payment, through SBI portal, through	Rural Area/ Urban Area	It would boost revenue realization to reduce commercial losses. The collection efficiency would improve to

S. No	Name of Work/ Scheme	Area Covered	Impact
	web portal		reduce AT&C losses.
10	AMR of high value consumers.	Rural Area/ Urban Area	It would minimize chances of pilferage, malpractice by big consumers and detection of less billing through tamper events to control commercial losses.
11	Construction of New 33/11 KV S/s	Rural Area/ Urban Area	It would reduce 11KV feeder over loading and reduce technical loss
12	Spot Billing	Urban Area	It will help to increase billed unit to reduce distribution loss/AT&C loss.
13	Billing Software is being upgraded (from RMS to CC&B)	Urban/Rural	It would provide useful MIS for monitoring consumers and taking up remedial/vigilance activities.

The T&D loss and AT&C loss of the Company in the last 5 years have been tabulated and shown below. It may be observed from that the T&D losses which were 33.16% in the year 2011-12 have come down to 25.13% in the year 2015-16. Similarly the AT&D loss were reduced from 37.79% to 28.65%.

Year wise T&D and AT&C losses							
Units in Lakh & Amount In Crore							
S.No.	Year	Total Input	Total Sale	T&D Loss (%)	Billing Efficiency	Collection Efficiency	AT&C Loss (%)
1	2011-12	127455.87	85185.58	33.16	0.67	0.93	37.79
2	2012-13	146028.03	99383.47	31.94	0.68	1.00	31.94
3	2013-14	164201.39	115573.75	29.61	0.70	1.00	29.61
4	2014-15	177109.01	133496.14	24.62	0.75	0.93	30.15
5	2015-16	196493.37	147123.19	25.13	0.75	0.95	28.65

14.1.4. West Discom submission

Discom is keen to comply directive by initiating detailed study of distribution system. Discom has submitted the compliance vide letter no MD / WZ /05/TRAC/ 17066 Indore dated 30.09.2016.

14.2. Meterization of unmetered connections

14.2.1. Commission's Directives:

The Commission directed the Discoms to expedite feeder meterisation and DTR meterisation on priority basis. Discoms should file a detailed plan in this regard to the Commission by 31st May 2015. Further, the Commission has observed that the Discoms have committed for 100% meterisation of rural domestic connections by 31 March, 2015. A status report in this regard be filed by 31 May 2015. The Commission shall review the status in June 2015.

Commission's Observation in FY 17 Tariff Order

.... The commission has noted that all the Discoms have submitted their definite timeframe to achieve 100% meterisation target in respect of feeder metersiation & rural unmetered domestic connections. The Commission expects that Discoms shall adhere to the timelines without any further slippage. The Commission however regrets to note that East and West Discoms have not furnished any definite time frame due to paucity of finances in respect of 100% meterisation of pre-dominant Agricultural DTRs although the Commission has been repeatedly directing the Discoms to step up meterisation of agriculture pre-dominant distribution transformers. The agricultural supply in various areas remained un-metered and as such it became difficult to compute accurately the loss reduction level in the utility. The provisions in section 55 of the Act mandating metered supply within a stipulated timeframe and hence can not be put on hold for indefinite time period. The Commission direct East & West Discom to complete the 100% meterisation target of pre-dominant Agricultural DTRs by March 2017 without any slippage

14.2.2. East Discom submission:

- a) **Feeder Meterization:** - All metering points of 33 KV feeders and 11 KV feeders have been provided with meters.
- b) **Meterization of un-metered domestic connections:** - Meters have been provided on all unmetered domestic connections of urban area. The un-metered DLF connections of rural area have reduced from 9,41,085 as on March-13 to 3,24,497 as on Mar-16. Thus total 6,16,588 meters have been provided on un-metered domestic rural connection in last three years. Further in the year 2016-17 up to Sept'16 total 11603 meters have been provided on un-metered domestic connections. The meterisation of un-metered DLF connections has been included in Central sponsored DDUGJY. The NIT has been issued for the same and as soon as the same will be finalized the installation of meters on balance unmetered connections will be taken up.
- c) **Meterization of Agricultural DTRs:** - The Company, as on Mar'16, is having 67470 agricultural predominant DTRs out of which 5444 DTRs have been provided with DTR meters. Further meterisation of 20,000 DTRs is being taken up in the year 2016-17. The meterisation of agricultural DTRs is not covered under any scheme. If additional fund is provided to the company under supplementary DDUGJY Scheme, then the same shall be taken up accordingly.

14.2.3. Central Discom submission:

The directive pertains to East & West Discoms.

14.2.4. West Discom submission:

Discom has achieved 100% meterization of 11kV and 33kV feeders. The status of feeder meterization upto 30.09.2016 is given in the table below:

Feeder Existing 33 KV (From EHV)*		Percentage of total	Feeder Existing 11 KV		Percentage of total
Total	Metered		%	Total	Metered

822	822	100%	5457	5457	100%

Out of total 117,618 agriculture dominated distribution transformers 21,076 has been metered till March, 2016. Discom submits that it has made a meterisation plan of agriculturally predominant DTRs which has shear dependency on availability of funds. The company is trying to arrange funds for the meterization work on priority basis. The Company is preparing Detailed Project Report for obtaining financial assistance from other financial Institutions.

The company has made significant progress in meterization of rural domestic connections and only 410 rural domestic connections comprising 0.02% of total domestic connections are unmetered till September 2016. The Company is trying to achieve 100% meterization of domestic connections by November 2016.

14.3. Capex plan for reduction in technical losses

14.3.1. Commission's Directives:

The licensees should closely monitor progress of implementation of the Capex plans to avoid slippages. The Discoms should monitor the benefits accrued after execution of schemes under the Capex plan and ensure that additional capex does lead to actual payback in commercial and technical terms as per provisions envisaged in the schemes.

Commission's Observations in FY 17 Tariff Order

The Commission observed that benefits accrued are not in proportion to capex done by the Licensees. The Commission directs the Discoms to furnish scheme wise status from physical & financial benefits accrued from capex implementation against the target envisaged henceforth.

14.3.2. East Discom submission:

In East Discom many projects like R-APDRP, ADB, Feeder Separation, DDUGJY etc. are running simultaneously, hence it is very difficult to ascertain the scheme wise impact in terms of benefits accrued, however the year-wise investment and reduction in T&D losses achieved is shown as below:

Particular	Investment (Cr.)	T&D losses (%)
2012-13	857.63	26.02
2013-14	1016.47	23.68
2014-15	806.58	21.69
2015-16	659.22	22.65

This slight variation at higher side in the T&D loss level of the year 2015-16 is due to estrangement of HT Traction connections of Railway's from Feb'2016 and migration of several HV consumers to open access during the year.

Discom submits that benefits accrued on account of undergoing schemes are self-proven in terms of improved supply arrangements and continuous supply. Further, under progress implementation of these schemes has resulted in reduction of losses. Loss Reduction schemes have helped considerably in reducing the loss levels. With the reduction in distribution loss level there has been considerable saving in the power purchase cost also.

The below table depicts the progress made by petitioner in implementing the capex plan. The year wise total progress (Financial) made by the Discom is submitted as shown in the table below:

Year-on-year progress / Infrastructure Growth of MPPKVVCL, Jabalpur

S N	Particulars	Unit	2011-12	2012-13	2013-14	2014-15	2015-16	% increase wrt 2011-12
1	New 33/11 kV Sub-Station	No	914	922	947	964	983	8%
2	No of PTR	No	1416	1463	1597	1694	1705	20%
3	33 KV Line	Km	14929	15288	16045	16815	17099	15%
4	11 KV Line	Km	81635	95985	105542	113330	116273	42%
5	Distribution X-mer (S/S)	No	95022	116651	132001	143280	148195	56%
6	New L.T. Line	Km	107984	110614	113005	115554	116904	8%
7	Capacity of PTR	MV A	5556	5914.8	6776.65	7493	7832	41%
8	Capacity of DTR	MV A	5629	6431	7046	7503	7660	36%

Discom has considerably enhanced its network by implementation of different schemes leading to improved quality of supply and less burden on the network. The year wise total progress (physical) made by the Discom is submitted as shown in the table below:

Year wise Investment (Rs in Cr)							
S.No	Name of scheme	FY-12	FY-13	FY-14	FY-15	FY-16	Total
System Strengthening							
1	ST(N)	20.88	53.46	334.17	140.5	7.2	556.24
2	TSP	18.37	30.96	69.95	85.09	53.99	258.36
3	SCSP	29.01	37.71	59.83	60.09	104.5	291.11
4	KMP/Anudan Yojna	35.15	72.74	74.43	56.53	59.55	298.40

5	System Improvement	22.45	0	0	0	27.19	49.64
7	R-APDRP-Part-A	31.08	9.67	9.19	5.87	5.88	61.69
8	R-APDRP-Part-B	46.1	81.45	97.86	92.93	42.33	360.67
9	SCADA	0.035	0.035	2.10	1.47	2.05	5.69
10	RGGVY	169.5	131.6	140.3	110.3	198.1	749.90
11	ADB	185.2	149.7	57.33	67.23	71.49	530.95
12	Feeder Separation-REC	48.44	102.9	67.83	44.18	14.39	277.77
13	Feeder Separation-ADB	197.7	106.6	142.23	108.6	33.45	588.48
Total		803.85	776.90	1055.2	772.8	620.1	4028.90

The table given below summarizes the scheme-wise benefits accrued –

Sr. No	Benefit areas	SSTD-GoMP, TSP, SCP	Kisan Anudan Yojna	ADB	Feeder separation (ADB & REC)	RGGVY	RAPDRP (Part- A & B)
1	AT&C loss reduction	√	√	√	√	√	√
2	System strengthening (Load growth)	√	√	√	√	√	√
3	Reliability improvement	√	√	√	√	√	√
4	Customer care						√
5	Infrastructure development	√	√	√	√	√	√
6	New service connection		√		√	√	
7	Information technology			√			√

14.3.3. Central Discom submission:

The physical & financial progress of works at the end of second quarter of year 2016-17 is tabulated below:-

Quarter wise Physical & Financial Achievement for FY16-17											
S. No.	Particulars	Ist QTR.		IIInd QTR.		IIIrd QTR.		IVth QTR.		(Rs. in Lakhs)	
		Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
1	FEEDER SEPARATION	5000.00	4082.00	6000.00	4932.00	8000.00		9000.00		28000.00	9014.00
2	R-APDRP (PART-A)	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
3	R-APDRP (PART-B)	1392.00	844.00	0.00	1613.00	0.00		0.00		1392.00	2457.00
4	SCADA (PART A+B)	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00
5	RGGVY	3803.80	5852.66	3882.00	7411.84	2108.30		1580.30		11374.40	13264.50
6	ADB	2227.00	2569.00	2246.00	1748.00	2205.00		2322.00		9000.00	4317.00
7	NEW PUMP CONNECTION	3660.00	665.80	5235.00	1204.21	5235.00		5057.00		19187.00	1870.01
8	SYSTEM STRENGTHENING SCHEME	1518.30	1328.11	3007.90	1390.53	3736.00		3365.80		11628.00	2718.64
9	IPDS	0.00	0.00	0.00	0.00	964.60		8681.40		9646.00	0.00
10	DDUGJY	0.00	0.00	343.20	0.00	5963.75		11727.75		18034.70	0.00
11	TC to PC	818.00	0.00	1636.00	0.00	1636.00		0.00		4090.00	0.00
12	Smart Metering	0.00	0.00	0.00	0.00	10.00		10.00		20.00	0.00
13	TRANSFORMER FAILURE/ RENOVATION SCHEME	1100.00	0.00	600.00	0.00	1100.00		500.00		3300.00	0.00
	TOTAL	19519.10	15341.57	22950.10	18299.58	30958.65		42244.25		115672.10	33641.15

Parameter wise Physical & Financial Achievement for FY16-17												
S. No.	Particulars	Unit	Ist Qtr.		IIInd Qtr.		IIIrd Qtr.		IV Qtr.		Total of 4 Qtrs.	
			Target	Achievement	Target	Achievement	Target	Ach.	Target	Ach.	Target	Achievement
1	33/ 11 KV Sub-station											
	New											
	5.00 MVA	No.	20	23	23	17	19		21		83	40
	3.15 MVA	No.	0	0	0	2	0		0		0	2
	Additional											
	5.00 MVA	No.	4	1	10	2	12		15		41	3
	3.15 MVA	No.	0	0	0	2	0		0		0	2
	Augmentation											
	5 MVA to 8 MVA	No.	0	0	0	0	0		0		0	0
	3.15 MVA to 5 MVA	No.	4	6	19	2	22		5		50	8
	1.6 MVA to 3.15 MVA	No.	0	0	0	0	0		0		0	0
2	33 KV Line											
	New (Single Circuit)	Kms.	189.00	129.24	194.00	139	183.00		229.00		795.00	268.56
	Re-conductoring	Kms.	0.00	0.00	0.00	0	0.00		0.00		0.00	0.00
3	11 KV Line											
	New	Kms.	1319.00	1628.95	1641.00	1003	2423.00		3290.00		8673.00	2632.20
	Re-conductoring	Kms.	0.00	0.00	0.00	0	0.00		0.00		0.00	0.00
	Conductor augmentation	Kms.	0.00	91.00	0.00	0	0.00		0.00		0.00	91.00
	New 11KV line on AB Cable	Kms.	0.00	0.00	0.00	0	0.00		0.00		0.00	0.00
4	LT Line											
	New LT on Cable	Kms.	343.30	427.85	210.00	312	676.60		837.70		2067.60	739.67
	Existing LT line on bare conductor to Cable	Kms.	512.70	338.50	869.00	495	970.40		1007.30		3359.40	833.90

Parameter wise Physical & Financial Achievement for FY16-17												
S. No.	Particulars	Unit	Ist Qtr.		IIInd Qtr.		IIIrd Qtr.		IV Qtr.		Total of 4 Qtrs.	
			Target	Achievement	Target	Achievement	Target	Ach.	Target	Ach.	Target	Achievement
5	Distribution Transformer											
	New/ Addl.	No.	2254	2363	3630	2537	5958		8134		19976	4900
	Augmentation	No.	0	0	0	0	0		0		0	0
	DTR Metering	No.	105	31	105	10	105		105		420	41
6	New Connection (Normal)											
	Single Phase	No.	570	32193	570	42821	480		480		2100	75014
	Three Phase	No.	105	7742	105	7982	0		0		210	15724
	HT	No.	0	34	0	16	0		0		0	50
7	Village electrification											
	BPL Connection under RGGVY	No.	6000	23251	9000	23607	9000		7500		31500	46858
	Elect. Of Un-Electrified Villages under RGGVY	No.	0	0	0	0	0		0		0	0
	Intensive electrification of Villages under RGGVY	No.	600	0	150	42	600		1500		2850	42
8	No. of Pump (Extn. Work)	No.	2100	431	3000	828	3000		2900		11000	1259
9	Meter and MEs Installation	No.	9464	2152	0	0	0		0		9464	2152
10	33 KV Bay	No.	0	0	0	0	0		0		0	0
	11KV Bay	No.	0	3	0	17	0		0		0	20
11	Conversion LT line to 11 KV	Kms.	0	0	0	0	0		0		0	0
12	Capacitor Bank	No.	15	30	15	0	0		0		30	30
13	Meter & Renovation of	No.	0	6567	0	5269	0		0		0	11836

Parameter wise Physical & Financial Achievement for FY16-17												
(Rs. in Lakhs)												
S. No.	Particulars	Unit	Ist Qtr.		IIInd Qtr.		IIIrd Qtr.		IV Qtr.		Total of 4 Qtrs.	
			Target	Achievement	Target	Achievement	Target	Ach.	Target	Ach.	Target	Achievement
	service line under feeder separation											
14 a)	No. of Feeders (Feeder Seperation)	No.	0	0	0	0	0		0		0	0
b)	Total No. of Villages under Feeder Seperation	No.	0	0	0	0	0		0		0	0
15	Sub-station R&M	No.	0	0	0	0	0		0		0	0
16	HVDS	No.	0	9	0	0	0		0		0	9
17	Others/PMC/Mobilization Adv.	LS	0	0	0	0	0		0		0	0

14.3.4. West Discom submission:

Discom submits that benefits on account of schemes under execution are evident in improved supply arrangements and continuous supply. Further, under progress implementation of these schemes has resulted in reduction of losses. Loss Reduction schemes have helped in considerably reducing the loss levels. The petitioner has considerably saved in power purchase cost due to lower distribution loss levels.

The below table depicts the progress made by petitioner in implementing capex plan. The year wise total progress (Financial) made by the Discom is submitted as shown in the table below:

MPPKVCL, Indore						
Year wise Impact assessment of Capital Expenditure Plan FY-2011-12 to 2015-16(Financial Progress)						
S. No	Scheme	Year wise Achievement				
		2011- 12	2012-13	2013- 14	2014- 15	2015-16
1	System Strengthening Scheme					
i	GoMP (N)	23.35	82.12	279.05	152.07	135.05
ii.	Schedule Cast Sub Plan (SCSP)	28.85	35.79	37.52	36.33	41.28
iii.	Tribal Sub Plan (TSP)	17.96	25.49	47.83	53.9	41.85
2	Feeder Separation	309.87	693.48	138.56	73.47	50.57
3	New Pump Connections	39.26	127.11	71.34	109.98	77.91
4	ADB	139.59	122.69	35.73	49.07	49.64
5	RGGVY	93.08	80.73	74.66	100.84	160.05
6	RAPDRP Part-A & Part-B	70.4	138.3	97.3	106.87	62.77
7	Simhantha 2016	3.09	2	2.78	4.37	70.14
	Total (Crore)	725.45	1307.71	784.77	686.9	689.26
						4194.09

Discom has considerably enhanced its network by implementation of different schemes leading to improved quality of supply and less burden on the network as evident from the table below-

S. No.	Particulars	Unit	11-12	12-13	13-14	14-15	15-16	% Increase w.r.t 11- 12
1	New 33/11 KV S/S	No	1054	1091	1140	1160	1218	16%
2	No of PTR	No	1691	1805	2027	2091	2173	29%
3	New 33 KV line	KM	13232	13577	13942	14396	15225	15%
4	New 11 KV line	KM	69188	84238	95603	100845	106957	55%

S. No.	Particulars	Unit	11-12	12-13	13-14	14-15	15-16	% Increase w.r.t 11-12
5	Distribution transformers- New/Addl	No	110401	123805	146768	163475	189068	71%
6	New LT line	KM	140616	145878	147621	150172	153735	9%
7	Capacity of PTR	MVA	7012	7693	8703	9366	9944	42%
8	Capacity of DTR	MVA	9229	9956	10984	11675	12987	41%

The table given below summarises the scheme-wise benefits accrued -

Sr. No	Benefit areas	SSTD- GoMP, TSP, SCP	Kisan Anudan Yojna	ADB	Feeder separation (ADB & REC)	RGGVY	RAPDRP (Part- A & B)
1	AT&C loss reduction	√	√	√	√	√	√
2	System strengthening (Load growth)	√	√	√	√	√	√
3	Reliability improvement	√	√	√	√	√	√
4	Customer care						√
5	Infrastructure development	√	√	√	√	√	√
6	New service connection		√		√	√	
7	Information technology			√			√

The net impact against of all the schemes have been figured out .Unit saving of West Discom is given below:

Name of scheme	Saving (MU)- 2011-12	Saving (MU)- 2012-13	Saving (MU)- 2013-14	Saving (MU)- 2014-15
West Discom	208.17	106.42	150.98	348.47

14.4. Segregation of rural feeders into agricultural and others

14.4.1. Commission's Directives:

The Commission is in receipt of progress in the matter. Feeder separation is reported to be completed in a majority of feeders under the schemes. However, other provisions of the schemes like installation of DTRs, meters, laying of LT cables etc. are lagging behind. It is obvious that the present status of implementation has been below expectations. Petitioners are directed to complete all works envisaged under these schemes expeditiously.

Commission's Observation in FY 17 Order

The Commission observed that West Discom has made significant progress while East & Central Discom are lagging behind. The Commission direct East & Central Discoms to complete the remaining works under these schemes expeditiously.

14.4.2. East Discom submission:

The progress of Feeder Separation Project is being regularly monitored from Corporate Office. To expedite progress 16 nos. non performers Contracts has been terminated and against them 14 number has been rewarded to new different companies and for rest two work is being executed departmentally. All efforts are being made to complete the Project at the earliest.

14.4.3. Central Discom submission:

The progress of feeder separation work at the end of second quarter of the year 2016-17 is tabulated below:-

S. No.	Particulars	Status of Feeders(No.)
1	Total Mixed Feeder	2452
2	Feeders covered in DeenDayalUpadhyayGraminJyotiYojna (DDUGJY)	436
3	Balance Mixed Feeders to be covered under Feeder Separation Scheme	2016
4	Feeders Separated in all respect	992
5	Feeders Electrically Operated but balance work left like cabling and meterization	382
6	Total Feeders separated & operated for 10 hours agriculture supply	1374
7	Feeders where work is under progress	405
8	Untouched Feeders	237

Status as on 31.10.2016

Total Feeders to be separated	Feeder Separated in all respect	Feeder Separated but balance work left like cabling, Meterization etc.	Feeders to be separated in all respect (Balance)	% Achievement	Financial Status							
					Project cost		Exp. Up to Aug. 16		Exp. Up to Sept-16		% achievement	
					Rs.in Cr.	Rs.in Cr.	Rs.in Cr.	Rs.in Cr.	Rs.in Cr.	Rs.in Cr.		
1	2	3	4=(1-2-3)	5=(2+3)/1*100								
2016	992	382	642	68.15%	2573		1789.77		1816.22		71%	

Month-wise Achievement against the action plan under Feeder Separation Project

1	Completion Plan for Feeders which are separated but balance work like cabling, Meterisation left (328Nos) as on 31.01.2016	Feb.-16	Ach.	March-16	Ach.	April-16	Ach.	May-16	Ach.	June-16	Ach.	July-16	Ach.	Aug-16	Ach.	Sept.-16	Ach.	Oct-16	Nov.-16	Dec.-16	Jan.-17	Feb.-17
		3	4	4	5	4	5	10	4	10	11	15	6	15	13	15	15	10	15	15	30	27
		Mar.-17		April-17		May.-17		Jun-17		Jul-17		Aug.-17		Sept.-17		Oct.-17		Nov.-17	Dec.-17	Jan.-18	Feb.-18	
		30		20		20		25		20		20		20		0		0	0	0	0	
2 Completion plan for balance feeders (768 No. Feeder)																						
a	Feeder separation only (From WIP to ES)	Feb.-16	Ach.	March-16	Ach.	April-16	Ach.	May-16	Ach.	June-16	Ach.	July-16	Ach.	Aug-16	Ach.	Sept.-16	Ach.	Oct-16	Nov.-16	Dec.-16	Jan.-17	Feb.-17
		15	8	20	10	20	17	25	4	25	22	20	24	20	10	20	16	30	35	35	35	35
		Mar.-17		April-17		May.-17		Jun-17		Jul-17		Aug.-17		Sept.-17		Oct.-17		Nov.-17	Dec.-17	Jan.-18	Feb.-18	
		40		25		25		25		30		30		50		60		65	83	0	0	
b	Feeder separation complete work in all respect including cabling, Meterisation	Feb.-16	Ach.	Mar.-16	Ach.	April-16	Ach.	May-16	Ach.	June-16	Ach.	July-16	Ach.	Aug-16	Ach.	Sept.-16	Ach.	Oct-16	Nov.-16	Dec.-16	Jan.-17	Feb.-17
		3	2	3	0	3	1	5	0	5	6	6	3	6	1	6	2	12	12	35	35	30
		Mar.-17		April-17		May.-17		Jun-17		Jul-17		Aug.-17		Sept.-17		Oct.-17		Nov.-17	Dec.-17	Jan.-18	Feb.-18	
		35		35		35		35		35		40		44		60		60	60	80	88	

14.4.4. West Discom submission:

Agricultural feeders and domestic feeders are separated in all districts within jurisdiction of West Discom. Minor works of cabling and metering are under execution in 05 nos. of districts namely Shajapur, Khandwa, Khargone, Barwani & Dhar.

14.5. Issue of tariff card with first bill based on new tariff

14.5.1. Commission's Directives:

The Commission directs that the practice of providing tariff cards should be continued for tariff order of FY 2015-16.

Commission's Observation in FY 17 Tariff Order

The Commission has noted the submission of Discoms and directs that the practice of providing tariff cards should be continued.

14.5.2. East Discom submission:

East Discom has arranged to print tariff cards for tariff order FY 2016-17 for different categories of the consumers and the same have been provided to the consumers.

14.5.3. Central Discom submission:

Tariff cards were issued to LT consumers. In addition, tariff schedule booklets were provided to all HT consumers.

14.5.4. West Discom submission:

Information related to tariff of different categories for FY 2016-17 was provided to the consumers.

14.6. Filing of ARR and tariff proposals in Hindi language

14.6.1. Commission's Directives:

Subsequent to the filing of the ARR/Tariff Petition in English, Discoms have submitted its Hindi version which was made public. The next filing of ARR/ tariff proposals should also be made in Hindi and English. In addition the Discoms are directed to submit replies to objectors in the language English/ Hindi in which objections are filed.

Commission's Observation in FY 17 tariff order.

Subsequent to the filing of the ARR/Tariff Petition in English, Discoms have submitted its Hindi version which was made available to stake-holders. The next filing of ARR/ tariff proposals should also be made in Hindi and English. In addition the Discoms are directed to submit replies to objectors in the language English/ Hindi in which objections are filed

14.6.2. East Discom submission:

The Hindi version of the subject petition will be submitted in due course after filing of petition in English.

14.6.3. Central Discom submission:

Hindi version of the ARR/Tariff proposals petition is being submitted subsequent to filing of petition in English. The Discom will also make sure to submit replies to the objectors in the language English/Hindi in which objections are filed.

14.6.4. West Discom submission:

Hindi version of the ARR and tariff proposal petition will be submitted subsequent to filing of FY 18 petition in English. Further Discom is complying to commission's directives every year regarding submission of replies to objectors in the language English/Hindi in which objections are filed and will follow the same practice for objections of ARR and tariff petition of FY 2017-18.

14.7. Accounting of rebates/incentives/surcharge

14.7.1. Commission's Directives:

The Discoms are directed to continue to compile the requisite details in respect of HT consumers and submit with their next ARR/tariff proposal. They should also collect and submit the details in respect of LT consumers.

Commission's Observation in FY 17 Tariff Order

Discoms are directed to submit details of rebates/incentives/surcharge for HT and LT consumers in their next ARR/tariff proposal.

14.7.2. East Discom submission:

The detail of rebates / incentives / surcharge for HT consumers up to Jun'16 submitted in soft copy. The detail for July-16 to Aug-16 is being emailed in soft copy.

14.7.3. Central Discom submission:

The directive of the Commission will be complied.

14.7.4. West Discom submission:

Discom submits that it has included details of rebates / incentives / surcharge for HT consumers and LT consumers of RAPDRP location.

14.8. Maintaining uniform accounts

14.8.1. Commission's Directives:

The Commission reiterates that Discoms should bring uniformity in maintaining the accounts at an early date. MPPMCL, as holding Company of all the Discoms, is directed to coordinate with the Discoms to bring about such uniformity.

Commission's Observation in FY 17 tariff order

The Commission has noted the submission of Discom

14.8.2. East Discom submission:

No further directions to comply with.

14.8.3. Central Discom submission:

No further directives from Hon'ble Commission.

14.8.4. West Discom submission:

No further directive from Hon'ble Commission

14.9. Mandatory demand based tariff for all Non-domestic LV consumers having load in excess of 25 HP

14.9.1. Commission's Directives:

The Commission directs the Central Discom to expedite the installation of AMR meters on remaining installations.

Commission's Observation in FY 17 tariff order

The Commission has noted the submission of Discoms

14.9.2. East Discom submission:

No further directions to comply with.

14.9.3. Central Discom submission:

No further directions from Hon'ble Commission.

14.9.4. West Discom submission:

No further direction from Hon'ble Commission

14.10. Assessment of consumption for billing to consumers

14.10.1. Commission's Directives:

The Commission directs the Discoms to strictly comply with the provisions of the Regulations in the matter and take stringent action in cases where noncompliance in the matter is found.

Commission's Observation in FY 17 tariff order

Commission directs the Discoms to strictly comply with the provisions of the regulations in the matter and take stringent action in cases where noncompliance in the matter is found.

14.10.2. East Discom submission:

East Discom is strictly adhering to the directive and accordingly, all field offices have been directed to ensure assessment for billing only as per the provisions given in Supply Code, and the tariff order.

14.10.3. Central Discom submission:

Discom submits that the directive of the Hon'ble Commission is being complied with.

14.10.4. West Discom submission:

Discom submits that it is strictly adhering to the directive and accordingly, all field offices have been directed to ensure assessment for billing only as per provision given in Supply code, and the tariff order.

14.11. Technical studies of the Distribution network to ascertain voltage-wise cost of supply

14.11.1. Commission's Directives:

The Commission directs the petitioners to carry out detailed technical studies of the Distribution network required for computing voltage-wise losses cost of supply.

Commission's observation in FY 17 Tariff Order

Commission is not convinced with the submissions of Discoms and directs them to carry out a detailed technical study on voltage wise losses on Distribution network and furnish report within 3 months.

14.11.2. East Discom submission:

Presently East Discom is working out the system loss at 33kV level and at 11kV+LT level. The system loss for the period Apr-16 to Oct-16 at 33kV level is 4.25% and at 11kV+LT level is 27.18%. In the absence of meterisation at DTR level the system loss at 11kV and LT Level is difficult to work out separately.

Further as per the MoU of Project UDAY, the timeline for DTR meterisation is as follows:

Sr.no.	Activity	Sub-activity	Timeline
3.	DT metering	Urban areas	31/12/2017
		Rural areas	31/12/2018

Until 100% DTR meterisation is complete, the computation of losses for 11kV and LT system separately is a very cumbersome task.

However it is submitted that for determination of Voltage wise cost of supply, the judgment passed by Appellate Tribunal for Electricity (APTEL) in Appeal No. 103 of 2010 & IA Nos. 137 & 138 of 2010 may please be perused.

The extract of APTEL's order is elaborated as below.

Extract of APTEL's order

"32. Ideally, the network costs can be split into the partial costs of the different voltage level and the cost of supply at a particular voltage level is the cost at that voltage level and upstream network. However, in the absence of segregated network costs, it would be prudent to work out the voltage-wise cost of supply taking into account the distribution losses at different voltage levels as a first major step in the right direction. As power purchase cost is a major component of the tariff, apportioning the power purchase cost at different voltage levels taking into account the distribution losses at the relevant voltage level and the upstream system will facilitate determination of voltage wise cost of supply, though not very accurate, but a simple and practical method to reflect the actual cost of supply.

33. The technical distribution system losses in the distribution network can be assessed by carrying out system studies based on the available load data. Some difficulty might be faced in reflecting the entire distribution system at 11 KV and 0.4 KV due to vastness of data. This could be simplified by carrying out field studies with representative feeders of the various consumer mix prevailing in the distribution system. However, the actual distribution losses allowed in the ARR which include the commercial losses will be more than the technical losses determined by the system studies. Therefore, the difference between the losses allowed in the ARR and that determined by the system studies may have to be apportioned to different voltage levels in proportion to the annual gross energy consumption at the respective voltage level. The annual gross energy consumption at a voltage level will be the sum of energy consumption of all consumer categories connected at that voltage plus the technical distribution losses corresponding to that voltage level as worked out by system studies. In this manner, the total losses allowed in the ARR can be apportioned to different voltage levels including the EHT consumers directly connected to the transmission system of GRIDCO. The cost of supply of the appellant's category who are connected to the 220/132 KV voltage may have zero technical losses but will have a component of apportioned distribution losses due to difference

between the loss level allowed in ARR (which includes commercial losses) and the technical losses determined by the system studies, which they have to bear as consumers of the distribution licensee.

34. Thus Power Purchase Cost which is the major component of tariff can be segregated for different voltage levels taking into account the transmission and distribution losses, both commercial and technical, for the relevant voltage level and upstream system. As segregated network costs are not available, all the other costs such as Return on Equity, Interest on Loan, depreciation, interest on working capital and O&M costs can be pooled and apportioned equitably, on pro-rata basis, to all the voltage levels including the appellant's category to determine the cost of supply. Segregating Power Purchase cost taking into account voltage-wise transmission and distribution losses will be a major step in the right direction for determining the actual cost of supply to various consumer categories. All consumer categories connected to the same voltage will have the same cost of supply. Further, refinements in formulation for cost of supply can be done gradually when more data is available."

In view of the above mentioned order of APTEL, as per the directives of the Hon'ble Commission the Discoms submit the details of calculation of the voltage wise cost of supply as per the methodology provided by the APTEL. Further it is submitted that the assignment of segregation of technical and commercial losses has been entrusted to consultant M/s PwC and after the completion of work, the Discoms will carry out the analysis and will submit the detailed report to the Commission.

14.11.3. Central Discom submission:

Until 100% meterisation is completed, it is very difficult to carry out such type of studies. However the Discom is pursuing the studies.

For ascertaining the LT, 11 KV & 33 KV cost of supply, the loss levels at each voltage are required to be computed. For this purpose, 100% meterisation is required so that correct consumption of energy at each level may be known. The meterisation plan for Central Discom has already been submitted to MPERC. It is to mention here that at the end of Nov.2016, approx. 16% of meterisation was remaining so Hon'ble Commission is requested to grant time upto mid of the financial year 2017-18 i.e. upto September 2017 after which such study may be carried out.

14.11.4. West Discom submission:

The work has been assigned to the consultant for "**Loss calculation (with segregation of technical & commercial losses)**" accordingly compliance shall be submitted before some Hon'ble Commission soon. It is requested to the Hon'ble Commission kindly grant more time in this regard.

14.12. *Impact assessment study for switching from KWh billing to KVAh billing.*

14.12.1. Commission's Directives:

The Commission directs the Petitioners to carry out impact assessment study on transition from KWh billing to KVAh billing and submit report within six months.

14.12.2. East Discom submission:

The existing meters installed in the premises of HT consumers have the provisions of recording KVAh consumption in ToD blocks, although the meters have been configured for the same as at present KVAh energy is being recorded for the entire billing period only. As such it is technically feasible to switch over to KVAh billing system. Although there are certain difficulties in implementation of KVAh based billing. Discoms have large numbers of open access consumers in the State. The energy of open access consumers is scheduled in KWh and credit of this energy is to be given in the energy bills of the OA consumers in each 15 minutes block. After switching over of KWh based tariff system to KVAh based tariff system, it is not clear as to how credit would be passed on to partial Open Access consumers.

The Discom has done a preliminary analysis on sample bills of different voltage level wise HT consumers. The working model and resultant outcome has been annexed for your kind perusal.

14.12.3. Central Discom submission:

The Central Discom has already submitted (Page No.174 of Petition) that in case of switching from Kwh to KVAh billing, the calculation of credit of energy fed by open access consumers in the system is very difficult because this energy is scheduled in Kwh and credit to them is given in each 15 minutes block. The existing meters are not having provisions of recording KVAh in each 15 minutes block. These meters record the KVAh for the entire billing period.

As explained above for switching from Kwh billing to KVAh billing, the meters are required to be recalibrated or changed which in turn may cost heavily.

14.12.4 West Discom submission:

The existing meters installed in the premises of HT consumers have the provisions of recording KVAh consumption in ToD blocks, although the meters have been configured for the same as at present KVAh energy is being recorded for the entire billing period only. As such it is technically feasible to switch over to KVAh billing system. The following are the effects of implementation of KVAh based billing:

i. The incentive above 95% power factors will be eliminated:

At present an incentive is being provided to maintain PF above 95%, in apparent based tariff there would be no such incentive available to the consumer and a charges shall be levied on them even though they maintain PF above 95%. Looking to the present practice some consumer may have made investment to gain such incentive thus it will be an indirect increase in terms of financial burden to the presently disciplined consumers who are maintaining PF at 95% or above and such consumer may protest such transition from KWH to KVAH.

ii. The exemption of penalty above 90% threshold limit will be eliminated:

Presently an threshold limit of 90% defined for penalty. The power factors greater than the threshold limit is exempted from penalization. While the power factors less than the threshold limit are levied p.f penalty. Further above 95% power factor incentive motivates the consumers to improve their power factors achieving higher power factors. According to kVAh based tariff, the accepted threshold limit of p.f is just 1, therefore wouldn't be any penalty exemption for power factor within the range of 90% to 95% as available presently this will be an additional tariff burden for such class of consumer.

iii. It may be a possibility that once KVAh billing is introduced, the consumer tends to overcompensate the reactive power requirement to make doubly sure that KWh is as close to KVAh and any over compensation brings the PF to leading and the lead energy will be pumped to the Grid and in turn the DISCOMs may have to introduce reactors to compensate the lead energy. This will increase the fixed cost to the licensee and the system will end up with more losses.

iv. The Discom purchases power in units of KWH if sold energy is measured in KVAh units the energy balance and losses calculation will not be measured accurately.

v. Discoms have large numbers of open access consumers in the State. The energy of open access consumers is scheduled in KWh and credit of this energy is to be given in the energy bills of the OA consumers in each 15 minutes block. After switching over of KWh based tariff system to KVAh based tariff system, it is not clear as to how credit would be passed on to partial Open Access consumers.

- vi. In some category of consumers there is a rebate on incremental consumption. In such when the KVAH based tariff will be implemented there will be difficult to calculate such rebate in the first year because the corresponding consumption shall be available in terms of KWH only.

14.13. Impact assessment of billing of tariff minimum consumption.

14.13.1 Commission's Directives:

The Commission directs the Petitioners to carry out impact assessment of billing of tariff minimum consumption for each category of previous two years and submit report within six months.

14.13.2 East Discom submission:

The Petitioner also would like to submit that the HT Billing details already furnished to the Commission also includes the billing of TMM. However the East Discom is of the opinion that fixed expenses of the company are to be recovered through the fixed charges only, but this can result in abnormal increase in the fixed charges. Hence, fixed expenses are recovered by partially embedding them in the energy charges, fixed charges and the tariff minimum charges.

During the year FY 15-16, East Discom has billed Rs. 17.06 Cr as TMM charges in respect of HT Consumers and during FY 16-17 upto June, the billing of TMM charges in respect of HT Consumers is Rs. 9.98 Cr. The Discom agrees with the submission made by West Discom.

14.13.3 Central Discom submission:

The details of category-wise tariff minimum received during the year 2014-15 & 2015-16 has already been submitted to MPERC (Page No.175 of Petition) from which it may be observed that there is a huge variation between the category-wise amount received. It is therefore submitted that revenue which is received from the billing of tariff minimum is uncertain and cannot be predicted.

As far as the justification for continuing with TMM is concerned, it is submitted that the fixed expenses of the Company are to be recovered through the fixed charges only but this can result in abnormal increase in the fixed charges. Hence, fixed expenses are recovered by partially embedding them in the energy charges, fixed charges and the tariff minimum charges.

The data of LT consumers is very voluminous. However details of HT consumers have been shown below:-

MPMKVVCL, Bhopal		
Tariff minimum consumption for HT consumers		
(Amount in Lakhs)		
	2014-15	2015-16

Tariff category	No. of consumer	Amount billed in tariff minimum	No. of consumer	Amount billed in tariff minimum
HV-1.1	0	0.00	3	396.27
HV-3.1	323	668.95	325	961.02
HV-3.2	257	489.79	186	1031.13
HV-3.3	5	14.53	2	11.32
HV-3.5	2	0.99	2	0.66
HV-4.1	1	1.93	2	2.90
HV-5.1	26	113.10	34	109.74
HV-6.1	2	1.25	1	15.72
Total	616	1290.55	555	2528.75

14.13.4 West Discom submission:

Kind attention of the Hon'ble Commission is drawn toward the Tariff Regulation 2015, the relevant clause of the said regulation is read as under:

42 Determination of tariffs for supply to consumers

42.1 The Commission shall determine the charges recoverable from different consumer categories based on the following principles:

.....

(d) Tariff minimum: Tariff minimum charges for a class or category of the consumers shall be recoverable from the consumers till the time fixed charges are aligned with recovery of full fixed costs.;

.....

In view of the above provision of the regulation, billing of tariff minimum charges cannot discontinued until the fixed charges are aligned with recovery of full fixed cost.

The DISCOMs would also like to submit before the Hon'ble Commission that, the two-part Retail tariff in the state of MP is not a true reflection of the fixed and variable cost which DISCOMs have to bear in terms of fixed and variable cost of power purchase and the fixed cost of the establishment. A part of the fixed cost borne by DISCOMs is recovered by the DISCOMs in the form of energy charges from retail consumers.

Analysis of Tariff Order and Revenue Realised for FY 2015-16

As per Tariff Order FY 2015-16 (Whole MP)		
Approved ARR	26555	Rs Cr
Revenue at Proposed Tariff	26555	Rs Cr
Power Purchase Cost	20979	Rs Cr

As per Tariff Order FY 2015-16 (Whole MP)		
Fixed Cost of Power Purchase	9906	Rs Cr
Variable Cost of Power Purchase	11073	Rs Cr
Other Fixed cost of the Discoms (return on equity, depreciation, interest on loan, interest on working capital and O&M expenses)	5576	Rs Cr
Total Fixed Cost including fixed component of Power Cost	15482	Rs Cr
Total Variable Cost	11073	Rs Cr
As per Actuals (Rs-15) (Whole MP)		
Fixed cost recovered (as per R-15)	3407	Rs Cr
Variable cost recovered (as per R-15)	19311	Rs Cr

It can be observed that the recovery of fixed charges from consumers is much less than the fixed charges to be paid by the Discoms. Therefore Tariff minimum charges is a kind of fixed charged being recovered from consumers. Further as per provision of the above quoted clause 42 of the tariff regulation tariff minimum charges cannot be removed unless the fixed charges are aligned with recovery of full fixed cost on the other hand there is a need to increase fixed charges in the line of the fixed cost of the Discom.

As directed by the Hon'ble Commission, complete detail of tariff minimum units billed along with the amount billed for the FY 2014-15 and FY 2015-16 is being enclosed as soft.

14.14 Segregation of Technical and Commercial losses:

14.14.1 Commission's Directives:

The commission directs the Petitioners to carry out detailed study of the Distribution system and submit a report on segregated technical and commercial loss level of Discom within six months.

14.14.2 East Discom submission:

In East Discom two feeders in each of the circles have been selected as pilot project for detailed study on Segregation of Technical and Commercial losses. The detail of these feeders is shown in the table below:-

Sr. No.	NAME OF CIRCLE	NAME OF FEEDER
1	JABALPUR CITY CIRCLE	11KV TRIMURTI NAGAR
		11KV VIJAY NAGAR
2	JABALPUR (O&M) CIRCLE	11KV SIHORA TOWN – II
		11KV SIHORA COLLAGE
3	CHHINDWARA CIRCLE	11KV LINGA
		11KV TOWN 5
4	SEONI CIRCLE	11KV GANJ T-5

Sr. No.	NAME OF CIRCLE	NAME OF FEEDER
		11KV TOWN-2
5	MANDLA CIRCLE	11KV MAHARAJPUR 11KV TOWN-1
6	NARSINGHPUR CIRCLE	11KV JAIL ROAD 11KV STATION ROAD
7	KATNI CIRCLE	11KV CITY – 4 11KV KUCHGAWA
8	SAGAR CIRCLE	11KV CITY - 2 11KV SHASTRI CHOUK
9	DAMOH CIRCLE	11KV TOWN – 1 11KV TOWN - VI
10	CHHATARPUR CIRCLE	11KV CHHATARPUR NEW BUS STAND-2 11KV PANNA TOWN - 1
11	TIKAMGARH CIRCLE	11KV DHONGA 11KV BADAGAON
12	REWA CIRCLE	11KV MAJHILA TOLA 11KV SHILPI PLAZA
13	SATNA CIRCLE	11KV SATNA TRANSPORT NAGAR 11KV MAIHAR TOWN - 2
14	SIDHI CIRCLE	11KV SIDHI HOUSING BOARD 11KV SINGRAULI SARASWAH
15	SHAHDOL CIRCLE	11KV SHAHDOL BUDHAR CHOWK 11KV SOHAGPUR

The methodology being adopted for segregation of Technical and Commercial losses is first to determine technical loss and then subtract the same from the total loss. There are two methods to calculate the technical losses:-

- a) Real time accumulation method – In this method technical loss of the feeder is calculated using average current of each time stamped 30 minute integration period to get average power loss.
- b) Peak current method – In this method technical loss is calculated using peak current of feeder and the figures are multiplied by lost load factor to get average power loss.

As it appears from the study carried out by PFC during the period Nov'2015 to Feb'2016, the above given methods have also used in the calculation of technical losses.

Further East Discom has also conducted study of technical loss on 33kV voltage level in 09 feeders of different Circle and the technical losses on 33kV voltage level has been worked out as given below:

Study of Technical Losses on 33kV Feeders			
Sr. no.	Name of Circle	33kV feeder	Technical Losses
1	Narsinghpur	33 kV Them	3.15%
2	Chhindwara	33 kV Sausar	3.73%
3	Seoni	33 kV Ghansor	3.65%

4	Sidhi	33 kV Madwas	5.98%
5	Rewa	33 kV Baheradabar	5.54%
6	Satna	33 kV Amadara	3.62%
7	Tikamgarh	33 kV Mohangarh	4.95%
8	Shahdol	33 kV Manpur	6.67%
9	Chhatarpur	33 kV Basanapur	2.33%

It has been found that 33kV Umariya - Manpur feeder is having high technical loss i.e. 6.67%. This feeder is approx. 70.0 kms lengthy and loaded 23.2 MVA the conductor is old of size .075 ACSR, hence the losses are high.

Similarly in case of 33kV Sidhi-Madwas feeder also the technical loss is high i.e. 5.98%. This feeder is very lengthy i.e. 130 kms. New 132/33kV Sub-stn has been sanctioned at Madwas and on completion of EHV S/S the loss will be reduced.

Study of 02 Circles covering 108 Nos. 33kV feeders have been carried out for technical losses and the detailed report is enclosed. For computation of technical losses the units sent out from EHV S/stn on these 33kV feeders and units received at 33/11kV S/s have been considered. The difference units as feeder loss have been expressed at percentage technical loss on the 33kV feeder.

The month-wise technical losses of 33kV feeders from April'16 to Sept'16 are enclosed as Annexure 15.

14.14.3 Central Discom submission:

The methodology proposed to be adopted for segregation of technical and commercial losses is first to determine technical loss and then subtract the same from the total loss. There are two methods to calculate the technical losses:-

- a) Real time accumulation method – In this method technical loss of the feeder is calculated using average current of each time stamped 30 minute integration period to get average power loss.
- b) Peak current method – In this method technical loss is calculated using peak current of feeder and the figures are multiplied by lost load factor to get average power loss.

As a first step for segregation, two feeders from each circle have been selected for a pilot project. However implementation of this project may take some more time.

It is submitted that Central Discom vide letter No.436 dtd 16-07-16 has already submitted a report of Pilot Study for Segregation of Commercial losses from overall AT&C losses for Bhopal city. The study was carried out by PFC and the AT&C loss for Bhopal city for the period Nov.15 to Feb.16 was found as 38.21%. This report incorporates concept, methodology and calculation details of losses.

This report also suggests the steps to be taken to reduce the AT&C losses which are under consideration to be followed by Discom.

14.14.4 West Discom submission:

The work has been assigned to the consultant for “Loss calculation (with segregation of technical & commercial losses)” accordingly compliance shall be submitted before Hon’ble Commission soon. It is requested to the Hon’ble Commission kindly grant some more time in this regards.

14.15 Trading Margin petition:

14.15.1 Commission’s Directives:

The commission has directed MPPMCL to file the petition for determination of Trading Margin with appropriate Commission.

14.15.2 East Discom submission:

Petition is required to be filed exclusively by MPPMCL.

14.15.3 Central Discom submission:

The directive pertains to MPPMCL.

14.15.4 West Discom submission:

The directive pertains to MPPMCL.

14.15.5. MPPMCL Submission

As per item No.8 (ii) of State Govt. Notification No.2260-F-3-24-2009-XIII dt. 19/03/2013, M.P. Power Management Company Limited has been supplying power to the Discoms at the tariff determined/approved by MPERC and its own expenses are being distributed on actual basis in proportion to the energy drawn by respective Discoms.

MPPMCL has been operating on “No Profit and No Loss” basis. Therefore, till now at the end of each financial year, all the credits received by MPPMCL which formed the part of income of MPPMCL were being passed on to the Discoms in proportion to the energy drawl by respective Discoms as a part of their Power Purchase Costs.

14.16 Approval for Capital expenditure Plan

14.16.1 Commission's Directives:

The Commission has directed the Discoms to obtain appropriate approval for their capital expenditure plan as per Regulation 10.3 of MPERC (The Conditions of Distribution License for Distribution Licensee (including Deemed Licensee)), 2004.

14.16.2 East Discom submission:

The Petition is being filed shortly.

14.16.3 Central Discom submission:

The directive of Hon'ble Commission will be complied.

14.16.4 West Discom submission:

West Discom has prepared Capex plan for FY 2016-17 to 2020-21 which will be shortly submitted before the Hon'ble commission for necessary approval.

14.17 Operational efficiency measures considered to bridge the gap:

14.17.1 Commission's Directives:

The Commission noted that the Petitioners have proposed to bridge the revenue gap through various operational efficiency measures therefore the Commission directs the Petitioners to work-out a concrete plan and methodology with quantitative analysis and submit the same to the Commission within three months.

14.17.2 East Discom submission:

Hon'ble Commission in its tariff order for FY 2016-17 has already quantified the saving from operational efficiency measures and had determined Rs. 600 Crores for the State out of which Rs. 231.93 Cr. has been quantified for East Discom. Further in this regard it is prayed that the quantitative analysis will be done at the time of filing the True-up.

The measures undertaken by the Discom are provided in the additional submission of the Petitioner.

14.17.3 Central Discom submission:

As shown in reply given in 14.1.3 of this chapter, the works being carried out along with their effect will also have an effect of increasing operational efficiency of Discom which in turn will help to bridge the revenue gap.

14.17.4 West Discom submission:

The details of the operational efficiency measures are provided in the additional submission of the Petitioner.

14.18 Separate record of increase in consumer-wise sales:**14.18.1 Commission's Directives:**

The Commission has considered the request of the Petitioners with regard to provide certain incentives / rebates in order to maximize the sales in view of surplus availability of power in the State. The Commission therefore directs the Petitioners to keep a separate record of increase in consumer-wise sales and submit the same to the Commission within six months.

14.18.2 East Discom submission:

The record of increase in consumer-wise sales of HV3.1 category for period April-16 to Aug-16 is a voluminous record and is being submitted to the Commission in Soft copy, through Email.

14.18.3 Central Discom submission:

The details of increase in consumer wise sales in the 1st quarter of FY16-17 are tabulated below. It is to mention here that the final R-15 statement of Company for the month September 2016 is not yet available so that details of IIInd quarter could not be shown here.

Month-wise, Category-wise Sales (in MUs) from Apr.16 to June.16				
	Category	Apr.16	Jun.16	% growth
LV-1	DOMESTIC	274.42	354.80	29.29
LV-2	NON-DOMESTIC	65.35	82.90	26.84
LV-3	PWW &STREET LIGHT	26.62	26.52	-0.37
LV-4	INDUSTRIAL	21.30	22.66	6.40
LV-5.1	IRRIGATION PUMPS	224.71	216.45	-3.68
LV-5.2	OTHER AGRICULTURE	0.35	0.36	1.57
	Total LT	612.75	703.68	14.84
HV-1	RAILWAY TRACTION			
HV-2	COAL MINES	2.58	2.62	1.22
HV-3	IND.NON-INDUSTRIAL	241.21	247.24	2.50
HV-4	SEASONAL	0.21	0.21	-0.87
HV-5.1	HT IRRIGATION	0.21	0.17	-19.21
HV-5.2	HT OTHER AGIRCULTURE	0.72	0.67	-7.44
HV-5.3	WATER WORKS	14.53	14.48	-0.35
HV-6	BULK SUPPLY TO EXEMP.	0.04	0.05	20.96
HV-7	BULK RESIDENCIAL	14.61	15.59	6.73
	Total HT	274.12	281.03	2.52
	Total (LT+HT)	886.88	984.71	11.03

It may be seen from the above table that in LT consumers there is a growth of 14.84% in sales whereas it is 2.52% in case of HT consumers. Although the desired details have already been submitted to MPERC, it is submitted that as far as the analysis of increase in sales is concerned, the sales model submitted to MPERC alongwith ARR shows the year-wise growth of each category and sub-category of consumers alongwith the reason to pick the most suitable growth rate for FY2017-18. The record of increase in consumer wise sale of HV 3.1 category for period Apr'16 to Dec'16 is being submitted to the Commission in soft copy through email.

14.18.4 West Discom submission:

Summary of increase in consumer sales for the period from April 16 to July 16 due to rebate on energy charges for the HT consumer is as under:

Month	No of consumer	Last year same month consumption	Current month consumption	Incremental consumption	10% rebate on energy charges in Rs.
April 16 to July 16	3479	32,42,19,949	43,15,58,756	10,73,38,807	5,61,04,774.00

Detail of increase in consumer wise sales after rebate declared for HV 3.1 tariff category on incremental monthly consumption w.r.t consumption of previous year same month is prepared and enclosed as soft.

A summary of compliance to directives is given below:

Directives	East	Central	West
1. Capex plan for reduction in technical losses	Detailed reply has been submitted	Detailed reply has been submitted	Discom submitted the details
2. Technical studies of the Distribution network to ascertain voltage wise cost of supply	Report will be submitted in six months.		
3. Impact assessment study for switching from KWh billing to KVAh billing	Sample working model and resultant outcome is being submitted. Detailed study report will be submitted in four months.	Detailed study report will be submitted in four months.	Detailed study report will be submitted in four months.
4. Impact assessment of billing of tariff minimum consumption	Details submitted.	Details submitted.	Details submitted.
5. Segregation of Technical and Commercial Losses	Pilot study report submitted and detailed report will be submitted in six months.	Pilot study report submitted and detailed report will be submitted in six months.	Work assigned to consultant. Detailed report will be submitted in six months.
6. Operational efficiency measures considered to bridge the gap	Discom will submit the details during true up. Details of measures submitted.	Discom will submit the details during true up. Details of measures submitted.	Discom will submit the details during true up. Details of measures submitted.
7. Separate record of increase in consumer-wise sales	Reply submitted	Reply submitted	Reply Submitted
8. Trading Margin	Reply by MPPMCL As per item No.8 (ii) of State Govt. Notification No.2260-F-3-24-2009-XIII dt. 19/03/2013, M.P. Power Management Company Limited has been supplying power to the Discoms at the tariff determined/approved by MPERC and its own expenses are being distributed on actual basis in proportion to the energy drawn by respective Discoms. MPPMCL has been operating on "No Profit and No Loss" basis. Therefore, till now at the end of each financial year, all the credits received by MPPMCL which formed the part of income of MPPMCL were being passed on to the Discoms in proportion to the energy drawl by respective Discoms as a part of their Power Purchase Costs.		

TARIFF SCHEDULES

TARIFF SCHEDULES FOR LOW TENSION CONSUMERS

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15. TARIFF SCHEDULES

Tariff Schedule – LV1 – DOMESTIC

Applicability:

This tariff is applicable for light, fan and power for residential use only. Dharamshalas, Gaushalas, old age homes, day care centres for senior citizens, rescue houses, orphanages, places of worship and religious institutions will also be covered under this category.

Tariff:

LV 1.1 (Consumers having sanctioned load not more than 100 watts (0.1 kW) and consumption not more than 30 units per month)

(a) Energy Charge and Fixed Charge – For metered connection

		Particular			
LV1.1	Monthly Consumption (units)	Energy Charge (paise per unit)		Monthly Fixed Charge	
		Urban and Rural			
		Existing	Proposed	Existing	Proposed
	Up to 30 units	290	300	NIL	NIL

(b) Minimum Charges: Rs. 40 per connection per month as minimum charges is applicable to this category of consumers.

LV 1.2

(a) Energy Charge and Fixed Charge – For metered connection.

Monthly Consumption Slab (units)	Energy Charge with telescopic benefit(paise per unit)		Monthly Fixed Charge			
	Urban/Rural areas		(Rs)			
	Existing	Proposed	Existing		Proposed	
Up to 50 units	365	400	45 per connection	30 per connection	60 per connection	50 per connection
51 to 100 units	435	480	80 per connection	55 per connection	100 per connection	90 per connection
101 to 300 units	560	610	90 for each 0.5KW of authorized load	70 for each 0.5KW of authorized load	105 for each 0.5 kW of authorized load	95 for each 0.5 kW of authorized load
Above 300 units	610	625	95 for each 0.5KW of authorized load	90 for each 0.5KW of authorized load	110 for each 0.5 kW of authorized load	100 for each 0.5 kW of authorized load

Minimum Charges: Rs. 100 per connection per month as minimum charges towards energy charges are applicable for above categories.

Note: The Authorized Load shall be as defined in the Madhya Pradesh Electricity Supply Code, 2013, as amended from time to time. (Every 75 units of consumption per month or part thereof shall be considered equal to 0.5 kW of authorized load. Example: If consumption during the month is 125 units, then the authorized load will be taken as 1 kW. In case the consumption is 350 units then the authorized load will be taken as 2.5 kW.)

Temporary/ DTR meter connection	Energy Charge(Paisa per unit) –Urban and Rural Area		Monthly Fixed Charge(Rs)			
			Existing		Proposed	
	Existing	Proposed	Urban areas	Rural areas	Urban areas	Rural areas
Temporary connection for construction of own house (max. up to one year).	790	625	370 for each one kW of sanctioned or connected or recorded load, whichever is the highest	285 for each one kW of sanctioned or connected or recorded load, whichever is the highest	400 for each one kW of sanctioned or connected or recorded load, whichever is the highest	300 for each one kW of sanctioned or connected or recorded load, whichever is the highest
Temporary connection for social/ marriage purposes and religious functions.	790	810	60 for each one kW of sanctioned or connected or recorded load whichever is highest for each 24 hours duration or part thereof	45 for each one KW of sanctioned or connected or recorded load whichever is highest for each 24 hours duration or part thereof	80 for each one kW of sanctioned or connected or recorded load, whichever is highest for each 24 hours duration or part thereof	60 for each one kW of sanctioned or connected or recorded load, whichever is the highest for each 24 hours duration or part thereof
Supply through DTR meter for clusters of Jhuggi/Jhopadi till individual meters are provided	300	350	NIL	NIL	NIL	NIL

Minimum Charges: Rs. 1000/- per connection per month is applicable towards energy charges for temporary connection and no minimum charges are applicable for supply through DTR meter for clusters of Jhuggi/Jhopadi.

Energy Charge and Fixed Charge for un-metered domestic connections:

Particulars	Units and Energy Charge to be billed per month for unmetered connections (Paise per Unit)		Monthly Fixed Charge (Rs)	
	Existing	Proposed	Existing	Proposed
Un-metered connection in urban areas	100 units @ 510 per unit	100 units @ 540 per unit	90 per connection	110 per connection
Un-metered connection in rural areas	75 units @ 400 per unit	75 units @ 430 per unit	45 per connection	70 per connection

Minimum charges: No minimum charges are applicable to this category of consumers

Specific Terms and Conditions for LV-1 category:

- a) The Energy Charges corresponding to consumption recorded in DTR meter shall be equally divided amongst all consumers connected to that DTR for the purpose of billing. The Distribution Licensee will obtain consent of such consumers for billing as per above procedure.
- b) In case Energy Charges for actual consumption are less than minimum charges, minimum charges shall be billed towards energy charges. All other charges, as applicable, shall also be billed.
- c) Other terms and conditions shall be as specified under General Terms and Conditions for Low Tension Tariff.
- d) In case of prepaid consumers, a rebate of **20 paise** per unit is applicable on all energy units consumed on monthly basis and all other charges should be calculated on the Tariff applicable after rebate. A consumer opting for prepaid meter shall not be required to make any security deposit for the energy charge.
- e) In case of temporary requirement, 20% of sanctioned load is allowed to be used **for own purpose** from the existing metered permanent domestic connection on the same tariff applicable for permanent connection.

Tariff Schedule – LV-2 – NONDOMESTIC**LV 2.1****Applicability:**

This tariff is applicable for light, fan and power to Educational Institutions including workshops and laboratories of Engineering Colleges / Polytechnics/ITIs (which are registered with /affiliated/ recognized by the relevant Govt. body or university), **Electric Vehicles**, Hostels for students or working women or sports persons (run either by Govt. or individuals)

Sub category	Energy Charge (paise/unit)		Monthly Fixed Charge (Rs.)			
	Urban/ Rural areas		Existing		Proposed	
	Existing	Proposed	Urban Area	Rural Area	Urban Area	Rural Area
Sanctioned load based tariff (only for connected load up to 10KW)	575	640	110 per kW	80 per kW	130 per kW	90 per kW
Mandatory Demand Based Tariff for contract demand above 10 kW	575	640	210 per kW or 168 per kVA of billing demand	150 per kW or 120 per KVA of billing demand	230 per kW or 176 per kVA of billing demand	170 per kW or 128 per KVA of billing demand

LV 2.2**Applicability:**

This tariff is applicable for light, fan and power to Railways (for purposes other than traction and supply to Railway Colonies/water supply), Shops/showrooms, Parlors, All Offices, Hospitals and medical care facilities including Primary Health Centers, clinics, nursing homes belonging to either Govt. or public or private organizations, public buildings, guest houses, Circuit Houses, Government Rest Houses, X-ray plant, recognized Small Scale Service Institutions, clubs, restaurants, eating establishments, meeting halls, places of public entertainment, circus shows, hotels, cinemas, professional's chambers (like Advocates, Chartered Accountants, Consultants, Doctors etc.), bottling plants, marriage gardens, marriage houses, advertisement services, advertisement boards/ hoardings, training or coaching institutes, petrol pumps and service stations, tailoring shops, laundries, gymnasiums, health clubs, telecom towers for mobile communication and any other establishment (except those which are covered in LV 2.1), who is required to pay Commercial tax/service tax/value added tax (VAT)/entertainment tax/luxury tax under any Central/State Acts.

Sub category	Energy Charge (paise/unit)		Monthly Fixed Charge (Rs.)			
	Urban/Rural areas		Urban areas	Rural areas	Urban areas	Rural areas
	Existing	Proposed	Existing		Proposed	
On all units if	600	660	60 per kW	40 per kW	65 per kW	45 per kW

Sub category	Energy Charge (paise/unit)		Monthly Fixed Charge (Rs.)			
	Urban/Rural areas		Urban areas	Rural areas	Urban areas	Rural areas
	Existing	Proposed	Existing		Proposed	
monthly consumption is not more than 50 units						
On all units in case monthly consumption exceeds 50 units	695	770	105 per kW	80 per kW	115 per kW	90 per kW
Mandatory Demand based tariff: For contract demand above 10 KW	600	670	220 per kW or 176 per KVA of billing demand	150 per kW or 120 per KVA of billing demand	230 per kW or 180 per KVA of billing demand	170 per kW or 130 per KVA of billing demand
Temporary connections including Multi point temporary connection at LT for Mela *	800	840	200 per kW or part thereof of sanctioned load or connected or recorded load whichever is highest	150 per kW or part thereof of sanctioned load or connected or recorded load whichever is highest	220 per kW or part thereof of sanctioned load or connected or recorded load whichever is highest	165 per kW or part thereof of sanctioned load or connected or recorded load whichever is highest
Temporary connection for marriage purposes at marriage gardens or marriage halls or any other premises covered under LV 2.1 and 2.2 categories	800 (Minimum consumption charges shall be billed @ 6 Units per kW or part thereof of sanctioned or connected or recorded load, whichever is the highest for each 24 hours duration or part thereof subject to a minimum of Rs. 500)	840 (Minimum consumption charges shall be billed @ 6 Units per kW or part thereof of sanctioned or connected or recorded load, whichever is the highest for each 24 hours duration or part thereof subject to a minimum of Rs. 500)	75 for each kW or part thereof of sanctioned or connected or recorded load whichever is the highest for each 24 hours duration or part thereof	55 for each kW or part thereof of sanctioned or connected or recorded load whichever is the highest for each 24 hours duration or part thereof	85 for each kW or part thereof of sanctioned or connected or recorded load whichever is the highest for each 24 hours duration or part thereof	65 for each kW or part thereof of sanctioned or connected or recorded load whichever is the highest for each 24 hours duration or part thereof
For X-Ray plant	Additional Fixed Charge (Rs. per machine per month)					
	Existing		Proposed			
Single Phase	500		500			
Three Phase	700		700			
Dental X-ray machine	100		100			

* In case permission for organizing Mela is granted by Competent Authorities of the Government of Madhya Pradesh

Specific Terms and Conditions for LV-2 category:

- a) **Minimum consumption:** The consumer shall guarantee a minimum annual consumption of 360 units per kW or part thereof in urban areas and 180 units per kW or part thereof in rural areas of **sanctioned load or contract demand (in case of demand based charges)**. However, the load of X-Ray unit shall be excluded while considering the load of the consumer for calculation of minimum consumption. The method of billing minimum consumption shall be as given in General Terms and Conditions of Low Tension tariff.
- b) **Additional Charge for Excess demand:** Shall be billed as given in General Terms and Conditions of Low Tension tariff.
- c) Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.
- d) For LV – 2.1 and LV-2.2: For the consumers having contract demand in excess of 10 kW, demand based tariff is mandatory. The Distribution Licensee shall provide Trivector /Bivector Meter capable of recording Demand in kVA/kW, kWh, kVAh.
- e) In case of prepaid consumers, a rebate of **20 paise** per unit is applicable on the basic energy charges, all other charges should be calculated on the Tariff applicable after rebate. A consumer opting for prepaid meter shall not be required to make any security deposit for the energy charge.

Tariff Schedule – LV-3 – PUBLICWATER WORKS AND STREET LIGHTS

Applicability:

It is proposed that the existing subcategories of Municipal Corporation/Cantonment Board and Municipality/Nagar Panchayat in Public Water Works and Municipal Corporation/Cantonment Board and Municipality/Nagar Panchayat in Street Light shall be merged.

The tariff LV 3.1 is applicable for Public Utility Water Supply Schemes, Sewage Treatment Plants, Sewage Pumping Installations run by P.H.E. Department or Local Bodies or Gram Panchayats or any other organization authorized by the Government to supply/ maintain public water works / sewerage installations and shall also be applicable to electric crematorium maintained by local bodies/trusts.

Note: Private water supply scheme, water supply schemes run by institution for their own use/employee/townships etc shall not fall in this category. These shall be billed under the appropriate tariff category to which such institution belongs. In case water supply is being used for two or more different purposes then entire consumption shall be billed for purpose for which the tariff is higher.

The tariff LV 3.2 is applicable to traffic signals and lighting of public streets or public places including parks, town halls, monuments and its institutions, museums, public toilets, public libraries, reading rooms run by the Government or Local Bodies, and Sulabh Shochalaya

Category of consumers/area of applicability	Energy Charge		Monthly Fixed Charge		Minimum charges(Rs)
	(Paise per unit)		(Rs per KW)		
LV 3.1 Public Water Works	Existing	Proposed	Existing	Proposed	
Municipal Corporation/ Cantonment board	450		215		
Municipality/ Nagar Parishad	450		200		
Gram Panchayat	450	500	90	150	No minimum charges
Temporary supply	1.3 times the applicable tariff				
LV 3.2 Street light					
Municipal Corporation/ Cantonment board	465		320		
Municipality/ Nagar Parishad	455		300		
Gram Panchayat	455	500	75	150	No Minimum charges

*It has been proposed to merge the sub categories of Municipal Corporation/Cantonment Board and Municipality/Nagar Parishad in Public Water Works and Street Light

Specific Terms and Conditions for LV-3 category:

- (a) Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.

Tariff Schedule – LV-4 –LT INDUSTRIAL

Applicability:

Tariff **LV-4** is applicable to light, fan and power for operating equipment used by printing press and any other industrial establishments and workshops (where any processing or manufacturing takes place including tyre re-treading). These tariffs are also applicable to cold storage, gur (jaggery) making machines, flour mills, Masala Chakkies, hullers, khandsari units, ginning and pressing units, sugar cane crushers (including sugar cane juicing machine), power looms, dal mills, besan mills, and ice factories and any other manufacturing or processing units (excluding bottling plant) producing/processing food items or processing agriculture produce for preservation/increasing its shelf life and Dairy units (where milk is processed to produce other end products of milk other than chilling, pasteurization etc.)

	Category of consumers	Monthly Fixed Charge (Rs.)				Energy Charge (paise per unit)	
						Urban/Rural area	
		Existing		Proposed		Existing	Proposed
		Urban Areas	Rural Areas	Urban Areas	Rural Areas		
4.1	Non seasonal consumers						
4.1a	Demand based tariff (Contract demand up to 150HP for existing tariff and up to 100 HP for proposed tariff)	270 per kW or 216 per KVA of billing demand	160 per kW or 128 per KVA of billing demand	300 per kW or 242 per KVA of billing demand	190 per kW or 158 per KVA of billing demand	605	630
4.1 b	Temporary connection	1.3 times of the applicable tariff					

***In case of consumers having contract demand up to 25 HP, the energy charges and fixed charges shall be billed at a rate 30% less than the charges shown in above table for tariff category 4.1a.**

4.2 Seasonal Consumers (period of season shall not exceed 180 days continuously). If the declared season or off-season spreads over two tariff periods, then the tariff for the respective period shall be applicable.

4.2 a	During season	Normal tariff as for Non seasonal consumers	Normal tariff as for non-seasonal consumers	Normal tariff as for non-seasonal consumers
4.2 b	During Off - season	Normal tariff as for Non Seasonal Consumers on 10% of contract demand or actual recorded demand whichever is more	Normal tariff as for Non Seasonal Consumers on 10% of contract demand or actual recorded demand whichever is more	120 % of normal tariff as for Non-seasonal consumers

Terms and Conditions:

- (a) The maximum demand of the consumer in each month shall be reckoned as four times the largest amount of kilovolt ampere hours delivered at the point of supply of the consumer during any continuous fifteen minutes in that month.
- (b) Demand based tariff is mandatory for all the LT industrial consumers and the licensee shall provide Tri vector/ Bi vector Meter capable of recording Demand in kVA/ kW, kWh, kVAh and Time of Use consumption.
- (c) **Minimum Consumption:** Shall be as per following:
 - i. **For LT Industries in rural areas:** The consumer shall guarantee a minimum annual consumption (kWh) based on 240 units per HP or part thereof of contract demand irrespective of whether any energy is consumed or not during the year.
 - ii. **For LT Industries in urban areas:** The consumer shall guarantee a minimum annual consumption (kWh) based on 420 units per HP or part thereof of contract demand irrespective of whether any energy is consumed or not during the year.
 - iii. The consumer shall be billed monthly minimum 20 units per HP per month in rural area and 35 units per HP per month in urban area in case the actual consumption is less than above specified units.
 - iv. Method of billing of minimum consumption shall be as given in the General Terms and Conditions of Low Tension tariff.
- (d) **Additional Charge for Excess Demand:** Shall be billed as given in the General Terms and Conditions of Low Tension Tariff.
- (e) Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.
- (f) Other Terms and conditions for **seasonal consumers:**

- i. The consumer has to declare months of season and off season for the financial year 2017-18 within 60 days of issue of Tariff Order and inform the same to the Distribution Licensee. If the consumer has already declared the period of season and off-season during this financial year prior to issue of this Order, same shall be taken into cognizance for the purpose and accepted by the Distribution Licensee.
- ii. The seasonal period once declared by the consumer cannot be changed during the financial year.
- iii. This tariff is not applicable to composite units having seasonal and other category of loads.
- iv. The consumer will be required to restrict his monthly off season consumption to 15% of the highest of average monthly consumption during the preceding three seasons. In case this limit is exceeded in any off season month, the consumer will be billed under Non seasonal tariff for the whole financial year as per the tariff in force.
- v. The consumer will be required to restrict his maximum demand during off season up to 30 % of the contract demand. In case the maximum demand recorded in any month of the declared off season exceeds this limit, the consumer will be billed under Non seasonal tariff for the whole financial year as per the tariff in force.

Tariff Schedule – LV - 5 –AGRICULTURE AND ALLIED ACTIVITIES

Applicability:

The tariff **LV-5.1** shall apply to connections for agricultural pump, chaff cutters, threshers, winnowing machines, seeding machines and irrigation pumps of lift irrigation schemes including water drawn by agriculture pumps for use by cattle.

The tariff **LV-5.2** shall apply to connections for nurseries, farms growing flowers/ plants/ saplings/ fruits, mushroom and grasslands.

The tariff **LV-5.3** shall apply to connections for fisheries ponds, aquaculture, sericulture, hatcheries, poultry farms, cattle breeding farms and those dairy units only where extraction of milk and its processing such as chilling, pasteurization etc. is done.

The tariff **LV- 5.4** shall apply to connections for permanent agricultural pump, chaff cutters, threshers, winnowing machines, seeding machines and irrigation pumps of lift irrigation schemes including water drawn by agriculture pumps for use by cattle to whom flat rate tariff is applicable.

S. No.	Sub-Category	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)
		Existing		Proposed	
LV- 5.1					
a) (i)	First 300 units per month	30	390	40	430
(ii)	Above 300 units up to 750 units in the month		460		510
(iii)	Rest of the units in the month		485		540
b)	Temporary connections	30	507	40	560
c)	DTR metered group consumers	NIL	355	NIL	390
LV-5.2					
a) (i)	First 300 units per month	30	390	40	430
(ii)	Above 300 units up to 750 units in the month		460		510
(iii)	Rest of the units in the month		485		540
b)	Temporary connections	30	507	40	560
LV-5.3					
a)	Up to 25 HP in urban areas	75 per HP	450	85 per HP	500
b)	Up to 25 HP in rural	45 per HP	430	60 per HP	480

S. No.	Sub-Category	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)
		Existing		Proposed	
	areas				
c)	Demand based tariff (Contract demand and connected load up to 100 HP) in urban areas	200 per kW or 160 per kVA of billing demand	540	220 per kW or 160 per kVA of billing demand	600
d)	Demand based tariff (Contract demand and connected load up to 100 HP) in rural areas	100 per kW or 80 per kVA of billing demand	540	120 per kW or 80 per kVA of billing demand	600

LV 5.4					
	Agriculture flat rate exclusive of subsidy *	Rate payable by the consumer in Rs per HP per month for months of April to September	Rate payable by the consumer in Rs per HP per month for the months of October to March	Same as previous tariff order	
a)	Three phase- urban	700	700		
b)	Three phase- rural	700	700		
c)	Single phase urban	700	700		
d)	Single phase rural	700	700		

* see para 1.2 of terms and conditions

Terms and Conditions:

- 1.1. **Billing of consumers under tariff schedule LV 5.1:** Billing to the consumers covered under tariff schedule LV 5.1 shall be done on a monthly basis based on the consumption recorded in the meter. Unmetered temporary connection under this schedule shall be billed on the basis of assessment of consumption provided under condition 1.3 (iii) of this schedule.
- 1.2. **Billing of consumers under tariff schedule LV 5.4:** Rates payable by the consumer under tariff schedule LV 5.4 are exclusive of subsidy. The bill for the consumer covered under the tariff schedule LV 5.4 shall be calculated at the rates specified under the tariff schedule LV 5.1 based on norms for assessment of units per HP specified under condition 1.3 of this schedule. The consumer shall be required to pay at the rates specified under tariff schedule LV 5.4 and the balance amount of the bill shall be paid by the State Govt. as advance subsidy to the Distribution licensee.

1.3. Basis of energy audit and accounting for categories LV 5.1 and LV 5.4:

- i) For energy audit and accounting purposes, actual billed consumption of metered consumers covered under tariff schedule LV 5.1 and LV 5.4 shall be considered.
- ii) For unmetered agriculture consumers under LV 5.4 category, assessed consumption shall be as per following norms

Particulars	No. of units per HP or part thereof of sanctioned load per month			
	Urban Area		Rural Area	
Type of Pump Motor	April to Sept	Oct to March	April to Sept	Oct to March
Three Phase	90	170	80	170
Single Phase	90	180	90	180

- iii) **For agriculture pump consumers who are getting supply from urban/city feeders, billing should be done, as per the actual metered consumption recorded, as per LV 5.1 category.**
- iv) For unmetered temporary agriculture consumers under LV 5.1 category, assessed consumption shall be as per following norms:

Particulars	No. of units per HP or part thereof of sanctioned load per month	
	Urban Area	Rural Area
Type of Pump Motor		
Three Phase	250	210
Single Phase	250	220

1.4. Agricultural consumers opting for temporary supply shall have to pay the charges in advance for three months including those who request to avail connection for one month only subject to replenishment from time to time for extended period and adjustment as per final bill after disconnection. Regarding temporary connection for the purpose of threshing the crops, temporary connection for a period of one month can be served at the end of Rabi and Kharif seasons only with payment of one month's charges in advance.

1.5. Following **incentive*** shall be given to the metered agricultural consumers on installation of energy saving devices –

S. No.	Particulars of Energy Saving Devices	Rate of rebate
1.	ISI / BEE star labeled motors for pump sets	15 paise per unit
2.	ISI / BEE star labeled motors for pump sets and use of frictionless PVC pipes and foot valve	30 paise per unit
3.	ISI / BEE star labeled motors for pump sets and use of frictionless PVC pipes and foot valves along with installation of shunt capacitor of appropriate rating	45 paise per unit

*Incentive shall be allowed on the consumer's contribution part of the normal tariff (full tariff minus amount of Govt. subsidy per unit, if any) for installation of energy saving devices under demand side management. This incentive will be admissible only if full bill is paid within due dates failing which all consumed units will be charged at normal rates. Incentive will be admissible from the month following the month in which Energy Saving Devices are put to use and its verification by a person authorized by the Distribution Licensee. The Distribution Licensee is required to arrange wide publicity to above incentive in rural areas. The licensee is required to place quarterly information regarding incentives provided on its web site.

1.6. Minimum consumption

(i) **For Metered agricultural consumers (LV-5.1 and LV-5.2):** The consumer shall guarantee a minimum consumption of 30 units per HP or part thereof of connected load per month for the months from April to September and 90 units per HP or part thereof of connected load per month for the months from October to March irrespective of whether any energy is consumed or not during the month.

(ii) **For other than agricultural use (LV-5.3) :**

- a) The consumer will guarantee a minimum annual consumption (kWh) based on 180 units/HP or part thereof of contract demand in notified rural areas and 360 units/HP or part thereof of contract demand in urban areas irrespective of whether any energy is consumed or not during the year.
- b) The consumer shall be billed monthly minimum 15 units per HP per month in rural area and 30 units per HP per month in urban area in case the actual

consumption is less than monthly minimum consumption (kWh).

- c) **Method of billing of minimum consumption** shall be as given in the General Terms and Conditions of Low Tension Tariff.

1.7.Additional Charge for Excess Demand: Shall be billed as given in the General Terms and Conditions of LT Tariff.

1.8.Delayed payment surcharge in case of agriculture consumers on LV - 5.4 flat rate tariff shall be levied @ of Rs 1 every month for each block or part thereof of arrears of Rs.100/-. For other sub categories of this Tariff Schedule, the delayed payment surcharge shall be billed as specified under General Terms and Conditions of Low Tension Tariff.

1.9.Specific conditions for DTR metered consumers:

- a. All the consumers connected to the DTR shall pay the energy charges for the units worked out based on their actual connected load.
 - b. The Distribution Licensee will obtain consent of such connected consumers for billing as per procedure specified in (a) above.
- 1.10. One CFL/ LED/ bulb up to 20 W is permitted at or near the pump in the power circuit.
- 1.11. The use of three phase agriculture pump by installing external device during the period when the supply is available on single phase, shall be treated as illegal extraction of energy and action as per prevailing rules and Regulations shall be taken against the defaulting consumer.
- 1.12. Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.

GENERAL TERMS AND CONDITIONS OF LOW TENSION TARIFF

1. **“Rural Areas” shall be the places other than and beyond Municipal towns and places with population less than 5,000 and are located more than 8 kms away from the nearest Municipal Committee/ Notified Area Committee/Municipal Corporation limits. This will also include village Covered by SADA (Special Area Development Authority) where industrial development activities have not been started. The decision of the Executive Engineer of the distribution company for the area concerned whether or not the Industrial development activities have started shall be final.**

“Urban Areas” shall be the places other than those covered under “Rural Areas”.

2. Rounding off: All bills will be rounded off to the nearest rupee i.e. up to 49 paisa shall be ignored and 50 paisa upwards shall be rounded off to next Rupee.
3. Billing Demand: In case of demand based tariff, the billing demand for the month shall be the actual maximum kVA demand of the consumer during the month or 90% of the contract demand, whichever is higher. The billing demand shall be rounded off to the nearest integer number i.e. fraction of 0.5 or above will be rounded to next higher integer and the fraction of less than 0.5 shall be ignored.
4. Fixed charges billing: Unless specified otherwise, fractional load for the purposes of billing of fixed charges shall be rounded off to nearest integer i.e. fraction of 0.5 or above will be rounded to next higher integer and the fraction of less than 0.5 shall be ignored. However for loads less than one kW/HP, it shall be treated as one kW/HP.
5. Method of billing of minimum consumption:
 - A. **For metered agricultural consumers and other than agricultural consumers horticulture activity - LV 5.1 and LV 5.2:** The consumer shall be billed minimum monthly consumption (kWh) specified for his category for the month in which his actual consumption is less than prescribed minimum consumption.
 - B. **For other consumers where applicable :**
 - a. The consumer shall be billed one twelfth of guaranteed annual minimum consumption (kWh) specified for his category each month in case the actual consumption is less than above mentioned minimum consumption.
 - b. During the month in which actual cumulative consumption equals or is greater than the annual minimum guaranteed consumption, no further billing of monthly minimum consumption shall be done in subsequent months of the financial year and only actual

recorded consumption shall be billed.

- c. Tariff minimum consumption shall be adjusted in the month in which cumulative actual or billed monthly consumption exceeds cumulative monthly prorated minimum annual guaranteed consumption. If actual cumulative consumption does not get fully adjusted in that month, adjustment shall continue to be provided in subsequent months of the financial year. The following example illustrates the procedure for monthly billing of consumption where prorated monthly minimum consumption is 100 kWh based on annual consumption of 1200 kWh.

Month	Actual cumulative consumption (kWh)	Cumulative minimum consumption (kWh)	Higher of 2 and 3 (kWh)	Already billed in the year (kWh)	To be billed in the month = (4-5) (kWh)
1	2	3	4	5	6
April	95	100	100	0	100
May	215	200	215	100	115
June	315	300	315	215	100
July	395	400	400	315	85
Aug	530	500	530	400	130
Sept	650	600	650	530	120
Oct	725	700	725	650	75
Nov	805	800	805	725	80
Dec	945	900	945	805	140
Jan	1045	1000	1045	945	100
Feb	1135	1100	1135	1045	90
March	1195	1200	1200	1135	65

6. Additional Charge for Excess connected load or Excess Demand: Shall be billed as per following procedure:

- a) **Consumers opting for demand based tariff:** The consumers availing supply at demand based tariff shall restrict their actual maximum demand within the contract demand. However, in case the actual maximum demand recorded in any month exceeds 115% of the contract demand, the tariff in this schedule shall apply to the extent of 115 % of the contract demand only. The consumer shall be charged for demand recorded in excess of 115% of contract demand (termed as Excess Demand) and consumption corresponding thereto at the following rates:-
 - i. **Energy charges for Excess Demand:** No extra charges are applicable on the energy charges due to the excess demand or excess connected load.
 - ii. **Fixed Charges for Excess Demand:** These charges shall be billed as per following:

1. **Fixed Charges for Excess Demand when the recorded maximum demand is up to 130% of the contract demand:** Fixed Charges for Excess Demand over and above 115% of the contract demand shall be charged at 1.3 times the normal rate of Fixed Charges.
 2. **Fixed Charges for Excess Demand when the recorded maximum demand exceeds 130% of contract demand:** In addition to Fixed Charges in 1 above, recorded demand over and above 30 % of the contract demand shall be charged at 2 times the normal rate of Fixed Charges.
- b) Consumers opting for connected load based tariff:** The consumers availing supply at connected load based tariff shall restrict their actual connected load within the sanctioned load. However, in case the actual connected load in any month exceeds 115% of the sanctioned load, the tariff in this schedule shall apply to the extent of 115% of the sanctioned load only. The consumer shall be charged for the connected load found in excess of 115% of the sanctioned load (termed as Excess Load) and consumption corresponding thereto at the following rates:-
- i. **Energy charges for Excess Load:** No extra charges are applicable on the energy charges due to the excess demand or excess connected load.
 - ii. **Fixed Charges for Excess load:** These charges shall be billed as per following, for the period for which the use of excess load is determined in condition i) above:
 1. **Fixed Charges for Excess load when the connected load is found up to 130% of the sanctioned load:** Fixed Charges for Excess load over and above 115% of the sanctioned load shall be charged at 1.3 times the normal rate of Fixed Charges.
 2. **Fixed Charges for Excess load when the connected load exceeds 130% of sanctioned load:** In addition to Fixed Charges in 1 above, connected load found over and above 30% of the sanctioned load shall be charged at 2 times the normal rate of Fixed Charges.
- c)** The above billing for Excess connected Load or Excess Demand, applicable to consumers is without prejudice to the Distribution Licensee's right to ask for revision of agreement and other such rights that are provided under the Regulations notified by the Commission or under any other law.

The maximum demand of the consumer in each month shall be reckoned as four times the largest amount of kilovoltampere hours delivered at the point of supply of the consumer during any continuous fifteen minutes in that month.

7. Other Terms and Conditions:

- (a) For **advance payment** made before commencement of consumption period for which bill is prepared, a rebate of 1% per month on the amount (excluding security deposit) which remains with the Distribution Licensee at the end of calendar month shall be credited to the account of the consumer after adjusting any amount payable to the Distribution Licensee.
- (b) **Incentive for prompt payment:** An incentive for prompt payment @0.25% of the bill amount (excluding arrears, security deposit, meter rent and Government levies viz. Electricity Duty and Cess etc.) shall be given in case the payment is made at least 7 days in advance of the due date of payment. The consumers in arrears shall not be entitled for this incentive.
- (c) **Rebate to all LT consumers for online payment of bills:** All LT consumers who have no arrears shall be given rebate of INR 5 per bill for online payment of the energy bill in full.
- (d) **All LT consumers who have no arrears shall be given rebate of Rs 5 per bill for online payment of the energy bill in full.**
- (e) The Sanctioned Load or Connected Load or Contract Demand should not exceed 112 kW / 150 HP except where a higher limit is specified or the category is exempted from the ceiling on connected load. If the consumer exceeds his connected load or contract demand beyond this ceiling on more than two occasions in two billing months during the tariff period, the Distribution Licensee may insist on the consumer to avail HT supply.
- (f) Metering Charges shall be billed as per schedule of Metering and Other Charges as prescribed in MPERC (Recovery of Expenses and other Charges for providing Electric Line or Plant used for the purpose of giving supply), Regulations (Revision-I), 2009. Part of a month will be reckoned as full month for purpose of billing.
- (g) In case the cheque presented by the consumer is dishonoured, without prejudice to Distribution Licensee's rights to take recourse to such other action as may be available under the relevant law, a service charge of Rs. 400 per cheque shall be levied in addition to delayed payment surcharge
- (h) Other charges as stated in Schedule of Miscellaneous Charges shall also be applicable.
- (i) Welding Surcharge is applicable to installations with welding transformers, where the connected load of welding transformers exceeds 25% of the total connected load and where suitable capacitors of prescribed capacity have not been installed to ensure power factor of not less than 0.8 (80%) lagging. Welding Surcharge of 75

(seventy five) paisa per unit shall be levied for the consumption of the entire installation during the month. However, no welding surcharge shall be levied when recorded power factor is 0.8 or more

- (j) For purposes of computing the connected load in kW of the welding transformers, a power factor of 0.6 (60%) shall be applied to the maximum current or kVA rating of such welding transformers.
- (k) Existing LT power consumer shall ensure that LT capacitor of proper rating is provided. In this regard, the Madhya Pradesh Electricity Supply Code, 2013, as amended from time to time may be referred for guidance. It shall be the responsibility of the consumer to ensure that overall average power factor during any month is not less than 0.8 (80%) failing which the consumer shall be liable to pay low power factor surcharge on the entire billed amount against energy charges during the month at the rates given below:

1. For the consumer whose meter is capable of recording average power factor:

- a. Surcharge @ 1 % of energy charges for every 1% fall in power factor below 80% up to 75 %.
- b. Surcharge of 5% plus 1.25% of energy charges for every 1% fall in power factor below 75% up to 70%.

The maximum limit of surcharge will be 10 % of the energy charges billed during the month.

2. For LT consumer having meter not capable of recording average power factor: The consumer shall ensure that LT capacitors of proper rating are provided and are in good working condition. In this regard, the Madhya Pradesh Electricity Supply Code, 2013, as amended from time to time may be referred for guidance. In case of failure to meet the above criteria, the consumer would be levied a low power factor surcharge of 10% on the entire billed amount against energy charges during the month and would be continued to be billed till such time the consumer meets the above criteria .

- (l) Levy of welding / power factor surcharge as indicated hereinabove shall be without prejudice to the rights of the Licensee to disconnect the consumer's installation, if steps are not taken to improve the power factor by installing suitable shunt capacitors.
- (m) Load Factor incentive: Following slabs of incentive shall be allowed for consumers billed under demand based tariff:

Load factor	Concession in energy charges
For load factor above 25% and up to 30 % load factor on contract demand	12 paise per unit concession on the normal energy charges for all energy consumption over and above 25% load factor during the billing month
For load factor above 30% and up to 40 % load factor on contract demand	In addition to load factor concession available up to 30% load factor , concession at the rate of 24 paise per unit on the normal energy charges for all energy consumption over and above 30 % load factor during the billing month
For load factor above 40% load factor on contract demand	In addition to load factor concession available up to 40% load factor, concession at the rate of 36 paise per unit on the normal energy charges for all energy consumption over and above 40% load factor during the billing month

The **load factor** shall be calculated as per the following formula:

$$\text{Load factor (\%)} = \frac{\text{Monthly consumption X 100}}{\text{No. of hours in the billing month X Demand X PF}}$$

- i. Monthly consumption shall be units (kWh) consumed in the month excluding those received from sources other than Licensee.
- ii. No. of Hours in billing month shall exclude period of scheduled outages in hours.
- iii. Demand shall be maximum demand recorded or contract demand whichever is higher.
- iv. Power factor shall be 0.8 or actual monthly power factor whichever is higher

Note: The Load Factor (%) shall be rounded off to the nearest lower integer. The billing month shall be the period in number of days between the two consecutive dates of meter readings taken for the purpose of billing to the consumer for the period under consideration as a month.

- (l) In case of any dispute on applicability of tariff on a particular LT category, the decision of the Commission shall be final.
- (m) The tariff does not include any tax, cess or duty, etc. on electrical energy that may be payable at any time in accordance with any law then in force. Such charges, if any, shall also be payable by the consumer in addition to the tariff charges and applicable miscellaneous charges.
- (n) **Delayed payment Surcharge for all categories:** Surcharge at the rate of 1.25 % per month or part thereof on the amount outstanding (including arrears) will be payable if the bills are not paid up to due date subject to a minimum of Rs.5/- per month for total outstanding bill amount up to Rs. 500/- and Rs 10/ per month for

amount of bill more than Rs.500/. The part of a month will be reckoned as full month for the purpose of calculation of delayed payment surcharge. The delayed payment surcharge will not be levied for the period after supply to the consumer is permanently disconnected. This provision shall not be applicable to that category where the levy of delayed payment surcharge has been prescribed separately.

- (o) In case of conversion of LT connection into HT connection, it is mandatory on the part of both the consumer and the licensee to get the HT agreement executed before availing supply at HT.

(p) Power Factor Incentive:

If the average monthly power factor of the consumer is equal to or more than 85%, incentive shall be payable as follows:

Power Factor	Percentage incentive payable on billed energy charges
Above 85% up to 86%	0.5
Above 86% up to 87%	1.0
Above 87% up to 88%	1.5
Above 88% up to 89%	2.0
Above 89% up to 90%	2.5
Above 90% up to 91%	3.0
Above 91% up to 92%	3.5
Above 92% up to 93%	4.0
Above 93% up to 94%	4.5
Above 94% up to 95%	5.0
Above 95% up to 96%	6.0
Above 96% up to 97%	7.0
Above 97% up to 98%	8.0
Above 98% up to 99%	9.0
Above 99%	10.0

For this purpose, the “average monthly power factor” is defined as the ratio in percentage of total kilowatthours to the total kilovoltampere hours recorded during the month.

- (q) Use of mix loads in one connection: Unless otherwise permitted specifically in the tariff category, the consumer requesting for use of mix loads for different purposes shall be billed for the purpose for which the tariff is higher.
- (r) Consumers in the notified Industrial Growth Centres area receiving supply under urban discipline shall be billed urban tariff.
- (s) No change in the tariff or the tariff structure including minimum charges for any category of consumer is permitted except with prior written permission from the Commission. Any action taken without such written permission of the

Commission shall be treated as null and void and shall also be liable for action under relevant provisions of the Electricity Act, 2003.

- (t) All conditions prescribed herein shall be applicable to the consumer notwithstanding if any contrary provisions exist in the agreement entered into by the consumer with the licensee.

8. Additional conditions for Temporary Supply at LT:

- (a) Temporary supply cannot be demanded by a prospective/ existing consumer as a matter of right but will normally be arranged by the Distribution Licensee when a requisition giving due notice is made. The temporary additional supply to an existing consumer also shall be treated as a separate service and charged subject to following conditions. However service under Tatkal Scheme shall be made available within 24 hours according to the charges specified in the order of the Commission regarding Schedule of Miscellaneous Charges.
- (b) Fixed Charge and Energy Charge for temporary supply shall be billed at **1.3** times the normal charges as applicable to relevant category if not specified otherwise specifically.
- (c) Estimated bill amount is payable in advance before serving the temporary connection subject to replenishment from time to time and adjustment as per final bill after disconnection. No interest shall be given to consumers for this advance payment.
- (d) The Sanctioned load or connected load shall not exceed 112 kW / 150 HP.
- (e) The month for the purpose of billing of charges for temporary supply shall mean 30 days from the date of connection. Any period less than 30 days shall be treated as full month for the purpose of billing.
- (f) Connection and disconnection charges and other miscellaneous charges shall be paid separately as may be specified in the Schedule of Miscellaneous Charges.
- (g) Load factor concession shall not be allowed on the consumption for temporary connection.
- (h) Power factor incentive/penalty shall be applicable at the same rate as applicable for permanent connection

TARIFF SCHEDULES FOR HIGH TENSION CONSUMERS

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Tariff Schedule-- HV-1 – RAILWAYTRACTION

Applicability:

This Tariff shall apply to the Railways for Traction loads only.

Tariff:

Category of consumer	Monthly Fixed Charge (Rs. per kVA of billing demand per month)	Energy Charge (paise / unit)	Monthly Fixed Charge (Rs. per kVA of billing demand per month)	Energy Charge (paise / unit)
	Existing		Proposed	
Railway Traction on 132 kV / 220 kV	310	570	310	570

Specific Terms and Conditions:

- (a) **A rebate of INR 2 per unit will be applicable on the energy charges as mentioned in the tariff schedule for HV 1 Railway Traction consumer.**
- (b) The dedicated feeder maintenance charges shall not be applicable.
- (c) Guaranteed Annual Minimum Consumption shall be 1500 units (kWh) per kVA of Contract Demand. The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff.
- (d) Power Factor Penalty:
 - i. If the average monthly power factor of the consumer falls below 90 percent, penalty will be levied at the rate of one percent of total energy charges for the month for each one percent fall in the average monthly power factor below 90 percent. **For determination of power factor, lag only logic shall be used and no power factor penalty shall be levied if leading power factor is recorded.**
 - ii. If the average monthly power factor of the consumer falls below 85 percent, the consumer shall be levied a penalty of 5% (five percent) plus @ 2% (two percent) for each one percent fall in his average monthly power factor below 85 percent, on the total amount of bill under the head of “Energy Charge”.

This penalty shall be subject to the condition that overall penalty on account of low power factor does not exceed 35%.

- iii. For this purpose, the “average monthly power factor” is defined as the ratio expressed in percentage of total kilowatthours recorded to the total kilovoltampere hours recorded during the billing month. This ratio (%) shall be rounded off to the nearest integer figure and the fraction of 0.5 or above will be rounded to next higher integer and

the fraction of less than 0.5 shall be ignored.

iv. Notwithstanding what has been stated above, if the average power factor of a new connection of the consumer is found to be less than 90% in any month during the first 6 (six) months from the date of connection, the consumer shall be entitled to a maximum period of six months to improve it to not less than 90% subject to following conditions:

- This period of six months shall be reckoned from the month in which the average power factor was found for the first time to be less than 90%.
- In all cases, the consumer will be billed penal charges for low power factor, but in case the consumer maintains the average power factor in subsequent three months (thus in all four months) to not less than 90%, the charges on account of low power factor billed during the said six months period, shall be withdrawn and credited in next monthly bills.
- The facility, as mentioned herein, shall be available not more than once to new consumer whose average power factor is less than 90% at any time during 6 months from the date of connection. Thereafter, the charges on account of low average power factor, if found less than 90%, shall be payable as by any other consumer.

- (e) Emergency feed extension: Provided that if as a result of the emergency in the traction substation or in the transmission line supplying load or part thereof is transferred to an adjacent traction substation, the M.D. for the month for that adjacent traction substation shall be as the average of M.D. for previous three months during which no emergency had occurred.
- (f) Other terms and conditions shall be as mentioned in the General Terms and Conditions of High Tension Tariff.

Tariff Schedule – HV - 2 –COALMINES

Applicability:

This Tariff shall apply to the Coal Mines for power, ventilation, lights, fans, coolers, etc. which shall mean and include all energy consumed for coal mines and lighting in the offices, stores, canteen, compound lighting etc. and the consumption for residential use therein.

Sub category	Monthly Fixed Charge (Rs./kVA of billing demand per month)		Energy Charge for consumption up to 50% load factor (Paise/unit)		Energy Charge for consumption in excess of 50% load factor (paise/unit)	
Coal Mines	Existing	Proposed	Existing	Proposed	Existing	Proposed
11 kV supply	600	625	620	680	560	620
33 kV supply	610	630	610	670	540	590
132 kV supply	620	640	600	660	520	570
220 kV supply	630	650	570	630	510	560

Specific Terms and Conditions:

- a. **Guaranteed Minimum Consumption** shall be on the following basis :

Supply Voltage	Guaranteed annual minimum consumption in units (kWh) per kVA of contract demand
<i>For supply at 220 / 132 kV</i>	1620
<i>For supply at 33 / 11 kV</i>	1200

Note: The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff.

- b. **Load Factor Incentive:** The consumer shall be eligible for Load Factor incentive on energy charges as per the scheme given in General Terms and Conditions of High Tension Tariff.
- c. **Time of Day Rebate:** This rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
- d. Other terms and conditions shall be as specified under General Terms and Conditions of High Tension Tariff.

Tariff Schedule – HV - 3 –INDUSTRIAL, NON-INDUSTRIAL AND SHOPPING MALLS

Applicability:

The **tariff HV-3.1(Industrial)** shall apply to all HT industrial consumers including mines (other than coal mines) for power, light and fan etc. which shall mean and include all energy consumed for factory and lighting in the offices, main factory building, stores, canteen, residential colonies of industries, compound lighting, common and ancillary facilities such as Banks, General purpose shops, Water supply, Sewage pumps, Police Stations etc. in the premises of the industrial units and Dairy units where milk is processed (other than chilling, pasteurization etc.) to produce other end products of milk.

The sub-categories HV 3.2 Non Industrial and HV 3.3 (Shopping Malls) are proposed to be merged considering the non-industrial and commercial nature of the business of the establishments.

The **tariff HV-3.2 (Non Industrial and Shopping Malls)** shall apply to establishments like Railway Stations, Offices, Hotels, Hospitals, Institutions etc. (excluding group of consumers) having mixed load for power, light and fan etc. which shall mean and include all energy consumed for lighting in the offices, stores, canteen, compound lighting etc. This shall also cover all other categories of consumers, defined in LT non-domestic category subject to the condition that the HT consumer shall not redistribute/sub-let the energy in any way to other person. The tariff shall also apply to establishments of shopping malls having group of non-industrial consumers subject to the specific terms and conditions specified in (e) of this schedule.

Shopping Mall shall be a multistoried shopping centre in an urban area having a system of enclosed walkways with collection of independent retail stores, services and parking areas constructed and maintained by a management firm/ developer as a unit.

The **tariff HV-3.4 (Power intensive industries)** shall apply to Mini Steel Plants (MSP), MSP with rolling mills/ sponge iron plants in the same premises, electro chemical/ electro thermal industry, Ferro alloy industry, which shall mean and include all energy consumed for factory and lighting in the offices, main factory building, stores, canteen, residential colonies of industries, compound lighting etc.

S. No.	Sub-Category of consumer	Monthly Fixed Charge (Rs/KVA) of billing demand per month	Energy Charge for consumption on up to 50% load factor (paise/unit)	Energy Charge for consumption in excess 50% load factor (paise/unit)	Monthly Fixed Charge (Rs/KVA) of billing demand per month	Energy Charge for consumption on up to 50% load factor (paise/unit)	Energy Charge for consumption in excess 50% load factor (paise/unit)
		Existing			Proposed		
3.1	Industrial						
	11 kV supply	300	620	555	320	690	620
	33 kV supply	470	610	510	490	680	580
	132 kV supply	560	570	485	580	630	560

S. No.	Sub-Category of consumer	Monthly Fixed Charge (Rs/KVA) of billing demand per month	Energy Charge for consumption on up to 50% load factor (paise/unit)	Energy Charge for consumption in excess 50% load factor (paise/unit)	Monthly Fixed Charge (Rs/KVA) of billing demand per month	Energy Charge for consumption on up to 50% load factor (paise/unit)	Energy Charge for consumption in excess 50% load factor (paise/unit)
	220/400 kV supply	590	545	465	620	600	520
3.2	Non-Industrial						
	11 kV supply	280	650	585	300	710	650
	33 kV supply	400	640	565	420	710	630
	132 kV supply	510	590	510	530	650	570
3.3	Shopping Malls (to be merged with Non Industrial)						
	11 kV supply	240	650	590	Merged with Non Industrial	Merged with Non Industrial	Merged with Non Industrial
	33 kV supply	355	630	565			
	132 kV supply	500	570	510			
3.4	Power intensive industries*						
	33 kV supply	490	460	460	530	500	500
	132 kV supply	600	440	440	620	480	480
	220 kV supply	640	425	425	670	460	460

* It has been proposed to merge the categories **HV 3.2 Non Industrial** and **HV 3.3 Shopping Malls**.

*Category HV 3.4 shall not be entitled to load factor incentive. Further energy charges for this category shall be same for entire consumption irrespective of load factor.

Specific Terms and Conditions:

1. **Guaranteed Minimum Consumption** for all the above categories shall be on following basis :

Supply Voltage	Sub- category	Guaranteed annual minimum consumption in units (kWh) per kVA of contract demand
<i>For supply at 220/132 kV</i>	Rolling Mills	1200
	Educational institutions	720
	Others	1800
<i>For supply at 33 / 11 kV</i>	Educational institutions	600
	Contract demand up to 100 kVA	600
	Others	1200

Note: The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff.

2. **Load Factor Incentive:** The consumer shall be eligible for Load Factor incentive on energy charges as per the scheme given in General Terms and Conditions of High Tension Tariff. However consumers under category HV 3.4 shall not be entitled to load factor incentive.
3. **Time of Day Rebate:** This rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
4. **Rebate for supply through feeders feeding supply to predominantly to rural areas :** HT consumers of this category receiving supply through rural feeders shall be entitled to 5 % rebate on Fixed Charges and 20 % reduction in Minimum Consumption (kWh) as specified above for respective voltage levels.
5. **Rebate for existing HT connections:** A rebate of 50 paisa per unit in energy charges is applicable for HV 3 tariff category for incremental monthly consumption w.r.t consumption of previous years same month.
6. **Rebate for new HT connections:** a rebate of Rs 1 per unit whichever is less is applicable in energy charges for new HV 3 tariff category connection for the consumption recorded provided these connections are given to green field projects and no rebate is applicable for new connections obtained by virtue of change in ownership in existing connection. This rebate will also continue to be applicable for all those HV 3.1 new connections (green field projects) given in FY 2016-17.

7. **Rebate for Captive power plant consumers:**

A rebate of INR 2 per unit shall be applicable only on those units which the captive consumers have reduced from their captive consumption and has instead taken from the distribution licensees. The proposed rebate is applicable to only such consumers in the license area of the distribution licensees,

- a) Who have been captive consumers in the last financial year.
- b) Who have recorded an incremental consumption i.e an increase in the units consumed from the distribution licensee in any month of the current fiscal (FY 18) compared to the same month in last year (FY17).

The quantum of units upon which this proposed rebate is applicable will be decided as

1. Y, if $X > Y$,
2. X, if $X = Y$ and
3. X, if $X < Y$ where

X = the incremental consumption recorded by the captive consumer in any month of the current year compared to the same month in last year.

And

Y = the quantum of reduction in units consumed from captive plant (self-consumption) achieved by the captive consumer in any month of the year compared to the same month in the last year.

For all other cases of incremental consumption (i.e when $X > Y$, 50 paise applicable units will be $X - Y$), the existing rebate of 50 paisa per unit will be applicable.

The sample calculation as shown below details the methodology by which the units, consumed by the captive consumers, on which INR 2 per unit rebate will be applicable.

	FY 17		FY 18		Incremental Consumption from Discom $X = A2 - A1$	Reduction in Captive Consumed units $Y = B1 - B2$	50 paise rebate applicable units $Z = X - XX$	2 rupee rebate applicable unit XX
	Consumption from Discom(Units) (A1)	Captive Generation Units (B1)	Consumption from Discom(Units) (A2)	Captive Generation Units (B2)				
Scenario 1	100	90	110	90	10	0	10	0
Scenario 2	100	90	110	80	10	10	0	10
Scenario 3	100	90	110	70	10	20	0	10
Scenario 4	100	90	100	80	0	10	0	0
Scenario 5	100	90	120	80	20	10	10	10

8. Rebate for existing open access consumers:

A rebate of INR 1 per unit applicable only on those units which the existing open access consumers have reduced from their wheeling and has instead taken from the distribution licensees. The proposed rebate is applicable to only such consumers in the license area of the petitioners,

- a) Who have availed open access in the last financial year and have wheeled through the licensee's distribution network.
- b) Who have recorded an incremental consumption i.e an increase in the units consumed from the distribution licensee in any month of the current fiscal (FY 18) compared to the same month in last year (FY17).

The quantum of units upon which this proposed rebate is applicable will be decided as

1. Y, if X>Y,
2. X, if X=Y and
3. X, if X<Y where

X = the incremental consumption recorded by the existing open access consumer in any month of the current year compared to the same month in last year.

And

Y = the quantum of reduction in wheeled units achieved by the open access consumer in any month of the year compared to the same month in the last year

For all other cases of incremental consumption (i.e when X>Y, 50 paise applicable units will be X-Y) the existing rebate of 50 paisa per unit will be applicable.

The sample calculation as shown below details the methodology by which the units, consumed by the existing open access consumers, on which Rs 1 rebate will be applicable.

	FY 17		FY 18		Incremental Consumption from Discom X= A2-A1	Reduction in OA units Y = B1-B2	50 paise rebate applicable units Z= X-XX	1 rupee rebate applicable unit XX
	Consumption from Discom (Units) (A1)	Wheeled Units (B1)	Consumption from Discom(Units) (A2)	Wheeled Units (B2)				
Scenario 1	100	90	110	90	10	0	10	0
Scenario 2	100	90	110	80	10	10	0	10
Scenario 3	100	90	110	70	10	20	0	10
Scenario 4	100	90	100	80	0	10	0	0
Scenario 5	100	90	120	80	20	10	10	10

9. Additional specific terms and conditions for shopping mall

- (i) Individual end user shall not be levied a rate which is exceeding non-domestic- commercial tariff (LV 2.2) in case of LT connection, as determined by the Commission.
- (ii) All end-users shall enter into a tripartite agreement with the Management Firm /developer of the shopping mall and the licensee for availing supply of electricity in the shopping mall in order to get the benefit of the tariff under this category.

10. Other terms and conditions shall be as specified under General Terms and conditions of High Tension Tariff.

Tariff Schedule – HV - 4 – SEASONAL and NON SEASONAL

Applicability:

This tariff shall be applicable to such seasonal industries / consumers requiring energy for the production purposes for maximum continuous one hundred eighty days and for a minimum period of three months. **If the declared season/off-season spreads over two tariff periods, then the tariff for the respective period shall be applicable.**

The licensee shall allow this tariff to any industry having seasonal use only.

This tariff shall also be applicable to mini/micro and small hydel plants to meet the essential requirement of power to maintain the plants without any ceiling as to the period for which supply shall be taken.

Tariff:

Category of consumers	Monthly Fixed Charge (Rs./kVA of billing demand per month)		Energy Charge for consumption up to 50% load factor (paise / unit)		Energy Charge for consumption in excess of 50% load factor (paise per unit)	
During Season						
	Existing	Proposed	Existing	Proposed	Existing	Proposed
11 kV supply	310	350	580	610	520	550
33 kV supply	340	380	570	600	500	530
During Off-Season						
11 kV supply	Rs. 310 on 10% of contract demand or actual recorded demand during the season whichever is higher	Rs. 350 on 10% of contract demand or actual recorded demand during the season whichever is higher	696 i.e. 120% of seasonal energy charge	732 i.e. 120% of seasonal energy charge	Not applicable	Not applicable
33 kV supply	Rs. 340 on 10% of contract demand or actual recorded demand during the season whichever is higher	Rs. 380 on 10% of contract demand or actual recorded demand during the season whichever is higher	684 i.e. 120% of seasonal energy charge	720 i.e. 120% of seasonal energy charge	Not applicable	Not applicable

Specific Terms and Conditions:

1. **Guaranteed Annual Minimum Consumption** shall be 900 units (kWh) per kVA of contract demand. The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff
2. **Load Factor Incentive:** The consumer shall be eligible for Load Factor incentive on energy charges as per the scheme given in General Terms and Conditions of High Tension Tariff.
3. **Time of Day Rebate:** This rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
4. The consumer has to declare months of season and off season for the tariff year 2017-18 within 60 days of issue of tariff order and inform the same to the licensee. If the consumer has already informed the Licensee of his season/offseason months during this financial year prior to issue of this order, same shall be accepted and shall be valid for this Tariff Order.
5. The seasonal period once declared by the consumer cannot be changed during the year.
6. This tariff schedule is not applicable to composite units having seasonal and other category loads.
7. The consumer will be required to restrict his monthly off season consumption to 15% of highest of the average monthly consumption of the preceding three seasons. In case this limit is exceeded in any off season month, the consumer will be billed under HV-3.1 Industrial Schedule for the whole tariff year.
8. The consumer will be required to restrict his maximum demand during off season to 30 % of the contract demand. In case the maximum demand recorded in any month during the declared off-season exceeds this limit, the consumer will be billed under HV-3.1 Industrial Schedule for the whole year.
9. Other terms and conditions shall be as per the General Terms and Conditions of High Tension Tariff.

Tariff Schedule – HV - 5 –IRRIGATION, PUBLIC WATER WORKS AND OTHER THAN AGRICULTURAL

Applicability:

The Tariff Category HV-5.1 shall apply to supply of power to lift irrigation schemes, group irrigation, Public Utility Water Supply schemes, sewage treatment plants /sewage pumping plants and for energy used in lighting pump house.

The tariff category HV-5.2 shall also apply to supply of power to other allied agriculture pump connections i.e. the connection for hatcheries, fisheries ponds, poultry farms, cattle breeding farms, grasslands, vegetables/ fruits/ floriculture/ mushroom growing units etc. and dairy (for those dairy units where only extraction of milk and its processing such as chilling, pasteurization etc. is done). However, in units where milk is processed to produce other end products of milk, billing shall be done under HV-3.1 (Industrial) category.

Note: Private water supply scheme, water supply schemes run by institutions for their own use/employees/townships etc. will not fall in this category but billed under the appropriate tariff category to which such institution belongs. In case water supply is being used for two or more different purposes then the highest tariff shall be applicable.

Tariff:

No.	Sub-Category	Monthly Fixed Charge (Rs. KVA of billing demand per month)		Energy Charge (paise per unit)	
5.1 Public Water Works, Group Irrigation and Lift Irrigation Schemes					
		Existing	Proposed	Existing	Proposed
	11 kV supply	225	245	490	540
	33 kV supply	245	265	465	520
	132 kV supply	270	290	440	490
5.2 Other allied agricultural use					
	11 kV supply	235	255	505	560
	33 kV supply	250	270	480	530
	132 kV supply	280	300	460	510

Specific Terms and Conditions:

- (a) **Guaranteed Annual Minimum Consumption** shall be 720 units (kWh) per kVA of contract demand. The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff.
- (b) **Time of Day Rebate:** This rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
- (c) **Incentive for adopting Demand Side Management**

An **incentive** equal to 5 % energy charges shall be given on installation and use of energy saving devices (such as ISI energy efficient motors for pump sets).**Incentive** will only be admissible if full bill is paid within due dates failing which all consumed units will be charged at normal rates as the case may be. Such incentive will be admissible from the month following the month in which energy saving devices are put to use and its verification by a person authorized by the licensee. The incentive will continue to be allowed till such time these energy saving devices remain in service. The Distribution Licensee is required to arrange wide publicity for above incentive. The Distribution Licensee is required to place quarterly information regarding incentives provided on its web site.

- (d) Other terms and conditions shall be per the General Terms and Conditions of High Tension Tariff.

Tariff Schedule – HV – 6 BULK RESIDENTIAL USERS

Applicability:

The tariff category **HV-6.1** is applicable for supply to industrial or any other township (e.g. that of University or academic institutions, hospitals, MES and Border villages etc.) for domestic purpose only such as lighting, fans, heating etc. provided that the connected load for essential common facilities such as Non-domestic supply in residential area, street lighting shall be within the limits specified hereunder:-

- (i) Water supply and Sewage pumping, Hospital - **No limit**
- (ii) Non-domestic/Commercial and other General purpose put together - **20 % of total connected load.**

The tariff category **HV-6.2** is applicable for supply to Registered Cooperative Group Housing Societies as per the Ministry of Power's notification no. S.O.798 (E) dated 9th June, 2005 and also to other Registered Group Housing Societies and individual domestic user. The Terms and Conditions to this category of consumers shall be applicable as per relevant provisions of the Madhya Pradesh Electricity Supply Code, 2013 as amended from time to time.

It is also proposed that this tariff category shall also be applicable to residents welfare societies/ associations and residential complexes/ apartments/ colonies/ townships where supply is used for residential purposes such as lighting, fans, heating etc provided that the connected load for essential common facilities such as Non-Domestic supply in residential area, street lighting, lift etc shall be within the limit of 20% of the sanctioned contracted demand/connected load.

Tariff:

S. No.	Category of consumers	Monthly Fixed Charge (Rs/KVA) of Billing demand per month	Energy Charge for Consumption up to 50% load factor (paise/unit)	Energy Charge for Consumption in excess of 50% load factor (paise/unit)	Monthly Fixed Charge (Rs/KVA) of Billing demand per month	Energy Charge for Consumption up to 50% load factor (paise/unit)	Energy Charge for Consumption in excess of 50% load factor (paise/unit)
Existing				Proposed			
1 For Tariff Sub-Category 6.1							
	11 kV supply	270	545	490	290	600	540
	33 kV supply	290	520	470	310	570	510

	132 kV supply	315	490	440	335	540	480
2	For Tariff Sub-Category 6.2						
	11 kV supply	175	550	490	195	600	540
	33 kV supply	175	535	475	195	590	520
	132 kV supply	180	505	455	200	550	500

Specific Terms and Conditions:

- (a) **Guaranteed Annual Minimum Consumption** shall be 780 units (kWh) per kVA of contract demand. The method of billing of minimum consumption shall be as given in General Terms and Conditions of High Tension Tariff.
- (b) **Load Factor Incentive:** The consumer shall be eligible for Load Factor incentive on energy charges as per the scheme given in General Terms and Conditions of High Tension Tariff.
- (c) All individual end-users shall enter into a tripartite agreement with the Management of the Group Housing Society and the licensee for availing supply of electricity in the Society in order to get the benefit of the tariff under this category. The individual end user shall not be levied a rate exceeding the tariff applicable to the corresponding LT category.
- (d) Other terms and conditions shall be as specified under General Terms and Conditions of High Tension Tariff.

Tariff Schedule – HV – 7 SYNCHRONIZATION AND START UP POWER FOR GENERATORS CONNECTED TO THE GRID

Applicability:

This Tariff shall apply to those generators who are already connected to the grid but who are not consumers of the Distribution Licensee and seek to avail power for synchronization with the grid or for start-up.

Tariff for all voltages:

S. No.	Category of consumers	Energy (paise/unit)	Energy (paise/unit)
		Existing	Proposed
	Generators for Startup power or synchronization with Grid	675	740

Terms and Conditions:

- (a) The supply for synchronization with the grid or for start-up power shall not exceed 15% of the capacity of unit of highest rating in the Power Plant.
- (b) The condition for minimum consumption shall not be applicable to the generators including CPP. Billing shall be done for energy recorded on each occasion of availing supply.
- (c) The supply shall not be allowed to the CPP for production purpose for which they may avail stand-by support under the relevant Regulations.
- (d) The synchronization with the grid or the start-up power shall only be made available after commissioning of plant and in the event of outages for annual planned maintenance, other maintenance, forced outages of generating units or also in the event of separation of generator from grid.
- (e) The synchronization with the grid, power shall be provided for a maximum period of 2 hours on each occasion. This time limit shall not be applicable to start up activity
- (f) The generator including CPP shall execute an agreement with the Licensee for meeting the requirement of synchronization with the grid or for start-up power incorporating the above terms and conditions..

GENERAL TERMS AND CONDITIONS OF HIGH TENSION TARIFF

The following terms and conditions shall be applicable to all HT consumer categories subject to specific terms and conditions for that category as mentioned in the tariff schedule of respective category:

- i. The contract demand shall be expressed in whole number only.
 - ii. **Character of Service:** The character of service shall be as per Madhya Pradesh Electricity Supply Code, 2013 as amended from time to time.
 - iii. **Point of Supply:**
 - a. The power will be supplied to the consumer ordinarily at a single point for the entire premises.
 - b. In case of Railway Traction, the supply at each sub-station shall be separately metered and charged.
 - c. In case of coal mines, the power will be supplied ordinarily at a single point for the entire premises. The power may, however, be supplied, on the request of the consumer, at more than one point subject to technical feasibility. In such cases, metering and billing will be done for each point of supply separately.
 - iv. **Determination of Demand:** The **maximum demand** of the supply in each month shall be four times the largest number of kilovolt ampere hours delivered at the point of supply during any continuous 15 minutes during the month as per sliding window principle of measurement of demand.
 - v. **Billing demand:** The billing demand for the month shall be the actual maximum kVA demand of the consumer during the month or 90% of the contract demand, whichever is higher. In case the power is availed through open access, the billing demand for the month shall be the actual maximum kVA demand during the month excluding the demand availed through open access for the period for which open access is availed or 90% of the contract demand, whichever is higher, subject to clause 3.4 of the M.P Electricity Suppply Code, 2013.
- Note:** The billing demand shall be rounded off to the nearest integer number i.e. the fraction of 0.5 or above will be rounded off to next integer figure and the fraction of less than 0.5 shall be ignored.
- v. **Tariff minimum consumption shall be billed** as follows:
 - d. The consumer shall be billed for guaranteed annual minimum consumption (kWh) based on number of units per kVA of contract demand specified for his category, irrespective of whether any energy is consumed or not during the year.

- e. The consumer shall be billed one twelfth of guaranteed annual minimum consumption (kWh) specified for his category each month in case the actual consumption is less than above mentioned minimum consumption.
- f. During the month in which actual cumulative consumption equals or greater than the annual minimum guaranteed consumption, no further billing of monthly minimum consumption shall be done in subsequent months of the financial year.
- g. Tariff minimum consumption shall be adjusted in the month in which cumulative actual or billed monthly consumption exceeds cumulative monthly prorated minimum annual guaranteed consumption. If actual cumulative consumption does not get fully adjusted in that month, adjustment shall continue to be provided in subsequent months of the financial year. The following example illustrates the procedure for monthly billing of consumption where prorated monthly minimum consumption is 100 kWh based on annual consumption of 1200 kWh.

Month	Actual cumulative consumption	Cumulative minimum consumption	Higher of 2 and 3	Already billed in the year	To be billed in the month = (4-5)
	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)
1	2	3	4	5	6
April	95	100	100	0	100
May	215	200	215	100	115
June	315	300	315	215	100
July	395	400	400	315	85
Aug	530	500	530	400	130
Sept	650	600	650	530	120
Oct	725	700	725	650	75
Nov	805	800	805	725	80
Dec	945	900	945	805	140
Jan	1045	1000	1045	945	100
Feb	1135	1100	1135	1045	90
March	1195	1200	1200	1135	65

- vii. **Rounding off:** All bills will be rounded off to the nearest rupee i.e. up to 49 paise shall be ignored and 50 paise upwards shall be rounded off to next Rupee.

Incentive/ Rebate / penalties

- viii. **Power Factor Incentive:** Power factor incentive shall be payable as follows:

Power Factor	Percentage incentive payable on billed energy charges
Above 95% and up to 96%	1.0 (one percent)
Above 96% and up to 97%	2.0 (two percent)
Above 97% and up to 98%	3.0 (three percent)
Above 98 % up to 99%	5.0 (five percent)
Above 99 %	7.0 (seven percent)

ix. Load factor calculation

- a. The **load factor** shall be calculated as per the following formula:

$$\text{Load factor (\%)} = \frac{\text{Monthly consumption} \times 100}{\text{No. of hours in the billing month} \times \text{Demand} \times \text{PF}}$$

- Monthly consumption shall be units consumed in the month excluding those received from sources other than Licensee
- No of Hours in billing month shall exclude period of scheduled outages in hours.
- Demand shall be maximum demand recorded or contract demand whichever is higher
- Power factor shall be 0.9 or actual average monthly power factor whichever is higher

Note: The load factor (%) shall be rounded off to the nearest lower integer. In case the consumer is getting power through open access, units set off from other sources, the net energy (after deducting units set off from other sources, from the consumed units) billed to consumer shall only be taken for the purpose of working out load factor. The billing month shall be the period in number of days between the two consecutive dates of meter readings taken for the purpose of billing to the consumer.

- b. **Load factor (LF) incentive** shall be calculated as per the following scheme and shall be given to those categories of consumers where it is specified:

LF Range	Incentive	Computation of % incentive on energy charge (LF = x%)
LF <= 75%	No incentive	=0.00
LF > 75%	Incentive of 0.10 % for every 1% increase in LF above 75% on the energy charges for incremental consumption above 75% load factor	$=(x-75)*0.10$

Example,

- Consumer having 72% load factor would not be getting any incentive on energy charges

- Consumer having 82% load factor will get incentive of $[0.10 * (82-75) \%] = 0.7\%$ on energy charges for incremental consumption above 75% load factor.

Note: For working out incremental consumption, consumption corresponding to 75 % load factor shall be deducted from total consumption. The above load factor incentive shall apply only to energy charges corresponding to such incremental consumption for which separate rates have been specified.

- x. For **advance payment** made before commencement of consumption period for which bill is prepared, an incentive of 1 % per month on the amount which remains with the licensee at the end of calendar month (excluding security deposit) shall be credited to the account of the consumer after adjusting any amount payable to the licensee.
- xi. All HT consumers who have no arrears shall be given rebate of Rs 100 per bill for online payment of the energy bill in full.
- xii. An incentive for prompt payment @0.25% of bill amount (excluding arrears, security deposit, meter rent and Government levies viz. Electricity Duty and Cess) shall be given in case the payment is made at least 7 days in advance of the due date of payment. The consumers in arrears shall not be entitled for this incentive.
- xiii. **Rebate for online bill payment by HT consumers:** All HT consumers who have no arrears shall be given a rebate Rs 100 per bill for online payment of energy bill in full.
- xiv. **Time of Day (ToD) Rebate:** This scheme is applicable to the categories of consumers where it is specified. This is applicable for different periods of the day i.e. normal period, peak load and off-peak load period. The rebate on energy charges according to the period of consumption shall be as per following table:

S. No.	Peak / Off-peak Period	Rebate on energy charges on energy consumed during the corresponding period
2.	Off peak load period (10 PM to 6 AM next day)	20% of Normal rate of Energy Charge as Rebate

Note: Fixed charges shall always be billed at normal rates i.e. ToD Rebate shall not be applied on Fixed Charges

- xv. **Power Factor Penalty (For consumers other than Railway Traction HV-1)**

- a. If the average monthly power factor of the consumer falls below 90 percent, the consumer shall be levied a penalty @ 1% (one percent), for each one percent fall in his average monthly power factor below 90 percent, on total amount of bill under the head of "Energy Charges".

- b. If the average monthly power factor of the consumer falls below 85 percent, the consumer shall be levied a penalty of 5% (five percent) plus @ 2% (two percent) for each one percent fall in his average monthly power factor below 85 percent, on the total amount of bill under the head of “Energy Charges”. This penalty shall be subject to the condition that overall penalty on account of low power factor does not exceed 35%.
- c. Should the average monthly power factor fall below 70%, the Distribution Licensee reserves the right to disconnect the consumer’s installation till steps are taken to improve the same to the satisfaction of the Distribution Licensee. This is, however, without prejudice to the levy of penalty charges for low power factor in the event of supply not being disconnected.
- d. For this purpose, the “average monthly power factor” is defined as the ratio expressed in percentage of total kilowatthours to the total kilovoltampere hours recorded during the billing month. This ratio (%) shall be rounded off to the nearest integer figure and the fraction of 0.5 or above will be rounded to next higher integer and the fraction of less than 0.5 shall be ignored.
- e. Notwithstanding what has been stated above, if the average monthly power factor of a new consumer is found to be less than 90% in any month during the first 6 (six) months from the date of connection, the consumer shall be entitled to a maximum period of six months to improve it to not less than 90% subject to following conditions:
 - i. This period of six months shall be reckoned from the month following the month in which the average power factor was found for the first time to be less than 90%.
 - ii. In all cases, the consumer will be billed the penal charges for low power factor, but in case the consumer maintains the average monthly power factor in subsequent three months (thus in all four months) to not less than 90%, the charges on account of low power factor billed during the said six months period, shall be withdrawn and credited in next monthly bills.
 - iii. The facility, as mentioned herein, shall be available not more than once to new consumer whose average monthly power factor is less than 90% in any month during 6 months from the date of connection. Thereafter, the charges on account of low average power factor, if found less than 90%, shall be payable as applicable to any other consumer.

xvi. Additional Charges for Excess Demand

- a) The consumer shall at all times restrict their actual maximum demand within the contract demand. In case the actual maximum demand in any month exceeds 115%

of the contract demand, the tariffs given in various schedules shall apply to the extent of 115% of the contract demand only. The consumer shall be charged for excess demand computed as difference of recorded maximum demand and 115% of the contract demand on energy charges and fixed charges and while doing so, the other terms and conditions of tariff, if any, shall also be applicable on the said excess demand. The excess demand so computed, if any, in any month shall be charged at the following rates from all consumers except Railway Traction.

- b) **Energy charges for excess demand:** No extra charges are applicable on the energy charges due to the excess demand or excess connected load.
- c) **Fixed charges for excess demand:** These charges shall be billed as per following:
 - i. **Fixed charges for Excess Demand when the recorded maximum demand is up to 130% of the contract demand:** Fixed charges for Excess Demand over and above 115% of the contract demand shall be charged at 1.3 times the normal fixed charges.
 - ii. **Fixed charges for Excess Demand when the recorded maximum demand exceeds 130% of contract demand:** In addition to fixed charges in 1 above, recorded demand over and above 30 % of the contract demand shall be charged at 2 times the normal fixed charges.

Example for fixed charges billing for excess demand: If the contract demand of a consumer is 100 kVA and the maximum demand recorded in the billing month is 140 kVA, the consumer shall be billed towards fixed charges as under:--

- 1. Up to 115 kVA at normal tariff.
- 2. Above 115 kVA up to 130 kVA i.e. for 15 kVA at 1.3 times the normal tariff.
- 3. Above 130 kVA up to 140 kVA i.e. for 10 kVA at 2 times the normal tariff.

- d) In case of **Railway Traction** the excess demand so computed as per above, if any, in any month shall be charged at the following rates:
 - 1. When the recorded maximum demand is up to 130% of contract demand- Excess Demand over and above 115% of the contract demand—at the rate of Rs. 341 per kVA
 - 2. When the recorded maximum demand exceeds 130% of contract demand: - In addition to fixed charges in (a) above, recorded demand over and above 30% of the contract demand shall be charged—at the rate of Rs. 465 per kVA

While doing so, other provisions of electricity tariff (such as tariff minimum charge etc.) will also be applicable on aforesaid excess demand.

- e) The excess demand computed in any month will be charged along with the monthly bill and shall be payable by the consumer.
 - f) The billing of excess demand at higher tariff is without prejudice to the Licensee's right to discontinue the supply in accordance with the provisions contained in the Madhya Pradesh Electricity Supply Code, 2013.
- xvii. **Delayed Payment Surcharge:** Surcharge at the rate of 1.25 % per month or part thereof on the amount outstanding (including arrears) will be payable if the bills are not paid up to due date. The part of a month will be reckoned as full month for the purpose of calculation of delayed payment surcharge. The delayed payment surcharge will not be applicable after supply to the consumer is permanently disconnected.
- xviii. **Service Charge for Dishonoured Cheques:** In case the cheque(s) presented by the consumer are dishonoured, a service charge at the rate of Rs. 2000/- per cheque shall be levied in addition to delayed payment surcharge as per rules. This is without prejudice to the Distribution Licensee's rights to take action in accordance with any other applicable law.
- xix. **Temporary supply at HT:** the character of temporary supply shall be as defined in the MP Electricity Supply Code, 2013. If any consumer requires supply for a temporary period, the temporary supply shall be treated as a separate service and charged subject to the following conditions:

- a. Fixed Charges and Energy Charges shall be charged at 1.3 times the normal tariff. The fixed charges shall be recovered for the number of days for which the connection is availed during the month by prorating the monthly fixed charges. Month shall be considered as the number of total days in that calendar month.
- b. The consumer shall guarantee minimum consumption (kWh) as applicable to the permanent consumers on pro-rata basis based on number of days as detailed below:

$$\text{Minimum consumption for additional supply for temporary period} = \frac{\text{Annual minimum consumption as applicable to permanent supply} \times \text{No. of days of temporary connection}}{\text{No. of days in a year}}$$

- c. The billing demand shall be the demand requisitioned by the consumer or the monthly maximum demand during the period of supply commencing from the month of connection ending with the billing month, whichever is higher. For example, the contract demand requisitioned by the consumer is 100 kVA, then:

Month	Recorded Maximum Demand (kVA)	Billing Demand (kVA)
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April	100	100
May	90	100
June	80	100
July	110	110
August	100	100
September	80	100
October	90	100
November	92	100
December	95	100
January	120	120
February	90	100
March	80	100

- d. The consumer shall pay the estimated charges in advance, before serving the Temporary Connection subject to replenishment from time to time and adjustment as per final bill after disconnection. No interest shall be given on such advance payment.
- e. The consumer shall pay rental for the metering system.
- f. Connection and Disconnection Charges shall also be paid.
- g. In case of existing HT consumer, the temporary connection may be given through existing permanent HT connection on following methodology of assessment:
 - i. Deemed contract demand (DCD) = CD for permanent connection + sanctioned demand for temporary connection.
 - ii. Billing demand for the month shall be worked out in the following manner :
 - 1. Fixed Charges shall be charged at 1.3 times the normal tariff.
 - 2. Deemed contract demand (DCD) = CD for permanent connection + sanctioned demand for temporary connection.
 - 3. Billing demand and fixed charges for the month shall be worked out in the following manner:
 - a) When recorded MD in the month is found to be less than deemed CD for the month, fixed charges for the month shall be sum of fixed charges at temporary tariff on 100% temporary sanctioned demand + fixed charge at normal tariff on highest of **a** or **b**.

where **a** is Recorded MD minus temporary sanctioned demand and **b** is 90% CD of permanent connection.

- b) When recorded MD in the month is found to be equal to deemed CD for the month, fixed charges for the month shall be sum of fixed charges at normal tariff on 100% CD for permanent connection + fixed charges at temporary tariff on 100% temporary sanctioned demand.
 - c) When recorded MD in the month is found to be in excess of deemed CD for the month, fixed charges for the month shall be sum of fixed charges at normal tariff on 100% CD for permanent connection + fixed charges at temporary tariff on 100% temporary sanctioned demand + fixed charges on 100% excess demand over and above deemed CD at 1.5 times of temporary tariff.
 - d) The fixed charges shall be recovered for the number of days for which the connection is availed during the month by prorating the monthly fixed charges. Month shall be considered as the number of total days in that calendar month.
4. The consumption corresponding to Permanent connection i.e. (A) during the month shall be billed in the following manner:

$$A = \frac{\text{Contract demand (Permanent)}}{\text{Deemed contract demand or actual demand whichever is higher}} \times \text{Total consumption}$$

5. The consumption corresponding to temporary sanctioned demand during the month i.e. (B) shall be billed at 1.3 times the normal energy charges and shall be billed in the following manner:

$$B = \frac{\text{Sanctioned demand for temporary connection}}{\text{Deemed contract demand or actual demand recorded whichever is higher}} \times \text{Total consumption}$$

6. Consumption during the month corresponding to excess demand i.e. (C), if any, shall be calculated in the following manner:

C= total recorded consumption minus (consumption corresponding to permanent connection i.e. A + consumption corresponding to temporary sanctioned demand i.e. B)

7. The demand recorded in excess of deemed contract demand shall be treated as Excess Demand. For billing purposes such Excess demand, if any, in any month shall be treated as pertaining to temporary connection load and shall be charged at 1.5 times the normal fixed and one time energy charges of temporary connection. Additional charges for excess demand recorded during the period of temporary connection shall be calculated as given below :

Fixed charges for excess demand = fixed charges per kVA for temporary connection * excess demand* 1.5 (one and half)

Energy charges for consumption corresponding to excess demand = energy charges per unit for temporary connection * (consumption corresponding to excess demand i.e. C)

- h. Load factor incentive shall not be allowed on the consumption for temporary connection.
- i. Power factor incentives/penalties and the condition for Time of Day Surcharge/ rebate shall be applicable at the same rate as for permanent connection.

Other Terms and Conditions for permanent connections:

- i. The existing 11 kV consumer with contract demand exceeding 300 kVA who want to continue to avail supply at 11 kV at his request, shall be required to pay additional charge at 3% on the total amount of Fixed Charges and, Energy Charges billed in the month.
- ii. The existing 33 kV consumer with contract demand exceeding 10,000 kVA who want to continue to avail supply at 33 kV at his request, shall be required to pay additional charge at 2% on the total amount of Fixed Charges and Energy Charges billed in the month.
- iii. The existing 132 kV consumer with contract demand exceeding 50,000 kVA who want to continue to avail supply at 132 kV at his request, shall be required to pay additional charge at 1% on the total amount of Fixed Charges and Energy Charges billed in the month.
- iv. Metering Charges shall be billed as per schedule of Metering and Other Charges as prescribed in MPERC (Recovery of Expenses and other Charges for providing Electric Line or Plant used for the purpose of giving Supply), Regulations (Revision-I), 2009 as amended from time to time. Part of a month will be reckoned as full month for purpose of billing.
- v. 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 then in force. Such charges, if any, shall be payable by the consumer in addition to the tariff charges.

- vi. In case any dispute arises regarding interpretation of this tariff order and/or applicability of this tariff, the decision of the Commission will be final and binding.
- vii. No changes in the tariff or the tariff structure including minimum charges for any category of consumer are permitted except with prior written permission of the Commission. Any order without such written permission of the Commission will be treated as null and void and also shall be liable for action under relevant provisions of the Electricity Act, 2003.
- viii. In case a consumer, at his request, avails supply at a voltage higher than the standard supply voltage as specified under relevant category, he shall be billed at the rates applicable for actually availed supply voltage and no extra charges shall be levied on account of higher voltage.
- ix. All consumers to whom fixed charges are applicable are required to pay fixed charges in each month irrespective of whether any energy is consumed or not.
- x. All conditions prescribed herein shall be applicable notwithstanding if any contrary provisions, exist in the agreement entered into by the consumer with the licensee.