

Before the Madhya Pradesh Electricity Regulatory Commission, Bhopal

Petition for determination of
Aggregate Revenue Requirement
&
Tariff Proposal for
FY 2020-21

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



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



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

Petition No. _____ of 2019

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

IN THE MATTER OF:

Filing of ARR and Tariff Petition for the Distribution & Retail Supply Business for FY 2020-21 under the tariff principles laid down in the “The Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Distribution and Retail Supply of Electricity and Methods and Principles for Fixation of Charges) Regulation, 2015 (RG-35 (II) of 2015) dated 17th December 2015” and Second amendment issued by MPERC dated 14th November 2019 for MPPMCL and MPPoKVVCL, MPPaKVVCL & MPMKVVCL as the Distribution Licensee

The Applicant respectfully submits as under: -

1. Madhya Pradesh Power Management Company Ltd. is a Company incorporated under the Companies Act, 1956 (now Companies Act 2013) and having its registered office at Block No.11, Shakti Bhawan, Vidyut Nagar, Jabalpur.
2. Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Ltd. 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 Madhya Kshetra Vidyut Vitaran Company Ltd. (MPMKVVCL) 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').

4. Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Ltd. 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').
5. The Government of Madhya Pradesh ('GoMP' or 'State Government'), vide an Order No. 3679 F-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) / (GENCO)
 - b. M.P. Power Transmission Company Ltd., Jabalpur (MPPTCL) / (TRANSCO)
 - c. M.P. Poorv Kshetra Vidyut Vitaran Company Ltd., Jabalpur (MPPKVVCL) / (EAST DISCOM)
 - d. M.P. Madhya Kshetra Vidyut Vitaran Company Ltd. Bhopal (MPMKVVCL) / (CENTRAL DISCOM)
 - e. M.P. Paschim Kshetra Vidyut Vitaran Company Ltd., Indore (MPPKVVCL) / (WEST DISCOM)
6. With the issuance of the said Order dated 31st May 2005, the Operation and Management Agreement that existed between MPSEB and the Five Companies came to end with effect from 1st June 2005. The three Vidyut Vitaran Companies viz. East Discom, Central Discom and West Discom, started functioning independently as Distribution Licensees in their respective area of license and from the said date 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 3rd June 2006, GoMP, in exercise of its power 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 Government and simultaneously re-transferred and re-vested the same to MP Power Trading Company ('Tradeco' or 'MP Tradeco'). Since then, MP Tradeco is discharging the responsibilities of procurement of power in bulk and supplying to the three Discoms, including the Petitioner herein. The transfer was effected 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. The MP Power Management Company has been made holding companies for all the three DISCOMS of MP. The Registrar of Companies, MP has issued the Certificate of Incorporation consequent upon change of name on 10th April 2012. The MPPMCL has been vested with several of functions and power that were earlier vested with the erstwhile M.P. State Electricity Board.
9. GoMP has entrusted 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 05th June 2012, with the three Discoms of the State, wherein it has been agreed that MPPMCL shall perform inter alia the following functions of common nature for the Discoms:
 - i. 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;
 - ii. 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;
 - iii. 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;
 - iv. Exploring opportunities for procurement of power on long-term and medium-term basis, procure power and finalizing Power Purchase Agreements (PPAs);
 - v. 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 Petition is being made by the Petitioners (MPPMCL, East Discom, Central Discom and West Discom) under Section 61 and Section 62 (1) (d) of the Electricity Act 2003, read with the “MPERC (Terms and Conditions for Determination of Tariff for Distribution and Retail Supply of Electricity and Methods and Principles of Fixation of Charges) Regulations, 2015 (RG-35 (II) of 2015)” dated 17th December 2015” (Hereinafter referred to as "Tariff Regulations, 2015 or “Regulations”) for determination of the tariff for distribution and Retail Supply Business for the period FY 2018-19 following the regulations laid down by the Hon’ble Commission. First amendment to the aforesaid regulation was issued by MPERC on dated 30th November 2018, wherein it has extended the control period to FY 2019-20 and has approved certain norms for FY 2019-20. MPERC has also issued second amendment on dated 14th Nov’2019 and has further extended the control period

to FY 2020-21 and has approved certain norms for FY 2020-21.

12. It is submitted that the present ARR for MYT FY 2018-19 to FY 2020-21 & Tariff Petition for FY 2020-21 has been prepared in accordance with the normative parameters and clauses as defined under Tariff Regulations 2015 and subsequent First amendment and Second amendment issued in the said Regulation. The Petitioner has endeavoured 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 to the possible extent on the basis of actual and reasonable assumptions and within the limitations of availability of data.
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 and captive consumers along with net metering should also be notified and made effective from the tariff application date.
14. Based on the information available, the Petitioner has made sincere efforts to comply with the Regulations of the Hon'ble Commission and discharge its obligations to the best of its abilities and resources in its command. However, should any further material information become available during the process of determination, the Petitioner may be permitted to reserve the right to file such additional information and consequently amend/ revise the petition.
15. 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 and amendments made therein. 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 2018-19.
16. The Petitioner has estimated a net ARR (including Transco, Genco and MP Discoms True Up) of Rs 41,332/- Crores for MP State, Rs.12,220/- Crores for East Discom, Rs 12,913/- Crores for Central Discom and Rs 16,199/- Crores for West Discom respectively and a Revenue Gap of Rs 2,000/- Crores for MP State, Rs 596/- Crores for East Discom, Rs 627/- Crores for Central Discom and Rs 777/- Crores for West Discom respectively for FY 2020-21. The summary of the Petitioners Claim is shown below:

Sr.	Particular	Unit	MP State	East	Central	West
1	Total ARR	Rs Crs.	41,332	12,220	12,913	16,199
2	Revenue at Current Tariffs	Rs Crs.	39,332	11,624	12,286	15,422
3	Total Revenue Gap (Including True-Up)	Rs Crs.	2000	596	627	777
4	Average Cost of Supply (Including True-up)	Rs./Unit	6.84	6.59	6.83	7.06

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 Firoj Kumar Meshram, Chief General Manager (Revenue Management) of MPPMCL; Shri Girdhar Wasnik, General Manager (Commercial) of MPPoKVCL; Shri Gangaram Patele, General Manager (Regulatory Affairs) of MPMKVCL and Shri Shailendra Jain, Deputy Director (Commercial) of MPPaKVCL have been authorized to execute and file all the documents on behalf of the respective petitioner in this regard. Accordingly, the current petition filing is signed and verified by, and backed by the affidavit of respective authorized signatories.

PRAYER

The Petitioners hereby prays to the Hon'ble Commission to:

- a) To invoke the power conferred to it under Section 62 of the Electricity Act, 2003, and to admit the petition seeking approval of ARR & Tariff Petition for FY 2020-21;
- b) To approve the net ARR of **Rs. 41,332 /- Crores for MP State** (Rs. 12,220/- Crores for East Discom, Rs. 12,913 /- Crores for Central Discom and Rs. 16,199 /- Crores for West Discom) and a Revenue Gap of **Rs. 2000/- Crores for MP State** (Rs. 596/- Crores for East Discom, Rs.627/- Crores for Central Discom and Rs. 777/- Crores for West Discom) for FY 2020-21;
- c) 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 Discom's to meet the ends of justice;
- d) Consider and approve Petitioners tariff proposal for FY 2020-21 to recover the costs for the ensuing year;
- e) Consider and determine the wheeling charges, voltage level and consumer category wise cross subsidy surcharge, additional surcharge and transmission charges for open access customers and captive consumers along with net metering on the basis of ARR petition for FY 2020-21 and make applicable w.e.f. the application date of the revised tariff;
- f) Condone any inadvertent omissions/ errors/ shortcomings and permit the petitioners to add/ change/ modify/ alter this filing and make further submissions as may be required at a later stage;
- g) Pass such an order as the Hon'ble Commission deems fit and proper in the facts and circumstances of the case in the interest of justice.

Date: 29th November, 2019

Shri Firoj Kumar Meshram
CGM (Revenue Management)
MP Power Management Co. Ltd.,
Jabalpur

Shri Girdhar Wasnik
GM (Commercial)
MP Poorv Kshetra Vidyut Vitaran
Co. Ltd, Jabalpur

Shri Gangaram Patel
GM (Regulatory Affairs)
MP Madhya Kshetra Vidyut Vitaran
Co. Ltd, Bhopal

Shri Shailendra Jain
Dy. Director (Commercial)
MP Paschim Kshetra Vidyut Vitaran
Co. Ltd, Indore

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Notes and Abbreviations

In this Petition:

- ✓ *All currency figures used in this Petition, unless specifically stated otherwise, are in ₹ Crores.*

Abbreviation	Full Description
ARR	Aggregate Revenue Requirement
APTEL	Appellate Tribunal for Electricity
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
Co-gen	Cogeneration Power Plant
CPP	Captive Power Plant
EA – 2003	The Electricity Act 2003
ERLDC	Eastern Regional Load Dispatch Committee
ERPC	Eastern Regional Power Committee
FY	Financial Year
GFA	Gross Fixed Assets
GoMP	Government of Madhya Pradesh
GoI	Government of India
HT/ HV	High Tension/ High Voltage
IPPs	Independent Power Producers
kV / KVA	Kilo Volt / Kilo Volt Ampere
kW	Kilo Watt
LT/LV	Low Tension/ Low Voltage
MoP	Ministry of Power, Government of India
MPSEB	Madhya Pradesh State Electricity Board
MPERC	Madhya Pradesh Electricity Regulatory Commission
MPMKVVCL	Madhya Pradesh Madhya Kshetra Vidyut Vitran Company Limited
MPPaKVCL	Madhya Pradesh Paschim Kshetra Vidyut Vitran Company Limited
MPPoKVCL	Madhya Pradesh Poorv Kshetra Vidyut Vitran Company Limited
MPPMCL	Madhya Pradesh Power Management Company Limited
MPPGCL	Madhya Pradesh Power Generation Company Limited
MPPTCL	Madhya Pradesh Power Transmission Company Limited
MU	Million Units
NCE / NCES	Non-Conventional Energy Sources
PGCIL	Power Grid Corporation India Limited
SSGS	State Sector Generating Stations
SLDC	State Load Dispatch Centre
STOA	Short Term Open Access
TO	Tariff Order
WRLDC	Western Regional Load Dispatch Committee
WRPC	Western Regional Power Committee

A1: CONTENTS OF THIS PETITION AND METHODOLOGY ADOPTED IN FILING OF THIS PETITION (INCLUDING CONSTRAINTS)

The contents of this petition covers in detail basis the actuals of individual elements constituting the ARR for MYT FY 2017-18 to FY 2019-20 & Tariff Proposal for FY 2019-20 based on Tariff Regulations, 2015 and First Amendment issued therein. The following elements have been explained in detail for FY 2017-18 to FY 2019-20:

- a. Energy Sales
- b. Distribution Loss and Energy Requirement
- c. Power Purchase from various sources to meet the Energy Requirement
- d. Computation of Other Expenses
 - i. O&M Expenses
 - ii. Investment Plan
 - iii. Depreciation
 - iv. Interest & Finance Charges
 - v. Interest on Working Capital
 - vi. Interest on Security Deposit
 - vii. Return on Equity
 - viii. Bad Debts
 - ix. MPPMCL Cost/ (Income)
 - x. Other Expenses if any
 - xi. Other Income & Non-Tariff Income
- e. Computation of Total ARR
- f. Computation of Revenue Category wise as collected
- g. Determination of Deficit/(Surplus) between Revenue as collected & Costs
- h. Tariff Proposal for FY 2020-21 and its Salient Features
 - i. Voltage Wise Cost of Supply
 - j. Wheeling Charges, Cross Subsidy Surcharge & Additional Surcharge
 - k. Net Metering Charges
 - l. Fuel Cost Adjustment Charge
 - m. Compliance of Directives

1.1 Methodology

- 1.1.1 The Petitioners are submitting the ARR for MYT FY 2018-19 to FY 2020-21 & Tariff Proposal for FY 2020-21 on the basis of actual and reasonable assumptions and within the limitations of availability of data within the purview of the Electricity Act, 2003, Tariff Regulations, 2015 and First Amendment issued thereon. It consists of details of projected expenditures envisaged by the Petitioner and details of

expected revenue leading to projected revenue deficit/ (surplus) to be incurred from April 2020 to March 2021. It is a measure of projected accounting gains / losses and expenditures incurred to carry forward the electricity distribution business. It is humbly requested to the Hon'ble Commission to approve the ARR for MYT FY 2018-19 to FY 2020-21 & Tariff Petition for FY 2020-21 in accordance with the applicable Regulations as expenses and income have been considered while issuing the Tariff Order for FY 2019-20.

1.1.2 For Reference

- FY 2018-19 or FY 18 is from 01st April 18 to 31st March 19 (Provisional)
- FY 2019-20 or FY 20 is from 01st April 19 to 31st March 20 (Re-Estimate)
- FY 2020-21 or FY 21 is from 01st April 20 to 31st March 21 (Projected)

A2: REGULATORY REQUIREMENT OF FILING OF THIS PETITION

2.1 Regulations

This petition has been prepared based on the provisions of following regulation notified by the Madhya Pradesh Electricity Regulatory Commission:

“The Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Distribution and Retail Supply of Electricity and Methods and Principles of Fixation of Charges) Regulations, 2015 (RG-35 (II) of 2015) dated 17th December 2015” (Hereinafter referred to as “Tariff Regulations, 2015) – Applicable from FY 2016-17 to FY 2018-19;

“Madhya Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Supply and Wheeling of Electricity and Methods and Principles for Fixation of Charges) Regulations, 2015 (Second Amendment) Regulations, 2015 dated 14th November 2019” (Hereinafter referred to as “Second Amendment of Tariff Regulations, 2019) – Applicable for FY 2020-21;

A3: ESTIMATION OF SALES**3.1 Method adopted for Estimation of Sales**

- 3.1.1 For the purpose of projection of sales, the distribution licensees have considered category wise and slab wise actual data of sale of electricity, number of consumers, connected / contracted load, etc. of the preceding four years i.e. FY 2015-16, FY 2016-17 and FY 2017-18 and FY 2018-19 and available data of the FY 2019-20 i.e. up to the month of August 2019.
- 3.1.2 The distribution licensees, in their previous year's filing for FY 2019-20, had projected the Sales based on the actual data of FY 2017-18. Since the actual data of FY 2018-19 is now available and it has been observed that the actual sales during FY 2018-19 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 2019-20 and thereafter project the sales for FY 2020-21.
- 3.1.3 The sales for FY 2020-21 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 2019-20.
- 3.1.4 The approach being followed is to analyse 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.
- 3.1.5 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: Energy Sales (MUs)

TC	Category	East Discom			Central Discom			West Discom			MP State		
		FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
LV 1	Domestic	4,138	4,675	5,170	4,329	4,980	5,624	4,214	4,512	4,815	12,681	14,167	15,609
LV 2	Non-Domestic	941	1,037	1,173	926	1,010	1,079	1,095	1,174	1,273	2,962	3,221	3,525
LV 3	WW & Street Light	374	374	390	345	369	386	443	501	570	1,162	1,244	1,346
LV 4	LT Industrial	338	382	418	283	289	311	623	661	708	1,244	1,332	1,437
LV 5.1	Agriculture Irrigation Pumps	5,505	6,399	7,264	5,311	6,532	7,066	9,033	9,432	9,573	19,849	22,363	23,903
LV 5.2	Agriculture related Use	5	5	6	4	5	5	2	2	2	11	12	13
LV6	LT EV	-	1	1	-	1	1	-	1	1	0	3	3
Total (LT)		11,301	12,874	14,424	11,198	13,185	14,470	15,409	16,282	16,943	37,908	42,341	45,837
HV 1	Railway Traction	-	55	55	-	55	55	-	-	-	0	110	110
HV 2	Coal Mines	465	464	466	27	28	28	-	-	-	492	492	494
HV 3.1	Industrial	2,277	2,541	2,911	2,995	3,104	3,448	4,011	4,266	4,553	9,283	9,911	10,912
HV 3.2	Non-Industrial	244	248	261	435	454	474	469	486	516	1,148	1,188	1,251
HV 4	Seasonal	8	8	9	2	2	2	11	14	16	21	24	27
HV 5.1	Public Water Works	10	11	12	5	6	7	146	160	176	161	177	195
HV 5.1	Irrigation	15	16	16	9	11	12	9	9	10	33	36	38
HV 5.2	Other Agricultural	99	104	119	208	228	252	500	592	686	807	924	1,057
HV 6	Bulk Residential Users	261	266	275	151	148	145	31	32	32	443	446	452
HV 7	Start Up Power	1	1	1	2	2	2	12	13	15	15	16	18
HV 8	HT EV	-	2	2	-	-	3	-	3	3	0	5	8
Total (HT)		3,380	3,715	4,126	3,833	4,038	4,430	5,189	5,576	6,007	12,402	13,329	14,563
TOTAL LT+HT		14,681	16,590	18,550	15,032	17,222	18,900	20,599	21,858	22,951	50,312	55,670	60,400

3.2 Category-wise sales Projection.

The methodology adopted by the petitioners for category-wise projection of sales for FY 2020-21 is elaborated in detail in the following paras:

3.2.1 LV-1: Domestic

3.2.1.1 Assumptions for Projecting Unmetered Domestic Sales

The projections for 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).

3.2.1.2 Pradhan Mantri Sahaj Bijli Har Ghar Yojna

Additionally, with the introduction of the Pradhan Mantri Sahaj Bijli Har Ghar Yojna (Saubhagya Scheme), an additional 19.82 Lakh domestic households have been connected with the Discoms by October 2018. Hence, over and above the normal growth, additional connections under the Saubhagya Scheme have also been taken into consideration while computing the revised estimate for FY 2019-20 and forecasting the sales for FY 2020-21.

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

Table 2: Energy Sales for LV 1 (MUs)

Area	Sub Category	East Discom			Central Discom			West Discom			MP State		
		FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
Urban	Metered	1,862	1,930	2,077	2,589	2,899	3,365	2,461	2,676	2,909	6,912	7,505	8,351
Urban	Un-metered	-	-	-	-	-	-	0	-	-	0	0	0
Urban	Temporary	15	18	18	17	17	18	27	27	25	59	62	61
Urban	Total	1,878	1,948	2,095	2,605	2,916	3,383	2,488	2,703	2,935	6,971	7,567	8,413
Rural	Metered	1,901	2,318	2,666	1,183	1,637	1,815	1,710	1,795	1,868	4,794	5,750	6,349
Rural	Un-metered	357	406	406	540	424	424	11	10	10	908	840	840
Rural	Temporary	3	4	4	2	2	2	5	4	3	10	10	9
Rural	Total	2,261	2,727	3,075	1,724	2,063	2,241	1,726	1,809	1,881	5,711	6,599	7,197
Total	Metered	3,763	4,248	4,743	3,771	4,537	5,180	4,171	4,471	4,777	11,705	13,256	14,700
Total	Un-metered	357	406	406	540	424	424	11	10	10	908	840	840
Total	Temporary	18	22	22	19	19	20	32	31	28	69	72	70
Total	Total	4,138	4,675	5,170	4,329	4,980	5,624	4,214	4,512	4,815	12,681	14,167	15,609

3.2.1.4 East Discom

The growth percentages assumed for the category for the FY 2020-21 are as shown below:

Table 3: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Metered	Consumer	7.50%	Nominal Growth rate has been considered	15.00%	Nominal Growth rate has been considered
	Average Load (kW) per Consumer	1.17	No growth rate has been considered	0.35	No growth rate has been considered
	Average consumption per consumer per month	11.91%	5 Month Variation has been considered	4.54%	5 Month Variation 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	0.99	No growth rate has been considered	0.23	No growth rate 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	0.43%	3-year CAGR considered	0.08%	3 year CAGR considered
	Average Load per Consumer	1.41	No growth rate has been considered	1.43	No growth rate 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

3.2.1.5 Central Discom

The growth percentages assumed for the category for the FY 2020-21 are as shown below:

Table 4: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Metered	Consumer	8.00%	Nominal Growth rate has been considered	6.06%	Nominal Growth rate has been considered
	Average Load (kW) per Consumer	1.52	No growth rate has been considered	0.56	No growth rate has been considered
	Average consumption per consumer per month	4.70%	5 Month Variation has been considered	8.30%	5 Month Variation 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	3.79		0.44	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	3 Year CAGR Considered No growth rate has been considered
	Average Load per Consumer	1.36		1.56	
	Average consumption per consumer per month	0.00%		0.00%	

3.2.1.6 West Discom

The growth percentages assumed for the category for the FY 2019-20 are as shown below:

Table 5: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Metered	Consumer	7.79%	Nominal Growth rate has been considered	4.06%	Nominal Growth rate has been considered
	Average Load (kW) per Consumer	1.48	No growth rate has been considered	0.57	No growth rate has been considered
	Average consumption per consumer per month	0.88%	2 year CAGR Considered	0.00%	2 year CAGR 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		0.22	
	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	1.87		1.56	
	Average consumption per consumer per month	0.00%		0.00%	

3.2.2 LV-2: Non-Domestic

The future projections for FY 2020-21 are as below:

Table 6 : Energy Sales for LV 2 (MUs)

Sub Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
Metered	911	1,005	1,139	881	956	1,022	1,048	1,129	1,223	2,840	3,090	3,384
Temporary	30	32	35	45	54	57	47	45	50	122	131	142
Total	941	1,037	1,173	926	1,010	1,079	1,095	1,174	1,273	2,962	3,221	3,525

3.2.2.1 East Discom

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

Table 7: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Metered	Consumer	7.39%	2 year CAGR Considered	14.34%	1 year Considered
	Average Load (kW) per Consumer	4.49%	5 month variation has been considered	5.11%	5 month variation has been considered
	Average consumption per kW per month	0.89%	5 month variation has been considered	13.61%	5 month variation has been considered
Temporary	Consumer	3.94%	5 month variation has been considered	14.34%	Nominal Growth Considered

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	0.00%	3 year CAGR Considered	0.00%	No Growth rate has been Considered
	Average consumption per consumer per month	3.02%	5 month variation has been considered	0.00%	No Growth rate has been Considered

3.2.2.2 Central Discom

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

Table 8: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Metered	Consumer	3.51%	3 year CAGR Considered	16.31%	3 year CAGR Considered
	Average Load (kW) per Consumer	2.70%	3 year CAGR Considered	2.99%	3 year CAGR Considered
	Average consumption per kW per month	4.52%	4 Month variation Considered	3.84%	5 Month variation Considered
Temporary	Consumer	2.94%	3 year CAGR Considered	26.64%	3 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%	No Growth rate has been Considered	0.00%	No Growth rate has been Considered

3.2.2.3 West Discom

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

Table 9: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Metered	Consumer	3.44%	3-year CAGR Considered	9.51%	3-year CAGR Considered
	Average Load (kW) per Consumer	3.34%	3-year CAGR Considered	2.36%	3-year CAGR Considered
	Average consumption per kW per month	0.00%	No Growth rate has been Considered	1.46%	3-year CAGR Considered
Temporary	Consumer	0.52%	3-year CAGR Considered	20.05%	3-year CAGR Considered
	Average Load (kW) per Consumer	0.97%	3-year CAGR Considered	7.34%	3-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

3.2.3 LV-3.1: Public Water Works & Street Light

The projections for FY 20 and FY 21 for Public water works are as follows:

Table 10: Energy Sales for LV 3.1 (MUs)

Sub Category	East Discom	Central Discom	West Discom	MP State
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	FY 20	FY 21						
Municipal Corp.	44	45	98	104	48	52	187	197
Nagar Panchayat	52	53	77	77	60	65	184	190
Gram Panchayat	136	149	73	79	229	277	387	457
Temporary	5	5	8	9	4	5	19	18
Total	237	252	256	269	341	399	777	862

The projections for FY 20 and FY 21 for Street Lights are as follows:

Table 11: Energy Sales for LV 3.2 (MUs)

Sub Category	East Discom		Central Discom		West Discom		MP State	
	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21
Municipal Corp.	55	55	59	62	53	57	174	170
Nagar Panchayat	54	54	47	47	52	56	148	153
Gram Panchayat	27	29	7	8	56	58	86	93
Total	137	138	114	117	160	171	410	415

3.2.3.1 Public Water Works

3.2.3.1.1 East Discom

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

Table 12: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	3.00%	Nominal Growth Considered	0.04%	3-year CAGR Considered
	Average Load (kW) per Consumer	0.21%	3-year CAGR Considered	0.26%	3-year CAGR Considered
	Average consumption per kW per month	3.00%	3-year CAGR Considered	4.81%	5-month Variation growth
Nagar Panchayat	Consumer	0.50%	Nominal Growth Considered	17.27%	3-year CAGR Considered
	Average Load (kW) per Consumer	0.54%	3-year CAGR Considered	0.00%	No Growth Rate Considered
	Average consumption per consumer per month	0.26%	3-year CAGR Considered	0.00%	No Growth Rate Considered
Gram Panchayat	Consumer	1.00%	Nominal Growth Considered	5.00%	3-year CAGR Considered
	Average Load (kW) per Consumer	1.25%	3-year CAGR 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
Temporary	Consumer	0.77%	3-year CAGR Considered	6.86%	2 year CAGR Considered
	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

3.2.3.1.2 Central Discom

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

Table 13: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	3.51%	3-year CAGR Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	1.69%	3-year CAGR Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Nagar Panchayat	Consumer	2.44%	3-year CAGR Considered	0.55%	3-year CAGR Considered
	Average Load (kW) per Consumer	3.07%	3-year CAGR Considered	7.33%	3-year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	2.63%	3-year CAGR Considered
Gram Panchayat	Consumer	8.38%	3 year CAGR Considered	6.40%	3-year CAGR Considered
	Average Load (kW) per Consumer	6.74%	3 year CAGR Considered	5.94%	3-year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Temporary	Consumer	5.11%	3 year CAGR Considered	10.86%	3-year CAGR Considered
	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

3.2.3.1.3 West Discom

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

Table 14: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	5.00%	Nominal Considered	14.50%	Nominal Considered
	Average Load (kW) per Consumer	1.05%	3 year CAGR Considered	5.27%	3 year CAGR Considered
	Average consumption per kW per month	3.37%	3 year CAGR Considered	0%	No growth rate considered.
Nagar Panchayat	Consumer	3.26%	3 year CAGR Considered	12.52%	Nominal growth Considered
	Average Load (kW) per Consumer	3.36%	3 year CAGR Considered	4.42%	2year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Gram Panchayat	Consumer	3.49%	3 year CAGR Considered	14.00%	3 year CAGR Considered
	Average Load (kW) per Consumer	0.52%	3 year CAGR Considered	6.79%	3 year CAGR Considered
	Average consumption per consumer per month	0.37%	3 year CAGR Considered	0.00%	No Growth Rate Considered
Temporary	Consumer	14.07%	3 year CAGR	15%	Nominal Growth

			Considered		Rate Considered
Average Load (kW) per Consumer	39.48%	3 year CAGR Considered	0%	No Growth rate considered	
Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No growth rate considered	

3.2.3.2 LV-3.2: Street Light

3.2.3.2.1 East Discom

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

Table 15: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	4.75%	3 Year CAGR Considered	4.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	0.81%	3 Year CAGR Considered	0.00%	No Growth Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	4.07%	3 Year CAGR Considered
Nagar Panchayat	Consumer	0.04%	3 Year CAGR Considered	10.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	0.24%	3 Year CAGR Considered	1.92%	3 Year CAGR Considered
	Average consumption per consumer per month	2.71%	3 Year CAGR Considered	0.83%	3 Year CAGR Considered
Gram Panchayat	Consumer	2.71%	3 Year CAGR Considered	4.50%	Nominal Growth Considered
	Average Load (kW) per Consumer	6.28%	3 Year CAGR Considered	0.56%	3 Year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered

3.2.3.2.2 Central Discom

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

Table 16: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Municipal Corporation	Consumer	5.56%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Nagar Panchayat	Consumer	3.14%	3 Year CAGR Considered	23.86%	3 Year CAGR Considered
	Average Load (kW) per Consumer	4.91%	3 Year CAGR Considered	15.66%	3 Year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Gram Panchayat	Consumer	0.00%	No Growth Rate Considered	16.37%	3 Year CAGR Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	10.34%	3 Year CAGR Considered

	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
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3.2.3.2.3 West Discom

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

Table 17: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
		7.48%	3 Year CAGR Considered	0%	No Growth Rate Considered
Municipal Corporation	Consumer	7.48%	3 Year CAGR Considered	0%	No Growth Rate Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	0 %	No growth
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Nagar Panchayat	Consumer	8.72%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	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
Gram Panchayat	Consumer	1.39 %	3 Year CAGR Considered	1.39%	3 Year CAGR Considered
	Average Load (kW) per Consumer	3.17%	3 Year CAGR Considered	1.90%	3 Year CAGR Considered
	Average consumption per consumer per month	3.47%	3 Year CAGR Considered	0.00%	No Growth Rate Considered

3.2.4 LV-4. Industrial

The projections for FY 20 and FY 21 for LV 4.1 Non- Seasonal Industrial category are as follows:

Table 18: Energy Sales for LV-4.1 (MUs)

Sub Category	East Discom		Central Discom		West Discom		MP State	
	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21
Up to 25HP	184	200	145	152	261	269	590	621
Above 25HP to 100HP	119	130	112	119	247	254	478	503
Above 100HP	64	71	29	36	144	175	237	282
Temporary LT Ind.	14	17	1	1	2	2	17	20
Total	381	417	287	308	654	700	1322	1425

The projections for FY 20 and FY 21 for LV 4.2 Seasonal Industrial category are as follows:

Table 19: Energy Sales for LV-4.2 (MUs)

Sub Category	East Discom		Central Discom		West Discom		MP State	
	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21

Sub Category	East Discom		Central Discom		West Discom		MP State	
	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21	FY 20	FY 21
Up to 25HP	0	0	0	0	3	3	3	3
Above 25HP to 100HP	1	1	2	2	3	3	6	6
Above 100HP	1	1	1	1	2	2	4	4
Total	1	1	2	3	7	8	10	12

3.2.4.1 LV-4.1 Non- Seasonal Industrial

3.2.4.1.1 East Discom

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

Table 20: Growth Percentage Assumption East Discom

Load	Category	Urban		Rural	
Upto 25HP	Consumer	8.00%	Nominal Growth Considered	8.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	0.21%	3 Year CAGR Considered	0.90%	3 Year CAGR Considered
	Average consumption per kW per month	2.82%	5-month variation Considered	4.26%	5-month variation Considered
Above 25HP to 100HP	Consumer	5.00%	Nominal Growth Considered	15.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	0.00%	No Growth Considered	0.57%	5-month variation Considered
	Average consumption per consumer per month	0.00%	3 Year CAGR Considered	0.00%	No Growth Considered
Above 100HP	Consumer	8.08%	5-month variation Considered	15.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	0.00%	No Growth Considered	0.03%	3 Year CAGR Considered
	Average consumption per consumer per month	0.00%	3 Year CAGR Considered	0.01%	3 Year CAGR Considered
Temporary	Consumer	6.00%	Nominal Growth Considered	5.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	6.89%	3 Year CAGR Considered	11.81%	3 Year CAGR Considered
	Average consumption per consumer per month	0.06%	3 Year CAGR Considered	0.15%	3 Year CAGR Considered

3.2.4.1.2 Central Discom

The growth percentages assumed are as follows:

Table 21: Growth Percentage Assumption Central Discom

Load	Category	Urban		Rural	
Upto 25HP	Consumer	5.00%	Nominal Growth Rate Considered	4.69%	YoY Growth Rate Considered
	Average Load (kW) per Consumer	0.88%	4 Month Variation	1.53%	3 Year CAGR Considered

Load	Category	Urban		Rural	
			Considered		
Above 25HP to 100HP	Average consumption per kW per month	4.05%	4 Month Variation Considered	0.00%	No Growth Rate Considered
	Consumer	5.01%	3 Year CAGR Considered	23.24%	3 Year CAGR Considered
	Average Load (kW) per Consumer	0.15%	YoY Growth Rate Considered	1.12%	YoY Growth Rate Considered
Above 100HP	Average consumption per consumer per month	2.38%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Consumer	10.00%	Nominal Growth Rate Considered	5.35%	YoY Growth Rate Considered
	Average Load (kW) per Consumer	1.37%	4 Month Variation Considered	4.36%	4 Month Variation Considered
Temporary	Average consumption per consumer per month	6.16%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Consumer	2.86%	3 Year CAGR Considered	2.42%	3 Year CAGR Considered
	Average Load (kW) per Consumer	2.20%	3 Year CAGR Considered	5.71%	3 Year CAGR Considered
	Average consumption per consumer per month	3.30%	3 Year CAGR Considered	0.00%	No Growth Rate Considered

3.2.4.1.3 West Discom

The growth percentages assumed are as follows:

Table 22: Growth Percentage Assumption West Discom

Load	Category	Urban		Rural	
Upto 25HP	Consumer	2.50%	Nominal Growth Rate Considered	2.87%	3 Year CAGR Considered
	Average Load (kW) per Consumer	0.40%	3 Year CAGR Considered	0.37%	3 Year CAGR Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Above 25HP to 100HP	Consumer	2.66%	3 Year CAGR Considered	15%	Growth Considered
	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	3.72%	3 Year CAGR Considered
Above 100HP	Consumer	15%	Nominal Growth rate Considered	40%	Growth rate Considered
	Average Load (kW) per Consumer	0.55%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average consumption per consumer per month	0.29%	3 Year CAGR Considered	0.64%	3 Year CAGR Considered
Temporary	Consumer	4.55%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	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

3.2.4.2 LV-4.2: Seasonal Industrial

The future projections are as follows:

3.2.4.2.1 East Discom

The growth percentages assumed are as follows:

Table 23: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Upto 25HP	Consumer	11.57%	3 Year CAGR Considered	50.00%	5-month Variation considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Above 25HP to 100HP	Consumer	8.64%	3 Year CAGR Considered	50.00%	3 Year CAGR Considered
	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	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	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	0.02%	3 Year CAGR Considered

3.2.4.2.2 Central Discom

The growth percentages assumed are as follows:

Table 24: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Up to 25HP	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	2.57%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average consumption per kW per month	10.00%	Nominal Growth rate Considered	0.00%	No Growth Rate Considered
Above 25HP to 100HP	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	8.39%	3 Year CAGR 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	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered

	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%	Nominal Growth rate Considered	0.00%	No Growth Rate Considered

3.2.4.2.3 West Discom

The growth rates assumed are as follows:

Table 25: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Up to 25HP	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	1.44%	3 Year CAGR Considered	1.97%	3 Year CAGR Considered
	Average consumption per kW per month	2.95%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
Above 25HP to 100HP	Consumer	0.00%	No Growth Rate Considered	5.72%	2 Year CAGR Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	5.72%	2 Year CAGR Considered
	Average consumption per consumer per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Above 100HP	Consumer	50%	Growth Considered	0.00%	Nominal Growth Rate Considered
	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

3.2.5 LV-5.1: Agricultural

The projections for LV 5.1 Agricultural category are as follows

Table 26: Energy Sales for LV 5.1 (MUs)

Area	Sub-category	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
Urban	Metered General	8	7	8	44	49	53	6	6	6	58	62	67
Urban	Metered Temporary	1	1	1	4	5	4	1	1	1	6	7	6
Urban	Unmetered General	318	356	406	150	207	240	173	183	187	641	746	833
Urban	Unmetered Temporary	4	5	5	2	2	2	7	8	9	13	15	16
Urban	Total	331	369	420	200	263	299	187	198	202	718	830	921
Rural	Metered General	2	3	4	6	15	24	2	2	3	10	20	31
Rural	Metered Temporary	0	0	0	1	1	1	0	0	0	1	1	1
Rural	Unmetered General	5,037	5,872	6,694	5,011	6,169	6,663	8,702	9,074	9,192	18750	21115	22549
Rural	Unmetered Temporary	135	155	147	93	83	79	142	158	175	370	396	401
Rural	Total	5,174	6,030	6,845	5,110	6,269	6,766	8,846	9,234	9,371	19130	21533	22982
Total	Metered General	10	10	12	50	65	76	8	8	9	68	83	97
Total	Metered Temporary	1	1	1	5	6	6	1	1	1	7	8	8
Total	Unmetered General	5,355	6,228	7,100	5,160	6,376	6,903	8,875	9,257	9,379	19390	21861	23382
Total	Unmetered Temporary	139	159	151	96	85	81	149	166	184	384	410	416
Total	Total	5,505	6,399	7,264	5,311	6,532	7,066	9,033	9,432	9,573	19849	22363	23903

- 3.2.5.1 For Temporary Metered & Temporary Permanent Connections, the estimation of Consumers and Load has been carried out on Monthly basis instead of directly applying the growth rate to annual figures. 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 2019-20. The same is shown as below:

Table 27: Phase Wise Assessment for Un-metered Temporary Agriculture Connections

Phase	Figures in Unit			
	Urban		Rural	
	2019-20	2020-21	2019-20	2020-21
Three Phase	220	220	195	195
Single Phase	230	230	205	205

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

Table 28: Phase Wise Assessment for Unmetered Permanent Agriculture Connections

Months	Three Phase		Single Phase	
	Urban	Rural	Urban	Rural
April	95	95	95	95
May	95	95	95	95
June	95	95	95	95
July	95	95	95	95
Aug	95	95	95	95
Sept	95	95	95	95
Oct	170	170	180	180
Nov	170	170	180	180
Dec	170	170	180	180
Jan	170	170	180	180
Feb	170	170	180	180
March	170	170	180	180

- 3.2.5.3 The Hon'ble Commission had increased the normative units for permanent agriculture consumers in the Tariff Order for FY 2018-19 from 1560 Units to 1650 Units per HP per Annum. Till FY 2013-14, agriculture pump consumers were being supplied with 8 Hrs. of electricity per day in groups. From FY 2014-15, feeder separation work started and as a result 10 Hours of electricity was supplied on daily basis on separated feeders to agriculture consumers whereas for mixed feeders it was on 24 Hours supply. On mixed feeders there are many agriculture pump connections that are being supplied by more than 20 Hours of supply.

3.2.5.4 East Discom

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

Table 29: Growth Percentage Assumption East Discom

Area	Category	Urban	Rural	
Metered General	Consumer	14%	Nominal Growth Rate Considered	14%
	Load	14%		14%
	Consumption per HP	14%		14%
Unmetered Permanent	Consumer	14%	Nominal Growth Rate Considered	14%
	Load	14%		14%
	Consumption per HP	14%		14%

Area	Category	Urban	Rural	
Metered Temporary	Consumer	14%	Nominal Growth Rate Considered	14%
	Load/ consumer	14%		14%
	Consumption per HP	14%		14%

3.2.5.5 Central Discom

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

Table 30: Growth Percentage Assumption Central Discom

Area	Category	Urban	Rural	
Metered General	Consumer	14%	Nominal Growth Rate Considered	14%
	Load	14%		14%
	Consumption per HP	14%		14%
Unmetered Permanent	Consumer	14%	Nominal Growth Rate Considered	14%
	Load	14%		14%
	Consumption per HP	14%		14%
Metered Temporary	Consumer	14%	Nominal Growth Rate Considered	14%
	Load/ consumer	14%		14%
	Consumption per HP	14%		14%

3.2.5.6 West Discom

Mukhya Mantri Sthayi Krishi Pump Yojna (MMSKPY) was introduced by Hon'ble Chief Minister of Madhya Pradesh in 2016. According to the capex plan, 63,147 temporary connection will be converted to Permanent Unmetered Connections in FY 2018-19 and FY 2019-20 respectively. Accordingly, the Petitioner has worked out the conversion plan.

With the conversion of Temporary Connections to Permanent Connections, a reduction in the number of Temporary Connections is also anticipated. Accordingly, a 10% reduction in growth has been considered in projecting the Consumers, Sales and Demand for FY 2018-19 and FY 2019-20

Table 31: Growth Percentage Assumption West Discom

Area	Category	Urban	Rural	
Metered General	Consumer	1%	Nominal Growth Rate Considered	1%
	Load	1%	Nominal Growth Rate Considered	1%
	Consumption per HP	1%	Nominal Growth Rate Considered	1%
Unmetered Permanent	Consumer	1%	Nominal Growth Rate Considered	1.83%
	Load	1%	Nominal Growth Rate Considered	1.83%
	Consumption per HP	1%	Nominal Growth Rate Considered	1%

Area	Category	Urban			Rural		
Metered Temporary	Consumer	0.0%	No Growth Rate Considered	0.0%	No Growth Rate Considered	0.0%	No Growth Rate Considered
	Load/ consumer	0.0%		0.0%		0.0%	
	Consumption per HP	0.0%		0.0%		0.0%	

3.2.6 LV-5.2: Other agricultural Use

The projections for LV 5.2 Agricultural category are as follows:

Table 32: Energy Sales for LV 5.2 (MUs)

Sub-category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
Upto 20HP	4	4	4	3	3	3	1	1	1	8	8	8
greater than 20HP	1	1	1	1	1	1	1	1	1	3	3	3
Temporary	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	5	6	4	5	5	2	2	2	11	12	13

3.2.6.1 East Discom

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

Table 33: Growth Percentage Assumption East Discom

Load	Category	Urban Area			Rural Area				
Upto 3HP	Consumer	4.00%		3 Year CAGR Considered	5.12%		3 Year CAGR Considered		
	Average Load (kW) per Consumer	0.00%			0.05%				
	Average consumption per kW per month	0.00%			1.37%				
Above 3HP to 5HP	Consumer	0.14%		3 Year CAGR Considered	0.00%		No Growth Rate Considered		
	Average Load (kW) per Consumer	0.00%			0.02%		3 Year CAGR Considered		
	Average consumption per consumer per month	0.00%			3.03%				
Above 5HP to 10HP	Consumer	53.25%		3 Year CAGR Considered	2.72%		3 Year CAGR Considered		
	Average Load (kW) per Consumer	0.00%			0.06%		3 Year CAGR Considered		
	Average consumption per consumer per month	0.00%			0.00%		No Growth Rate Considered		
Above 10HP to 20HP	Consumer	25.00%		3 Year CAGR Considered	4.08%		5-month variation considered		
	Average Load (kW) per Consumer	0.00%			0.34%		3 Year CAGR Considered		
	Average consumption per consumer per month	0.00%			5.46%		3 Year CAGR Considered		
Above 20HP	Consumer	0.00%		No Growth Rate Considered	34.30%		5-month variation considered		
	Average Load (kW) per Consumer	0.00%			0.18%		3 Year CAGR Considered		

Load	Category	Urban Area		Rural Area	
	Average consumption per consumer per month	0.00%		1.24%	
Temporary	Consumer	59.00%	3 Year CAGR Considered	40.27%	3 Year CAGR Considered
	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%	

3.2.6.2 Central Discom

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

Table 34: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Upto 3HP	Consumer	4.26%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	0.00%	
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	
Above 3HP to 5HP	Consumer	0.00%	3 Year CAGR Considered	4.38%	3 Year CAGR Considered
	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 5HP to 10HP	Consumer	5.73%	3 Year CAGR Considered	0.24%	3 Year CAGR Considered
	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 10HP to 20HP	Consumer	18.56%	3 Year CAGR Considered	9.58%	3 Year CAGR Considered
	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 20HP	Consumer	18.56%	3 Year CAGR Considered	10.06%	3 Year CAGR Considered
	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
Temporary	Consumer	0.00%	3 Year CAGR Considered	10.00%	Nominal Growth rate Considered
	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

3.2.6.3 West Discom

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

Table 35: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Upto 3HP	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	0.00%	No Growth Rate Considered	2.71%	3 Year CAGR Considered
	Average consumption per kW per month	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
Above 3HP to 5HP	Consumer	21.64%	3 Year CAGR Considered	18.56%	3 Year CAGR Considered
	Average Load (kW) per Consumer	23.42%	3 Year CAGR Considered	15.37%	3 Year CAGR Considered
	Average consumption per consumer per month	17.58%	3 Year CAGR Considered	18.03%	3 Year CAGR Considered
Above 5HP to 10HP	Consumer	2.70%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	3.30%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average consumption per consumer per month	2.92%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
Above 10HP to 20HP	Consumer	31.04%	3 Year CAGR Considered	19.98%	3 Year CAGR Considered
	Average Load (kW) per Consumer	10%	Nominal Growth rate considered	19.68%	3 Year CAGR Considered
	Average consumption per consumer per month	76.52%	3 Year CAGR Considered	12.41%	3 Year CAGR Considered
Above 20HP	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Average Load (kW) per Consumer	1.99%	3 Year CAGR Considered	3.90%	3 Year CAGR Considered
	Average consumption per consumer per month	8.38%	3 Year CAGR Considered	0%	No Growth Rate Considered
Temporary	Consumer	0 %	Nominal Growth rate Considered	0.00%	No Growth Rate Considered
	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

3.2.7 LV-6 E- Vehicle / E-Rickshaw Charging Station

The projection of sales for this category is as follows:

Table 36: Energy Sales for LV 6 (MUs)

Sub-category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
E-Vehicle Charging Stations	-	1	1	-	1	1	-	1	1	0	3	3

3.2.7.1 East Discom

The growth rates assumed for future projections are as follows:

Table 37: Growth Percentage Assumption East Discom

Area	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal Growth Rate	10.00%	Nominal Growth Rate
	Units (MUS)	20.00%	Nominal Growth Rate	15.00%	Nominal Growth Rate

3.2.7.2 Central Discom

The growth rates assumed for future projections are as follows:-

Table 38: Growth Percentage Assumption Central Discom

Area	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal Growth Rate	10.00%	Nominal Growth Rate
	Units (MUS)	15.00%	Nominal Growth Rate	15.00%	Nominal Growth Rate

3.2.7.3 West Discom

The growth rates assumed for future projections are as follows:

Table 39: Growth Percentage Assumption West Discom

Area	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	5.00%	Nominal Growth Rate	5.00%	Nominal Growth Rate
	Units (MUS)	10.00%	Nominal Growth Rate	5.00%	Nominal Growth Rate

3.2.8 HV-1: Railway Traction

The petitioners have signed a contract with Railways last year for On-demand supply of electricity for the currently under-development corridor between Itarsi and Katni. With the electrification of Railway Line between Itarsi-Pipariya-Bankhedi-Gadarwara, one new connection for Central Discom is expected. Similarly, with the electrification of the Railway Line between Gadarwara-Kareli-Katni, a new connection is expected for East Discom. There is no expectation of sales to Railways from West Discom.

The projection of sales for this category is as follows:

Table 40: Energy Sales for HV 1 (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
HV-1 Railway Traction	0	0	55	0	0	55	0	0	0	0	0	111

3.2.8.1 East Discom

There has been no sale to Railways in FY 2017-18 or FY 2018-19, till date. However, owing to the new contract signed with Railways, and looking at the historic trend of sales from the time when, Railways used to draw power from Discom's, One Connection of 10,000 kVA is expected in the year FY 2019-20. With a load factor of 30% and power factor of 0.95, approximately 55 MUs worth of sales is expected.

3.2.8.2 Central Discom

There has been no sale to Railways in FY 2017-18 or FY 2018-19, till date. However, owing to the new contract signed with Railways, and looking at the historic trend of sales from the time when, Railways used to draw power from Discom's, One Connection of 10,000 kVA is expected in the year FY 2019-20. With a load factor of 30% and power factor of 0.95, approximately 55 MUs worth of sales is expected.

3.2.8.3 West Discom West Discom lacks any consumer base for this category.

3.2.9 HV -2: Coal Mines

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

Table 41: Energy Sales for HV 2 (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
132 kV	214	214	215	-	-	-	-	-	-	214	214	215
33 kV	249	247	248	27	28	28	-	-	-	276	275	276
11 kV	3	3	3	-	-	-	-	-	-	3	3	3
Total	465	464	466	27	28	28	-	-	-	492	492	494

3.2.9.1 East Discom

The growth rates assumed for future projections are as follows:

Table 42: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	0.00%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	0.27%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
33 kV	Consumer	0.15%	3 Year CAGR Considered	8.33%	5 months Variation considered
	Load (kW)	0.01%	3 Year CAGR Considered	9.41%	5 months Variation considered
	Units (MUS)	0.29%	3 Year CAGR Considered	0.11%	3 Year CAGR Considered
11 kV	Consumer	11.11%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	8.71%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	11.45%	3 Year CAGR Considered	0.00%	No Growth rate has been considered

3.2.9.2 Central Discom

No Growth has been considered.

Table 43: Growth Percentage Assumption Central Discom

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	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
	Load (kW)	0.00%	No Growth rate has	0.00%	

Area	Category	Urban		Rural	
		been considered			
	Units (MUS)	2.00%	Nominal Growth Rate Considered	0.00%	
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%	
	Units (MUS)	0.00%		0.00%	

3.2.9.3 West Discom

West Discom lacks any consumer base for this category.

3.2.10 HV 3: Industrial and Non-Industrial

The future projections are as follows:

Table 44: Energy Sales for HV 3 (MUs)

Sub-Category	Voltage Level	East Discom			Central Discom			West Discom			MP State		
		FY 19	FY 20 (RE)	FY 21 (Proj)	FY 19	FY 20 (RE)	FY 21 (Proj)	FY 19	FY 20 (RE)	FY 21 (Proj)	FY 19	FY 20 (RE)	FY 21 (Proj)
Industrial (MU)	220 kV	389	527	688	0	0	0	3	4	5	392	531	693
	132 kV	1,059	1,043	1,106	1,403	1,525	1,751	977	1,040	1,113	3439	3608	3970
	33 kV	705	843	983	1,530	1,511	1,624	2,854	3,035	3,237	5089	5389	5844
	11 kV	124	128	133	62	67	73	176	186	198	362	381	404
	Total	2,277	2,541	2,911	2,995	3,104	3,448	4,011	4,266	4,553	9283	9911	10912
Non Industrial (MU)	132 kV	0	-	-	5	6	7	41	46	48	46	52	55
	33 kV	157	161	171	311	326	343	305	314	340	773	801	854
	11 kV	87	87	90	119	122	124	122	127	128	328	336	342
	Total	244	248	261	435	454	474	469	486	516	1148	1188	1251

3.2.10.1 East Discom

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

Table 45: Growth Percentage Assumption for HV Industrial - East Discom

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	5 Month Variation has been considered	0.00%	3-year CAGR growth considered
	Load (kW)	0.00%	5 Month Variation has been considered	0.00%	3-year CAGR growth considered
	Units (MUS)	35.00%	Nominal Growth rate has been considered	3.84%	3-year CAGR growth considered
132 kV	Consumer	0.59%	3-year CAGR growth considered	0.00%	3-year CAGR growth considered
	Load (kW)	14.25%	3-year CAGR growth considered	3.62%	3-year CAGR growth considered
	Units (MUS)	13.16%	5 Month Variation has been considered	1.21%	3-year CAGR growth considered

Area	Category	Urban		Rural	
33 kV	Consumer	6.01%	3-year CAGR has been considered	2.14%	3-year CAGR has been considered
	Load (kW)	24.41%	3-year CAGR has been considered	7.15%	3-year CAGR has been considered
	Units (MUS)	21.69%	3-year CAGR has been considered	26.22%	3-year CAGR has been considered
11 kV	Consumer	4.58%	3-year CAGR has been considered	2.25%	3-year CAGR has been considered
	Load (kW)	2.50%	3-year CAGR has been considered	2.67%	3-year CAGR has been considered
	Units (MUS)	3.20%	3-year CAGR has been considered	15.56%	3-year CAGR has been considered

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

Table 46: Growth percentage assumptions for HV Non-industrial - East Discom

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	5.04%	3 Year CAGR Considered	5.33%	3 Year CAGR Considered
	Load (kW)	0.78%	3 Year CAGR Considered	20.55%	3 Year CAGR Considered
	Units (MUS)	0.04%	3 Year CAGR Considered	14.47%	Nominal Growth Considered
11 kV	Consumer	1.10%	3 Year CAGR Considered	20.25%	3 Year CAGR Considered
	Load (kW)	0.38%	3 Year CAGR Considered	2.02%	3 Year CAGR Considered
	Units (MUS)	0.01%	3 Year CAGR Considered	1.51%	3 Year CAGR Considered

3.2.10.2 Central Discom

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

Table 47: Growth Percentage Assumption for HV Industrial - Central Discom

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	3-year CAGR has been considered	0.00%	No Growth rate has been considered
	Load (kW)	0.00%	3-year CAGR has been considered	0.00%	
	Units (MUS)	5.00%	Nominal Growth Rate Considered	0.00%	
132 kV	Consumer	12.62%	3-year CAGR has been considered	2.00%	Nominal Growth Rate Considered
	Load (kW)	8.58%	3-year CAGR has been considered	2.00%	Nominal Growth Rate Considered
	Units (MUS)	15.54%	3-year CAGR has been considered	2.00%	Nominal Growth Rate Considered
33 kV	Consumer	6.93%	3-year CAGR has been considered	10.59%	3-year CAGR has been considered
	Load (kW)	4.40%		1.90%	3-year CAGR has been

Area	Category	Urban		Rural	
11 kV	Units (MUS)	8.14%	3-year CAGR has been considered	5.55%	YoY growth rate has been considered
	Consumer	1.79%		30.00%	5 Month Variation Considered
	Load (kW)	1.61%		39.22%	3-year CAGR has been considered
	Units (MUS)	6.86%		20.00%	Nominal Growth rate has been considered

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

Table 48: Growth Percentage Assumption for HV Non-industrial - Central Discom

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)	10.00%	Nominal Growth rate considered	0.00%	
	Units (MUS)	20.00%	Nominal Growth rate considered	0.00%	
33 kV	Consumer	2.30%	3 Year CAGR Considered	5.00%	Nominal Growth rate considered
	Load (kW)	3.72%	3 Year CAGR Considered	3.47%	3 Year CAGR Considered
	Units (MUS)	5.00%	Nominal Growth rate considered	8.08%	3 Year CAGR Considered
11 kV	Consumer	2.59%	3 Year CAGR Considered	4.26%	3 Year CAGR Considered
	Load (kW)	1.16%	3 Year CAGR Considered	2.86%	2 Year CAGR Considered
	Units (MUS)	1.86%	3 Year CAGR Considered	5.00%	Nominal Growth rate considered

3.2.10.3 West Discom

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

Table 49: Growth Percentage Assumption for HV Industrial - West Discom

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate has been considered
	Load (kW)	19.40%		0.00%	
	Units (MUS)	0.00%		30.00%	YoY Growth rate Considered
132 kV	Consumer	8.74%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	19.40%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	7%	Nominal growth considered	7.50%	Nominal growth considered
33 kV	Consumer	5.64%	3 Year CAGR	6.05%	3 Year CAGR

Area	Category	Urban			Rural	
			Considered		Considered	
11 kV	Load (kW)	5.29%	3 Year CAGR Considered	5.04%	3 Year CAGR Considered	
	Units (MUS)	6.47%	3 Year CAGR Considered	7.80%	3 Year CAGR Considered	
	Consumer	7.77%	3 Year CAGR Considered	6.14%	3 Year CAGR Considered	
11 kV	Load (kW)	6.50%	3 Year CAGR Considered	9.68%	3 Year CAGR Considered	
	Units (MUS)	5.80%	3 Year CAGR Considered	9%	Nominal Growth Considered	

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

Table 50: Growth Percentage Assumption for HV Non-Industrial West Discom

		FY 20-21			
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)	4.56%	3 Year CAGR Considered	0.00%	
33 kV	Consumer	5.15%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	6.09%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	9.33%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
11 kV	Consumer	3.48%	3 Year CAGR Considered	4.26%	3 Year CAGR Considered
	Load (kW)	3.53%	3 Year CAGR Considered	3.71%	3 Year CAGR Considered
	Units (MUS)	0%	No Growth Considered	19.09	3 Year CAGR Considered

3.2.11 HV 4: Seasonal

The future projections are as follows:

Table 51: Energy Sales for HV 4 (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
33 kV	7	7	8	-	-	-	9	12	13	16	19	21
11 kV	1	1	1	1	1	2	2	3	3	4	5	6
Total	8	8	9	0	1	1	11	15	16	19	24	26

3.2.11.1 East Discom

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

Table 52: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
33 kV	Consumer	7.44%	3 Year CAGR Considered	0.00%	5 months variation considered
	Load (kW)	0.07%	3 Year CAGR Considered	0.00%	5 months variation considered
	Units (MUS)	1.00%	Nominal Growth rate has been considered	11.00%	Nominal Growth rate has been considered
11 kV	Consumer	2.78%	3 Year CAGR Considered	0.00%	5 months variation considered
	Load (kW)	2.00%	Nominal Growth rate has been considered	0.00%	5 months variation considered
	Units (MUS)	7.00%	Nominal Growth rate has been considered	11.00%	Nominal Growth rate has been considered

3.2.11.2 Central Discom

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

Table 53: Growth Percentage Assumption Central Discom

Voltage level	Category	Urban		Rural	
33 kV	Consumer	25.99%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	23.17%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	30.00%	Nominal Growth rate has been considered	3.44%	3 Year CAGR Considered
11 kV	Consumer	44.22%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	39.71%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	11.22%	3 Year CAGR Considered	0.00%	No Growth rate has been considered

3.2.11.3 West Discom

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

Table 54: Growth Percentage Assumption West Discom

Voltage level	Category	Urban		Rural	
33 kV	Consumer	6.27%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	7.22 %	3 Year Growth considered	0.00%	No Growth rate has been considered
	Units (MUS)	12.77%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
11 kV	Consumer	10.06%	3 Year CAGR Considered	0.00%	No Growth rate has been considered

Voltage level	Category	Urban			Rural		
	Load (kW)	3.22%	3 Year CAGR Considered			0.00%	No Growth rate has been considered
	Units (MUS)	16.61%	3 Year CAGR Considered			0.00%	No Growth rate has been considered

3.2.12 HV 5: Water Works, Lift Irrigation & Other Agricultural use

The future projections are as follows:

Table 55: Energy Sales for HV 5 (MUs)

Sub-Category		East Discom			Central Discom			West Discom			MP State		
		FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
Irrigation - Units (MU)	132 kV	-	-	-	0	0	0	-	-	-	0	0	0
	33 kV	10	11	12	4	5	6	146	160	176	160	176	194
	11 kV	0	-	-	1	1	1	-	-	-	1	1	1
	Total	10	11	12	5	6	7	146	160	176	161	177	195
Water Works - Units (MU)	132 kV	0	0	0	63	67	72	365	439	467	428	506	539
	33 kV	90	95	109	133	148	165	125	143	208	348	386	482
	11 kV	9	9	10	12	13	16	9	10	11	30	32	37
	Total	99	104	119	208	228	252	500	592	686	807	924	1057
Other than Agricultural - Units (MU)	132 kV	-	-	-	-	-	-	-	-	-	0	0	0
	33 kV	12	12	13	7	7	8	0	0	0	19	19	21
	11 kV	3	4	4	3	3	5	9	9	10	15	16	19
	Total	15	16	16	9	11	12	9	9	10	33	36	38

3.2.12.1 East Discom

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

Table 56: Growth Percentage Assumption East Discom

Voltage level	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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered		0.00%	No Growth rate has been considered
33 kV	Consumer	25.81%	5 Month variation Considered		36.36%	YOY growth considered
	Load (kW)	19.25%	5 Month variation Considered		22.52%	5 Month variation Considered
	Units (MUS)	8.68%	5 Month variation Considered		1.71%	3 Year CAGR Considered

11 kV	Consumer	5.00%	5 Month variation Considered	2.78%	3 Year CAGR Considered
	Load (kW)	3.17%	5 Month variation Considered	1.88%	3 Year CAGR Considered
	Units (MUS)	0.01%	3 Year CAGR Considered	2.48%	3 Year CAGR Considered

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

Table 57: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Load (kW)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Units (MUS)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
33 kV	Consumer	0.00%	No Growth rate considered	0.00%	3 Year CAGR Considered
	Load (kW)	6.84%	YoY Growth rate considered	0.00%	5 months variation considered
	Units (MUS)	13.66%	YoY Growth rate considered	8.94%	YoY Growth rate considered
11 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Load (kW)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Units (MUS)	0.00%	No Growth rate considered	0.00%	No Growth rate considered

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

Table 58: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Load (kW)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Units (MUS)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
33 kV	Consumer	1.23%	3-year CAGR Considered	5.00%	Nominal Growth Rate Considered
	Load (kW)	4.00%	3-year CAGR Considered	0.44%	3-year CAGR Considered
	Units (MUS)	0.29%	3-year CAGR Considered	3.54%	3-year CAGR Considered
11 kV	Consumer	1.23%	3-year CAGR Considered	5.00%	Nominal Growth Rate Considered
	Load (kW)	3.33%	3-year CAGR Considered	5.00%	Nominal Growth Rate Considered
	Units (MUS)	7.11%	YoY Growth rate considered	14.99%	2-year CAGR Considered

3.2.12.2 Central Discom

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

Table 59: Growth Percentage Assumption Central Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Load (kW)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Units (MUS)	6.46%	3 Year CAGR Considered	0.00%	No Growth rate considered
33 kV	Consumer	5.00%	Nominal Growth rate considered	20.00%	Nominal Growth rate considered
	Load (kW)	10.87%	3 Year CAGR Considered	20.00%	Nominal Growth rate considered
	Units (MUS)	8.95%	3 Year CAGR Considered	42.82%	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)	2.50%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	118.91%	3 Year CAGR Considered

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

Table 60: Growth Percentage Assumption Central Discom

Voltage level	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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
33 kV	Consumer	0.00%	No Growth rate has been considered	14.47%	3 Year CAGR Considered
	Load (kW)	0.00%	No Growth rate has been considered	66.22%	3 Year CAGR Considered
	Units (MUS)	12.27%	3 Year CAGR Considered	34.77%	3 Year CAGR Considered
11 kV	Consumer	0.00%	No Growth rate has been considered	25.99%	3 Year CAGR Considered
	Load (kW)	0.00%	No Growth rate has been considered	0.00%	3 Year CAGR Considered
	Units (MUS)	0.00%	No Growth rate has been considered	13.11%	YoY Growth rate considered

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

Table 61: Growth Percentage Assumption Central Discom

Voltage level	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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
33 kV	Consumer	2.04%	3-year CAGR Considered	10.06%	3-year CAGR Considered
	Load (kW)	1.79%	3-year CAGR Considered	13.56%	3-year CAGR Considered
	Units (MUS)	0.66%	3-year CAGR Considered	15.05%	2 year CAGR Considered
11 kV	Consumer	0.00%	3-year CAGR Considered	58.07%	3-year CAGR Considered
	Load (kW)	0.00%	3-year CAGR Considered	106.5%	3-year CAGR Considered
	Units (MUS)	2.30%	2-year CAGR Considered	50.2%	2-year CAGR Considered

3.2.12.3 West Discom

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

Table 62: Growth Percentage Assumption West Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%		0.00%	No Growth rate has been considered
	Load (kW)	10%		8.50%	3 Year CAGR Considered
	Units (MUS)	6%		6.50%	3 Year CAGR Considered
33 kV	Consumer	12.56%		9.70%	3 Year CAGR Considered
	Load (kW)	21.05%		8.91%	3 Year CAGR Considered
	Units (MUS)	50%		30%	Nominal Growth rate has been considered
11 kV	Consumer	4.55%		6.27%	3 Year CAGR Considered
	Load (kW)	0.00%		10.09%	3 Year CAGR Considered
	Units (MUS)	0.00%		25%	Nominal Growth rate has been considered

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

Table 63: Growth Percentage Assumption West Discom

Voltage level	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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
33 kV	Consumer	10.00%	Nominal Growth rate has been considered	20.00%	Nominal Growth rate has been considered
	Load (kW)	9.5%	Nominal Growth rate has been considered	0.00%	No Growth rate has been considered
	Units (MUS)	10%	Nominal Growth Considered	5.00%	Nominal Growth Rate Considered
11 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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered

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

Table 64: Growth Percentage Assumption West Discom

Voltage level	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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
33 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%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered

11 kV	Consumer	0.00%	No Growth rate has been considered	0.00%	No Growth rate has been considered
	Load (kW)	5.%	Nominal Growth Rate Considered	0.00%	No Growth rate has been considered
	Units (MUS)	10%	Nominal Growth rate Considered	0.00%	No Growth rate has been considered

3.2.13 HV 6: Bulk Residential users

The future projections are as follows:

Table 65: Energy Sales for HV 6 (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
132 KV	0	0	0	0	0	0	0	0	0	0	0	0
33 kV	239	243	251	136	132	128	26	26	27	401	401	406
11 kV	22	22	23	15	16	17	5	5	6	42	43	46
Total	261	266	275	151	148	145	31	32	32	443	446	452

3.2.13.1 East Discom

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

Table 66: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
33 kV	Consumer	0.09%	3 Year CAGR Considered	6.25%	3 Year CAGR Considered
	Load (kW)	0.84%	3 Year CAGR Considered	0.00%	3 Year CAGR Considered
	Units (MUS)	1.33%	3 Year CAGR Considered	3.89%	3 Year CAGR Considered
11 kV	Consumer	0.00%	3 Year CAGR Considered	4.00%	3 Year CAGR Considered
	Load (kW)	0.02%	3 Year CAGR Considered	1.44%	3 Year CAGR Considered
	Units (MUS)	1.74%	3 Year CAGR Considered	7.14%	3 Year CAGR Considered

3.2.13.2 Central Discom

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

Table 67: Growth Percentage Assumption Central Discom

Voltage level	Category	Urban		Rural	
33 kV	Consumer	2.50%	3 Year CAGR Considered	0.00%	No growth rate considered

Voltage level	Category	Urban		Rural	
	Load (kW)	0.43%	3 Year CAGR Considered	0.00%	No growth rate considered
	Units (MUS)	0.00%	No growth rate considered	5.09%	3 Year CAGR Considered
11 kV	Consumer	25.99%	3 Year CAGR Considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate considered	35.23%	3 Year CAGR Considered
	Units (MUS)	0.00%	No growth rate considered	5.84%	3 Year CAGR Considered

3.2.13.3 West Discom

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

Table 68: Growth Percentage Assumption West Discom

FY 20-21					
Voltage level	Category	Urban		Rural	
33 kV	Consumer	0.00%	No growth rate considered	14.47%	3 Year CAGR Considered
	Load (kW)	0.00%	No growth rate considered	6.47%	3 Year CAGR Considered
	Units (MUS)	0.00%	No growth rate considered	2.85%	3 Year CAGR Considered
11 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate considered	0.00%	No growth rate considered
	Units (MUS)	1.00%	Nominal growth rate considered	1.00%	Nominal growth rate considered

3.2.14 HV-7: Requirement of Power For Generators Connected to the grid

The future projections are as follows:

Table 69: Requirement of Power for Generators Connected to the grid (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
132 KV	-	-	-	-	-	-	6	6	7	6	6	7
33 kV	0	0	0	1	2	2	6	7	8	7	9	10
11 kV	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	1	2	2	2	12	13	15	15	16	18

3.2.14.1 East Discom

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

Table 70: Growth Percentage Assumption East Discom

Voltage level	Category	Urban		Rural	
132 kV	Consumer	0.00%	5 months variation considered	0.00%	No growth rate has been considered
	Load (kW)	0.00%	5 months variation considered	0.00%	No growth rate has been considered
	Units (MUS)	0.00%	5 months variation considered	0.00%	No growth rate has been considered
33 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%	No growth rate has been considered
	Units (MUS)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
11 kV	Consumer	50.00%	Nominal growth rate has been considered	0.00%	No growth rate has been considered
	Load (kW)	20.00%	Nominal growth rate has been considered	0.00%	No growth rate has been considered
	Units (MUS)	1.00%	Nominal Growth Rate Considered	0.00%	No growth rate has been considered

3.2.14.2 Central Discom

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

Table 71: Growth Percentage Assumption Central Discom

Voltage level	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%	No growth rate has been considered
	Units (MUS)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
33 KV	Consumer	0.00%	No growth rate has	0.00%	No growth rate has

Voltage level	Category	Urban		Rural	
11 kV		been considered		been considered	
	Load (kW)	10.00%	Nominal Growth rate Considered	0.00%	No growth rate has been considered
	Units (MUS)	20.00%	Nominal Growth rate Considered	0.00%	No growth rate has been considered
11 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%	No growth rate has been considered
	Units (MUS)	4.08%	3 Year CAGR Considered	0.00%	No growth rate has been considered

3.2.14.3 West Discom

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

Table 72: Growth Percentage Assumption West Discom

		FY 20-21			
Voltage level	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%	No growth rate has been considered
	Units (MUS)	10.00%	Nominal Growth rate Considered	10.00%	Nominal Growth rate Considered
33 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%	No growth rate has been considered
	Units (MUS)	10.00%	Nominal Growth rate Considered	11.00%	Nominal Growth rate Considered
11 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%	No growth rate has been considered
	Units (MUS)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered

3.2.15 HV-8 E- VEHICLE / E-RICKSHAWS CHARGING STATION

The projection of sales for this category is as follows:

Table 73: Energy Sales for HV 8 (MUs)

Sub-Category	East Discom			Central Discom			West Discom			MP State		
	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)	FY 19	FY 20 (RE)	FY 21 (Proj.)
LV- 8 EV Charging Stations	-	2	2	0	0	3	0	3	3	0	5	8

3.2.15.1 East Discom

The growth rates assumed for future projections are as follows:-

Table 74: Growth Percentage Assumption East Discom

Sub Category	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal Growth Rate	5.00%	Nominal Growth Rate
	Units (MUS)	15.00%	Nominal Growth Rate	10.00%	Nominal Growth Rate

3.2.15.2 Central Discom

The growth rates assumed for future projections are as follows: -

Table 75: Growth Percentage Assumption Central Discom

Sub Category	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal Growth Rate	5.00%	Nominal Growth Rate
	Units (MUS)	15.00%	Nominal Growth Rate	10.00%	Nominal Growth Rate

3.2.15.3 West Discom

The growth rates assumed for future projections are as follows:-

Table 76: Growth Percentage Assumption West Discom

Sub Category	Category	Urban		Rural	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal Growth Rate	5.00%	Nominal Growth Rate
	Units (MUS)	15.00%	Nominal Growth Rate	10.00%	Nominal Growth Rate

A4: ENERGY REQUIREMENT AT DISCOM BOUNDARY & EX-BUS REQUIREMENT

4.1 Conversion of Annual Sales into Monthly Sales

The annual sales of the Discoms have been converted into monthly sales using the sales profile actually observed in the past five years including FY 2018-19 for each Discom. This profile is then used to compute monthly sales for the FY 2019-20 & FY 2020-21. The profiling for all Discoms is given in the table below:

Table 77: Month wise Sales Profile

Month wise Sales Profile Mix (%)														
Sr. No	Discom	April	May	June	July	August	September	October	November	December	January	February	March	Total
1	FY 2018-19 (Actual)													
a	East	7.10%	7.79%	7.78%	7.42%	7.19%	7.17%	9.03%	9.35%	9.12%	9.50%	9.18%	9.37%	100.00%
b	Central	6.74%	7.50%	7.98%	7.72%	7.56%	7.42%	9.03%	9.14%	9.08%	9.28%	9.30%	9.25%	100.00%
c	West	6.76%	7.49%	7.76%	7.48%	7.20%	7.11%	9.32%	9.48%	9.42%	9.41%	9.37%	9.22%	100.00%
2	FY 2019-20 (Re-Estimate)													
a	East	7.10%	7.79%	7.78%	7.42%	7.19%	7.17%	9.03%	9.35%	9.12%	9.50%	9.18%	9.37%	100.00%
b	Central	6.74%	7.50%	7.98%	7.72%	7.56%	7.42%	9.03%	9.14%	9.08%	9.28%	9.30%	9.25%	100.00%
c	West	6.76%	7.49%	7.76%	7.48%	7.20%	7.11%	9.32%	9.48%	9.42%	9.41%	9.37%	9.22%	100.00%
3	FY 2020-21 (Projected)													
a	East	7.10%	7.79%	7.78%	7.42%	7.19%	7.17%	9.03%	9.35%	9.12%	9.50%	9.18%	9.37%	100.00%
b	Central	6.74%	7.50%	7.98%	7.72%	7.56%	7.42%	9.03%	9.14%	9.08%	9.28%	9.30%	9.25%	100.00%
c	West	6.76%	7.49%	7.76%	7.48%	7.20%	7.11%	9.32%	9.48%	9.42%	9.41%	9.37%	9.22%	100.00%

4.2 Distribution Losses

Hon'ble Commission in its Tariff Regulations, 2015 had notified normative distribution loss levels for the MYT period FY 2016-17 to FY 2018-19. The Commission with its second Amendment to Tariff Regulations, 2015 notified on 14.11.2019 has notified the normative distribution loss levels for FY 2020-21. Thus the distribution loss level trajectory as specified in these Regulations is given in the table below:

Table 78: Distribution Losses (%)

Sr. no	Particulars	FY 2018-19	FY 2019-20	FY 2020-21
1	East Discom	16.00%	16.00%	16.00%
2	Central Discom	17.00%	17.00%	17.00%
3	West Discom	15.00%	15.00%	15.00%

The actual losses of the Discom's for FY 2018-19 have been observed at 30.56% for East Discom, 36.67% for Central Discom and 16.65% for West Discom. However for the purpose of the instant petition the normative loss targets specified by the Commission in its 2nd Amendment to Tariff Regulations' 2015 have been considered for computation of Energy Balance and power purchase costs of Discoms for FY 2019-20 & FY 2020-21 except FY 2018-19 wherein it has been considered at the actual loss figures.

4.3 Intra State Transmission Losses

The Discoms have considered the actual Intra-state Transmission Losses for FY 2018-19 as reported by MPPTCL in its Annual Report on Regulatory Compliance for FY 2017-18 uploaded on its website (http://www.mptransco.in/Document/2016-17-Annual%20Regulatory%20compliance_01072017.pdf) losses is approx. 2.75%. The same has been considered for FY 2019-20 & FY 2020-21 also. The actual losses of FY 2018-19 is yet to published by MPPTCL, hence loss as reported for FY 2017-18 has been considered.

4.4 Inter-State Transmission Losses

- 2.4.1 Hon'ble Commission in its earlier directive had directed to submit Region-wise PGCIL losses, the Discoms have shown actual Inter-state Transmission losses as reported during the FY 2018-19 by the Eastern Region Load Dispatch Centre applicable for Eastern Region Plants (ERLDC- <https://erldc.in/market-operation/52weeksloss/> and http://www.erldc.org/OpenAccess/schd_loss_2017-2018.pdf and POSOCO - <https://posoco.in/side-menu-pages/applicable-transmission-losses/>) & Western Region Load Dispatch Centre applicable for Western Region Plants (http://www.wrldc.in/content/210_1_WeeklyLoss.aspx).

- 2.4.2 The Discoms have considered the actual losses for FY 2018-19 for Western Region, Northern Region & Eastern Region i.e. 3.18%, 3.59% and 1.91% respectively and last 52 weeks moving average losses (14 October 19 – 06 October 20) for FY 2019-20 & FY 2020-21 i.e. 3.00%, 3.46% and 1.78% respectively.

4.5 Energy Requirement at Discom Boundary and Ex-Bus Requirement

- 2.5.1 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 Discoms for the past years are taken and standard deviation of loss levels of each month from the cumulative annual average has been calculated. The monthly standard deviations are then used to calculate the monthly loss levels using the annual MPERC loss level trajectory.
- 2.5.2 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 Discom's and MP state at the state boundary as shown in tables below:

Table 79: Energy Requirement- Discom & Ex-Bus (MUs) for FY 2018-19 (Provisional)

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2018-19 (Actual)														
S.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
1	Sales	3,448	3,814	3,939	3,790	3,674	3,631	4,602	4,698	4,645	4,729	4,677	4,664	50,880
a	East	1,043	1,144	1,142	1,090	1,055	1,053	1,325	1,372	1,338	1,395	1,348	1,376	14,681
b	Central	1,014	1,127	1,199	1,160	1,137	1,115	1,358	1,374	1,366	1,395	1,398	1,390	15,600
c	West	1,391	1,543	1,598	1,541	1,482	1,464	1,919	1,952	1,941	1,939	1,930	1,898	20,599
2	Distribution Loss (%)													
a	East	32.32%	31.91%	19.19%	23.31%	29.59%	33.31%	36.05%	33.44%	37.05%	33.77%	24.78%	25.72%	30.56%
b	Central	38.11%	38.73%	23.64%	30.36%	38.43%	36.73%	40.88%	42.90%	43.83%	41.70%	27.69%	28.92%	36.67%
c	West	4.40%	24.37%	20.31%	4.50%	-5.88%	1.24%	7.78%	22.84%	31.56%	29.43%	23.92%	7.16%	16.65%
3	Distribution Loss	1,186	1,746	1,049	910	1,070	1,191	1,848	2,299	2,749	2,517	1,587	1,188	19,611
a	East	498	536	271	331	443	526	747	689	788	711	444	476	6,462
b	Central	624	712	371	506	709	647	939	1,032	1,066	998	536	566	9,035
c	West	64	497	407	73	(82)	18	162	578	895	808	607	146	4,115
4	Energy at Discom Periphery	4,634	5,559	4,988	4,700	4,744	4,822	6,450	6,998	7,394	7,246	6,264	5,852	70,491
a	East	1,541	1,680	1,413	1,421	1,499	1,578	2,072	2,062	2,126	2,106	1,792	1,852	21,143
b	Central	1,638	1,839	1,570	1,666	1,846	1,762	2,297	2,407	2,431	2,393	1,934	1,956	24,635
c	West	1,456	2,040	2,005	1,613	1,400	1,482	2,081	2,529	2,836	2,748	2,537	2,045	24,713
5	State Transmission Losses	131	157	141	133	134	136	182	198	209	205	177	165	1,993
a	East	44	48	40	40	42	45	59	58	60	60	51	52	598
b	Central	46	52	44	47	52	50	65	68	69	68	55	55	697
c	West	41	58	57	46	40	42	59	72	80	78	72	58	699
6	Energy at State Boundary	4,765	5,717	5,129	4,833	4,878	4,959	6,632	7,196	7,603	7,451	6,441	6,018	72,485
a	East	1,584	1,728	1,453	1,461	1,541	1,623	2,131	2,120	2,186	2,165	1,843	1,904	21,740
b	Central	1,684	1,891	1,614	1,713	1,898	1,811	2,362	2,475	2,500	2,461	1,989	2,011	25,332
c	West	1,497	2,098	2,062	1,659	1,439	1,524	2,140	2,601	2,917	2,825	2,609	2,103	25,412
7	External/PGCIL Losses (WR/ER)	122	125	121	113	111	101	112	107	106	103	89	109	1,318
a	East	37	38	35	33	32	29	32	31	30	30	26	32	380

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2018-19 (Actual)														
S.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
b	Central	36	37	37	35	34	31	33	31	31	30	27	33	404
c	West	49	51	49	46	45	41	47	44	44	42	37	45	534
8	Ex-Bus Energy Requirement including adjustment of UI	4,887	5,842	5,250	4,946	4,989	5,059	6,744	7,302	7,709	7,554	6,530	6,127	72,939
a	East	1,621	1,765	1,488	1,494	1,573	1,652	2,163	2,151	2,217	2,196	1,869	1,936	22,125
b	Central	1,720	1,928	1,651	1,747	1,932	1,842	2,395	2,506	2,531	2,491	2,015	2,043	24,803
c	West	1,546	2,149	2,111	1,705	1,484	1,565	2,186	2,645	2,961	2,868	2,646	2,147	26,011

Table 80: Energy Requirement- Discom & Ex-Bus (MUs) for FY 2019-20 (Re-Estimate)

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2019-20 (Re-Estimate)														
Sr.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
1	Sales	3,833	4,240	4,379	4,214	4,085	4,038	5,111	5,218	5,158	5,255	5,196	5,184	55,910
a	East	1,189	1,304	1,302	1,243	1,203	1,200	1,511	1,565	1,526	1,590	1,537	1,569	16,741
b	Central	1,177	1,308	1,392	1,347	1,320	1,294	1,577	1,596	1,586	1,620	1,624	1,614	17,455
c	West	1,467	1,627	1,684	1,624	1,562	1,543	2,023	2,057	2,047	2,044	2,035	2,001	21,715
2	Distribution Loss (%)													
a	East	25.04%	23.10%	14.15%	15.05%	20.82%	24.32%	17.05%	17.48%	18.75%	9.09%	5.61%	1.53%	16.00%
b	Central	22.38%	20.40%	10.65%	14.05%	19.06%	21.58%	17.10%	19.82%	21.56%	17.78%	11.53%	8.09%	17.00%
c	West	22.11%	23.99%	13.94%	5.61%	4.62%	11.07%	14.48%	25.49%	25.68%	17.74%	11.15%	4.11%	15.00%
3	Distribution Loss	1,153	1,240	653	537	703	934	978	1,430	1,495	950	558	252	10,596
a	East	397	392	215	220	316	386	311	332	352	159	91	24	3,189
b	Central	339	335	166	220	311	356	325	395	436	350	212	142	3,575
c	West	416	513	273	97	76	192	342	704	707	441	255	86	3,832
4	Energy at Discom Periphery	4,986	5,480	5,032	4,751	4,788	4,972	6,089	6,648	6,654	6,205	5,755	5,436	66,506
a	East	1,586	1,696	1,517	1,463	1,520	1,586	1,822	1,896	1,879	1,750	1,629	1,593	19,930
b	Central	1,517	1,644	1,558	1,567	1,630	1,651	1,902	1,990	2,021	1,970	1,836	1,756	21,030
c	West	1,883	2,140	1,957	1,721	1,638	1,735	2,365	2,762	2,754	2,485	2,290	2,087	25,547
5	State Transmission Losses	141	155	142	134	135	141	172	188	188	176	163	154	1,881

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2019-20 (Re-Estimate)														
Sr.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
a	East	45	48	43	41	43	45	52	54	53	49	46	45	564
b	Central	43	46	44	44	46	47	54	56	57	56	52	50	595
c	West	53	61	55	49	46	49	67	78	78	70	65	59	723
6	Energy at State Boundary	5,127	5,635	5,174	4,885	4,924	5,112	6,261	6,836	6,842	6,380	5,917	5,590	68,387
a	East	1,631	1,744	1,560	1,505	1,563	1,631	1,873	1,950	1,932	1,799	1,675	1,638	20,493
b	Central	1,559	1,690	1,602	1,611	1,677	1,697	1,956	2,047	2,079	2,026	1,887	1,806	21,624
c	West	1,937	2,201	2,012	1,769	1,684	1,784	2,432	2,840	2,832	2,555	2,355	2,146	26,269
7	External/PGCIL Losses (WR/ER)	111	117	120	98	80	107	121	115	126	119	106	118	1,338
a	East	35	36	36	29	24	32	36	35	37	36	31	36	401
b	Central	34	36	38	31	26	34	37	35	39	37	33	37	418
c	West	43	45	46	38	31	41	48	45	50	46	42	46	519
8	Ex-Bus Energy Requirement including adjustment of UI	5,238	5,752	5,294	4,983	5,004	5,220	6,382	6,951	6,968	6,499	6,024	5,708	70,023
a	East	1,666	1,780	1,595	1,534	1,586	1,663	1,909	1,985	1,969	1,835	1,706	1,674	20,901
b	Central	1,594	1,726	1,640	1,643	1,702	1,732	1,993	2,082	2,117	2,063	1,921	1,843	22,055
c	West	1,979	2,245	2,058	1,807	1,715	1,825	2,480	2,885	2,881	2,602	2,397	2,192	27,067

Table 81: Energy Requirement- Discom & Ex-Bus (MUs) for FY 2020-21 (Projected)

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2020-21 (Projected)														
Sr.no	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
1	Sales	4,142	4,581	4,730	4,552	4,414	4,362	5,520	5,636	5,571	5,677	5,613	5,601	60,400
a	East	1,318	1,445	1,443	1,377	1,333	1,330	1,674	1,734	1,691	1,762	1,704	1,738	18,550
b	Central	1,275	1,417	1,507	1,458	1,429	1,401	1,708	1,728	1,717	1,754	1,758	1,748	18,900
c	West	1,550	1,719	1,780	1,716	1,651	1,631	2,138	2,175	2,163	2,160	2,151	2,115	22,950
2	Distribution Loss (%)													
a	East	25.04%	23.10%	14.15%	15.05%	20.82%	24.32%	17.05%	17.48%	18.75%	9.09%	5.61%	1.53%	16.00%
b	Central	22.38%	20.40%	10.65%	14.05%	19.06%	21.58%	17.10%	19.82%	21.56%	17.78%	11.53%	8.09%	17.00%

Monthly- Ex-Bus Energy Requirement (MUs) for FY 2020-21 (Projected)														
Sr.no	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
c	West	22.11%	23.99%	13.94%	5.61%	4.62%	11.07%	14.48%	25.49%	25.68%	17.74%	11.15%	4.11%	15.00%
3	Distribution Loss	1,248	1,340	706	584	767	1,016	1,058	1,539	1,610	1,022	600	272	11,454
a	East	440	434	238	244	351	427	344	367	390	176	101	27	3,533
b	Central	367	363	180	238	336	386	352	427	472	379	229	154	3,871
c	West	440	543	288	102	80	203	362	744	747	466	270	91	4,050
4	Energy at Discom Periphery	5,390	5,921	5,436	5,137	5,181	5,378	6,578	7,175	7,181	6,699	6,213	5,872	71,854
a	East	1,758	1,880	1,681	1,621	1,684	1,757	2,018	2,101	2,082	1,939	1,805	1,765	22,083
b	Central	1,642	1,780	1,687	1,697	1,765	1,787	2,060	2,155	2,189	2,133	1,988	1,901	22,771
c	West	1,990	2,262	2,068	1,818	1,731	1,834	2,500	2,919	2,910	2,626	2,421	2,206	27,000
5	State Transmission Losses	152	167	154	145	147	152	186	203	203	189	176	166	2,348
a	East	50	53	48	46	48	50	57	59	59	55	51	50	632
b	Central	46	50	48	48	50	51	58	61	62	60	56	54	658
c	West	56	64	59	51	49	52	71	83	82	74	68	62	1,058
6	Energy at State Boundary	5,543	6,089	5,590	5,282	5,327	5,531	6,764	7,378	7,384	6,888	6,389	6,039	74,202
a	East	1,807	1,933	1,728	1,667	1,732	1,807	2,075	2,161	2,140	1,993	1,856	1,815	22,715
b	Central	1,689	1,830	1,735	1,745	1,815	1,838	2,118	2,216	2,251	2,194	2,044	1,955	23,429
c	West	2,047	2,326	2,127	1,870	1,780	1,886	2,571	3,001	2,993	2,701	2,489	2,268	28,058
7	External/PGCIL Losses (WR/ER)	114	116	116	111	100	97	117	111	121	112	90	111	1,316
a	East	36.41	36.58	35.28	33.45	30.19	29.72	35.61	34.22	36.60	34.65	27.30	34.38	404
b	Central	35.23	35.85	36.86	35.41	32.36	31.32	36.32	34.10	37.15	34.48	28.17	34.57	412
c	West	42.85	43.50	43.53	41.68	37.39	36.45	45.47	42.91	46.80	42.47	34.46	41.84	499
8	Ex-Bus Energy Requirement including adjustment of UI	5,657	6,205	5,706	5,392	5,427	5,628	6,881	7,489	7,504	7,000	6,479	6,149	75,518
a	East	1,844	1,969	1,764	1,701	1,762	1,837	2,111	2,195	2,177	2,028	1,883	1,849	23,120
b	Central	1,724	1,866	1,772	1,780	1,848	1,869	2,154	2,250	2,288	2,228	2,072	1,990	23,841
c	West	2,090	2,369	2,170	1,912	1,818	1,922	2,616	3,044	3,040	2,743	2,524	2,310	28,557

4.5.1 The ex-bus energy to be purchased during FY 2018-19 to FY 2020-21 (Normative & Actual Losses) is shown in the following table:

Table 82: Energy Requirement- Normative Losses (MUs)

Sr. no.	Particulars	Normative Distribution Losses											
		MP State			East			Central			West		
		FY-19	FY-20	FY-21	FY-19	FY-20	FY-21	FY-19	FY-20	FY-21	FY-19	FY-20	FY-21
1	Sales (MUs)	50,880	55,910	60,400	14,681	16,741	18,550	15,600	17,455	18,900	20,599	21,715	22,950
a	LT	38,478	42,789	45,836	11,301	13,081	14,424	11,767	13,408	14,469	15,409	16,300	16,943
b	HT	12,402	13,121	14,564	3,380	3,660	4,126	3,833	4,047	4,431	5,189	5,414	6,007
2	Distribution Losses												
a	%	15.91%	15.93%	15.94%	16.00%	16.00%	16.00%	17.00%	17.00%	17.00%	15.00%	15.00%	15.00%
b	MUs	9,627	10,596	11,454	2,796	3,189	3,533	3,195	3,575	3,871	3,635	3,832	4,050
3	Energy Requirement at Discom Boundary (MUs)	60,507	66,506	71,854	17,477	19,930	22,083	18,796	21,030	22,771	24,234	25,547	27,000
4	State Transmission Losses												
a	%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%
b	MUs	1,711	1,881	2,333	494	564	631	531	595	644	685	722	1,058
5	Energy Requirement at State Boundary (MUs)	62,218	68,387	74,188	17,972	20,493	22,714	19,327	21,624	23,415	24,919	26,269	28,058
6	External/PGCIL Losses												
a	WR %	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%
b	NR%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%
c	ER %	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%
d	WR MUs	1,318	1,338	1,329	380	406	404	407	426	534	525	499	
e	NR MUs												
f	ER MUs												
7	Energy Requirement Ex-Bus	63,536	69,725	75,517	18,352	20,899	23,119	19,731	22,032	23,841	25,453	26,795	28,557

Table 83: Energy Requirement- Actual Losses (MUs)

Provisional/Actual Distribution Losses													
Sr. no.	Particulars	MP State			East			Central			West		
		FY-19	FY-20	FY-21									
1	Sales (MUs)	50,880	55,910	60,400	14,681	16,741	18,550	15,600	17,455	18,900	20,599	21,715	22,950
a	LT	38,478	42,789	45,836	11,301	13,081	14,424	11,767	13,408	14,469	15,409	16,300	16,943
b	HT	12,402	13,121	14,564	3,380	3,660	4,126	3,833	4,047	4,431	5,189	5,414	6,007
2	Distribution Losses												
a	%	27.82%	28.07%	28.18%	30.56%	30.56%	30.56%	36.67%	36.67%	36.67%	16.65%	16.65%	16.65%
b	MUs	19,611	21,815	23,695	6,462	7,368	8,165	9,035	10,109	10,946	4,115	4,337	4,584
3	Energy Requirement at Discom Boundary (MUs)	70,491	77,725	84,095	21,143	24,109	26,715	24,635	27,563	29,846	24,713	26,052	27,534
4	State Transmission Losses												
a	%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%
b	MUs	1,993	2,198	2,378	598	682	755	697	779	844	699	737	779
5	Energy Requirement at State Boundary (MUs)	72,485	79,922	86,473	21,740	24,791	27,470	25,332	28,343	30,690	25,412	26,789	28,313
6	External/PGCIL Losses												
a	WR %	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%	3.18%	3.00%	3.00%
b	NR%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%	3.59%	3.46%	3.46%
c	ER %	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%	1.90%	1.78%	1.78%
d	WR MUs												
e	NR MUs	1,318	1,338	1,329	380	406	404	404	407	426	534	525	499
f	ER MUs												
7	Energy Requirement Ex-Bus	73,803	81,261	87,802	22,121	25,196	27,874	25,736	28,750	31,115	25,946	27,314	28,812

4.5.2 It is prayed to the Hon'ble Commission to approve energy requirement as shown above.

A5: ASSESSMENT OF AVAILABILITY

5.1 Availability Assessment- Existing and Upcoming

The Discoms have broadly categorised the sources of energy into State-Owned Generation, i.e., Generation from MPPGCL (MP Genco), Allocation (firm and non-firm) from Central Generating Stations (CGS), Independent Power Producers (IPPs), Biomass, Wind, Hydro, DVC and Solar Power Plants etc.

5.2.1 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 2019-20 and FY 2020-21 for MPPGCL, Central Sector, Joint venture and by Private players awarded through competitive bidding
- Impact of generation capacity allocation in WR, NR and ER

5.2.2 Based on the above available information, power purchase for the ensuing years has been forecasted. The same has been detailed in the subsequent sections. We further submit that new Central and State Generating Plants are scheduled to commence generation during FY 2019-20 & 2020-21 as follows:

Table 84: Upcoming Conventional Stations and Other Technical Parameters

Sr.no.	Particulars	Capacity (MW)	PLF/DE/CFU Considered (%) first 90 days	PLF/DE/CFU Considered (%) after 90 Days	Remarks	MP Share	MP Share	Energy Availability (MU) FY 20-21	CoD
						(%)	(MW)		
1	NTPC Gadarwara STPS, Unit-1	1x800	65.0%	85.0%	CERC Norms	50%	400	2887	Jun-2019
2	NTPC Gadarwara STPS, Unit-2	1x800	65.0%	85.0%	CERC Norms	50%	400	2756	Jan-2020
3	NTPC Lara STPS, Raigarh Unit -1	1x800	65.0%	85.0%	CERC Norms	11%	85	597	Oct-2019
4	NTPC Lara STPS, Raigarh Unit -2	1x800	65.0%	85.0%	CERC Norms	8%	64	431	Feb-2020
5	NTPC Khargone STPS, Unit-1	1x660	65.0%	85.0%	CERC Norms	50%	330	2316	Nov-2019
6	NTPC Khargone STPS, Unit-2	1x660	65.0%	85.0%	CERC Norms	50%	330	2185	Mar-2020
TOTAL		4520					1609	11172	

Table 85: Fixed & Variable Charges of upcoming Stations

Sr. no.	Particulars	Fixed Cost	Basis	Variable Cost in Rs. Per Unit	Basis
1	NTPC Gadarwara STPS, Unit-1	590.31	Fixed charges proportionate to weighted average of past 3 months Bills (June-19 to Aug-19)	3.80	Variable charges proportionate to weighted average of past 3 months Bills (June-19 to Aug-19)
2	NTPC Gadarwara STPS, Unit-2	590.31	Taken same as NTPC Gadarwara STPS, Unit-1	3.80	Taken same as NTPC Gadarwara STPS, Unit-1
3	NTPC Lara STPS, Raigarh, Unit I	97.21	Proportionately calculated on the basis of NTPC Mauda Unit 1	2.41	As per MoD of Oct-19
4	NTPC Lara STPS, Raigarh, Unit II	70.84	Proportionately calculated on the basis of NTPC Mauda Unit 1	2.41	Taken same as NTPC Lara STPS, Unit-I
5	NTPC Khargone STPS, Unit-I	487.00	Proportionately calculated on the basis of Gadarwara	3.80	Taken same as NTPC Gadarwara STPS, Unit-1
6	NTPC Khargone STPS, Unit-II	487.00	Proportionately calculated on the basis of Gadarwara	3.80	Taken same as NTPC Gadarwara STPS, Unit-1

- 5.2.3 Allocation of Power 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/2019/948 dated 30th September 2019 and from **Eastern Region** NTPC Kahalgaon-2 vide GoI MoP letter no. 5/31/2006-Th.2 dated 21st February 2007 and **Northern Region** as per Northern Regional Power Committee letter no. NRPC/OPR/103/02/2018/6105-6103 dated 01st June 2018 and communication held with their concerned office. Allocation from MP Genco and other sources have been considered based on inputs provided and latest updates from their concerned office.
- 5.2.4 The various stations both new and existing in which MPPMCL/Discom's has been allocated share are listed in the table below.

Table 86: Contracted Capacity – MP State (Existing & New)

Sr.no.	Particulars	Region	Capacity (MW)	Allocation Statement: MP Share		FY 2018-19		FY 2019-20 (RE)		FY 2020-21 (Proj)	
				%	MW	%	MW	%	MW	%	MW
I	Central Sector		33,996		5,219		5,684		5,684		5,684
1.	NTPC Korba	WR	2,100	22%	464.24	22%	466.67	22%	466.67		
2.	NTPC Korba III	WR	500	14%	68.16	14%	69.59	14%	69.59		
3.	NTPC Vidyachal I	WR	1,260	34%	427.82	34%	430.35	34%	430.35		
4.	NTPC Vidyachal II	WR	1,000	31%	306.43	31%	308.32	31%	308.32		
5.	NTPC Vidyachal III	WR	1,000	23%	233.43	24%	235.32	24%	235.32		
6.	NTPC Vidyachal IV	WR	1,000	27%	267.72	27%	270.59	27%	270.59		
7.	NTPC Vidyachal V Unit 1	WR	500	27%	133.52	100%	500	100%	500		
8.	NTPC Sipat I	WR	1,980	15%	305.39	16%	311.08	16%	311.08		
9.	NTPC Sipat II	WR	1,000	18%	176.03	18%	177.79	18%	177.79		
10.	NTPC Mouda I	WR	1,000	17%	165.00	17%	165.15	17%	165.15		
11.	NTPC Mouda II Unit 1	WR	660	34%	226.53	35%	230.32	35%	230.32		
12.	NTPC Kawas GPP	WR	656	21%	140.16	21%	140.16	21%	140.16		
13.	NTPC Gandhar GPP	WR	657	18%	117.18	18%	117.18	18%	117.18		
14.	NTPC Solapur STPS, Unit-1	WR	1,320	12%	155.41	16%	210	16%	210		
15.	NTPC Gadarwara STPS, Unit-1	WR	800	50%	400.00	50%	400	50%	400		
16.	NTPC Gadarwara STPS, Unit-2	WR	800	50%	400.00	50%	400	50%	400		
17.	NTPC Lara STPS, Raigarh, Unit I	WR	800	8%	63.80	11%	85.05	11%	85.05		
18.	NTPC Lara STPS, Raigarh, Unit II	WR	800	8%	63.80	8%	63.8	8%	63.8		
19.	NTPC Khargone STPS, Unit-I	WR	660	50%	330.00	50%	330	50%	330		
20.	NTPC Khargone STPS, Unit-II	WR	660	50%	330.00	50%	330	50%	330		
21.	TAPP Tarapur	WR	1,080	21%	229.79	21%	230.68	21%	230.68		

Sr.no.	Particulars	Region	Capacity (MW)	Allocation Statement: MP Share		FY 2018-19		FY 2019-20 (RE)		FY 2020-21 (Proj)	
				%	MW	%	MW	%	MW	%	MW
22.	KAPP Kakrapar	WR	440	26%	113.30	25%	111.06	25%	111.06		
23.	RAPP Rawabhatta	NR	440	0%	1.85	0%	1.85	0%	1.85		
24.	NAPP Narora	NR	440	0%	1.10	0%	1.1	0%	1.1		
25.	NTPC Auraiya GPP	NR	663	0%	1.72	0%	1.72	0%	1.72		
26.	NTPC Dadri GPP	NR	830	0%	2.24	0%	2.24	0%	2.24		
27.	NTPC Anta GPP	NR	419	0%	1.13	0%	1.13	0%	1.13		
28.	NTPC Firoz Gandhi Unchahar I	NR	420	0%	0.34	0%	0.34	0%	0.34		
29.	NTPC Firoz Gandhi Unchahar II	NR	210	1%	1.13	0%	0.55	0%	0.55		
30.	NTPC Firoz Gandhi Unchahar III	NR	420	0%	0.55	0%	1.13	0%	1.13		
31.	NTPC Firoz Gandhi Unchahar IV	NR	500	0%	1.30	0%	1.3	0%	1.3		
32.	NTPC Rihand I	NR	1,000	0%	2.20	0%	2.2	0%	2.2		
33.	NTPC Rihand II	NR	1,000	0%	2.40	0%	2.4	0%	2.4		
34.	NTPC Rihand III	NR	1,000	0%	2.70	0%	2.7	0%	2.7		
35.	NTPC NCTP Dadri II	NR	980	0%	2.25	0%	2.25	0%	2.25		
36.	NTPC Singrauli	NR	2,000	0%	4.40	0%	4.4	0%	4.4		
37.	NTPC IGPS I Jhajjar	NR	1,500	0%	1.95	0%	1.95	0%	1.95		
38.	NTPC Kahalgaon 2	ER	1,500	5%	73.95	5%	74	5%	74		
II	MP Genco-Thermal & Hydel		6,586	79%	5,181	96%	6,317	96%	6,317		
39.	Amarkantak TPS Ph-III	State	210	100%	210.00	100%	210	100%	210		
40.	Satpura TPS Phase III	State	830	51%	420.00	100%	830	100%	830		
41.	Satpura TPS Ph-IV	State	500	100%	500.00	100%	500	100%	500		
42.	SGTPS Ph-I & II	State	840	100%	840.00	100%	840	100%	840		
43.	SGTPS Ph-III	State	500	100%	500.00	100%	500	100%	500		
44.	Shri Singaji STPS Phase 1& 2	State	1,200	100%	1,200.00	100%	1200	100%	1200		
45.	Shri Singaji STPS Phase-3	State	1,320	45%	594.00	100%	1320	100%	1320		
46.	Rani Awanti Bai Sagar, Bargi HPS	State	90	100%	90.00	100%	90	100%	90		
47.	Bansagar Ph I HPS (Tons)	State	315	100%	315.00	100%	315	100%	315		
48.	Bansagar Ph-II HPS (Silpara)	State	30	100%	30.00	100%	30	100%	30		
49.	Bansagar Ph-III HPS (Deolond)	State	60	100%	60.00	100%	60	100%	60		
50.	Bansagar Ph-IV HPS (Jhinna)	State	20	100%	20.00	100%	20	100%	20		
51.	Birsinghpur HPS	State	20	100%	20.00	100%	20	100%	20		
52.	Marhikheda HPS	State	60	100%	60.00	100%	60	100%	60		
53.	Rajghat HPS	State	45	50%	22.50	50%	22.5	50%	22.5		
54.	Gandhisagar HPS	State	115	50%	57.50	50%	57.5	50%	57.5		

Allocation Statement: MP Share									
Sr.no.	Particulars	Region	Capacity (MW)	FY 2018-19		FY 2019-20 (RE)		FY 2020-21 (Proj)	
				%	MW	%	MW	%	MW
55.	Ranapratap Sagar HPS	State	172	79%	135.50	50%	86	50%	86
56.	Jawahar Sagar HPS	State	99	0%	-	50%	49.5	50%	49.5
57.	Pench HPS	State	160	67%	106.67	67%	106.7	67%	106.7
III	JV Hydel & Other Hydel		9,892	24%	2,415	25%	2,475	25%	2,475
58.	NHDC Indira Sagar HPS	State	1,000	100%	1,000.00	100%	1000	100%	1000
59.	NHDC Omkareshwar HPS	State	520	100%	520.00	100%	520	100%	520
60.	Sardar Sarovar HPS	WR	1,450	57%	826.50	57%	826.5	57%	826.5
61.	SJVN Rampur HPS	NR	412	0%	0.66	0%	0.66	0%	0.66
62.	SJVN Jhakri HPS	NR	1,500	0%	2.70	0%	2.7	0%	2.7
63.	Tehri HPS	NR	1,000	0%	1.80	0%	1.8	0%	1.8
64.	Koteshwar HPP	NR	400	0%	0.72	0%	0.72	0%	0.72
65.	Parbati III	NR	520	0%	1.40	0%	1.4	0%	1.4
66.	NHPC Chamera II	NR	300	0%	0.96	0%	0.96	0%	0.96
67.	NHPC Chamera III	NR	231	0%	0.62	0%	0.62	0%	0.62
68.	NHPC Dulhasti	NR	390	0%	1.05	0%	1.05	0%	1.05
69.	NHPC Dhauliganga	NR	280	0%	0.76	0%	0.76	0%	0.76
70.	NHPC Sewa II	NR	120	0%	0.31	0%	0.31	0%	0.31
71.	NHPC Uri II	NR	240	0%	0.65	0%	0.65	0%	0.65
72.	NHPC Kishanganga	NR	330	0%	0.86	0%	0.86	0%	0.86
73.	NTPC Koldam HPP I	NR	800	0%	0.96	0%	0.96	0%	0.96
74.	NTPC Singrauli Small HPP	NR	8	0%	0.02	0%	0.02	0%	0.02
75.	Rihand HPS	NR	300	15%	45.00	15%	45	15%	45
76.	Matatila HPS	NR	31	33%	10.00	33%	10	33%	10
77.	MTOA (5 years) from RVPNL (Hydel)	WR	60			100%	60	100%	60
IV	IPPs		10,318	33%	3,397	33%	3,427	33%	3,427
78.	Torrent Power	WR	1,148	7%	75.00	7%	75	7%	75
79.	Lanco Amarkantak TPS Unit 1	WR	300	100%	300.00	100%	300	100%	300
80.	Reliance UMPP, Sasan	WR	3,960	38%	1,485.00	38%	1485	38%	1485
81.	Jaiprakash Power STPS, Nigri	WR	1,320	38%	495.00	38%	495	38%	495
82.	MB Power STPS	WR	1,200	35%	420.00	35%	420	35%	420
83.	Jhabua Power STPS, Unit-1	WR	600	35%	210.00	35%	210	35%	210
84.	BLA Power	State	90	35%	31.50	35%	31.5	35%	31.5
85.	Jaypee Bina Power	State	500	70%	350.00	70%	350	70%	350
86.	Essar Power STPS	State	1,200	3%	30.00	5%	60	5%	60
V	Renewables				4,348.90		4,348.90		3977.15
87.	Solar	State			1,535.90		1545.75		1545.75
88.	Other than Solar	State			2,771.25		2396.65		2396.65

Allocation Statement: MP Share									
Sr.no.	Particulars	Region	Capacity (MW)	FY 2018-19		FY 2019-20 (RE)		FY 2020-21 (Proj)	
				%	MW	%	MW	%	MW
89.	Mini/Micro Hydel	State			41.75		34.75		34.75
	Total		60,791		20,560		22,252		21,880

5.2.5 As can be seen from the above table, some relevant information for FY 2020-21 are as follows:

- As submitted in the previous year's ARR Petitions, MPPMCL has already decided to foreclose the PPAs with DVC for 400 MW from DVC (MTPS & CTPS) and 100 MW (DTPS) w.e.f. 01st March 2018 & 15th May 2017 respectively. Hence no power is being scheduled from these stations after the said date. The Costs of such plants have not been considered while calculating the power purchase cost for FY 2019-20 & 2020-21. However, in case the PPAs with DVC remains in force in FY 2019-20 & 2020-21, MPPMCL will be obligated to pay fixed charges for these stations.
- During FY 2019-20, power from Essar, BLA & Sugen Torrent Generating Stations has been scheduled following MoD whereas in the Tariff Order for FY 2019-20, Hon'ble Commission had not considered availability and the cost thereon from these plants. It is humbly submitted that the power purchase expenditure incurred on these plants will be submitted before the Hon'ble Commission in the true up of FY 2019-20. It is further humbly submitted before the Hon'ble Commission that for FY 2020-21, the availability from these plants has been considered as the PPAs with these plants remain in force.

5.2 Ex-Bus Availability

For the purpose of estimating the Ex-bus availability the Discoms have considered the provisional energy received in FY 2018-19 & FY 2019-20 (till August 2019). The total Ex-Bus Availability from the existing allocated stations as well as the future capacity additions which are expected to become operational till end of MYT period i.e. FY 2020-21 as discussed in previous sections is as given below:

Table 87: Ex-Bus Availability (MUs) Plant Source Wise

Sr.No	Particulars	FY 2018-19	FY 2019-20 (Proj.)	FY 2020-21 (Proj.)
I	Central Sector	26,783	26,210	37,231
1	NTPC Korba	3,358.84	3,433.04	3,243.15
2	NTPC Korba III	560.30	500.48	488.37
3	NTPC Vidyachal I	3,126.65	2,810.82	2,916.24
4	NTPC Vidyachal II	2,332.16	1,822.27	2,163.75
5	NTPC Vidyachal III	1,844.76	1,765.42	1,651.63
6	NTPC Vidyachal IV	2,155.23	2,103.43	1,898.96

Sr.No	Particulars	FY 2018-19	FY 2019-20 (Proj.)	FY 2020-21 (Proj.)
7	NTPC Vindyachal V Unit 1	1,017.08	945.76	947.06
8	NTPC Sipat I	2,393.11	2,307.17	2,183.11
9	NTPC Sipat II	1,360.21	1,355.66	1,247.70
10	NTPC Mouda I	1,173.72	888.74	1,229.41
11	NTPC Mouda II Unit 1	1,475.07	937.04	1,616.35
12	NTPC Kawas GPP	1,153.54	681.50	718.30
13	NTPC Gandhar GPP	863.33	501.46	600.54
14	NTPC Solapur STPS, Unit-1	1,121.93	703.96	2,207.82
15	NTPC Gadarwara STPS, Unit-1	-	1,744.78	2,886.72
16	NTPC Gadarwara STPS, Unit-2	-	292.09	2,756.47
17	NTPC Lara STPS, Raigarh, Unit I	-	246.33	596.87
18	NTPC Lara STPS, Raigarh, Unit II	-	90.14	431.29
19	NTPC Khargone STPS, Unit-I	-	-	2,315.89
20	NTPC Khargone STPS, Unit-II	-	-	2,184.52
21	TAPP Tarapur	1,644.21	1,611.59	1,511.65
22	KAPP Kakrapar	185.27	641.75	727.78
23	RAPP Rawabhatta	8.95	11.80	12.75
24	NAPP Narora	6.34	7.04	7.58
25	NTPC Auraiya GPP	17.93	9.96	11.85
26	NTPC Dadri GPP	29.65	16.44	15.44
27	NTPC Anta GPP	60.66	8.05	7.79
28	NTPC Firoz Gandhi Unchahar I	59.88	29.94	2.34
29	NTPC Firoz Gandhi Unchahar II	55.88	38.87	3.79
30	NTPC Firoz Gandhi Unchahar III	19.39	16.45	7.79
31	NTPC Firoz Gandhi Unchahar IV	2.71	25.74	8.96
32	NTPC Rihand I	21.78	24.19	15.16
33	NTPC Rihand II	23.31	23.66	16.54
34	NTPC Rihand III	24.30	30.35	18.61
35	NTPC NCTP Dadri II	13.38	17.31	15.51
36	NTPC Singrauli	49.83	69.22	30.33
37	NTPC IGPS I Jhajjar	73.48	26.09	13.44
38	NTPC Kahalgaon 2	549.70	471.07	519.32
II	MP Genco-Thermal & Hydel	27,452	26,231	34,769
39	Amarkantak TPS Ph-III	1,496.07	1,533.43	1,424.00
40	Satpura TPS Phase III	3,778.42	2,402.65	3,924.00
41	Satpura TPS Ph-IV	3,649.43	3,072.66	3,406.00
42	SGTPS Ph-I & II	4,568.13	3,633.99	4,686.00
43	SGTPS Ph-III	3,533.39	2,955.51	3,499.00
44	Shri Singaji STPS Phase 1& 2	6,884.46	5,026.47	7,530.49
45	Shri Singaji STPS Phase-3	1,781.62	3,765.10	8,234.19
46	Rani Awanti Bai Sagar, Bargi HPS	346.26	293.80	309.19
47	Bansagar Ph I HPS (Tons)	570.60	858.62	797.40
48	Bansagar Ph-II HPS (Silpara)	39.00	60.08	78.38

Sr.No	Particulars	FY 2018-19	FY 2019-20 (Proj.)	FY 2020-21 (Proj.)
49	Bansagar Ph-III HPS (Deolond)	83.12	131.70	89.77
50	Bansagar Ph-IV HPS (Jhinna)	65.47	65.75	69.61
51	Birsinghpur HPS	29.41	33.25	30.93
52	Marhikheda HPS	87.72	73.93	69.69
53	Rajghat HPS	39.85	23.09	33.04
54	Gandhisagar HPS	123.44	104.40	159.14
55	Ranapratap Sagar HPS	165.17	213.54	176.14
56	Jawahar Sagar HPS	122.02	21.28	125.51
57	Pench HPS	88.31	135.75	127.00
58	Shri Singaji Phase-2, Unit-2		1,826.49	
III	JV Hydel & Other Hydel	2,247	4,815	4,332
59	NHDC Indira Sagar HPS	-	1,254.72	1,831.00
60	NHDC Omkareshwar HPS	-	573.64	855.36
61	Sardar Sarovar HPS	-	746.91	955.79
62	SJVN Rampur HPS	2.61	4.88	4.55
63	SJVN Jhakri HPS	9.66	19.10	18.61
64	Tehri HPS	7.68	2.50	12.41
65	Koteshwar HPP	3.20	1.13	4.96
66	Parbati III	1.49	2.08	9.65
67	NHPC Chamera II	3.73	3.35	6.62
68	NHPC Chamera III	2.22	2.21	4.27
69	NHPC Dulhasti	4.62	3.28	7.24
70	NHPC Dhauliganga	2.43	2.49	5.24
71	NHPC Sewa II	2.56	1.06	2.14
72	NHPC Uri II	1.73	2.41	4.48
73	NHPC Kishanganga	1.19	1.87	5.93
74	NTPC Koldam HPP I	3.59	3.26	6.62
75	NTPC Singrauli Small HPP	0.02	0.03	0.14
76	Rihand HPS	-	-	82.37
77	Matatila HPS	-	-	14.78
78	MTOA (5 years) from RVPNL (Hydel)		-	499.50
79	ISP	1,266.33	1,316.65	-
80	OSP	609.98	368.57	-
81	SSP	313.73	504.15	-
82	ISP NVDA	10.70	0.59	-
83	Bargi NVDA	-	-	-
IV	IPPs	23,906	20,160	22,616
84	Torrent Power	648.12	366.45	384.35
85	Lanco Amarkantak TPS Unit 1	2,097.41	2,036.54	2,032.76
86	Reliance UMPP, Sasan	11,456.22	10,204.07	10,421.86
87	Jaiprakash Power STPS, Nigri	3,325.79	2,775.20	3,207.97

Sr.No	Particulars	FY 2018-19	FY 2019-20 (Proj.)	FY 2020-21 (Proj.)
88	MB Power STPS	2,901.12	2,005.33	2,728.32
89	Jhabua Power STPS, Unit-1	1,045.90	859.93	979.36
90	BLA Power	47.97	64.87	68.56
91	Jaypee Bina Power	2,336.75	1,818.87	2,371.55
92	Essar Power STPS	46.29	28.92	421.07
	Renewables	6,640.32	7,258.52	7,324.70
93	Solar	1,873.42	2,722.81	2,601.14
94	Other than Solar	4,766.90	4,509.18	4,704.44
95	Mini/Micro Hydel		26.53	19.12
	Total	87,007	84,675	106,272

Table 88: Month Wise Power Availability for FY 2020-21

Monthwise availability														
Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
I	Central Sector	3032	3180	3022	2955	2920	3072	3359	3237	3310	3230	2724	3188	37231
1.	NTPC Korba	294	304	294	304	283	264	295	274	260	223	194	255	3243
2.	NTPC Korba III	45	46	45	0	36	45	46	45	46	46	42	46	488
3.	NTPC Vindyachal I	227	227	225	221	248	263	272	263	272	245	205	249	2916
4.	NTPC Vindyachal II	198	205	126	153	132	147	205	198	205	205	185	205	2164
5.	NTPC Vindyachal III	99	152	147	152	152	147	152	147	152	130	89	130	1652
6.	NTPC Vindyachal IV	174	93	152	180	93	152	180	174	180	180	162	180	1899
7.	NTPC Vindyachal V Unit 1	85	88	85	88	3	85	88	85	88	88	79	88	947
8.	NTPC Sipat I	196	203	131	137	143	184	203	196	203	203	183	203	2183
9.	NTPC Sipat II	70	113	109	113	113	109	113	109	113	113	102	73	1248
10.	NTPC Mouda I	110	114	110	114	114	110	114	110	114	106	49	67	1229
11.	NTPC Mouda II Unit 1	145	150	145	150	77	72	150	145	150	150	135	150	1616
12.	NTPC Mouda II Unit 2	0	0	0	0	0	0	0	0	0	0	0	0	0
13.	NTPC Kawas GPP	61	62	61	63	56	61	63	60	62	63	43	63	718
14.	NTPC Gandhar GPP	51	53	51	53	45	51	53	51	51	53	32	53	601
15.	NTPC Solapur STPS, Unit-1	198	204	198	6	204	198	204	198	204	204	185	204	2208
16.	NTPC Solapur STPS, Unit-2	0	0	0	0	0	0	0	0	0	0	0	0	0
17.	NTPC Gadarwara STPS, Unit-1	237	245	237	245	245	237	245	237	245	245	221	245	2887
18.	NTPC Gadarwara STPS, Unit-2	180	238	231	238	238	231	238	231	238	238	215	238	2756
19.	NTPC Lara STPS, Raigarh, Unit I	49	51	49	51	51	49	51	49	51	51	46	51	597
20.	NTPC Lara STPS, Raigarh, Unit II	28	30	37	38	38	37	38	37	38	38	34	38	431
21.	NTPC Lara STPS, Raigarh Unit -III	0	0	0	0	0	0	0	0	0	0	0	0	0
22.	NTPC Lara STPS, Raigarh Unit -IV	0	0	0	0	0	0	0	0	0	0	0	0	0

Monthwise availability														
Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
23.	NTPC Lara STPS, Raigarh Unit -V	0	0	0	0	0	0	0	0	0	0	0	0	0
24.	NTPC Khargone STPS, Unit-I	190	197	190	197	197	190	197	190	197	197	178	197	2316
25.	NTPC Khargone STPS, Unit-II	146	150	150	197	197	190	197	190	197	197	178	197	2185
26.	NTPC Khargone STPS, Unit-III	0	0	0	0	0	0	0	0	0	0	0	0	0
27.	TAPP Tarapur	128	133	128	133	133	128	133	128	126	133	75	133	1512
28.	KAPP Kakrapar	62	64	62	64	64	62	64	62	61	64	36	64	728
29.	RAPP Rawabhatta	1	1	1	1	1	1	1	1	1	1	1	1	13
30.	NAPP Narora	1	1	1	1	1	1	1	1	1	1	1	1	8
31.	NTPC Auraiya GPP	1	1	1	1	1	1	1	1	1	1	1	1	12
32.	NTPC Dadri GPP	1	1	1	1	1	1	1	1	1	1	1	1	15
33.	NTPC Anta GPP	1	1	1	1	1	1	1	1	1	1	1	1	8
34.	NTPC Firoz Gandhi Unchahar I	0	0	0	0	0	0	0	0	0	0	0	0	2
35.	NTPC Firoz Gandhi Unchahar II	0	0	0	0	0	0	0	0	0	0	0	0	4
36.	NTPC Firoz Gandhi Unchahar III	1	1	1	1	1	1	1	1	1	1	1	1	8
37.	NTPC Firoz Gandhi Unchahar IV	1	1	1	1	1	1	1	1	1	1	1	1	9
38.	NTPC Rihand I	1	1	1	1	1	1	1	1	1	1	1	1	15
39.	NTPC Rihand II	1	1	1	1	1	1	1	1	1	1	1	1	17
40.	NTPC Rihand III	2	2	2	2	2	2	2	2	2	2	1	2	19
41.	NTPC NCTP Dadri II	1	1	1	1	1	1	1	1	1	1	1	1	16
42.	NTPC Singrauli	2	3	2	3	3	2	3	2	3	3	2	3	30
43.	NTPC IGPS I Jhajjar	1	1	1	1	1	1	1	1	1	1	1	1	13
44.	NTPC Kahalgaon 2	43	43	43	45	45	43	45	42	43	45	40	45	519
	MP Genco-Thermal & Hydel	2842	2933	2716	2633	2831	2934	3129	2981	3030	3051	2703	2986	34769
45.	Amarkantak TPS Ph-III	127	131	127	84	63	123	131	127	131	131	118	131	1424

Monthwise availability														
Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
46.	Satpura TPS Phase III	343	355	259	262	304	281	361	349	361	361	327	361	3924
47.	Satpura TPS Ph-IV	294	304	294	220	220	289	304	294	304	304	275	304	3406
48.	SGTPS Ph-I & II	414	428	361	280	297	319	441	426	441	441	398	440	4686
49.	SGTPS Ph-III	289	299	289	292	292	282	299	290	299	299	270	299	3499
50.	Shri Singaji STPS Phase 1& 2	619	640	619	640	640	619	640	619	640	640	578	640	7530
51.	Shri Singaji STPS Phase-3	677	699	677	699	699	677	699	677	699	699	632	699	8234
52.	Rani Awanti Bai Sagar, Bargi HPS	10	8	5	20	50	60	30	19	25	55	15	13	309
53.	Bansagar Ph I HPS (Tons)	25	25	40	40	140	150	100	100	50	50	40	40	797
54.	Bansagar Ph-II HPS (Silpara)	2	2	4	4	14	15	10	10	5	5	4	4	78
55.	Bansagar Ph-III HPS (Deolond)	0	0	0	25	25	25	3	3	6	3	0	0	90
56.	Bansagar Ph-IV HPS (Jhinna)	3	3	2	3	0	6	5	8	12	10	9	9	70
57.	Birsinghpur HPS	0	0	0	9	13	9	0	0	0	0	0	0	31
58.	Marhikheda HPS	0	0	0	5	10	11	12	12	10	10	0	0	70
59.	Rajghat HPS	2	2	2	3	5	5	3	3	3	3	2	2	33
60.	Gandhisagar HPS	8	7	8	12	24	23	16	14	13	12	11	11	159
61.	Ranapratap Sagar HPS	14	15	14	15	15	14	15	14	15	15	14	15	176
62.	Jawahar Sagar HPS	10	11	10	11	11	10	11	10	11	11	10	11	126
63.	Pench HPS	5	5	5	10	10	16	50	7	7	3	2	8	127
	JV Hydel & Other Hydel	337	346	338	364	406	393	377	358	364	364	327	359	4332
64.	NHDC Indira Sagar HPS	150	156	150	156	156	150	156	150	156	156	140	156	1831
65.	NHDC Omkareshwar HPS	70	73	70	73	73	70	73	70	73	73	66	73	855
66.	Sardar Sarovar HPS	79	81	79	81	81	79	81	79	81	81	73	81	956
67.	SJVN Rampur HPS	0	0	0	0	0	0	0	0	0	0	0	0	5
68.	SJVN Jhakri HPS	2	2	2	2	2	2	2	2	2	2	1	2	19
69.	Tehri HPS	1	1	1	1	1	1	1	1	1	1	1	1	12
70.	Koteshwar HPP	0	0	0	0	0	0	0	0	0	0	0	0	5
71.	Parbati III	1	1	1	1	1	1	1	1	1	1	1	1	10

Monthwise availability														
Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
72.	NHPC Chamera II	1	1	1	1	1	1	1	1	1	1	1	1	7
73.	NHPC Chamera III	0	0	0	0	0	0	0	0	0	0	0	0	4
74.	NHPC Dulhasti	1	1	1	1	1	1	1	1	1	1	1	1	7
75.	NHPC Dhauliganga	0	0	0	0	0	0	0	0	0	0	0	0	5
76.	NHPC Sewa II	0	0	0	0	0	0	0	0	0	0	0	0	2
77.	NHPC Uri II	0	0	0	0	0	0	0	0	0	0	0	0	4
78.	NHPC Kishanganga	0	1	0	1	1	0	1	0	1	1	0	1	6
79.	NTPC Koldam HPP I	1	1	1	1	1	1	1	1	1	1	1	1	7
80.	NTPC Singrauli Small HPP	0	0	0	0	0	0	0	0	0	0	0	0	0
81.	Rihand HPS	4	4	4	6	12	12	8	7	7	6	6	6	82
82.	Matatila HPS	1	1	1	1	1	1	1	1	1	1	1	1	15
83.	MTOA (5 years) from RVPNL (Hydel)	25	23	26	39	75	72	50	42	39	39	33	34	500
84.	IPPs	1925	1876	1748	1865	1720	1819	2015	1941	2003	1981	1720	2002	22616
85.	Torrent Power	34	35	34	35	35	34	35	25	23	26	32	35	384
86.	Lanco Amarkantak TPS Unit 1	178	184	178	184	56	178	184	178	184	184	166	184	2033
87.	Reliance UMPP, Sasan	892	821	778	871	808	816	947	917	947	922	756	947	10422
88.	Jaiprakash Power STPS, Nigri	264	272	264	272	272	264	272	264	272	272	246	272	3208
89.	MB Power STPS	224	232	224	232	232	224	232	224	232	232	209	232	2728
90.	Jhabua Power STPS, Unit-1	80	83	80	83	83	80	83	80	83	83	75	83	979
91.	BLA Power	6	6	6	6	6	6	6	6	6	6	5	6	69
92.	Jaypee Bina Power	211	218	148	145	190	180	218	211	218	218	197	218	2372
93.	Essar Power STPS	37	25	37	38	38	37	38	37	38	38	34	25	421
	Renewables	602	622	602	622	623	603	622	602	622	622	562	622	7325
94.	Solar	214	221	214	221	221	214	221	214	221	221	200	221	2601
95.	Other than Solar	387	400	387	400	400	387	400	387	400	400	361	400	4704
96.	Mini/Micro Hydel	1	1	1	2	3	3	2	2	2	2	1	1	19
97.	Total	8738	8956	8426	8440	8500	8820	9503	9119	9330	9248	8036	9157	106272

5.3 Renewable Purchase Obligation

- 5.3.1 The Hon'ble Commission had 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 August 31st, 2017. The Hon'ble Commission had considered procurement of power from renewable energy sources through PPA or short term market to ensure RPO compliance. In the said Regulation, while defining the RPO percentage in compliance from Solar and Other than Solar, the Hon'ble Commission while considering the Ex-Bus Requirement based on Merit Order Dispatch of MP State (Three Discom's) had included consumption met through hydro sources of power as well.
- 5.3.2 Meanwhile, the Hon'ble Commission had notified Sixth Amendment to the said Regulation and the amendment therein is as follows:

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, 1.75% for Solar and 7.50% for Non-Solar for FY 2018-19, 4.00% for Solar and 8.00% for Non-Solar for FY 2019-20 & 6.00% for Solar and 8.50% for Non-Solar for FY 2020-21 excluding consumption met through hydro sources of power during the FY.

- 5.3.3 As can be verified from the above Regulation, the Hon'ble Commission defined a percentage of RPO on Ex-Bus Requirement by excluding Hydel sources of power in the Sixth Amendment. The Petitioner, in view of the RPO targets as specified under Sixth 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 02nd, 2015 & National Tariff Policy, 2016 had made an arrangement under various PPA for its compliance. As a result, there was a surplus situation of availability from solar during FY 2018-19 & FY 2019-20 and deficit during FY 2020-21 for complying with RPO targets. However there was deficit in non-solar for FY 2018-19, FY 2019-20 & FY 2020-21. Accordingly the Petitioners have calculated the RPO requirement as shown in the following table:

Table 89: Renewable Purchase Obligation (MUs)

Sr.no	Particulars	MP State		
		FY 2018-19	FY 2019-20	FY 2020-21
A	RPO Obligations (%)	9.25%	12.00%	14.50%
1	Solar	1.75%	4.00%	6.00%
2	Other than Solar	7.50%	8.00%	8.50%
B	Ex-Bus RPO Requirement based on MoD (MUs) excluding Hydro	6,456.05	7,826.83	10,089.42
1	Solar	1,221.42	2,608.94	4,174.93
2	Other than Solar	5,234.64	5,217.88	5,914.49
C	Energy Available from Existing Sources (MUs)	6,640.32	7,231.99	7,324.70

Sr.no	Particulars	MP State		
		FY 2018-19	FY 2019-20	FY 2020-21
1	Solar	1,873.42	2,722.81	2,601.14
2	Other than Solar	4,766.90	4,509.18	4,723.55
D	Shortfall (MUs)	467.74	708.71	2,764.72
1	Solar	-	-	1,573.79
2	Other than Solar	467.74	708.71	1,190.93
E	Extra Power Available for Sale after meeting RPO obligations which needs to be sold (MUs)	652.01	113.87	-
1	Solar	652.01	113.87	-
2	Other than Solar	-	-	-
G	Renewable Energy Purchase Rate (Paisa/kWh)			
1	Solar	5.39	5.00	5.00
2	Other than Solar	5.11	5.54	5.54
H	Renewable Energy Purchase for Shortage Power (Rs Crores)	238.85	392.50	1,445.84
1	Solar	-	-	786.27
2	Other than Solar	238.85	392.50	659.57
I	Total Renewable Energy Purchase to meet RPO (Rs Crores)	238.85	392.50	5,355.57
1	Solar	-	-	2,085.81
2	Other than Solar	238.85	392.50	3,269.76
J	Renewable Energy Sale Rate for Surplus Power (Paisa/kWh)			
1	Solar	342.10	328.44	328.44
2	Other than Solar	342.10	328.44	328.44
K	Revenue from sale of additional Renewable Energy (Rs Crores)	160.01	232.77	908.06
1	Solar	-	-	516.90
2	Other than Solar	160.01	232.77	391.16
L	Net additional cost to be borne due to shortage of RPO (Rs. Cr)	78.83	159.73	537.78
1	Solar	-	-	269.37
2	Other than Solar	78.83	159.73	268.41

5.3.4 It may be observed from the above table that there is a shortfall of the RPO from Solar and Non-solar energy in FY 2020-21 and the Petitioners would meet its Renewable Purchase Obligation requirement from its contracted sources with an objective to promote renewable energy and to comply with its contractual obligations.

5.4 Backing down of Power

5.4.5 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 2020-21 and thereafter, after considering all generating stations allocated to MPPMCL. The Petitioners have considered the provisional data for FY 2018-19 & FY 2019-20 (till August 19) for calculating normative availability including backing down of power for FY 2020-21.

5.4.6 The Petitioners have also considered partial backing down of units/stations which are higher up in the MoD by an average rate of energy sale at IEX during past 30 month, i.e. 328.44 per unit for FY 2020-21, 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.

5.4.7 The following table shows the stations which are considered for partial/full back down for FY 2020-21:

Table 90: Backing Down of Power (MUs) Plant Source Wise

Sr. No	Particulars	FY 2020-21		
		Normative Availability	Net Availability	Back Down of Power
I	Central Sector	37,231	22,993	14,238
1	NTPC Korba	3,243	3,243	-
2	NTPC Korba III	488	488	-
3	NTPC Vindyachal I	2,916	2,916	-
4	NTPC Vindyachal II	2,164	2,164	-
5	NTPC Vindyachal III	1,652	1,652	-
6	NTPC Vindyachal IV	1,899	1,899	-
7	NTPC Vindyachal V Unit 1	947	947	-
8	NTPC Sipat I	2,183	2,183	-
9	NTPC Sipat II	1,248	1,248	-
10	NTPC Mouda I	1,229	-	1,229
11	NTPC Mouda II Unit 1	1,616	1,616	-
12	NTPC Mouda II Unit 2		-	-
13	NTPC Kawas GPP	718	718	-
14	NTPC Gandhar GPP	601	-	601
15	NTPC Solapur STPS, Unit-1	2,208	-	2,208
16	NTPC Solapur STPS, Unit-2		-	-
17	NTPC Gadarwara STPS, Unit-1	2,887	-	2,887
18	NTPC Gadarwara STPS, Unit-2	2,756	-	2,756
19	NTPC Lara STPS, Raigarh, Unit I	597	597	-
20	NTPC Lara STPS, Raigarh, Unit II	431	431	-
21	NTPC Lara STPS, Raigarh Unit -III		-	-
22	NTPC Lara STPS, Raigarh Unit -IV		-	-
23	NTPC Lara STPS, Raigarh Unit -V		-	-
24	NTPC Khargone STPS, Unit-I	2,316	-	2,316
25	NTPC Khargone STPS, Unit-II	2,185	-	2,185
26	NTPC Khargone STPS, Unit-III		-	-
27	TAPP Tarapur	1,512	1,512	-
28	KAPP Kakrapar	728	728	-
29	RAPP Rawabhatta	13	13	-
30	NAPP Narora	8	8	-
31	NTPC Auraiya GPP	12	-	12
32	NTPC Dadri GPP	15	-	15
33	NTPC Anta GPP	8	8	-
34	NTPC Firoz Gandhi Unchahar I	2	2	-
35	NTPC Firoz Gandhi Unchahar II	4	4	-
36	NTPC Firoz Gandhi Unchahar III	8	8	-
37	NTPC Firoz Gandhi Unchahar IV	9	9	-

Sr. No	Particulars	FY 2020-21		
		Normative Availability	Net Availability	Back Down of Power
38	NTPC Rihand I	15	15	-
39	NTPC Rihand II	17	17	-
40	NTPC Rihand III	19	19	-
41	NTPC NCTP Dadri II	16	-	16
42	NTPC Singrauli	30	30	-
43	NTPC IGPS I Jhajjar	13	-	13
44	NTPC Kahalgaon 2	519	519	-
45	NTPC Talcher		-	-
46	NTPC Farakka		-	-
47	NTPC Meja		-	-
II	MP Genco-Thermal & Hydel	34,769	34,769	-
48	Amarkantak TPS Ph-III	1,424	1,424	-
49	Satpura TPS Phase III	3,924	3,924	-
50	Satpura TPS Ph-IV	3,406	3,406	-
51	SGTPS Ph-I & II	4,686	4,686	-
52	SGTPS Ph-III	3,499	3,499	-
53	Shri Singaji STPS Phase 1& 2	7,530	7,530	-
54	Shri Singaji STPS Phase-3	8,234	8,234	-
55	Rani Awanti Bai Sagar, Bargi HPS	309	309	-
56	Bansagar Ph I HPS (Tons)	797	797	-
57	Bansagar Ph-II HPS (Silpara)	78	78	-
58	Bansagar Ph-III HPS (Deolond)	90	90	-
59	Bansagar Ph-IV HPS (Jhinna)	70	70	-
60	Birsinghpur HPS	31	31	-
61	Marhikheda HPS	70	70	-
62	Rajghat HPS	33	33	-
63	Gandhisagar HPS	159	159	-
64	Ranapratap Sagar HPS	176	176	-
65	Jawahar Sagar HPS	126	126	-
66	Pench HPS	127	127	-
67	Shri Singaji Phase-2, Unit-2			-
III	JV Hydel & Other Hydel	4,332	4,331	0
68	NHDC Indira Sagar HPS	1,831	1,831	-
69	NHDC Omkareshwar HPS	855	855	-
70	Sardar Sarovar HPS	956	956	-
71	SJVN Rampur HPS	5	5	-
72	SJVN Jhakri HPS	19	19	-
73	Tehri HPS	12	12	-
74	Koteshwar HPP	5	5	-
75	ParbatI III	10	10	-
76	NHPC Chamera II	7	7	-
77	NHPC Chamera III	4	4	-
78	NHPC Dulhasti	7	7	-
79	NHPC Dhauliganga	5	5	-
80	NHPC Sewa II	2	2	-
81	NHPC Uri II	4	4	-
82	NHPC Kishanganga	6	6	-
83	NTPC Koldam HPP I	7	7	-
84	NTPC Singrauli Small HPP	0	-	0
85	Rihand HPS	82	82	-
86	Matatila HPS	15	15	-
87	MTOA (5 years) from RVPNL (Hydel)	500	500	-
88	ISP			-
89	OSP			-
90	SSP			-

Sr. No	Particulars	FY 2020-21		
		Normative Availability	Net Availability	Back Down of Power
91	ISP NVDA			-
92	Bargi NVDA			-
	DVC	-	-	-
93	DVC MTPS		-	-
94	DVC CTPS		-	-
95	DVC DTPS		-	-
	IPPs	22,616	19,370	3,246
95	Torrent Power	384	-	384
96	Lanco Amarkantak TPS Unit 1	2,033	2,033	-
97	Reliance UMPP, Sasan	10,422	10,422	-
98	Jaiprakash Power STPS, Nigri	3,208	3,208	-
99	MB Power STPS	2,728	2,728	-
100	Jhabua Power STPS, Unit-1	979	979	-
101	BLA Power	69	-	69
102	Jaypee Bina Power	2,372	-	2,372
103	Essar Power STPS	421	-	421
	Renewables	7,325	7,325	-
103	Solar	2,601	2,601	-
104	Other than Solar	4,704	4,704	-
105	Mini/Micro Hydel	19	19	-
	Total	106,272	88,789	17,483

5.5 Allocation Statement at State Boundary Level

- 5.5.1 The Government of MP vide gazette notification dated 21st March 2016 had allocated all the stations to MPPMCL and in order to maintain equitable allocation of the power purchased cost among all the three Discom's, MPPMCL have allocated the costs to the three Discom's as per their monthly energy requirement.
- 5.5.2 For allocation of the overall availability and costs to the Discoms, MPPMCL has considered the monthly energy requirement of the three Discom's at the State boundary level for the period FY 2018-19 to FY 2020-21 as provided in the table below:

Table 91: Allocation Statement at State Boundary Level

Allocation Statement at State Boundary Level														
Sr.no	Discom	April	May	June	July	August	September	October	November	December	January	February	March	Total
1	FY 2018-19 (Provisional) - MUs													
a	MP State	4,765	5,717	5,129	4,833	4,878	4,959	6,632	7,196	7,603	7,451	6,441	6,018	71,561
b	East	1,584	1,728	1,453	1,461	1,541	1,623	2,131	2,120	2,186	2,165	1,843	1,904	21,740
c	Central	1,684	1,891	1,614	1,713	1,898	1,811	2,362	2,475	2,500	2,461	1,989	2,011	24,409
d	West	1,497	2,098	2,062	1,659	1,439	1,524	2,140	2,601	2,917	2,825	2,609	2,103	25,412
2	FY 2019-20 (Re-Estimate)- MUs													
a	MP State	5,125	5,633	5,173	4,884	4,922	5,111	6,259	6,834	6,840	6,378	5,916	5,588	68,367
b	East	1,631	1,744	1,560	1,505	1,563	1,631	1,873	1,950	1,932	1,799	1,675	1,638	20,493
c	Central	1,559	1,690	1,602	1,611	1,677	1,697	1,956	2,047	2,079	2,026	1,887	1,806	21,624
d	West	1,935	2,199	2,011	1,768	1,683	1,783	2,430	2,837	2,830	2,553	2,353	2,145	26,250
3	FY 2020-21 (Projected)- MUs													
a	MP State	5,542	6,089	5,590	5,282	5,327	5,531	6,764	7,378	7,384	6,888	6,389	6,038	74,188
b	East	1,807	1,933	1,728	1,667	1,732	1,807	2,075	2,161	2,140	1,993	1,856	1,815	22,083
c	Central	1,689	1,830	1,735	1,745	1,815	1,838	2,118	2,216	2,251	2,194	2,044	1,955	22,771
d	West	2,047	2,326	2,127	1,870	1,780	1,886	2,571	3,001	2,993	2,701	2,489	2,268	27,000
4	FY 2018-19 (Provisional)													
a	MP State	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
b	East	33%	30%	28%	30%	32%	33%	32%	29%	29%	29%	29%	32%	30%
c	Central	35%	33%	31%	35%	39%	37%	36%	34%	33%	33%	31%	33%	34%
d	West	31%	37%	40%	34%	30%	31%	32%	36%	38%	38%	41%	35%	36%
5	FY 2019-20 (Re-Estimate)- %													
a	MP State	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
b	East	32%	31%	30%	31%	32%	32%	30%	29%	28%	28%	28%	29%	30%
c	Central	30%	30%	31%	33%	34%	33%	31%	30%	30%	32%	32%	32%	32%
d	West	38%	39%	39%	36%	34%	35%	39%	42%	41%	40%	40%	38%	38%
6	FY 2020-21 (Projected)-%													
a	MP State	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
b	East	33%	32%	31%	32%	33%	33%	31%	29%	29%	29%	29%	30%	31%
c	Central	30%	30%	31%	33%	34%	33%	31%	30%	30%	32%	32%	32%	32%
d	West	37%	38%	38%	35%	33%	34%	38%	41%	41%	39%	39%	38%	38%

5.6 Management of Surplus Energy

- 5.6.1 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.
- 5.6.2 The IEX rate for the past **thirty months** (FY 2017-18, FY 2018-19 & FY 19-20 till Sept-19) is observed to be at Paisa 328.44 per Unit. For the purpose of computation of revenue from surplus energy, the IEX rate is taken at Paisa 328.44 per Unit for FY 2020-21. The Petitioners have considered the provisional data for FY 2018-19 & FY 2019-20 (till August 19) for calculating surplus sale for FY 2020-21.
- 5.6.3 The energy surplus of the Discom's 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 Discom's. The Petitioner has also considered the net benefit on account of variable cost based on surplus energy.

Table 92: Management of Surplus Power (MUs)

Management of Surplus Energy (MUs)		
Sr.no	Particulars	FY 2020-21 (Proj.)
1.	Ex-Bus Availability	106,272
2.	Back down of Power including Surplus Sale of Power	17,483
3.	Energy Available after Back down	88,789
4.	Ex-Bus Energy Required by Discom's	75,517
5.	Ex-Bus Energy Required by Discom's including UI Adjustment	75,517
6.	Surplus Units available for Sale	13,272
7.	IEX Rate (Paisa/kWh)	328.44
8.	Revenue from Sale of Surplus Power (Rs Crores)	4,359.16
9.	Purchase Cost of Surplus Power- Variable (Rs Crores) including Renewables	3,689.60
10.	Total saving in variable cost of surplus energy from sale of surplus energy (Rs Crore)	669.55

- 5.6.4 The Petitioner hereby prays to the Hon'ble Commission to approve Assessment of Availability including treatment of surplus energy as indicated in above para.**

A6: POWER PURCHASE COST**6.1 Details of Cost for Power Stations**

The basis of considering the Fixed cost (Rs. Crores) and the variable charge (Paise/kWh) of different power stations has been indicated in the below table:

Table 93: Methodology for Power Purchase Cost for FY 2019-20

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
I	Central Sector				
1.	NTPC Korba	221.51	CERC Order 24-02-2017	1.39	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
2.	NTPC Korba III	66.69	CERC Order 03-03-2017	1.37	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
3.	NTPC Vidyachal I	248.67	CERC Order 24-02-2017	1.86	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
4.	NTPC Vidyachal II	149.61	CERC Order 06-02-2017	1.89	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
5.	NTPC Vidyachal III	171.90	CERC Order 24-02-2017	1.76	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
6.	NTPC Vidyachal IV	295.86	CERC Order 10-03-2017	1.75	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
7.	NTPC Vidyachal V Unit 1	155.81	CERC Order 31-08-2016	1.79	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
8.	NTPC Sipat I	281.38	CERC Order 29-03-2017	1.35	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
9.	NTPC Sipat II	153.52	CERC Order 21-03-2017	1.39	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
10.	NTPC Mouda I	188.77	CERC Order 01-02-2017	3.31	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
11.	NTPC Mouda II Unit 1	255.73	CERC Order 05-04-2017	3.08	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
12.	NTPC Kawas GPP	86.91	CERC Order 24-03-2017	2.84	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
13.	NTPC Gandhar GPP	89.92	CERC Order 10-04-2017	3.82	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
14.	NTPC Solapur STPS, Unit-1	314.19	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	4.47	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
15.	NTPC Gadarwara STPS, Unit-1	590.31	Fixed charges proportionate to Weighted Average of past 3 months Bills	3.80	Variable charges proportionate to Weighted Average of past 3 months Bills (June-19 to Aug-19)

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
			(June-19 to Aug-19)		
16.	NTPC Gadarwara STPS, Unit-2	590.31	Considered same as NTPC Gadarwara STPS, Unit-1	3.80	Considered same as NTPC Gadarwara STPS, Unit-1
17.	NTPC Lara STPS, Raigarh, Unit I	97.21	Proportionately calculated on the basis of NTPC Mauda Unit 1	2.41	As per MoD of Oct-19
18.	NTPC Lara STPS, Raigarh, Unit II	70.84	Proportionately calculated on the basis of NTPC Mauda Unit 1	2.41	Considered same as NTPC Lara STPS, Unit-1
19.	NTPC Khargone STPS, Unit-I	487.00	Proportionately calculated on the basis of Gadarwara	3.80	Considered same as NTPC Gadarwara STPS, Unit-1
20.	NTPC Khargone STPS, Unit-II	487.00	Proportionately calculated on the basis of Gadarwara	3.80	Considered same as NTPC Gadarwara STPS, Unit-1
21.	TAPP Tarapur	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	3.11	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
22.	KAPP Kakrapar	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	2.48	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
23.	RAPP Rawabhatta	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	4.05	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
24.	NAPP Narora	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	3.20	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
25.	NTPC Auraiya GPP	0.64	CERC Order 18-04-2017	3.91	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
26.	NTPC Dadri GPP	0.95	CERC Order 01-02-2017	3.83	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
27.	NTPC Anta GPP	0.59	CERC Order 19-09-2017	3.28	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
28.	NTPC Firoz Gandhi Unchahar I	0.23	CERC Order 22-03-2017	3.21	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
29.	NTPC Firoz Gandhi Unchahar II	0.46	CERC Order 19-04-2017	3.18	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
30.	NTPC Firoz Gandhi Unchahar III	0.69	CERC Order 31-03-2017	3.19	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
31.	NTPC Firoz Gandhi Unchahar IV	0.94	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	3.19	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
32.	NTPC Rihand I	1.29	CERC Order 23-08-2016	1.35	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
33.	NTPC Rihand II	1.19	CERC ORDER 01-12-2016	1.34	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
34.	NTPC Rihand III	2.75	CERC ORDER 06-12-2017	1.35	Variable charges as per Weighted Average of past 12 months Bills

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
					(Sep-18 to Aug-19)
35.	NTPC NCTP Dadri II	2.12	CERC ORDER 02-05-2017	3.67	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
36.	NTPC Singrauli	1.99	CERC Order 28-07-2016	1.39	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
37.	NTPC IGPS I Jhajjar	2.04	CERC ORDER 09-03-2017	3.44	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
38.	NTPC Kahalgaon 2	56.35	CERC Order 21-01-2017	2.12	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
II MP Genco-Thermal & Hydel					
39.	Amarkantak TPS Ph-III	211.32	MPERC Order 14-07-2016	1.59	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
40.	Satpura TPS Phase III	407.73	MPERC Order 14-07-2016	2.72	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
41.	Satpura TPS Ph-IV	672.84	MPERC Order 14-07-2017	2.26	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
42.	SGTPS Ph-I & II	360.28	MPERC Order 14-07-2016	2.15	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
43.	SGTPS Ph-III	385.99	MPERC Order 14-07-2016	1.99	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
44.	Shri Singaji STPS Phase 1& 2	1,176.14	MPERC Order 14-07-2017	2.78	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
45.	Shri Singaji STPS Phase-3	1,192.44	MPERC Order 07-03-2019 And MPERC Order 18-06-2019	2.64	Variable charges as per Weighted Average of past 5 months Bills (Apr-19 to Aug-19)
46.	Rani Awanti Bai Sagar, Bargi HPS	13.80	MPERC Order 14-07-2016	0.64	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
47.	Bansagar Ph I HPS (Tons)	124.78	MPERC Order 14-07-2016	0.78	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
48.	Bansagar Ph-II HPS (Silpara)	-	0	0.83	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
49.	Bansagar Ph-III HPS (Deolond)	-	0	1.61	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
50.	Bansagar Ph-IV HPS (Jhinna)	15.40	MPERC Order 14-07-2016	1.06	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
51.	Birsinghpur HPS	4.62	MPERC Order 14-07-2016	0.97	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
52.	Marhikheda HPS	32.67	MPERC Order 14-07-2016	2.17	Variable charges as per Weighted Average of past 12 months Bills

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
					(Sep-18 to Aug-19)
53.	Rajghat HPS	6.17	MPERC Order 14-07-2016	1.73	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
54.	Gandhisagar HPS	5.52	MPERC Order 14-07-2016	0.77	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
55.	Ranapratap Sagar HPS	4.66	As per Tariff Order for FY 2018-19 Considered same as Gandhi Sagar	1.51	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
56.	Jawahar Sagar HPS	-	0	1.51	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
57.	Pench HPS	11.63	MPERC Order 14-07-2016	0.47	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
III	JV Hydel & Other Hydel				
58.	NHDC Indira Sagar HPS	502.78	CERC Order 31-05-2016	1.72	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
59.	NHDC Omkareshwar HPS	395.45	CERC Order 26-05-2016	2.67	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
60.	Sardar Sarovar HPS	205.20	MPERC Order dated August 62013 in P.No.18 of 2013	1.18	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
61.	SJVN Rampur HPS	0.96	CERC Order Dated 15-02-2017	1.78	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
62.	SJVN Jhakri HPS	3.08	CERC Order Dated 15-03-2017	1.15	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
63.	Tehri HPS	4.04	CERC Order Dated 29-03-2017	1.61	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
64.	Koteshwar HPP	1.49	CERC Order Dated 09-10-2018	1.57	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
65.	Parbati III	0.31	As no tariff Order issued after FY 13-14 for FY 13-14 AFC was approved for 7 days for all units AFC available for 2 days so same has been prorated for 366 days	1.84	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
66.	NHPC Chamera II	0.90	CERC Order Dated 17-06-2016	1.01	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
67.	NHPC Chamera III	1.08	CERC Order Dated 06-02-2017	2.12	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
68.	NHPC Dulhasti	2.85	CERC Order Dated 30-08-2016	2.56	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
69.	NHPC	0.70	CERC Order Dated 26-	1.22	Variable charges as per Weighted

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
	Dhauliganga		04-2016		Average of past 12 months Bills (Sep-18 to Aug-19)
70.	NHPC Sewa II	1.08	CERC Order Dated 27-01-2017	2.17	Variable charges proportionate to Weighted Average of past 5 months Bills (Apr-18 to Aug-19)
71.	NHPC Uri II	1.11	CERC Order Dated 22-07-2016	2.37	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
72.	NHPC Kishanganga	0.92	CERC Order Dated 27-01-2017	1.84	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
73.	NTPC Koldam HPP I	1.94	CERC ORDER 05-04-2018	2.54	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
74.	NTPC Singrauli Small HPP	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	5.31	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
75.	Rihand HPS	-	As per actual Bills from Sept-15 to Aug-16	0.40	As per actual Bills from Sept-15 to Aug-16
76.	Matatila HPS	-	As per actual Bills from Sept-15 to Aug-16	0.40	As per actual Bills from Sept-15 to Aug-16
IV	IPPs				
77.	Torrent Power	62.49	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	5.46	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
78.	Lanco Amarkantak TPS Unit 1	247.00	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	2.55	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
79.	Reliance UMPP, Sasan	166.58	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	1.41	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
80.	Jaiprakash Power STPS, Nigri	709.17	MPERC Order in Petition No.7 of 2018 dated 29-11-2018	0.49	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
81.	MB Power STPS	409.06	MPERC Order dated 29-07-2015	2.30	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
82.	Jhabua Power STPS, Unit-1	166.50	MPERC Order 30-11-2018	2.52	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
83.	BLA Power	14.98	For BLA I total Fixed charges as per past 6 months Bills (Mar-19 to Aug-19) and for BLA II total Fixed charges as per past 1 Month Bill (July-19)	3.67	for BLA I ,Variable charges as per Weighted Average of past 6 months Bills (Mar-19 to Aug-19) and for BLA II Variable charges proportionate to Weighted Average of past 1 Month Bill (July-19)
84.	Jaypee Bina Power	504.75	MPERC Order 08-08-2016	3.45	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
85.	Essar Power STPS	-	Total Fixed charges as per past 12 months Bills (Sep-18 to Aug-19)	3.95	Variable charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19)
V	Renewables				
	Solar			5.00	
	Other than Solar			5.54	

Sr. no.	Particulars	Fixed Charge	Basis for Fixed Charges	Variable Charge	Basis for Energy Charges
	Mini/Micro Hydel			2.49	

6.2 Merit Order Dispatch

6.2.1 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 backing down of selected stations as explained above. The MoD applied for FY 2020-21 is given in the following table:

Table 94: Merit Order Dispatch for FY 2020-21

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
1	KAPP Kakrapar	248	728
2	TAPP Tarapur	311	1,512
3	RAPP Rawabhatta	405	13
4	NAPP Narora	320	8
5	Solar	500	2,601
6	Mini/Micro Hydel	249	19
7	Other than Solar	554	4,704
8	Rihand HPS	40	82
9	Matatila HPS	40	15
10	Pench HPS	47	127
11	Jaiprakash Power STPS, Nigri	49	3,208
12	Rani Awanti Bai Sagar, Bargi HPS	64	309
13	MTOA (5 years) from RVPNL (Hydel)	73	500
14	Gandhisagar HPS	77	159
15	Bansagar Ph I HPS (Tons)	78	797
16	Bansagar Ph-II HPS (Silpara)	83	78
17	Birsinghpur HPS	97	31
18	NHPC Chamera II	101	7
19	Bansagar Ph-IV HPS (Jhinna)	106	70
20	SJVN Jhakri HPS	115	19
21	Sardar Sarovar HPS	118	956
22	NHPC Dhauliganga	122	5
23	NTPC Rihand II	134	17
24	NTPC Sipat I	135	2,183
25	NTPC Rihand I	135	15
26	NTPC Rihand III	135	19
27	NTPC Korba III	137	488
28	NTPC Sipat II	139	1,248
29	NTPC Singrauli	139	30
30	NTPC Korba	139	3,243
31	Reliance UMPP, Sasan	141	10,422
32	Ranapratap Sagar HPS	151	176
33	Jawahar Sagar HPS	151	126

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
34	Koteshwar HPP	157	5
35	Amarkantak TPS Ph-III	159	1,424
36	Tehri HPS	161	12
37	Bansagar Ph-III HPS (Deolond)	161	90
38	NHDC Indira Sagar HPS	172	1,831
39	Rajghat HPS	173	33
40	NTPC Vidyachal IV	175	1,899
41	NTPC Vidyachal III	176	1,652
42	SJVN Rampur HPS	178	5
43	NTPC Vidyachal V Unit 1	179	947
44	Parbati III	184	10
45	NHPC Kishanganga	184	6
46	NTPC Vidyachal I	186	2,916
47	NTPC Vidyachal II	189	2,164
48	SGTPS Ph-III	199	3,499
49	NTPC Kahalgaon 2	212	519
50	NHPC Chamera III	212	4
51	SGTPS Ph-I & II	215	4,686
52	Marhikheda HPS	217	70
53	NHPC Sewa II	217	2
54	Satpura TPS Ph-IV	226	3,406
55	MB Power STPS	230	2,728
56	NHPC Uri II	237	4
57	NTPC Lara STPS, Raigarh, Unit I	241	597
58	NTPC Lara STPS, Raigarh, Unit II	241	431
59	Jhabua Power STPS, Unit-1	252	979
60	NTPC Koldam HPP I	254	7
61	Lanco Amarkantak TPS Unit 1	255	2,033
62	NHPC Dulhasti	256	7
63	Shri Singaji STPS Phase-3	264	8,234
64	NHDC Omkareshwar HPS	267	855
65	Satpura TPS Phase III	272	3,924
66	Shri Singaji STPS Phase 1& 2	278	7,530
67	NTPC Kawas GPP	284	718
68	NTPC Mouda II Unit 1	308	1,616
69	NTPC Firoz Gandhi Unchahar II	318	4
70	NTPC Firoz Gandhi Unchahar IV	319	9
71	NTPC Firoz Gandhi Unchahar III	319	8
72	NTPC Firoz Gandhi Unchahar I	321	2
73	NTPC Anta GPP	328	8
74	NTPC Mouda I	331	1,229
75	NTPC IGPS I Jhajjar	344	13
76	Jaypee Bina Power	345	2,372
77	BLA Power	367	69
78	NTPC NCTP Dadri II	367	16
79	NTPC Gadarwara STPS, Unit-1	380	2,887

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
80	NTPC Gadarwara STPS, Unit-2	380	2,756
81	NTPC Khargone STPS, Unit-I	380	2,316
82	NTPC Khargone STPS, Unit-II	380	2,185
83	NTPC Gandhar GPP	382	601
84	NTPC Dadri GPP	383	15
85	NTPC Auraiya GPP	391	12
86	Essar Power STPS	395	421
87	NTPC Solapur STPS, Unit-1	447	2,208
88	NTPC Singrauli Small HPP	531	0
89	Torrent Power	546	384
Total			106,272

6.3 Power Purchase Cost for MP

6.3.1 The following tables indicates the Total costs (fixed costs and variable costs) of Stations allocated to MP State and the three Discoms before consideration of MPPMCL Cost and treatment of surplus energy:

Table 95: Gross Power Purchase Cost for MP State

Sr. No	Particulars	Power Purchase Cost- MP State (Rs Crores)			FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
I	Central Sector	2,685	4,198	6,883	4,300	4,307	8,414	5,075	3,777	8,667			
1	NTPC Korba	229	459	688	224	480	703	222	452	673			
2	NTPC Korba III	71	72	143	66	68	134	67	67	133			
3	NTPC Vindyachal I	248	508	755	244	531	775	249	543	791			
4	NTPC Vindyachal II	156	379	535	137	369	506	150	408	558			
5	NTPC Vindyachal III	181	300	481	172	316	488	172	291	462			
6	NTPC Vindyachal IV	308	349	657	306	375	680	296	333	629			
7	NTPC Vindyachal V Unit 1	158	164	322	160	172	333	156	169	325			
8	NTPC Sipat I	298	308	606	289	320	609	281	294	575			
9	NTPC Sipat II	162	181	343	153	194	347	154	174	327			
10	NTPC Mouda I	208	199	407	203	160	363	189	-	189			
11	NTPC Mouda II Unit 1	191	227	418	249	160	409	256	3	258			
12	NTPC Kawas GPP	84	110	194	85	74	159	87	17	104			
13	NTPC Gandhar GPP	89	60	149	90	10	100	90	-	90			
14	NTPC Solapur STPS, Unit-1	230	119	350	351	23	374	314	-	314			
15	NTPC Gadarwara STPS, Unit-1	-	-	-	491	138	629	590	-	590			
16	NTPC Gadarwara STPS, Unit-2	-	-	-	344	-	344	590	-	590			
17	NTPC Lara STPS, Raigarh, Unit I	-	-	-	57	59	116	97	144	241			
18	NTPC Lara STPS, Raigarh, Unit II	-	-	-	41	22	63	71	104	175			
19	NTPC Khargone STPS, Unit-I	-	-	-	283	-	283	487	-	487			
20	NTPC Khargone STPS, Unit-II	-	-	-	283	-	283	487	-	487			
21	TAPP Tarapur	-	511	511	-	498	498	-	470	470			
22	KAPP Kakrapar	-	53	53	-	159	159	-	181	181			

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
23	RAPP Rawabhatta	-	4	4	-	5	5	-	5	5
24	NAPP Narora	-	2	2	-	2	2	-	2	2
25	NTPC Auraiya GPP	1	3	4	1	1	2	1	-	1
26	NTPC Dadri GPP	1	6	7	1	4	5	1	-	1
27	NTPC Anta GPP	0	3	4	1	2	2	1	-	1
28	NTPC Firoz Gandhi Unchahar I	0	18	18	0	10	11	0	-	0
29	NTPC Firoz Gandhi Unchahar II	1	16	17	1	12	13	0	-	0
30	NTPC Firoz Gandhi Unchahar III	0	5	6	1	5	6	1	-	1
31	NTPC Firoz Gandhi Unchahar IV	0	0	1	1	7	8	1	-	1
32	NTPC Rihand I	1	3	4	1	3	5	1	2	3
33	NTPC Rihand II	1	3	4	1	3	4	1	2	3
34	NTPC Rihand III	2	3	6	3	4	7	3	3	5
35	NTPC NCTP Dadri II	2	2	4	2	4	6	2	-	2
36	NTPC Singrauli	2	7	9	2	10	12	2	4	6
37	NTPC IGPS I Jhajjar	2	23	25	2	8	10	2	-	2
38	NTPC Kahalgaon 2	57	98	155	56	99	155	56	110	166
				-		-	-			-
	MP Genco-Thermal & Hydel	3,434	5,726	9,159	4,003	5,026	9,029	4,626	5,363	9,989
39	Amarkantak TPS Ph-III	215	228	443	211	253	464	211	227	438
40	Satpura TPS Phase III	314	936	1,250	350	557	908	408	420	827
41	Satpura TPS Ph-IV	382	958	1,340	525	684	1,209	673	769	1,442
42	SGTPS Ph-I & II	405	706	1,111	337	765	1,103	360	1,008	1,368
43	SGTPS Ph-III	693	711	1,405	452	615	1,067	386	695	1,081
44	Shri Singaji STPS Phase 1 & 2	1,058	1,597	2,655	916	1,035	1,951	1,176	516	1,692

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
45	Shri Singaji STPS Phase-3	243	411	654	1,044	920	1,965	1,192	1,531	2,723
46	Rani Awanti Bai Sagar, Bargi HPS	9	20	29	11	20	31	14	20	34
47	Bansagar Ph I HPS (Tons)	57	47	104	90	66	156	-	63	63
48	Bansagar Ph-II HPS (Silpara)	5	3	8	2	5	7	-	7	7
49	Bansagar Ph-III HPS (Deolond)	12	14	26	5	21	26	125	14	139
50	Bansagar Ph-IV HPS (Jhinna)	8	7	15	12	7	20	15	7	23
51	Birsinghpur HPS	1	3	4	3	3	7	5	3	8
52	Marhikheda HPS	15	19	35	25	17	42	33	15	48
53	Rajghat HPS	2	7	9	4	4	8	6	6	12
54	Gandhisagar HPS	4	10	14	4	11	15	6	12	18
55	Ranapratap Sagar HPS	-	25	25	3	32	35	5	27	31
56	Jawahar Sagar HPS	-	18	18	-	3	3	-	19	19
57	Pench HPS	10	4	14	8	6	15	12	6	18
JV Hydel & Other Hydel		595	561	1,156	973	808	1,781	1,124	584	1,708
58	NHDC Indira Sagar HPS	-	-	-	293	216	509	503	315	818
59	NHDC Omkareshwar HPS	-	-	-	230	109	339	395	100	495
60	Sardar Sarovar HPS	-	-	-	119	88	208	205	113	318
61	SJVN Rampur HPS	1	0	1	1	1	2	1	1	2
62	SJVN Jhakri HPS	1	1	2	2	2	5	3	2	5
63	Tehri HPS	1	1	2	3	0	3	4	2	6
64	Koteshwar HPP	0	0	1	1	0	1	1	1	2
65	Parbati III	0	0	1	1	0	1	0	2	2
66	NHPC Chamera II	0	0	1	1	0	1	1	1	2
67	NHPC Chamera III	1	0	1	1	0	1	1	1	2

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
68	NHPC Dulhasti	1	1	2	2	1	3	3	2	5
69	NHPC Dhauliganga	0	0	1	1	0	1	1	1	1
70	NHPC Sewa II	0	0	1	1	0	1	1	0	2
71	NHPC Uri II	0	0	1	1	1	2	1	1	2
72	NHPC Kishanganga	0	0	1	1	0	1	1	1	2
73	NTPC Koldam HPP I	1	1	2	2	1	2	2	2	4
74	NTPC Singrauli Small HPP	-	0	0	-	0	0	-	-	-
75	Rihand HPS	-	-	-	-	-	-	-	3	3
76	Matatila HPS	-	-	-	-	-	-	-	1	1
77	MTOA (5 years) from RVPNL (Hydel)	-	-	-	-	-	-	-	37	37
78	ISP	225	301	526	138	220	359	-	-	-
79	OSP	184	221	406	87	96	183	-	-	-
80	SSP	178	27	205	89	71	160	-	-	-
81	ISP NVDA	-	4	4	-	0	0	-	-	-
82	Bargi NVDA	-	-	-	-	-	-	-	-	-
	DVC	-	-	-	-	-	-	-	-	-
83	DVC MTPS	-	-	-	-	-	-	-	-	-
84	DVC CTPS	-	-	-	-	-	-	-	-	-
85	DVC DTPS	-	-	-	-	-	-	-	-	-
	IPPs	2,275	3,457	5,732	2,236	3,063	5,299	2,281	3,017	5,297
86	Torrent Power	67	27	95	60	11	70	62	-	62
87	Lanco Amarkantak TPS Unit 1	250	454	704	247	506	753	247	519	766
88	Reliance UMPP, Sasan	166	1,605	1,771	167	1,435	1,602	167	1,466	1,632

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
88	Jaiprakash Power STPS, Nigri	645	183	828	630	135	765	709	157	866
89	MB Power STPS	481	510	991	439	467	907	409	628	1,037
90	Jhabua Power STPS, Unit-1	188	184	372	189	218	407	167	246	413
90	BLA Power	9	5	14	15	9	24	15	-	15
91	Jaypee Bina Power	468	471	939	489	276	765	505	-	505
92	Essar Power STPS	-	18	18	-	7	7	-	-	-
	Renewables									
93	Solar	-	1,011	1,011	-	870	870	-	1,300	1,300
94	Other than Solar	-	-	-	-	2,490	2,490	-	2,605	2,605
95	Mini/Micro Hydel	-	-	-	-	7	7	-	5	5
	Total	8,988.21	14,952.49	23,940.70	11,511.71	16,570.98	27,889.28	13,105.79	16,650.18	29,570.50

Table 96: Gross Power Purchase Cost for East Discom

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
I	Central Sector	818	1,283	2,101	1,295	1,305	2,600	1,561	1,063	2,624
1	NTPC Korba	70	140	210	68	145	213	68	139	208
2	NTPC Korba III	22	22	44	20	21	41	21	20	41
3	NTPC Vidyachal I	76	155	230	74	161	234	76	136	212
4	NTPC Vidyachal II	48	116	163	42	111	153	46	102	148
5	NTPC Vidyachal III	55	92	147	52	96	148	53	73	126
6	NTPC Vidyachal IV	94	106	200	93	114	207	91	102	193

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
7	NTPC Vindyachal V Unit 1	48	50	99	49	52	101	48	52	100
8	NTPC Sipat I	91	94	185	88	97	185	87	90	177
9	NTPC Sipat II	49	55	105	46	59	105	47	53	101
10	NTPC Mouda I	63	61	125	62	49	110	58	-	58
11	NTPC Mouda II Unit 1	58	69	127	75	49	124	79	1	79
12	NTPC Kawas GPP	26	34	60	26	22	48	27	5	32
13	NTPC Gandhar GPP	27	18	46	27	3	30	28	-	28
14	NTPC Solapur STPS, Unit-1	70	37	107	107	7	114	97	-	97
15	NTPC Gadarwara STPS, Unit-1	-	-	-	148	42	189	182	-	182
16	NTPC Gadarwara STPS, Unit-2	-	-	-	101	-	101	182	-	182
17	NTPC Lara STPS, Raigarh, Unit I	-	-	-	17	18	34	30	29	59
18	NTPC Lara STPS, Raigarh, Unit II	-	-	-	12	6	19	22	21	43
19	NTPC Khargone STPS, Unit-I	-	-	-	84	-	84	150	-	150
20	NTPC Khargone STPS, Unit-II	-	-	-	84	-	84	150	-	150
21	TAPP Tarapur	-	157	157	-	152	152	-	145	145
22	KAPP Kakrapar	-	16	16	-	48	48	-	56	56
23	RAPP Rawabhatta	-	1	1	-	1	1	-	2	2
24	NAPP Narora	-	1	1	-	1	1	-	1	1
25	NTPC Auraiya GPP	0	1	1	0	0	1	0	-	0
26	NTPC Dadri GPP	0	2	2	0	1	1	0	-	0
27	NTPC Anta GPP	0	1	1	0	0	1	0	-	0
28	NTPC Firoz Gandhi Unchahar I	0	5	5	0	3	3	0	-	0
29	NTPC Firoz Gandhi Unchahar II	0	5	5	0	4	4	0	-	0
30	NTPC Firoz Gandhi Unchahar III	0	2	2	0	2	2	0	-	0

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
31	NTPC Firoz Gandhi Unchahar IV	0	0	0	0	2	3	0	-	0
32	NTPC Rihand I	0	1	1	0	1	1	0	1	1
33	NTPC Rihand II	0	1	1	0	1	1	0	1	1
34	NTPC Rihand III	1	1	2	1	1	2	1	1	2
35	NTPC NCTP Dadri II	1	1	1	1	1	2	1	-	1
36	NTPC Singrauli	1	2	3	1	3	4	1	1	2
37	NTPC IGPS I Jhajjar	1	7	8	1	2	3	1	-	1
38	NTPC Kahalgaon 2	17	30	47	17	30	47	17	34	51
II	MP Genco-Thermal & Hydel	1,046	1,741	2,787	1,208	1,518	2,726	1,423	1,342	2,765
39	Amarkantak TPS Ph-III	66	70	135	64	77	141	65	69	134
40	Satpura TPS Phase III	96	285	381	106	169	275	125	123	248
41	Satpura TPS Ph-IV	116	292	408	158	209	366	207	154	361
42	SGTPS Ph-I & II	124	216	340	102	230	332	111	309	420
43	SGTPS Ph-III	211	217	428	138	186	324	119	139	258
44	Shri Singaji STPS Phase 1& 2	323	486	809	275	309	584	362	150	512
45	Shri Singaji STPS Phase-3	72	122	194	315	279	595	367	337	704
46	Rani Awanti Bai Sagar, Bargi HPS	3	6	9	3	6	9	4	6	10
47	Bansagar Ph I HPS (Tons)	17	14	32	27	20	47	-	19	19
48	Bansagar Ph-II HPS (Silpara)	1	1	2	1	2	2	-	2	2
49	Bansagar Ph-III HPS (Deolond)	4	5	8	1	6	8	38	5	43
50	Bansagar Ph-IV HPS (Jhinna)	3	2	5	4	2	6	5	2	7
51	Birsinghpur HPS	0	1	1	1	1	2	1	1	2
52	Marhikheda HPS	5	6	11	8	5	13	10	5	15
53	Rajghat HPS	1	2	3	1	1	2	2	2	4

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
54	Gandhisagar HPS	1	3	4	1	3	5	2	4	5
55	Ranapratap Sagar HPS	-	7	7	1	10	10	1	8	10
56	Jawahar Sagar HPS	-	5	5	-	1	1	-	6	6
57	Pench HPS	3	1	4	2	2	4	4	2	5
III	JV Hydel & Other Hydel	182	172	354	294	247	541	346	178	524
58	NHDC Indira Sagar HPS	-	-	-	86	64	150	155	97	252
59	NHDC Omkareshwar HPS	-	-	-	68	32	100	122	29	151
60	Sardar Sarovar HPS	-	-	-	35	26	61	63	35	98
61	SJVN Rampur HPS	0	0	0	0	0	1	0	0	1
62	SJVN Jhakri HPS	0	0	1	1	1	1	1	1	2
63	Tehri HPS	0	0	1	1	0	1	1	1	2
64	Koteshwar HPP	0	0	0	0	0	0	0	0	1
65	Parbati III	0	0	0	0	0	0	0	1	1
66	NHPC Chamera II	0	0	0	0	0	0	0	0	0
67	NHPC Chamera III	0	0	0	0	0	0	0	0	1
68	NHPC Dulhasti	0	0	1	1	0	1	1	1	1
69	NHPC Dhauliganga	0	0	0	0	0	0	0	0	0
70	NHPC Sewa II	0	0	0	0	0	0	0	0	0
71	NHPC Uri II	0	0	0	0	0	0	0	0	1
72	NHPC Kishanganga	0	0	0	0	0	0	0	0	1
73	NTPC Koldam HPP I	0	0	1	0	0	1	1	1	1
74	NTPC Singrauli Small HPP	-	0	0	-	0	0	-	-	-
75	Rihand HPS	-	-	-	-	-	-	-	1	1
76	Matatila HPS	-	-	-	-	-	-	-	0	0

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
77	MTOA (5 years) from RVPNL (Hydel)				-	-	-	-	11	11
78	ISP	69	92	161	44	70	114	-	-	-
79	OSP	57	68	124	27	30	58	-	-	-
80	SSP	54	8	62	28	23	51	-	-	-
81	ISP NVDA	-	1	1	-	0	0	-	-	-
82	Bargi NVDA	-	-	-	-	-	-	-	-	-
IV	DVC				-	-	-	-	-	-
83	DVC MTPS	-	-	-	-	-	-	-	-	-
84	DVC CTPS	-	-	-	-	-	-	-	-	-
85	DVC DTPS	-	-	-	-	-	-	-	-	-
V	IPPs	693	1,054	1,747	678	929	1,607	701	615	1,316
86	Torrent Power	21	8	29	18	3	21	19	-	19
87	Lanco Amarkantak TPS Unit 1	76	137	214	75	153	228	76	104	180
88	Reliance UMPP, Sasan	51	489	540	51	436	487	51	264	315
89	Jaiprakash Power STPS, Nigri	197	56	253	190	41	231	218	39	257
90	MB Power STPS	147	156	302	134	142	276	126	132	258
91	Jhabua Power STPS, Unit-1	57	56	113	58	66	123	51	76	127
92	BLA Power	3	2	4	5	3	7	5	-	5
93	Jaypee Bina Power	142	144	286	148	83	231	155	-	155
94	Essar Power STPS	-	6	6	-	2	2	-	-	-
VI	Renewables									
95	Solar	-	308	308	-	257	257	-	400	400
96	Other than Solar		743	743	-	752	752	-	801	801

Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
97	Mini/Micro Hydel			-	-	2	2	-	1	1
	Total	2,739.33	5,300.20	8,039.53	3,474.80	5,011.09	8,485.90	4,031.06	4,400.34	8,431.41

Table 97: Gross Power Purchase Cost for Central Discom

Power Purchase Cost- Central Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
I	Central Sector	918	1,442	2,360	1,324	1,322	2,646	1,607	1,063	2,670
1	NTPC Korba	78	157	235	69	148	217	70	143	213
2	NTPC Korba III	24	25	49	20	21	41	21	21	42
3	NTPC Vindyachal I	85	174	259	75	163	238	79	119	198
4	NTPC Vindyachal II	53	130	183	42	113	156	47	102	149
5	NTPC Vindyachal III	62	103	165	53	97	150	54	64	118
6	NTPC Vindyachal IV	105	119	225	94	115	209	94	105	199
7	NTPC Vindyachal V Unit 1	54	57	111	49	53	102	49	53	103
8	NTPC Sipat I	102	106	208	89	98	187	89	93	182
9	NTPC Sipat II	56	62	118	47	60	107	49	55	104
10	NTPC Mouda I	71	69	140	62	48	111	60	-	60
11	NTPC Mouda II Unit 1	65	78	144	77	48	125	81	1	82
12	NTPC Kawas GPP	29	38	67	26	22	48	28	5	33
13	NTPC Gandhar GPP	30	21	51	28	3	31	28	-	28
14	NTPC Solapur STPS, Unit-1	78	41	120	108	7	115	99	-	99

Power Purchase Cost- Central Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
15	NTPC Gadarwara STPS, Unit-1	-	-	-	153	42	195	187	-	187
16	NTPC Gadarwara STPS, Unit-2	-	-	-	106	-	106	187	-	187
17	NTPC Lara STPS, Raigarh, Unit I	-	-	-	17	18	36	31	29	60
18	NTPC Lara STPS, Raigarh, Unit II	-	-	-	13	7	19	22	26	48
19	NTPC Khargone STPS, Unit-I	-	-	-	87	-	87	154	-	154
20	NTPC Khargone STPS, Unit-II	-	-	-	87	-	87	154	-	154
21	TAPP Tarapur	-	176	176	-	154	154	-	149	149
22	KAPP Kakrapar	-	18	18	-	49	49	-	57	57
23	RAPP Rawabhatta	-	1	1	-	1	1	-	2	2
24	NAPP Narora	-	1	1	-	1	1	-	1	1
25	NTPC Auraiya GPP	0	1	1	0	0	1	0	-	0
26	NTPC Dadri GPP	0	2	2	0	1	1	0	-	0
27	NTPC Anta GPP	0	1	1	0	0	1	0	-	0
28	NTPC Firoz Gandhi Unchahar I	0	6	6	0	3	3	0	-	0
29	NTPC Firoz Gandhi Unchahar II	0	5	6	0	4	4	0	-	0
30	NTPC Firoz Gandhi Unchahar III	0	2	2	0	2	2	0	-	0
31	NTPC Firoz Gandhi Unchahar IV	0	0	0	0	2	3	0	-	0
32	NTPC Rihand I	0	1	1	0	1	1	0	1	1
33	NTPC Rihand II	0	1	2	0	1	1	0	1	1
34	NTPC Rihand III	1	1	2	1	1	2	1	1	2
35	NTPC NCTP Dadri II	1	1	2	1	1	2	1	-	1
36	NTPC Singrauli	1	2	3	1	3	4	1	1	2
37	NTPC IGPS I Jhajjar	1	8	9	1	2	3	1	-	1
38	NTPC Kahalgaon 2	20	34	53	17	30	48	18	35	53

Power Purchase Cost- Central Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
II	MP Genco-Thermal & Hydel	1,170	1,951	3,122	1,231	1,536	2,763	1,465	1,495	2,960
39	Amarkantak TPS Ph-III	74	78	152	65	78	143	67	71	138
40	Satpura TPS Phase III	108	320	427	108	170	278	129	130	260
41	Satpura TPS Ph-IV	131	328	459	161	210	372	213	192	405
42	SGTPS Ph-I & II	140	244	383	103	234	338	114	318	432
43	SGTPS Ph-III	237	243	480	139	189	328	122	208	331
44	Shri Singaji STPS Phase 1& 2	360	543	903	280	312	592	372	159	532
45	Shri Singaji STPS Phase-3	80	135	214	322	282	604	378	352	730
46	Rani Awanti Bai Sagar, Bargi HPS	3	7	10	3	6	9	4	6	11
47	Bansagar Ph I HPS (Tons)	20	16	36	28	20	48	-	20	20
48	Bansagar Ph-II HPS (Silpara)	2	1	3	1	2	2	-	2	2
49	Bansagar Ph-III HPS (Deolond)	4	5	9	1	7	8	40	5	44
50	Bansagar Ph-IV HPS (Jhinna)	3	2	5	4	2	6	5	2	7
51	Birsinghpur HPS	0	1	1	1	1	2	1	1	2
52	Marhikheda HPS	5	7	12	8	5	13	10	5	15
53	Rajghat HPS	1	2	3	1	1	2	2	2	4
54	Gandhisagar HPS	1	3	5	1	3	5	2	4	6
55	Ranapratap Sagar HPS	-	8	8	1	10	11	1	8	10
56	Jawahar Sagar HPS	-	6	6	-	1	1	-	6	6
57	Pench HPS	3	1	5	3	2	-	4	2	6
III	JV Hydel & Other Hydel	205	193	398	301	254	555	356	184	540
58	NHDC Indira Sagar HPS	-	-	-	90	66	156	159	100	259
59	NHDC Omkareshwar HPS	-	-	-	71	33	104	125	31	156
60	Sardar Sarovar HPS	-	-	-	37	27	64	65	36	101

Power Purchase Cost- Central Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
61	SJVN Rampur HPS	0	0	0	0	0	0	0	0	1
62	SJVN Jhakri HPS	0	0	1	1	1	1	1	1	2
63	Tehri HPS	0	0	1	1	0	1	1	1	2
64	Koteshwar HPP	0	0	0	0	0	0	0	0	1
65	Parbati III	0	0	0	0	0	0	0	0	1
66	NHPC Chamera II	0	0	0	0	0	0	0	0	0
67	NHPC Chamera III	0	0	0	0	0	0	0	0	1
68	NHPC Dulhasti	0	0	1	1	0	1	1	1	1
69	NHPC Dhauliganga	0	0	0	0	0	0	0	0	0
70	NHPC Sewa II	0	0	0	0	0	0	0	0	0
71	NHPC Uri II	0	0	0	0	0	0	0	0	1
72	NHPC Kishanganga	0	0	0	0	0	0	0	0	1
73	NTPC Koldam HPP I	0	0	1	0	0	1	1	1	1
74	NTPC Singrauli Small HPP	-	0	0	-	0	-	-	-	-
75	Rihand HPS	-	-	-	-	-	-	-	1	1
76	Matatila HPS	-	-	-	-	-	-	-	0	0
77	MTOA (5 years) from RVPNL (Hydel)			-	-	-	-	-	12	12
78	ISP	77	104	181	43	71	115	-	-	-
79	OSP	63	76	140	27	30	57	-	-	-
80	SSP	61	9	70	28	23	51	-	-	-
81	ISP NVDA	-	1	1	-	0	0	-	-	-
82	Bargi NVDA	-	-	-	-	-	-	-	-	-
IV	DVC	-	-	-	-	-	-	-	-	-

Power Purchase Cost- Central Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
83	DVC MTPS	-	-	-	-	-	-	-	-	-
84	DVC CTPS	-	-	-	-	-	-	-	-	-
85	DVC DTSPS	-	-	-	-	-	-	-	-	-
V	IPPs	778	1,182	1,960	688	938	1,626	722	898	1,620
86	Torrent Power	23	9	32	18	3	22	20	-	20
87	Lanco Amarkantak TPS Unit 1	86	154	240	76	155	231	78	104	182
88	Reliance UMPP, Sasan	57	549	606	51	441	492	53	469	522
89	Jaiprakash Power STPS, Nigri	221	63	284	194	41	235	225	39	264
90	MB Power STPS	165	174	339	135	143	279	130	207	337
91	Jhabua Power STPS, Unit-1	64	63	126	58	67	125	53	78	131
92	BLA Power	3	2	5	5	3	7	5	-	5
93	Jaypee Bina Power	160	162	322	151	83	233	160	-	160
94	Essar Power STPS	-	6	6	-	2	2	-	-	-
VI	Renewables			-	-	1,029	1,029	-	1,238	1,238
95	Solar	-	344	344	-	267	267	-	411	411
96	Other than Solar		840	840	-	759	759	-	825	825
97	Mini/Micro Hydel			-	-	2	2	-	2	2
	Total	3,070.93	5,952.53	9,023.47	3,544.14	5,079.46	8,619.09	4,149.93	4,878.28	9,028.21

Table 98: Gross Power Purchase Cost for West Discom

Sr.no.	Particulars	Power Purchase Cost- West Discom (Rs Crores)								
		FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
I	Central Sector	949	1,473	2,422	1,680	1,680	3,360	1,907	1,651	3,558
1	NTPC Korba	81	162	243	87	186	273	83	169	253
2	NTPC Korba III	25	25	50	26	27	53	25	25	50
3	NTPC Vindyachal I	87	179	266	95	207	302	93	288	381
4	NTPC Vindyachal II	55	133	188	53	144	197	56	204	260
5	NTPC Vindyachal III	64	105	169	67	123	190	65	154	219
6	NTPC Vindyachal IV	109	123	232	119	146	265	111	126	237
7	NTPC Vindyachal V Unit 1	56	57	113	62	67	129	59	64	123
8	NTPC Sipat I	105	108	213	113	124	237	106	111	217
9	NTPC Sipat II	57	63	120	60	75	135	58	65	123
10	NTPC Mouda I	74	69	143	79	63	142	71	-	71
11	NTPC Mouda II Unit 1	68	79	148	97	64	160	96	1	97
12	NTPC Kawas GPP	30	38	68	33	30	63	33	7	40
13	NTPC Gandhar GPP	32	21	53	35	4	39	34	-	34
14	NTPC Solapur STPS, Unit-1	82	41	123	136	9	145	118	-	118
15	NTPC Gadarwara STPS, Unit-1	-	-	-	191	54	245	222	-	222
16	NTPC Gadarwara STPS, Unit-2	-	-	-	137	-	137	222	-	222
17	NTPC Lara STPS, Raigarh, Unit I	-	-	-	22	24	46	37	86	123
18	NTPC Lara STPS, Raigarh, Unit II	-	-	-	16	9	25	27	57	84
19	NTPC Khargone STPS, Unit-I	-	-	-	113	-	113	183	-	183
20	NTPC Khargone STPS, Unit-II	-	-	-	113	-	113	183	-	183
21	TAPP Tarapur	-	179	179	-	193	193	-	176	176

Power Purchase Cost- West Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
22	KAPP Kakrapar	-	19	19	-	62	62	-	68	68
23	RAPP Rawabhatta	-	1	1	-	2	2	-	2	2
24	NAPP Narora	-	1	1	-	1	1	-	1	1
25	NTPC Auraiya GPP	0	1	1	0	0	1	0	-	0
26	NTPC Dadri GPP	0	2	3	0	1	2	0	-	0
27	NTPC Anta GPP	0	1	1	0	1	1	0	-	0
28	NTPC Firoz Gandhi Unchahar I	0	6	6	0	4	4	0	-	0
29	NTPC Firoz Gandhi Unchahar II	0	6	6	0	5	5	0	-	0
30	NTPC Firoz Gandhi Unchahar III	0	2	2	0	2	2	0	-	0
31	NTPC Firoz Gandhi Unchahar IV	0	0	0	0	3	3	0	-	0
32	NTPC Rihand I	0	1	1	0	1	2	0	1	1
33	NTPC Rihand II	0	1	2	0	1	2	0	1	1
34	NTPC Rihand III	1	1	2	1	2	3	1	1	2
35	NTPC NCTP Dadri II	1	1	2	1	1	2	1	-	1
36	NTPC Singrauli	1	2	3	1	4	4	1	2	2
37	NTPC IGPS I Jhajjar	1	8	8	1	3	4	1	-	1
38	NTPC Kahalgaon 2	20	35	55	22	38	60	21	41	63
II	MP Genco-Thermal & Hydel	1,218	2,033	3,246	1,564	1,972	3,530	1,738	2,526	4,258
39	Amarkantak TPS Ph-III	75	81	156	82	98	180	79	86	165
40	Satpura TPS Phase III	111	331	441	137	218	355	153	167	320
41	Satpura TPS Ph-IV	135	338	473	206	265	471	253	423	676
42	SGTPS Ph-I & II	142	247	388	132	301	433	135	382	517
43	SGTPS Ph-III	245	252	497	174	240	414	145	347	492
44	Shri Singaji STPS Phase 1& 2	375	568	943	361	414	775	442	206	648

Power Purchase Cost- West Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
45	Shri Singaji STPS Phase-3	92	155	247	406	359	765	448	842	1,290
46	Rani Awanti Bai Sagar, Bargi HPS	3	7	10	4	8	12	5	7	12
47	Bansagar Ph I HPS (Tons)	20	16	36	35	26	61	-	23	23
48	Bansagar Ph-II HPS (Silpara)	2	1	3	1	2	3	-	2	2
49	Bansagar Ph-III HPS (Deolond)	4	5	9	2	8	10	47	5	52
50	Bansagar Ph-IV HPS (Jhinna)	3	3	6	5	3	8	6	3	9
51	Birsinghpur HPS	0	1	1	1	1	3	2	1	3
52	Marhikheda HPS	5	7	12	10	6	16	12	6	18
53	Rajghat HPS	1	2	3	2	2	3	2	2	4
54	Gandhisagar HPS	1	4	5	2	4	6	2	5	7
55	Ranapratap Sagar HPS	-	9	9	1	13	14	2	10	12
56	Jawahar Sagar HPS	-	7	7	-	1	1	-	7	7
57	Pench HPS	3	1	4	3	3	6	4	2	6
III	JV Hydel & Other Hydel	208	197	405	378	307	685	422	221	631
58	NHDC Indira Sagar HPS	-	-	-	116	86	202	189	119	307
59	NHDC Omkareshwar HPS	-	-	-	91	45	136	149	39	188
60	Sardar Sarovar HPS	-	-	-	47	35	82	77	42	119
61	SJVN Rampur HPS	0	0	0	0	0	1	0	0	1
62	SJVN Jhakri HPS	0	0	1	1	1	2	1	1	2
63	Tehri HPS	0	0	1	1	0	1	2	1	2
64	Koteshwar HPP	0	0	0	0	0	1	1	0	1
65	Parbati III	0	0	0	0	0	0	0	1	1
66	NHPC Chamera II	0	0	0	0	0	0	0	0	1
67	NHPC Chamera III	0	0	0	0	0	1	0	0	1

Power Purchase Cost- West Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
68	NHPC Dulhasti	0	0	1	1	0	1	1	1	2
69	NHPC Dhauliganga	0	0	0	0	0	0	0	0	1
70	NHPC Sewa II	0	0	0	0	0	0	0	0	1
71	NHPC Uri II	0	0	0	0	0	1	0	0	1
72	NHPC Kishanganga	0	0	0	0	0	0	0	0	1
73	NTPC Koldam HPP I	0	0	1	1	0	1	1	1	1
74	NTPC Singrauli Small HPP	-	0	-	-	0	-	-	-	1
75	Rihand HPS	-	-	-	-	-	-	-	1	1
76	Matatila HPS	-	-	-	-	-	-	-	0	0
77	MTOA (5 years) from RVPNL (Hydel)				-	-			14	14
78	ISP	78	105	184	51	79	130	-	-	-
79	OSP	64	78	142	33	35	68	-	-	-
80	SSP	63	10	72	33	25	58	-	-	-
81	ISP NVDA	-	2	2	-	0	0	-	-	-
82	Bargi NVDA	-	-	-	-	-	-	-	-	-
IV	DVC	-	-	-	-	-	-	-	-	-
83	DVC MTPS	-	-	-	-	-	-	-	-	-
84	DVC CTPS	-	-	-	-	-	-	-	-	-
85	DVC DTPS	-	-	-	-	-	-	-	-	-
IV	IPPs	803	1,221	2,024	870	1,196	3,255	857	1,505	2,362
86	Torrent Power	24	10	33	23	4	1,216	23	-	23
87	Lanco Amarkantak TPS Unit 1	88	162	250	96	199	294	93	312	404
88	Reliance UMPP, Sasan	59	567	625	65	558	623	63	733	795

Power Purchase Cost- West Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
89	Jaiprakash Power STPS, Nigri	227	64	291	246	53	299	266	79	345
90	MB Power STPS	170	180	350	170	182	352	154	289	443
91	Jhabua Power STPS, Unit-1	67	65	132	73	85	158	63	93	155
92	BLA Power	3	2	5	6	3	9	6	-	6
93	Jaypee Bina Power	166	165	331	190	110	301	190	-	190
94	Essar Power STPS	-	6	6	-	3	3	-	-	-
VI	Renewables			-			-	-	1,469	1,469
95	Solar	-	359	359	-	346	346	-	488	488
96	Other than Solar		851	851	-	978	978	-	979	979
97	Mini/Micro Hydel			-	-	3	3	-	2	2
	Total	3,177.94	6,133.92	9,307.04	4,492.77	6,480.42	12,156.22	4,924.79	7,371.55	12,296.35

6.3.1 The above costs after being adjusted for Surplus and MPPMCL cost are again distributed among the three Discoms according to the monthly energy requirement at state boundary for individual Discoms as shown below:

Table 99: Net Power Purchase Cost for MP State

Net Power Purchase Cost- MP State (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	Gross Power Purchase Cost	8,988	14,952	23,941	11,512	16,571	27,899	13,106	16,650	29,570
2	Less: Saving in variable cost of surplus energy from sale of surplus energy	-	1392	1392	-	487	487	-	670	670
3	Gross Power Purchase Cost after Saving in Variable Cost	8,988	13,560	22,549	11,512	16,084	27,402	13,106	15,981	28,901
4	Add: MPPMCL Cost	(38)		(38)	(210)		(210)	(238)		(238)
5	Net Power Purchase Cost	8,950	13,560	22,511	11,302	16,084	27,192	12,868	15,981	28,663

Table 100: Net Power Purchase Cost for East Discom

Net Power Purchase Cost- East Discom (Rs Crores)										
Sr.no.	Particulars	FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	Gross Power Purchase Cost	2,739	5,300	8,040	3,475	5,011	8,486	4,031	4,400	8,431
2	Less: Saving in variable cost of surplus energy from sale of surplus energy		423	423		149	149		205	205
3	Gross Power Purchase Cost after Saving in Variable Cost	2,739	4,878	7,617	3,475	4,862	8,337	4,031	4,195	8,226
4	Add: MPPMCL Cost	(12)		(12)	(64)		(64)	(73)		(73)
5	Net Power Purchase Cost	2,728	4,878	7,605	3,411	4,862	8,273	3,958	4,195	8,154

Table 101: Net Power Purchase Cost for Central Discom

Sr.no.	Particulars	Net Power Purchase Cost- Central Discom (Rs Crores)								
		FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	Gross Power Purchase Cost	3,071	5,953	9,023	3,544	5,079	8,619	4,150	4,878	9,028
2	Less: Saving in variable cost of surplus energy from sale of surplus energy		474	474		147	147		211	211
3	Gross Power Purchase Cost after Saving in Variable Cost	3,071	5,478	8,549	3,544	4,933	8,472	4,150	4,667	8,817
4	Add: MPPMCL Cost	(13)		(13)	(63)		(63)	(75)		(75)
5	Net Power Purchase Cost	3,058	5,478	8,536	3,481	4,933	8,409	4,075	4,667	8,742

Table 102: Net Power Purchase Cost for West Discom

Sr.no.	Particulars	Net Power Purchase Cost- West Discom (Rs Crores)								
		FY 2018-19 (Provisional)			FY 2019-20 (Re-Estimated)			FY 2020-21 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	Gross Power Purchase Cost	3,178	6,134	9,307	4,493	6,480	12,156	4,925	7,372	12,298
2	Less: Saving in variable cost of surplus energy from sale of surplus energy		495	495		191	191		253	253
3	Gross Power Purchase Cost after Saving in Variable Cost	3,178	5,639	8,812	4,493	6,289	11,965	4,925	7,118	12,045
4	Add: MPPMCL Cost	(13)		(13)	(82)		(82)	(90)		(90)
5	Net Power Purchase Cost	3,165	5,639	8,799	4,410	6,289	11,882	4,835	7,118	11,955

6.4 Estimation of Other Costs associated to Power Purchase.

6.4.1 Inter State Transmission Charges

6.4.1.1 The Inter-State transmission charges to be paid by MP consist of charges to be paid for Western, Eastern & Northern Regions transmission systems. The Petitioners have considered Inter-Transmission Charges for FY 2018-19 as per provisional figures from power purchase statement and the same cost has been considered for FY 2019-20 & FY 2020-21 as shown below:

Table 103: Inter State Transmission Charges (Rs Crores)

Sr. no	Particulars	FY 2018-19	FY 2019-20	FY 2020-21
1	East Discom	543.31	543.31	543.31
2	Central Discom	560.40	560.40	560.40
3	West Discom	671.12	671.12	671.12
4	MP State	1,774.83	1,774.83	1,774.83

6.4.1.2 These Inter-state transmission charges have been allocated to Discoms based on energy allocation from Central Generating Stations and availability at State Boundary.

6.4.1.3 Intra-State Transmission Charges including SLDC Charges and Cash Outflow for Terminal Benefits

6.4.1.4 The Petitioners have considered Intra-State Transmission Charges including SLDC Charges for FY 2018-19 as per the Orders of Hon'ble Commission in Petition no(s) 70/2016 and 69/2016 both dated 26th April 2017 i.e. Rs. 2,501.16 Crores and Rs. 2,718.82 Crores respectively as per the methodology adopted by Hon'ble Commission in its previous Tariff Order's. For FY 2019-20, in absence of Tariff Order on Intra-State Transmission Charges including SLDC Charges has been considered at the same level of FY 2018-19 i.e. Rs 2,718.82 Crores and for FY 2020-21 it has been escalated by a nominal growth rate of 2%.

6.4.1.5 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) of MPPRC (Terms and Conditions for Allowing Pension & Terminal Benefits Liabilities of Personnel of Board and Successor Entities) Regulations'2012.

6.4.1.6 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

6.4.1.7 Hon'ble Commission, in its Multi Year Transmission Tariff for the control period FY 2016-17 to FY 2018-19 passed in 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, 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"

Table 104: Intra State Transmission Charges including SLDC (Rs Crores)

Sr. no.	Particulars	FY 18-19 (MPERC order)	FY19-20	FY20-21
1	O&M Expenses	495.49	Order Still Awaited. So escalated @ 2%	Order Still Awaited. So escalated @ 2%
2	Expenses towards payment of PPP Licensee	37.80		
3	Depreciation	345.84		
4	Interest & Finance charges	143.12		
5	Interest on working capital	73.40		
6	Return on Equity	388.46		
7	MPERC Fees & Taxes	1.47		
8	Less Non-tariff income	(21.00)		
9	MPPTCL charges approved by MPERC (excluding terminal benefits)	1,464.58		
10	Terminal Benefits	1,282.38		
11	MPPTCL charges as approved in Petition No 02/2016 including AKVN	2,746.96		
11	MPPTCL charges as per Provisional for FY 2016-17 and approved in Petition No 69/2016 & 70/2016 for FY 2017-18 & FY 2018-19 for 3 Discom's	2,707.00		
12	MPPTCL Charges	2,707.00	2,761.14	2,816.36
13	SLDC Charges	11.82	12.06	12.30
13	Total Intra-State Transmission Charges allocated to Discoms including SLDC	2,718.82	2,773.20	2,828.66
a	East Discom	812.38	828.63	845.20
b	Central Discom	865.40	882.71	900.36
c	West Discom	1,041.04	1,061.86	1,083.09

6.4.1.8 The Intra-State Transmission charges have been allocated to Discoms based on energy availability at State Boundary.

6.5 MPPMCL Cost

6.5.1 The MPPMCL Cost for the FY 2018-19 to FY 2020-21 is as follows:

Table 105: MPPMCL Cost Details and Discom Wise Allocation

MPPMCL Cost (Rs Crores)														
Sr. no.	Particulars	FY 2018-19 (Actual)				FY 2019-20 (Re-Estimated)				FY 2020-21 (Projected)				
		MPPMCL	East	Central	West	MPPMCL	East	Central	West	MPPMCL	East	Central	West	
1	Revenue	573	174	198	201	627	192	189	246	690	211	218	261	
a	Revenue from Operations including Revenue Subsidy	2	1	1	1	-	-	-	-	-	-	-	-	
b	Other Income	570	173	197	200	627	192	189	246	690	211	218	261	
2	Expenses	535	162	184	188	417	128	126	164	452	138	143	171	
a	Purchase of Power from Other Sources	225	69	78	79	95	29	29	37	105	32	33	40	
b	Inter-State Transmission Charges	88	27	30	31	97	30	29	38	107	33	34	40	
c	Depreciation & Amortization Expenses	4	1	1	1	6	2	2	2	8	3	3	3	
d	Interest & Finance Charges	127	39	44	44	124	38	37	49	132	40	42	50	
e	Repairs & Maintenance	3	1	1	1	3	1	1	1	3	1	1	1	
f	Employee Costs	65	20	23	23	67	21	20	26	69	21	22	26	
g	Administration & General Expenses	19	6	7	7	21	7	6	8	23	7	7	9	
h	Other Expenses	3	1	1	1	4	1	1	1	4	1	1	1	
	(Profit) / Loss for the Period	(38)	(12)	(13)	(13)	(210)	(64)	(63)	(82)	(238)	(73)	(75)	(90)	

6.6 Total Power Purchase Cost

6.6.1 Based on the various cost components discussed above, the total power purchase cost for MP state and for each of the Discoms is indicated in the below table:

Table 106: Total Power Purchase Cost

Sr.no.	Particulars	UoM	FY 2018-19 (Provisional)				FY 2019-20 (Re-Estimate)				FY 2020-21 (Projected)			
			MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom
A Ex- Bus Net Power Purchase Cost Excluding Transmission Charges (Inter, Intra & SLDC) etc.														
i	Quantum	MUs	87,475	26,664	29,912	30,899	69,942	21,118	21,477	27,347	75,517	23,119	23,841	28,557
ii	Fixed Cost	Rs Crores	8,988	2,739	3,071	3,178	11,512	3,475	3,544	4,493	13,106	4,031	4,150	4,925
iii	Variable Cost	Rs Crores	17,544	5,348	6,006	6,190	15,077	4,959	5,031	5,088	16,518	4,360	4,837	7,322
iv	MPPMCL Cost	Rs Crores	(38)	(12)	(13)	(13)	(210)	(64)	(63)	(82)	(238)	(73)	(75)	(90)
v	Total Cost	Rs Crores	26,495	8,076	9,064	9,355	26,379	8,369	8,512	9,498	29,386	8,318	8,911	12,156
vi	Average Cost	Paisa/kWh	303	303	303	303	377	396	396	347	389	360	374	426
B Inter State Transmission														
i	Losses	MUs	1,189	380	404	404	1,338	406	407	525	1,329	404	426	499
ii	Charges- Fixed	Rs Crores	1,775	543	560	671	1,775	543	560	671	1,775	543	560	671
C Power Purchase Cost at State Boundary														
i	Quantum	MUs	86,286	26,284	29,508	30,495	68,604	20,712	21,070	26,822	74,188	22,714	23,415	28,058
ii	Fixed Cost	Rs Crores	10,763	3,283	3,631	3,849	13,287	4,018	4,105	5,164	14,881	4,574	4,710	5,596
iii	Variable Cost	Rs Crores	17,544	5,348	6,006	6,190	15,077	4,959	5,031	5,088	16,518	4,360	4,837	7,322
iv	MPPMCL Cost	Rs Crores	(38)	(12)	(13)	(13)	(210)	(64)	(63)	(82)	(238)	(73)	(75)	(90)
v	Total Cost	Rs Crores	28,269	8,619	9,624	10,026	28,154	8,912	9,072	10,169	31,161	8,861	9,472	12,828
vi	Average Cost	Paisa/kWh	328	328	326	329	410	430	431	379	420	390	405	457
D Intra State Transmission including SLDC														
i	Losses	MUs	1,755	539	595	622	1,729	529	521	679	2,333	631	644	1,058
ii	Charges- Fixed	Rs Crores	2,501	747	796	958	2,773	829	883	1,062	2,829	845	900	1,083

Sr.no.	Particulars	UoM	FY 2018-19 (Provisional)				FY 2019-20 (Re-Estimate)				FY 2020-21 (Projected)			
			MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom
E	Power Purchase Cost at Discom Boundary	-	-	-	-	-	-	-	-	-	-	-	-	-
i	Quantum	MUs	84,531	25,745	28,913	29,873	66,875	20,183	20,549	26,143	71,854	22,083	22,771	27,000
ii	Fixed Cost including Transmission Charges	Rs Crores	13,264	4,030	4,427	4,807	16,060	4,847	4,987	6,226	17,709	5,420	5,611	6,679
iii	Variable Cost	Rs Crores	17,544	5,348	6,006	6,190	15,077	4,959	5,031	5,088	16,518	4,360	4,837	7,322
iv	MPPMCL Cost	Rs Crores	(38)	(12)	(13)	(13)	(210)	(64)	(63)	(82)	(238)	(73)	(75)	(90)
v	Total Cost	Rs Crores	30,771	9,366	10,421	10,983	30,927	9,741	9,955	11,231	33,989	9,707	10,372	13,911
vi	Average Cost	Paisa/kWh	364	364	360	368	462	483	484	430	473	440	455	515

6.6.2 The Petitioners hereby prays to the Hon'ble Commission to approve power purchase cost as shown above.

6.7 Reason for Increase in Power Purchase Cost

- 6.5.2 Power Purchase Costs contribute more than 80% of total ARR of the MP State. Any increase in power purchase cost directly gets reflected in the consumer tariff.
- 6.5.3 With new generating stations being added up in near future, power purchase costs is likely to be increase further. The Average Power Purchase Cost has increased by 53% over last eight years from Paisa 260 per kWh in FY 2011-12 to 397 paise per kWh in FY 2018-19. The year wise average power purchase cost is given as per the table below:

Table 107: Power Purchase Cost Trend in last few FYs

Power Purchase Cost Trend				
Sr. No.	Particulars	Quantum (MUs)	Total Cost (Rs Crores)	Avg. Cost (Paisa/kWh)
1	FY 2011-12	44,030	11,442	260
2	FY 2012-13	49,037	14,693	300
3	FY 2013-14	53,714	18,500	344
4	FY 2014-15	57,977	19,365	334
5	FY 2015-16	64,932	23,510	362
6	FY 2016-17	64,052	27,555	430
7	FY 2017-18	69,099	26,752	387
8	FY 2018-19	77,500	30,771	397

- 6.5.4 The reasons for the increase in average power purchase cost are given in brief below:
- 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;
- 6.5.5 The hurdles in reduction of power purchase cost are shown in brief below:
- 6.5.5.1 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.

- The scheduling of generators considered in the MOD is theoretical, whereas during actual operating conditions the demand incident is an uncontrollable parameter and varies abruptly during the peak of Rabi seasons. Under such circumstances most of the surplus capacity that has been considered to be back down is scheduled to meet the demand. Hence, there is a rational for having surplus capacities tied up.
- **Increase in Renewable Capacity:** Renewable Capacity has doubled in the current year compared to the previous year. The per unit cost of Renewable Energy is Paisa 554 per kWh in FY 2018-19 which is much higher than the APPC, thus contributing towards high Power Purchase Cost.

A7: INCOME/EXPENSES OF MPPMCL

- 7.1 The details of the MPPMCL expenses that have been allocated to Discom's for the MYT years are related to the various roles, responsibilities and administrative functions of MPPMCL. These expenses are allocated to the three Discom's based on the total energy requirement at state boundary.
- 7.2 As per item No.8 (ii) of State Govt. Notification No.2260-F-3-24-2009-XIII dtd 19/03/2013, M.P. Power Management Company Limited has been supplying power to the Discom's 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.
- 7.3 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 Discom's in proportion to the energy drawl by respective Discom's as a part of their Power Purchase Costs. The major components of Annual Revenue Requirement of MPPMCL are detailed in this section.
- 7.4 The details of these expenses are given in the table below:

Table 108: MPPMCL Cost (Rs Crores)

Sr. no.	Particulars	FY 2018-19 (Re-estimated)	FY 2019-20 (Projected)	FY 2020-21 (Projected)
1	Revenue	572.55	627.19	689.91
a	Revenue from Operations including Revenue Subsidy	2.38	-	-
b	Other Income	570.17	627.19	689.91
2	Expenses	534.58	417.14	451.66
a	Purchase of Power from Other Sources	225.39	95.35	104.88
b	Inter-State Transmission Charges	88.13	96.95	106.64
c	Depreciation & Amortization Expenses	3.65	6.04	8.43
d	Interest & Finance Charges	126.67	123.57	131.67
e	Repairs & Maintenance	2.63	2.90	3.19
f	Employee Costs	65.50	67.46	69.49
g	Administration & General Expenses	19.42	21.36	23.49
h	Other Expenses	3.19	3.51	3.87
3	(Profit)/Loss for the Period	(37.97)	(210.05)	(238.25)

7.5 Income of MPPMCL

7.5.1 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 129.04 Crores and sale of power to others of Rs 2.38 Crores has been taken in FY 2018-19 as the credit for the same could not be passed to the Discoms in the monthly bills. However, from FY 2019-20 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 2019-20 onwards.

7.5.2 Other Income

Other Income for FY 2018-19 was Rs 570.17 Crores for 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 compensation received. The details of other income of MPPMCL received in FY 2018-19 are as follows:

Table 109: Other Income (Rs Crores)

Particulars	Amount (in Crores)
i) Compensation received	12.15
ii) Rebate received on a/c of timely/prompt payments	458.22
iii) Generation based incentive	6.72
iv) Interest received (Includes interest on commitment advances)	1.83
v) Income from RRAS	35.58
v) Other Income	55.67
TOTAL	570.17

7.5.3 Further the other income for FY 2019-20 onwards has been worked out by increasing the income of FY 2018-19 by 10%.

7.6 Expenses of MPPMCL

7.6.1 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 for not being 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:-

7.6.2 Energy Purchase

For FY 2018-19 it includes:

- Bills of power purchase & Transmission charges of Rs. 211.92 Crores.
- Liability for banking of energy of Rs 13.25 Crores.
- Others Cost of Rs. 0.21 Crores

7.6.2.1 Bills of Power Purchase:

FY 2018-19 includes bills of generators listed above, which could not be passed to Discoms through monthly bills. From FY 2019-20 onwards all the bills are likely to be passed through the monthly bills to the Discoms, hence will be considered in ARR of Discoms.

7.6.2.2 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.

7.6.2.3 Liability for Banking of energy of Rs. 13.25 Crores:

The Company has a liability to return 1210.94 MU of banked energy, received during 2018-19, which translates into a financial liability of about Rs 449.95 Cr considering cost per unit of Rs. 3.72 i.e. the average power purchase rate for 2018-19 calculated on the basis of total power purchase cost except Banking for FY 2018-19. During FY 2018-19, the Company had returned 1166.97 MU of banked power received in 2016-17. This was translated into a financial liability of Rs.436.70 Cr @ Rs 3.74 per unit which was the average cost of power purchase for the year 2017-18. Therefore, a net banking liability of Rs.13.25 Crs. was booked in FY 2018-19. For FY 19-20, the liability for banking of energy is calculated as follows:

Table 110: Other Income

Particulars	Rs Crores
MUs to be returned at the end of FY 2018-19 =	1210.94
MUs to be returned at the end of FY 2019-20 (increasing the units of FY 2018-19 by 10%) =	1332.03
Average purchase cost for F.Y. 18-19 =	3.72
Average purchase cost for F.Y. 19-20 (Increasing the rate of FY 2018-19 by 10%) =	4.09
Total amount of Banking Liability for FY 19-20	545.07
Credit for 1210.94 MUs billed to Discoms in 2018-19 @ 3.72 Rs/unit	449.95
Net liability to be passed to Discoms for FY 19-20	95.12
For FY 20-21 (Increasing cost for FY 19-20 by 10%)	104.63
For FY 21-22 (Increasing cost for FY 20-21 by 10%)	115.09

7.6.2.4 Other Power Purchase Cost

The other power purchase costs for FY 19-20 and onwards is taken by increasing the expenses of FY 18-19 by 10% p.a.

7.6.3 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 of. 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.

7.6.4 **Depreciation:**

Depreciation is calculated as under:

Table 111: Depreciation

Fixed assets	FY19	FY20	FY21
(i) Tangible assets			
Gross Block	90.91	102.57	103.57
Depreciation*	3.31	4.21	5.11
(ii) Intangible assets			
Gross Block	2.24	22.14	22.14
Depreciation**	0.34	1.83	3.33
Total Depreciation (i + ii)	3.65	6.04	8.43

*In case of Tangible assets, an addition of Rs. 10.66 Crs has been assumed on account of ERP Hardware in FY 2019-20. This addition is assumed to be in second half of FY 2019-20. Apart from this, an addition of Rs. 1 Crs. depreciable @ 10% approx. is assumed for FY 2019-20 and onwards.

7.6.5 **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 on loans and cash credit facility, Bank charges, Guarantee Charges, commitment charges, Stamp duty, processing charges etc. FY 2018-19 these amount to Rs. 126.67 crs.

Interest paid to NHDC in FY 18-19 is Rs. 17.85 crs. The total interest payable to NHDC as per the financial arrangement for FY 2019-20 is Rs 3.87 crs

The final installment of this loan is due in December 2019, hence from FY 2020-21 the interest on loan from NHDC shall be nil.

The other interest and finance charges (other than interest to NHDC) for FY 2018-19 is Rs. 108.82 crs. (i.e. Rs 126.67 crs - Rs.17.85 crs.). For FY 19-20 onwards the interest and finance charges (other than interest to NHDC) are taken by increasing the expenses of FY 18-19 by 10% p.a.

7.6.6 **Repairs and Maintenance:**

These expenses for FY 19-20 and onwards is taken by increasing the expenses of FY 18-19 by 10% PA

7.6.7 Employee expenses:

The employee costs for FY 18-19 is Rs. 65.50 Crs. For FY 19-20 onwards the employee expense has been considered by increasing the expense of FY 18-19 by 3%.

7.6.8 Administration and General Expenses:

In FY 2018-19, Admin & general expenses consists of consultancy fees, legal charges, bank charges, Rates and Taxes, printing & stationary, etc.

The Total Administration and General expense for FY 18-19 amounts to Rs 19.42 Crs. The administration and general expenses for FY 19-20 and onwards has been considered by increasing the expenses of FY 18-19 by 10% p.a.

7.6.9 Exceptional Items

In FY 2018-19, Exceptional items consists of interest receivable and withdrawal of power bills billed in previous years due to one-time settlement with UPPCL & RRVPNL. This is a one-time settlement and thus not expected to occur again. Therefore the exceptional items are taken as NIL from FY 2019-20 onwards

7.6.10 The Petitioner hereby prays to the Hon'ble Commission to approve MPPMCL cost as shown above.

A8: O&M EXPENSES - DISCOMS

The Commission in its Tariff Regulation 2015 had notified O&M expenses for the MYT period FY 2016-17 to FY 18-19. The Commission with its second Amendment of Tariff regulation 2015 had notified the normative O&M expenses for the MYT period FY 2020-21.

The O&M expenses based on the provisions of the 2nd Amendment to Tariff Regulation, 2015 as notified on 15th Nov 2019 are as below:

8.1 Employee Costs

As per the provision of 1st Amendment to Tariff Regulation, 2015 Clause 34.6 (b)(i), employee costs has been calculated as below:

Table 112: Employee Costs (Rs Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Employees Expenses excluding arrears, DA, terminal benefits and incentives & EL encashment	722	1,080	1,080	740.97	1,009	1,009	1100	113	1133
DA	58	176	227	54	166	232	102	184	238
Leave encashment	6	17	12	29	31	33	28	30	31
NPS Employer contribution	7	7	7	9	14	43	9	10	13
PF/CFA/GTIS/Annuity	16	17	17	9	10	10	8	8	9
Incentives	0	0	0	0	0	0	0	0	0
7th Pay DA Arrear		46	42	0	0	0		55	55
Expense Capitalized	(33)	-	-	(33)	-	-	-	-	-
Total	809	1,343	1,386	841.97	1,234	1,331	1,311	1,421	1,480

Major assumptions considered for calculation of Employee Costs for three Discom's are:

- For calculation of Employees Expenses excluding arrears, DA, terminal benefits and incentives, for FY 2020-21 the Basic salary has been considered as per the norms provided in the prevalent MPERC regulation.
- For computation of Dearness allowance, % increase in DA has been considered as given in below table:

Table 113: Dearness Allowance Considered (%)

Particulars (As per 7th Pay)	FY '19	FY '20	FY '21
DA as percentage of Basic for first quarter - Apr to June	7%	12%	19%
DA as percentage of Basic for 2nd and 3rd quarter - July to Dec	9%	17%	21%
DA as percentage of Basic for 4th quarter - Jan to March	12%	19%	23%

- Incentive/ Bonus to be paid to the employees have been considered as per the previous trend in the Audited Accounts.
- Leave Encashment and PF/CFA/GTIS/NPS:
 - It is pertinent to mention that MPPTCL is providing fund to Discom's, only to meet out Terminal Benefits liability of Gratuity, Pension and Commutation of pension.
 - Other than these components, Discom's 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 Discom's.
- 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.

8.2 Administrative & General Expenses

As the Commission in regulation 34.6 (b) (ii) of 2nd Amendment to Tariff Regulation, 2015, had notified A&G expenses for the MYT period FY 2016-17 to FY 20-21. The Commission with its second Amendment of Tariff regulation 2015 had notified the normative A&G expenses for the MYT period FY 2020-21.

As per the above provision A&G expenses have been calculated as below:-

Table 114: Administrative & General Expenses (Rs Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
A&G Expenses excluding MPERC fees	307	205	205	294	119	119	132	169	170
MPERC Fees	1	1	1	0	0	0	1	1	1
Total	308	206	206	294	120	120	133	170	171

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

- a. As per the provision of the para 34.1 of the 2nd Amendment to Tariff Regulation, 2015, norms of A&G expenses notified in the regulation excludes Fees paid to the MPERC.
- b. In view of above, Fees paid to the MPERC are considered over & above the cost notified in the regulation.

8.3 Repair and Maintenance Expenses

The Commission in regulation 34.6 (a) Tariff Regulation, 2015, had notified R&M expenses for the MYT period FY 2016-17 to FY 18-19. The Commission with its first Amendment of Tariff regulation 2015 had notified the normative R&M expenses for the MYT period FY 2020-21.

As per the above provision R&M expenses have been calculated as below:

Table 115: Repair & Maintenance Expenses (Rs Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Opening GFA of FY year	8,441	8,960	9,579	10,131	10,760	11,435	6,500	7,587	8,397
R&M Expenses as 2.3% of GFA	194	206	220	83.53	247	263	149	175	193

8.4 Gist of O&M Expenses

The Gist of O&M expense as per the provisions of 1st Amendment to Tariff Regulation, 2015 is summarized as below:

Table 116: Gist of O&M Expenses (Rs Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Employee Cost (including arrears, DA and others)	809	1,343	1,386	842	1,234	1,331	1,311	1,421	1,480
A&G Expenses	308	206	206	249	120	120	133	170	171
R&M expenses	194	206	220	84	247	263	149	175	193
Total	1,311	1,755	1,812	1175	1,601	1,714	1,594	1,766	1,844

8.4.1 The Petitioner hereby requests the Hon'ble Commission to approve O&M expenses as shown above.

A9: INVESTMENT PLAN – DISCOMS

9.1 Capital Investment Plan

- 9.1.1 For strengthening of the system and reduction of Distribution losses, all the three Discom's of the State are undertaking various projects in the forthcoming years. 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.
- 9.1.2 The overall distribution loss of the system is a mix of Technical and Commercial losses. Technical losses are mainly due comparatively inadequate infrastructure as per the system demand which needs strengthening, renovation and up-gradation of the capacity of lines, Sub-stations and associated infrastructures. Whereas, the commercial losses are mainly due to commercial parameters like theft & pilferage of energy, presence of prominent nos. of stop & defective meters in the system, inadequate meter reading system etc. 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 regularly, which have resulted in reduction in Distribution losses considerably over the past years but these reductions are not up to the normative loss levels which are more stringent at this level.
- 9.1.3 Scheme wise Capital Expenditure Plan of Discom's for FY'19 to FY'21 is given in table below:

Table 117: Capital expenditure Plan (Rs. Crores)

EAST DISCOM - CAPEX			
Name of Scheme	FY '19	FY '20	FY '21
ST&D (GoMP)	230	255	277
Feeder Separation Scheme	299	0	0
New Agricultural Pumps	0	0	0
Renovation of 33/11kV SS & DTR Metering	0	0	0
RAPDRP	20	0	0
RGGVY	193	0	0
DDUGVY	200	200	359
DDUGVY Phase II	0	0	0
IPDS	297	0	0
Conversion of TC to PC	548	699	0
Procurement of DTR against failure	0	0	0
Procurement of smart meters	0	0	0
Balance Urban Households Connections (147509 no) not covered elsewhere	0	0	0
Total	1786	1154	636

CENTRAL DISCOM - CAPEX			
Name of Scheme	FY '19	FY '20	FY '21
SYSTEM STRENGTHING	230	120	129
FEEDER SEPERATION	140	102	0
NEW PUMP CONNECTION	695	0	0
ADB-II	0	0	0
ADB-III	0	0	0
RGGVY/Saubhagya	170	91	0
RAPDRP PART A	0	0	0
RAPDRP PART B	0	0	0
HUDCO	0	0	0
IPDS	150	309	0
DDUGJY	522	346	0
ST&D (GoMP)	0	0	0
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	0	18	18
Procurement of Distribution Transformers against Failure	88	97	107
Procurement of Smart Meters	0	266	177
Total	1996	1064	448

WEST DISCOM - CAPEX			
Name of Scheme	FY '19	FY '20	FY '21
ADB	18	-	-
TSP and SCSP	211	267	278
GOMP Scheme			-
FSP - ADB Loan	-		-
Grant Scheme(Govt. Contribution)	320	-	-
New Agricultural pumps	-		-
Mukhyamantri Sthayi Krishi pump Connection Scheme	279	58	60
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution)	-		-
Transformer failure reduction Scheme	-	42	44
Procurement of Smart Meters	-	70	73
RAPDRP (GOI)	-		-
JBIC			-
Others (New EAP)			-
RGGVY	12	-	-
IPDS	206	305	317

WEST DISCOM - CAPEX			
Name of Scheme	FY '19	FY '20	FY '21
DDUGVY	561	166	172
Central Govt. Assistance (FS)	-	3	3
REC(Departmental Works)			
Equity for Nepa Ltd, Nepanagar			
Total	1,607	910	947

9.2 Scheme Wise Capitalization

Following is the proposed scheme wise Capitalization Plan of Discom's:

Table 118: Scheme Wise Capitalization (Rs. Crores)

Scheme Wise Capitalization - East Discom			
Name of Scheme	FY '19	FY '20	FY '21
Opening CWIP	0	0	0
ST&D (GoMP)	124	82	128
Feeder Separation Scheme	161	60	50
New Agricultural Pumps	0	0	0
Renovation of 33/11kV SS & DTR Metering	0	0	0
RAPDRP	11	4	3
RGGVY	104	39	32
DDUGVY	108	68	124
DDUGVY Phase II	0	0	0
IPDS	160	59	50
Conversion of TC to PC	295	207	232
Procurement of DTR against failure	0	0	0
Procurement of smart meters	0	0	0
Balance Urban Households Connections (147509 no) not covered elsewhere	0	0	0
Total	963	519	620

Scheme Wise Capitalization - Central Discom			
Name of Scheme	FY '19	FY '20	FY '21
SYSTEM STRENGTHING	72	57	194
FEEDER SEPERATION	44	49	-
NEW PUMP CONNECTION & MMSKPY	218	-	-
ADB-II	-	-	-

Scheme Wise Capitalization - Central Discom			
Name of Scheme	FY '19	FY '20	FY '21
ADB-III	-	-	-
RGGVY/Saubhagya	53	43	-
RAPDRP PART A	-	-	-
RAPDRP PART B	-	-	-
HUDCO	-	-	-
IPDS	47	147	-
DDUGJY	164	165	-
Others	-	-	-
ST&D (GoMP)	-	-	-
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	-	-	-
Procurement of Distribution Transformers against Failure	28	46	161
Procurement of Smart Meters	-	143	320
Total	626	650	675

Scheme Wise Capitalization - West Discom			
Name of Scheme	FY '19	FY '20	FY '21
ADB		327	409
TSP and SCSP		50	118
GOMP (Equity)		-	-
FSP - ADB Loan		-	-
Grant Scheme(Govt. Contribution)		19	24
New Agricultural pumps		-	-
Mukhyamantri Sthayi Krishi pump Connection Scheme (Govt. Contribution)		25	43
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution)		-	-
transformer failure reduction Scheme		6	16
Procurement of Smart Meters		10	27
RAPDRP (GOI)		-	-
JBIC		-	-
Others (New EAP)		-	-
RGGVY		1	1
IPDS		55	131

Scheme Wise Capitalization - West Discom			
Name of Scheme	FY '19	FY '20	FY '21
DDUGVY		57	105
Central Govt. Assistance (FS)		0	1
REC(Departmental Works)		-	-
Equity for Nepa Ltd, Nepanagar		-	-
Capitalization of opening CWIP		550	875
Total	1123	834	948

9.3 Capital Work in Progress

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

Table 119: Discom Wise Capital Work in Progress (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Opening Balance of CWIP	1748	2034	2859	1,213	2,867	3,582	2,232	2,746	3,357
Fresh Investment during the year	1250	1344	792	2,189	1,364	448	1,631	1,119	936
Investment capitalized	963	519	620	534	650	675	1,117	508	980
Closing Balance of CWIP	2034	2859	3031	2,867	3,582	3,355	2,746	3,357	3,314

9.4 Fixed Assets Addition

The year wise fixed assets addition is as follows:

Table 120: Fixed Assets Addition (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Land & land rights	0	0	0	0	0	0	0	0	0
Buildings	0	5	20	35	35	35	29	20	22
Hydraulic works	0	0	0	0	0	0	0	0	0
Other civil works	5	5	12	0	0	0	17	12	13
Plant & machinery	232	218	209	129	132	134	390	270	293
Lines, cables, networks	720	287	376	409	429	451	680	470	510
Vehicles	0	0	0	0	0	0	1	1	1

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Furniture & fixtures	0	0	0	0	0	0	0	0	0
Office equipment's	4	2	2	2	2	2	5	3	4
RGGVY	3	3	0	10	10	10	0	58	106
Intangible Assets	0	0	0	0	0	0	0	0	0
Supervision assets	0	0	0	24	25	25	0	0	0
Capital Stores & Spares	0	0	0	17	17	17	0	0	0
Total	963	519	620	626	650	675	1123	834	948

The Petitioner hereby requests the Hon'ble Commission to approve Capital Expenditure and Fixed Assets Addition as shown above.

A10: OTHER COSTS/INCOME - DISCOMS

10.1 Depreciation

- 10.1.1 As per regulation 32 of 1st Amendment to Tariff Regulations, 2015, Depreciation needs to be calculated on value base of the capital cost as admitted by the Commission. The salvage value of the assets needs to be considered as 10% of Capital Cost and Depreciation shall be allowed up to maximum of 90% of the Capital Cost of the Asset.
- 10.1.2 According to the applicable norms, the Petitioner have developed detailed depreciation model based on rates specified by the Hon'ble Commission in Annexure-II of the 1st Amendment to Tariff Regulations, 2015.
- 10.1.3 The depreciation during the FY as worked out for FY 2018-19 to FY 2020-21 is shown below:

Table 121: Discom Wise Depreciation- As per Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Land under Lease	0	0	0	0	0	0	0	0	0
Building	0	2	2	5	5	5	5	4	5
Hydraulic Works	2	0	0	0	0	0	0	0	0
Other Civil Works	0	0	0	0	0	0	1	1	1
Plant & Machinery	156	108	113	111	113	116	115	106	113
Line Cable Networks etc.	175	218	225	150	158	166	173	134	147
Vehicles	0	0	0	0	0	0	0	0	0
Furniture & fixtures	0	0	0	0	0	0	0	0	0
Office Equipment	17	11	10	8	8	9	9	3	3
RGGVY	0	0	0	35	0	0	0	43	46
Intangible Assets	12	19	19	2	3	3	6	2	2
Supervision assets	0	0	0	18	19	19			
Capital Stores & Spares	0	0	0	15	15	15	14	0	0
Total	362	358	371	346	365	388	323	294	318

10.2 Interest and Finance Charges

10.2.1 Interest on Project Loans

- 10.2.1.1 Regulation 31 of 1st Amendment to Tariff Regulations, 2015 provides the method of calculation of interest and finance charges on loan capital. The repayment of loan for each FY should be equal to depreciation as allowed for the respective FY. The interest rate shall be the weighted average rate of interest rate as calculated on the basis of actual loan portfolio at the beginning of each FY applicable to the project.

10.2.1.2 The same methodology as adopted by the Hon'ble Commission for calculating Interest and Finance charges on project loan in Tariff Order FY 2019-20 has been adopted for projecting the interest and finance charges on project loan. The details are elaborated in following table:

Table 122: East Discom Interest on Project Loan - As per Regulation (Rs. Crores)

Particulars In Rs Crores	MYT 2018-19 to 2020-21		
	2018-19	2019-20	2020-21
FY 18			
Debt identified with GFA as on 1st April 2017	2,076	2,076	2,076
70% of addition to net GFA considered as funded through Loan net of consumer contribution	127	127	127
Debt repayment (Equal to depreciation)	335	335	335
Total debt associated with GFA as on 31st March 2018	1,868	1,868	1,868
FY 19			
Debt identified with GFA as on 1st April 2018	1,868	1,868	1,868
70% of addition to net GFA considered as funded through Loan net of consumer contribution	363	363	363
Debt repayment (Equal to depreciation)	362	362	362
Total debt associated with GFA as on 31st March 2019	1,868	1,868	1,868
FY 20			
Debt identified with GFA as on 1st April 2019	-	1,868	1,868
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	-18	-18
Debt repayment (Equal to depreciation)	-	358	358
Total debt associated with GFA as on 31st March 2020	-	1,492	1,492
FY 21			
Debt identified with GFA as on 1st April 2020	-	-	1,492
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	-	223
Debt repayment (Equal to depreciation)	-	-	371
Total debt associated with GFA as on 31st March 2021	-	-	1,344
Average of Loan Balance	1,868	1,680	1,418
Weighted average rate of interest (%) (as per Interest on Project Loans)	8%	9%	8%
Interest and Finance charges on Project Loans	906	143	119
Cost of Raising finance	18	20	22
Discount to consumer on timely repayment	0	0	0
Total	924	163	141

Table 123: Central Discom Interest on Project Loan - As per Regulation (Rs. Crores)

Particulars In Rs Crores	MYT 2018-19 to 2020-21		
	2018-19	2019-20	2020-21
FY 19			
Debt identified with GFA as on 1st April 2018	3,276.36	3,276.36	3,276.36
70% of addition to net GFA considered as funded through Loan	306.77	306.77	306.77

Particulars	MYT 2018-19 to 2020-21		
	2018-19	2019-20	2020-21
net of consumer contribution			
Debt repayment (Equal to depreciation)	346.05	346.05	346.05
Total debt associated with GFA as on 31st March 2019	3,237.08	3,237.08	3,237.08
FY 20			
Debt identified with GFA as on 1st April 2018		3,237.08	3,237.08
70% of addition to net GFA considered as funded through Loan net of consumer contribution		454.85	454.85
Debt repayment (Equal to depreciation)		318.52	318.52
Total debt associated with GFA as on 31st March 2020	3,373.41	3,373.41	
FY 21			
Debt identified with GFA as on 1st April 2018			3,373.41
70% of addition to net GFA considered as funded through Loan net of consumer contribution			472.27
Debt repayment (Equal to depreciation)			388
Total debt associated with GFA as on 31st March 2021			3,412
Average of Loan Balance	3,256.72	3,305.25	3,370
Weighted average rate of interest (%) (as per Interest on Project Loans)	7.03%	7.16%	7.53%
Interest and Finance charges on Project Loans	228.91	235	254
Cost of Raising finance	2.34	2.57	2.83
Total	231.25	238	257

Table 124: West Discom Interest on Project Loan - As per Regulation (Rs. Crores)

Particulars	MYT 2018-19 to 2020-21		
	2018-19	2018-19	2018-19
Debt identified with GFA as on 1st April 2016	599	599.13	599.13
70% of addition to net GFA considered as funded through Loan net of consumer contribution	97	97.09	97.09
Debt repayment (Equal to depreciation)	235	234.55	234.55
Total debt associated with GFA as on 31st March 2017	462	461.66	461.66
FY 18	-	0.00	0.00
Debt identified with GFA as on 1st April 2017	840	840.08	840.08
70% of addition to net GFA considered as funded through Loan net of consumer contribution	61	60.54	60.54
Debt repayment (Equal to depreciation)	104	104.09	104.09
Total debt associated with GFA as on 31st March 2018	797	796.53	796.53
FY 19	-	0.00	0.00
Debt identified with GFA as on 1st April 2018	797	796.53	796.53
70% of addition to net GFA considered as funded through Loan net of consumer contribution	742	742.37	742.37
Debt repayment (Equal to depreciation)	323	322.97	322.97
Total debt associated with GFA as on 31st March 2019	1,216	1215.93	1215.93
FY 20	-	0.00	0.00
	-	0.00	0.00
Debt identified with GFA as on 1st April 2018	-	1215.93	1215.93

Particulars	MYT 2018-19 to 2020-21		
	In Rs Crores	2018-19	2018-19
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	562.79	562.79
Debt repayment (Equal to depreciation)	-	293.72	293.72
Total debt associated with GFA as on 31st March 2020	-	1485.00	1485.00
Average of Loan Balance	1006.23	1350.47	1652.77
Weighted average rate of interest (%) (as per Interest on Project Loans)	0.09	0.08	0.08
Interest and Finance charges on Project Loans	88.10	106.76	134.26
Cost of Raising finance	14.36	19.15	25.54
Discount to consumer on timely repayment	0.00	0.00	0.00
Discount to consumer on timely repayment	0.00	0.00	0.00
Total	102.46	125.91	159.80

10.2.2 Interest on Working Capital

10.2.2.1 Regulation 36 of 1st Amendment to Tariff Regulations, 2015 provides the method of calculation of interest on working capital, wherein the total Working Capital shall consist of expenses towards working capital for the supply activity and wheeling activity. The parameters considered for computation of working capital for wheeling and supply activity have also been specified. Rate of interest on working capital shall be equal to the State Bank Advance Rate as on 01st April of the relevant year.

Table 125: East Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
I	Wheeling			
A)	1/6th of annual requirement of inventory for 1% GFA of previous year	12	13	14
B)	O&M expenses			
	R&M expenses	205	206	220
	A&G expense	308	206	206
	Employee expenses	1014	1868	1936
B) i)	Total of O&M expenses	1527	2279	2362
B) ii)	1/12th of total	127	190	197
C)	Receivables	0	0	0
C) i)	Annual Revenue from wheeling charges**	0	0	0
C) ii)	Receivables equivalent to 2 months average billing of wheeling charges	0	0	0
D)	Total Working capital [A) + B) ii) - C) ii)]	139	203	211
E)	Rate of Interest *	14%	14%	14%
F)	Interest on Working capital (Wheeling)	19	28	29
II	Retail Supply			
A)	1/6th of annual requirement of inventory for previous year	1	1	1
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	12969	10630	11624
B) ii)	Receivables equivalent to 2 months average billing	2162	1772	1937

Sr. no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
C)	Power Purchase expenses	0	8369	8318
C) i)	1/12th of power purchase expenses	0	697	693
D)	Consumer Security Deposit	762	800	838
E)	Total Working capital (A+B ii) - C i) - D)	1400	275	407
F)	Rate of Interest *	14%	14%	14%
G)	Interest on Working capital (Retail Supply)	192	38	56
	Total Interest on Working Capital (Wheeling + Retail Supply)	212	66	85

Table 126: Central Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
I	Wheeling			
A)	1/6th of annual requirement of inventory for 1% GFA of previous year	14	14	15
B)	O&M expenses			
	R&M expenses	233	247	263
	A&G expenses	111	120	120
	Employee expenses (incl. terminal benefits)	1,064	1,234	1,331
B) i)	Total of O&M expenses	1,408	1,601	1,714
B) ii)	1/12th of total	117	133	143
C)	Receivables			
C) i)	Annual Revenue from wheeling charges**	1	1	1
C) ii)	Receivables equivalent to 2 months average billing of wheeling charges	0	0	0
D)	Total Working capital [A) + B) ii) - C) ii)]	131	148	158
E)	Rate of Interest *	13.75%	13.75%	13.80%
F)	Interest on Working capital (Wheeling)	18	20	22
II	Retail Supply			
A)	1/6th of annual requirement of inventory for previous year	3	4	4
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	10,377	11,611	12,286
B) ii)	Receivables equivalent to 2 months average billing	1,730	1,935	2,048
C)	Power Purchase expenses	9,528	8,978	9,174
C) i)	1/12th of power purchase expenses	794	748	765
D)	Consumer Security Deposit	874	918	964
E)	Total Working capital (A+B ii) - C i) - D)	64	272	323
F)	Rate of Interest *	13.85%	13.75%	13.75%
G)	Interest on Working capital (Retail Supply)	9	37	44
III	Total Interest on Working Capital (Wheeling + Retail Supply)	27	58	66

Table 127: West Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
I	Wheeling			

Sr. no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
A)	1/6th of annual requirement of inventory for previous year	9	10	1
B)	O&M expenses			
	R&M expenses	119	175	193
	A&G expense	121	170	171
	Employee expenses	1,234	1,421	1,480
B) i)	Total of O&M expenses	1,473	1,765	1,844
B) ii)	1/12th of total	123	147	154
C)	Receivables			
C) i)	Annual Revenue from wheeling charges**	11	11	11
C) ii)	Receivables equivalent to 2 months average billing of wheeling charges	2	2	2
D)	Total Working capital [A) + B) ii) - C) ii)]	133	159	156
E)	Rate of Interest *	13.75%	13.70%	13.70%
F)	Interest on Working capital (Wheeling)	18	22	21
II	Retail Supply			
A)	1/6th of annual requirement of inventory for previous year	2	3	0
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	13,582	14,620	15,422
B) ii)	Receivables equivalent to 2 months average billing	2,264	2,437	2,570
C)	Power Purchase expenses	9,893	9,498	12,156
C) i)	1/12th of power purchase expenses	824	792	1,013
D)	Consumer Security Deposit	1,126	1,219	1,313
	Net Consumer Security Deposit	1,126	1,219	1,313
E)	Total Working capital (A+B ii) - C i) - D)	316	428	244
F)	Rate of Interest *	13.75%	13.70%	13.70%
G)	Interest on Working capital (Retail Supply)	43	59	33
	Summary			
1	For wheeling activity	18	22	21
2	For Retail Sale activity	43	59	33
III	Total Interest on working Capital	62	80	55

10.2.3 Interest on Consumer Security Deposit

10.2.3.1 As per 1st amendment to Tariff Regulations, 2015 Interest on consumer security deposit has to be paid to the consumers according to the Hon'ble Commission's regulation for security deposit. The Petitioner has computed the interest on consumer security deposit as per the norms of the Tariff Regulations at RBI latest Bank Rate of 6.50% for FY 2019-20 and 5.65% for FY 2020-21. (https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/0BUL11112019FULC7D2F59FAEC_C4355B254538635188140.PDF) and calculated the same for FY 2020-21 as shown in the table below:

Table 128: Discom Wise Interest on Consumer Security Deposit – As per Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Interest on Consumer Security Deposit	52	52	54	53	53	53	65	69	74

10.3 Gist of Interest & Finance Charge

Gist of the Interest & Finance Charges for FY 19, FY 20 & FY 21 is summarized as below:

Gist of Interest & Finance Charge

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Interest on Project Loans	924	163	141	231	238	257	102	126	160
Total Interest on working Capital	212	66	85	27	58	66	62	80	55
Interest on Consumer Security Deposit	52	52	54	53	53	53	65	69	74
Total	1,188	281	280	311	349	376	229	275	289

10.4 Return on Equity

10.3.1 Regulation 36 of 1st Amendment to Tariff Regulations, 2015 provides the methodology for computation of Return of Equity, wherein it is stated that RoE should be computed on pre-tax basis @ 16%. The paragraphs under the interest and finance charges in this Petition explain the approach for identification of debt and equity component related with completed assets. This approach results in the total equity identified with GFA as at the end of FY 2020-21. The return on equity is then determined by allowing the specified rate of 16% on the total equity identified which is allocated in proportion to GFA. The detail calculation is shown as below:

Table 129: East Discom Return on Equity- As per Regulation (Rs. Crores)

Particulars	MYT 2018-19 to 2020-21		
	2018-19	2019-20	2020-21
FY 2017-18			
Equity identified with GFA as on 1st April 2017	1,942	1,942	1,942
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	146	146	146
Total Equity associated with GFA as on 31st March 2018	2,087	2,087	2,087
FY 2018-19			
Equity identified with GFA as on 1st April 2018	2,087	2,087	2,087
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	288	288	288
Total Equity associated with GFA as on 31st March 2019	2,376	2,376	2,376

Particulars	MYT 2018-19 to 2020-21		
	2018-19	2019-20	2020-21
FY 2019-20			
Equity identified with GFA as on 1st April 2019		2,376	2,376
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year		(8)	(8)
Total Equity associated with GFA as on 31st March 2020		2,368	2,368
FY 2020-21			
Equity identified with GFA as on 1st April 2020			2,368
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year			95
Total Equity associated with GFA as on 31st March 2021			2,464
Average Equity			
Rate of Return	16%	16%	16%
Return on Equity	357	379	387

Table 130: Central Discom Return on Equity- As per Regulation (Rs. Crores)

Sr.no.	Particulars	MYT 2018-19 to 2020-21		
		2018-19	2019-20	2020-21
A	Gross Fixed Assets at the beginning of year (net of consumer contributions)	10,131	10,760	11,435
A1	Opening balance of GFA identified as funded through equity	1,606	1,789	1,977
A2	Opening balance of GFA identified as funded through debt	8,525	8,971	9,458
B	Proposed capitalisation of assets as per the investment plan (net of consumer contribution)	623	626	650
				-
B1	Proportion of capitalised assets funded out of equity, internal reserves	183	245	238
B2	Balance Proportion of capitalised assets funded out of project loans	439	381	411
				-
C1	Normative additional equity	187	188	195
C2	Normative additional debt	436	438	455
				-
D1	Excess / shortfall of additional equity over normative	(3)	57	43
D2	Excess / shortfall of additional debt over normative	3	(57)	(43)
				-
E	Equity eligible for Return, whichever is lower	1,698	1,883	2,075
				-
	Return on Equity (16%)	272	301	332

Table 131: West Discom Return on Equity- As per Regulation (Rs. Crores)

Particulars	2018-19	2019-20	2020-21
FY 2017-18	-	-	-
Equity identified with GFA as on 1st April 2017	1,087	1,087	1,087
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	26	26	26
Total Equity associated with GFA as on 31st March 2018	1,113	1,113	1,113
FY 2018-19	-	-	-
Equity identified with GFA as on 1st April 2018	1,113	1,113	1,113
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	318	318	318
Total Equity associated with GFA as on 31st March 2019	1,431	1,431	1,431
FY 2019-20	-	-	-
Equity identified with GFA as on 1st April 2018	-	1,431	1,431
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	-	241	241
Total Equity associated with GFA as on 31st March 2019	-	1,672	1,672
FY 2020-21	-	-	-
Equity identified with GFA as on 1st April 2020	-	-	1,672
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	-	-	280
Total Equity associated with GFA as on 31st March 2021	-	-	1,952
Average Equity	1,099.96	1,272.01	1,812.28
Rate of Return	16%	16%	16%
Return on Equity	176	204	290

10.5 Provision for Bad & Doubtful Debts

Regulation 35 of 1st Amendment to Tariff Regulations, 2015 provides the methodology for computation of Provision for Bad & Doubtful Debts, wherein it is stated that it is to be allowed to the maximum of 1% of FY revenue. Hon'ble Commission in its previous Tariff Order's for previous FYs has considered Rs 2 Crores for Bad & Doubtful debts. Accordingly, the petitioner has claimed the expenses against bad and doubtful debts of 27 Crores for East Discom, 24 Crores for Central Discom & 57 Crores for West Discom. for FY 2020-21.

The detail calculation of the same is shown below:

Table 132: Discom Wise Provision for Bad & Doubtful Debts- As per Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY19	FY20	FY21	FY19	FY20	FY21	FY19	FY20	FY21
Bad and Doubtful Debts	773	108	25	1,678	116	24	763	146	57

10.6 Other Income & Non-Tariff Income

The main components of Non-Tariff Income are wheeling charges, supervision charges, sale of scrap and miscellaneous charges from consumers as per 1st

Amendment to Tariff Regulations, 2015 and as per the schedule of Miscellaneous and General Charges under MPERC (Details to be furnished and fee payable by licensee or generating company for determination of tariff and manner of making application) Regulations, 2004 and amendments issued therein. The miscellaneous charges have been projected as a percentage of tariff income. The Petitioner have projected their Other Income & Non-Tariff Income for FY 2019-20 & FY 2020-21 based on with certain percentage increase line item wise including adjustments during the previous FY. The Petitioner has made the projections for FY 2019-20 & FY 2020-21 as per the Regulatory Requirement specified under the 1st Amendment to Tariff Regulations, 2015 and other applicable Regulations.

- The Hon’ble Madhya Pradesh Electricity Regulatory Commission (hereinafter referred ‘the Commission’) vide Notification No. 1902/MPERC/2009 Dated 7th September 2009, in exercise of powers conferred under Section 181 read with Section 45 (3)(b) and 46 of the Electricity Act, 2003 (No. 36 of 2003), has made the “Madhya Pradesh Electricity Regulatory Commission (Recovery of Expenses and other charges for providing electric line or plant used for the purpose of giving supply) Regulation (Revision-I), 2009” to specify manner & quantum of recovery of Expenses and other charges for providing electric line or plant used for the purpose of giving supply.

Accordingly, the Other Income & Non-Tariff Income is shown below:

Table 133: Other Income & Non-Tariff Income (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21	FY '19	FY '20	FY '21
Income from Investment, Fixed & Call Deposits	16	12	13	57	65	75	71	136	258
Interest on loans and Advances to staff	0	0	0	0	0	0	0	0	0
Interest on Advances to Suppliers / Contractors	0	8	7	0	0	0	3	3	6
Income/Fee/Collection against staff welfare activities	0	0	0	0	0	0	0	0	0
Miscellaneous receipts	48	29	36	36	38	40	1	1	2
Misc. charges	46	46	46	16	13	13	0	0	0
Deferred Income (Consumer Contribution)	116	135	131	136	109	120	0	0	0
Wheeling charges	0	0	0	1	1	1	11	11	11
Income from Trading other than Power (i.e sale of scrap, tender form)	21	19	19	49	29	24	12	20	147
Supervision charges	16	11	13	18	19	20	21	40	85
Recovery from theft	45	19	23	0	0	0	0	0	0
Meter Rent	46	46	46	36	38	40	69	146	277
Other Charges from Consumers	77	70	74	0	0	0	0	0	0
Total	385	351	362	313	274	293	119	211	509

A11: AGGREGATE REVENUE REQUIREMENT

11.1 Aggregate Revenue Requirement of MPPMCL

The table below details the Aggregate Revenue Requirement of MPPMCL. The net expenses are included as a part of Power Purchase Costs of Discom's

Table 134: Summary of ARR for MPPMCL (Rs. Crore)

Particulars	FY 18	FY 19	FY 20
Revenue	572.55	627.19	689.91
Revenue from Operations including Revenue Subsidy	2.38	-	-
Other Income	570.17	627.19	689.91
Expenses	534.58	417.14	451.66
Purchase of Power from Other Sources	225.39	95.35	104.88
Inter-State Transmission Charges	88.13	96.95	106.64
Depreciation & Amortization Expenses	3.65	6.04	8.43
Interest & Finance Charges	126.67	123.57	131.67
Repairs & Maintenance	2.63	2.90	3.19
Employee Costs	65.50	67.46	69.49
Administration & General Expenses	19.42	21.36	23.49
Other Expenses	3.19	3.51	3.87
(Profit)/Loss for the Period	(37.97)	(210.05)	(238.25)

11.2 Aggregate Revenue Requirement of Discom's

The summary of the Aggregate Revenue Requirement, Revenue from Sale of Power & Revenue (Gap)/Surplus of the DISCOM's calculated on the basis of provisions of the regulation is detailed in the table below:

Table 135: Summary of ARR for MPPMCL (Rs. Crore)

Particulars	UoM	FY 2018-19				FY 2019-20				FY 2020-21			
		MP	East	Central	West	MP	East	Central	West	MP	East	Central	West
Revenue													
Revenue from Sale of Power	Rs. Crs	31,295	8,756	9,617	12,921	36,861	10,630	14,620	11,611	39,332	11,624	12,286	15,422
Expenditure													
Purchase of Power	Rs. Crs	26,533	8,087	9,077	9,368	26,589	8,433	8,575	9,581	29,625	8,391	8,987	12,247
MPPMCL Cost	Rs. Crs	(38)	(12)	(13)	(13)	(210)	(64)	(63)	(82)	-238	-73	-75	-90
Inter-state Transmission charges	Rs. Crs	1,775	543	560	671	1,775	543	560	671	1,774	543	560	671
Intra-state Transmission Charges	Rs. Crs	2,501	747	796	958	2,773	829	883	1,062	2,828	845	900	1,083
R&M Expenses	Rs. Crs	427	194	84	149	628	206	247	175	676	220	263	193
Employee Expense	Rs. Crs	2,962	809	842	1,311	3,998	1,343	1,234	1,421	4,197	1,386	1,331	1,480
A&G	Rs. Crs	735	308	294	133	496	206	120	170	497	206	120	171
Depreciation and Related	Rs. Crs	1,031	362	346	323	1,017	358	365	294	1,077	371	388	318
Interest and Finance Charge	Rs. Crs	2,600	1,188	1,182	230	905	281	349	275	946	281	376	289
Other Debits - Write-off	Rs. Crs	3,214	773	1,678	763	312	108	58	146	106	25	24	57
Total Expense	Rs. Crs	41,739	13,000	14,846	13,892	38,282	12,243	12,327	13,712	41,488	12,195	12,874	16,419
RoE	Rs. Crs	1,140	357	607	176	1,884	1,379	301	204	1,009	387	332	290
Total Expense including RoE	Rs. Crs	42,879	13,357	15,453	14,068	40,167	13,622	12,629	13,916	42,497	12,582	13,206	16,709
Other income	Rs. Crs	1,135	385	631	119	836	351	274	211	1,164	362	293	509
Total ARR	Rs. Crs	41,745	12,972	14,823	13,949	39,331	13,271	12,354	13,705	41,332	12,220	12,913	16,199
Revenue Gap	Rs. Crs	10,450	4,216	5,205	1,028	2,469	2,641	2,266	2,094	2,000	596	627	777
ACoS	Rs./kWh	8.30	8.84	9.86	6.77	7.06	8.00	7.16	6.27	6.84	6.58	6.83	7.05

A12: TARIFF PROPOSAL FOR FY 2020-21

12.1 Revenue at Current & Proposed Tariffs

- 12.1.1 It is submitted that there has not been any substantial tariff hike for the years FY 2014-15 and FY 2015-16 in the state of Madhya Pradesh which has severely affected the financial health of the Discom's. For FY 2016-17 to FY 2018-19, the Hon'ble Commission had approved an average tariff hike of 8.40%, 9.48% and 0% respectively. In FY 2019-20, there was 7% hike. The Discom's 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.
- 12.1.2 The state of MP has a total installed capacity of approx. 23,334.40 MW as on 31st March 2019. 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.
- 12.1.3 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 order to respect the power purchase agreements with such generators substantial quantum of power was backed down in previous years also and the petitioner have to pay the fixed cost to the generators against power which was not availed.
- 12.1.4 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, the MPPMCL has already foreclosed the PPA with DVC for 400 MW from DVC (MTPS & CTPS) and 100 MW (DTPS) w.e.f. 01st March 2018 & 15th May 2017 respectively.

- 12.1.5 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 Discom's. If the Discom can provide competitive power, they will be willing to shift their demand to Discom's. With the increase in availability of power in the State, it is necessary to increase the sale also. Hence, the licensee in their previous years petition have introduced several rebates to encourage Captive and Open Access Consumers to shift their demand to Discoms and the same have been admitted in the Tariff order of the Commission. With the existence of these rebates many Captive and OA consumers have inclined 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 Discom's increases.
- 12.1.6 Furthermore, discussions have been held with Railways to bring them back to the Discom. Accordingly, rebates have been proposed for Railways in the previous Petition.
- 12.1.7 In order to bridge the revenue gap, 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. 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. 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 2020-21 are already on the lower side and are based on the normative loss levels as specified by the Hon'ble Commission. The Petitioners submit that the actual costs run higher based on the actual loss levels experienced in its distribution network and the external network.
- 12.1.8 In view of the above submission, the Petitioners are proposing a hike of 5.09%. It would just not be possible for the Discom's to maintain its operational viability at the least, without an appropriate hike in the retail tariff sought through this petition.
- 12.1.9 A summary of the proposed tariff hike and resultant additional revenue is given in the table below:

Table 136: Summary of proposed tariff for FY 2020-21 (Rs. Crores)

Particulars	UoM	MP State	East Discom	Central Discom	West Discom
Total ARR	Rs Crs.	41,332	12,220	12,913	16,199
Revenue at Current Tariffs	Rs Crs.	39,332	11,624	12,286	15,422
Total Revenue Gap	Rs Crs.	2000	596	627	777
Average Cost of Supply	Rs./Unit	6.84	6.59	6.83	7.06

- 12.1.10 In view of above the licensees pray to the Hon'ble Commission to consider and approve the said tariff proposal for FY 2020-21 to recover the costs for the ensuing year for the State as a whole.
- 12.1.11 The detailed category-wise tariff proposal is being submitted in the tariff schedules as part of the current petition. The impact on category-wise revenue due to the proposed tariff is given below:

Table 137: Category-wise proposed revenue for FY 2020-21 (Rs. Crores)

Tariff Category / Sub-category	MP State		East Discom		Central Discom		West Discom	
	Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs
LT CATEGORIES								
LV-1	Domestic	9,808	10,326	3,196	3,352	3,493	3,738	3,119
LV-2	Non-Domestic	3,101	3,139	983	995	955	968	1,163
LV-3	Public Waterworks and Street Light	861	918	241	268	256	264	365
LV-4	LT Industry	1,213	1,247	367	379	194	198	651
LV-5	Agriculture	13,261	14,138	3,948	4,246	3,965	4,156	5,348
LV-6	EV Charging	2	2	1	1	1	1	1
TOTAL – LT		28245	29771	8,735	9,241	8,863	9,324	10,647
HT CATEGORIES								
HV-1	Railway Traction	54	54	27	27	27	-	-
HV-2	HV 2: Coal Mines	426	442	402	416	25	26	-
HV-3.1	Industrial Use	6,213	6,512	1,241	1,277	2,246	2,356	2,725
HV-3.2	Non-Industrial	1,058	1,075	242	247	405	414	411
HV-3.3	Shopping Mall	95	98	-	-	43	44	52
HV-3.4	Power Intensive Industries	1,972	2,067	677	702	383	421	912
HV-4	Seasonal & Non Seasonal	25	26	8	8	2	2	14
HV-5	PWW Works & Other	918	951	108	112	188	193	622

Tariff Category / Sub-category		MP State		East Discom		Central Discom		West Discom	
		Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs	Rev. at current tariffs	Rev. at proposed tariffs
	Agri								
HV-6	Bulk Residential Users	304	314	182	189	100	102	22	23
HV-7	RECs/Synchro of power for Generator connected to Grid	16	17	1	1	2	2	14	14
HV-8	EV Charging	5	5	1	1	2	2	2	2
TOTAL - HT		11087	11562	2889	2980	3,424	3,589	4,774	4,993
TOTAL (LT+HT)		39332	41332	11624	12220	12286	12913	15422	16199

12.2 Salient Features of the Tariff Proposal

In order to meet out the Revenue gap, the licensees have proposed nominal hike 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 2019-20 is enclosed with this petition.

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

- Tariff for Temporary supply (including point connection) at LT for Mela as specified in schedule LV2.2 has been proposed to be abolished.*

Reasons for proposed changes:

On the proposal of the licensees the Commission has admitted temporary supply @ 1.25 times the normal tariff under the General Terms & Conditions of LT Supply. Thus with the need of simplification in tariff continuing with separate sub-categories of Temporary supply has no rational.

- Tariff for Supply through DTR meter as specified in schedule LV1.2 has been proposed to be abolished.*

Reasons for proposed changes:

As there are no beneficiaries under this category thus there is no rational to continue with this tariff sub-category.

- Rebate for supply through feeders feeding supply to predominantly rural area to be abolished*

Reasons for proposed changes:

It is stated that HT consumers are receiving supply through Industrial feeders which are having supply 24x7 and as of now no framework exists for classification of feeders as Urban or Rural. This leads to avoidable disputes with consumers regarding applicability of above mentioned rebate. In fact many consumers have approached forum for adjudication of such disputes. It is further stated that other rebates to promote consumption from Discom are provided to consumers.

4. *Amendment in additional conditions of Temporary supply at LT*

Reasons for proposed changes:

For Clarity in billing it has been proposed to amend the condition as “The sanctioned load/connected load (for sanctioned load based tariff) or contract demand (for demand based tariff) as the case may be, shall not exceed 112 KW/150 HP.”

5. *Amendments in clause for Tripartite agreement in the HV-6, HV-3.3 category:*

Reasons for proposed changes:

At present as per the specific terms and conditions of HV6 (Bulk Residential Users) and HV 3.3 (Shopping Malls) categories, all end-users (i.e. occupier of individual houses/shops) are required to enter into a tripartite agreement with Management Firm/developer of the shopping mall and licensee for availing supply of electricity in the shopping mall in order to get the benefit of the tariff under these respective category. In this regard, it is stated that the contract of supply of power is between licensee and Developer/Management firm. However, the Licensee has no control over change in the occupier of individual houses/shops situated in shopping malls. As per current provision, if any occupier/tenant changes, the tripartite agreement is required to be changed again. Further, there is no practical mechanism through which licensee can effectively ensure that developer/management is not charging the tariff in excess of applicable tariff from the individual occupier of house/shop. In view of above, the tariff order condition is proposed to be amended for ensuring compliance of this condition.

6. *All Temporary connection at 1.25 times normal tariff of respective category*

Reasons for proposed changes

In order to rationalize the tariff categories, it is proposed that if a consumer demands a temporary connection in a certain category of LV, then the Fixed Charge and Energy Charge for temporary supply shall be billed at 1.25 times the normal charges as applicable to respective category throughout LV structure.

A13: VOLTAGE WISE COST OF SUPPLY

13.1 Commissions Directives

- 13.1.1 The Hon'ble MPERC has directed the Discom's of MP to determine the voltage wise cost of supply in its previous Tariff Order's. 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.
- 13.1.2 Until 100% DTR Meterization 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.
- 13.1.3 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 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 Discom's 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

- 13.2.1 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.
- 13.2.2 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.

13.3 Methodology

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

- ✓ EHT System (400 kV, 220 kV and 132 kV)
- ✓ 33 KV System
- ✓ 11 KV + LT System

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

- ✓ Determine the voltage-wise Sales for three voltage levels.
- ✓ 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).
- ✓ It may also be noted that the percentage of EHT losses allocated to the three Discom's 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.
- ✓ 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.
- ✓ 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.
- ✓ 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.
- ✓ Non-tariff income has been assumed to be part of the revenue from 11 kV + LT, 33kV and EHT voltage levels.
- ✓ 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.

13.4 Calculation

The calculation for Voltage wise Cost of Supply for MP State and Discom's is as shown below:

Table 138: Cost of Supply Calculation for MP State for FY21

Sr. no	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	MP State						
1	Sales	MUs		5,595	8,111	46,694	60,400
2	Loss %	%		1.00%	4.11%	19.79%	20.02%
3	Energy Input	MUs		5,652	8,545	61,322	75,518
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	57	433	14,628	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				7,314	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		678	982	5,654	
7	Net Energy Input	MUs	7=1+4+6	6,329	9,527	59,662	75,518
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		2,849	4,288	26,853	33,990
9	Other costs - allocated based on voltage-wise sales	Rs Cr		783	1,135	6,535	8,453
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		103	149	859	1,111
11	Total Costs (ARR requirement)	Rs Cr	11=8+9-10	3,529	5,274	32,529	41,332
12	Average Cost of Supply	Rs/kWh	12=11/1*10	6.31	6.50	6.97	6.84

Table 139: Cost of Supply Calculation for East Discom for FY21

Sr. no	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	East Discom						
1	Sales	MUs		2,067	1,794	14,690	18,550
2	Loss %	%		1.00%	2.75%	12.65%	19.77%
3	Energy Input	MUs		2,088	1,863	19,169	23,120
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	21	69	4,480	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,240	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		250	217	1,774	

Sr. no	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
7	Net Energy Input	MUs	$7=1+4+6$	2,337	2,079	18,703	23,120
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		992	883	7,941	9,816
9	Other costs including true up adjustment - allocated based on voltage-wise sales	Rs Cr		320	278	2,276	2,874
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		40	35	287	362
11	Total Costs (ARR requirement)	Rs Cr	$11=8+9-10$	1,272	1,126	9,930	12,328
12	Average Cost of Supply	Rs/kWh	$12=11/1*10$	6.16	6.28	6.76	6.65

Table 140: Cost of Supply Calculation for Central Discom for FY21

Sr. no	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	Central Discom						
1	Sales	MUs		1,888	2,306	14,706	18,900
2	Loss %	%		1.00%	2.75%	25.00%	20.72%
3	Energy Input	MUs		1,907	2,395	19,538	23,841
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	19	89	4,833	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,416	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		241	295	1,880	
7	Net Energy Input	MUs	$7=1+4+6$	2,149	2,690	19,002	23,841
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		930	1,165	8,229	10,324
9	Other costs - allocated based on voltage-wise sales	Rs Cr		278	339	2,164	2,781
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		24	29	187	240
11	Total Costs (ARR requirement)	Rs Cr	$11=8+9-10$	1,184	1,475	10,206	12,865
12	Average Cost of Supply	Rs/kWh	$12=11/1*10$	6.27	6.40	6.94	6.81

Table 141: Cost of Supply Calculation for West Discom for FY21

Sr. no	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	West Discom						
1	Sales	MUs		1,640	4,012	17,298	22,950
2	Loss %	%		1.00%	5.47%	31.00%	19.64%
3	Energy Input	MUs		1,656	4,287	22,614	28,557
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	17	275	5,316	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,658	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		190	465	2,003	
7	Net Energy Input	MUs	7=1+4+6	1,846	4,751	21,960	28,557
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		895	2,304	10,650	13,850
9	Other costs - allocated based on voltage-wise sales	Rs Cr		200	489	2,109	2,798
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		36	89	384	509
11	Total Costs (ARR requirement)	Rs Cr	11=8+9-10	1,059	2,705	12,375	16,139
12	Average Cost of Supply	Rs/kWh	12=11/1*10	6.46	6.74	7.15	7.03

A14: CROSS SUBSIDY SURCHARGE AND ADDITIONAL SURCHARGE

14.1 Cross Subsidy Surcharge

- 15.1.1 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 3.28 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.
- 15.1.2 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.
- 15.1.3 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.

14.2 Additional Surcharge

- 15.2.1 The Licensees submit that the National Tariff Policy 2016 also provides for the determination of additional surcharge to be levied from consumers who are permitted open access.
- 15.2.2 The Petitioners 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 Discom's have to bear the additional burden of capacity charges of stranded power to comply with its Universal Supply Obligation.
- 15.2.3 The Petitioner would further 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.

- 15.2.4 In light of the provisions specified in the clause 5.8.3 of the National Electricity Policy, Section 42(4) of the Electricity Act 2003 besides relevant clause 13.1 of MPERC (Term & conditions for Open Access in MP) Regulations, 2005 and determined additional surcharge on a yearly basis for Open Access consumers of the State in addition to levy of Cross subsidy surcharge specified in Tariff policy 2016 on the basis of latest data for previous 12 months commencing from September 2018 to August 2019.
- 15.2.5 The Petitioner has computed the additional surcharge by considering the weighted average monthly fixed rate of surrendered power, which is based on daily weighted fixed rate of the generating station in the surrendered power. The Petitioner worked-out additional surcharge is shown in the table below:

Table 142: Additional Surcharge for FY 2020-21

Sr.	Month	Energy entitlement (Crores Unit)	Energy Scheduled in (Crores Unit)	Energy Surrendered (Crores Unit)	Effective Fixed Cost Applied	OA Units (Crores Units)	Cost of Back Energy Surrendered due to Open Access (Rs. Crores)
1	2	3=4+5	4	5	6	7	8=(7*6)
1	Sep-18	601.80	506.45	95.36	1.20	1.49	1.79
2	Oct-18	635.34	611.85	23.49	1.18	0.92	1.09
3	Nov-18	660.16	619.33	40.83	1.50	2.19	3.28
4	Dec-18	663.56	599.64	63.92	1.51	2.73	4.14
5	Jan-19	704.39	605.02	99.37	0.95	2.90	2.77
6	Feb-19	654.84	539.59	115.25	0.90	2.80	2.53
7	Mar-19	738.68	627.14	111.54	1.24	3.31	4.09
8	Apr-19	666.72	586.77	79.94	1.22	2.63	3.22
9	May-19	616.21	580.01	36.21	1.08	2.59	2.80
10	Jun-19	512.49	460.28	52.21	1.37	2.55	3.50
11	Jul-19	563.47	498.83	64.64	1.10	2.24	2.47
12	Aug-19	484.56	384.76	99.80	1.03	2.22	2.29
Total		7502.23	6619.66	882.57		28.59	33.96
Additional Surcharge on OA Consumers (Rs./Unit) = (8/7)							1.19

- 15.2.6 The Petitioner has thus determined the additional surcharge of Rs 1.19 per unit on the power drawn by the Open Access consumers from the date of issuance or applicability of this Retail Supply Tariff Order by the Hon'ble Commission. The detailed calculation of additional surcharge along with the other details is being submitted in softcopy along with this Petition.

A15: MANNER OF BILLING OF DOMESTIC NET METERED CONSUMERS

- 15.1** As per MPERC (Grid Connected Net Metering) Regulations 2015 notified on 14th October 2015 and amendments issued therein, net metering facility has to be made available to Consumers. To incorporate the provisions of Net Metering Regulations for giving credit of energy through billing software, procedure for same is required to be incorporated in the Tariff Order, so that the same can be uniformly applied in all the three Discoms of MP.

The following process needs to be followed:

- i. Manner of billing of fixed charges to the net metered domestic Consumer.
- ii. Applicable slab / Tariff for billing of net import units to the net metered consumer.
- iii. Applicability of subsidy.

The detailed explanations of some of the key points are explained below:

15.2 Manner of billing of fixed charges to the net metered domestic Consumer:

As per the Tariff Order for FY 2019-20, the authorized load of Domestic consumer is required to be calculated based on the units consumed i.e. 15 units treated as 0.1 kW of authorized load. Therefore for levy of fixed charges, connected load should be calculated based on the total energy imported from grid by net metering consumer. An illustration clarifying above is given below:-

Table 143: Computation of Authorized load for a net metered domestic Consumer

Sr. no.	Month	Import	Export	Net Read (+Import / -Export)	Authorized Load (in kW)
A	B	C	D	E	F
1	April	95	100	-5	0.70
2	May	215	200	15	1.50
3	June	315	300	15	2.10
4	July	395	400	-5	2.70
5	August	530	100	430	3.60
6	September	650	200	450	4.40
7	October	725	300	425	4.90
8	November	400	400	0	2.70
9	December	100	500	-400	0.70
10	January	1045	1500	-455	7.00
11	February	1132	200	935	7.60

Sr. no.	Month	Import	Export	Net Read (+Import / -Export)	Authorized Load (in kW)
A	B	C	D	E	F
12	March	400	800	-400	2.70

In the above table, authorized load should only be calculated based on total drawl of power from the grid without any netting of injected units.

15.3 Applicable slab/Tariff for billing of net import:

In the tariff order, for the purpose of billing, different slabs are provided based on the consumption pattern of consumer. For example in case LV-1.2 category following slabs are prescribed in the tariff order of FY 2020-21:

Monthly Consumption Slab(units)	Energy Charge with telescopic benefit (paisa per unit)	Monthly Fixed Charge (Rs)	
		Urban areas	Rural areas
Up to 50 units	405	60 per connection	45 per connection
51 to 150 units	495	100 per connection	80 per connection
151 to 300 units	630	23 for each 0.1 kW of authorized load	20 for each 0.1 kW of authorized load
Above 300 units	650	25 for each 0.1 kW of authorized	23 for each 0.1 kW of authorized

In the scenario of net metering, only net units (net of import & export units) are required to be billed to the consumer. Therefore, in view of different slabs with telescopic benefit, it is decided that netting of import & export units shall also be done slab wise and remaining units shall be billed in the respective higher slab. An illustration clarifying above is given below: -

Sr. no.	Month	Import	Export	Net Read (3-4)	Billed units	Up to 50 Units	51-150 Units	151-300 Units	Above 300 Units
1	2	3	4	5	6	7	8	9	10
1	April	95	100	-5	0	0	0	0	0
2	May	215	200	15	10			10	
3	June	315	300	15	15				15
4	July	395	400	-5	0	0	0	0	0
5	August	530	100	430	425			200	225
6	September	650	200	450	450			100	350
7	October	725	300	425	425				425
8	November	400	400	0	0	0	0	0	0
9	December	100	500	-400	0	0	0	0	0
10	January	1045	1500	-455	0	0	0	0	0

Sr. no.	Month	Import	Export	Net Read (3-4)	Billed units	Up to 50 Units	51-150 Units	151-300 Units	Above 300 Units
11	February	1132	200	932	77 (932-855)				77
12	March	400	800	-400	(-) 400*APPC	0	0	0	0

APPC → Average Power Purchase Cost

A16: TERMINAL BENEFITS (PENSION, GRATUITY AND LEAVE ENCASHMENT) PROVISION

- 16.1** 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, Discom’s claim both provisions as per the rate prescribed in actuary report & actual cash out flow on account of terminal benefits.
- 16.2** 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 Discom’s for meeting the liabilities arising due to future service:

Table 144: 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%	25.52 %	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 2018-19 to FY 2020-21 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 145: Calculation of Terminal Benefits Provisions (Rs. Crores)

Particular	East Discom				West Discom				Central Discom				MP State			
	Pension	Gratuity	Leave Enc. Enc.	Total	Pension	Gratuity	Leave Enc.	Total	Pension	Gratuity	Leave Enc.	Total	Pension	Gratuity	Leave Enc.	Total
Provision as on 31.03.2017	1,643	335	76	2,054	1,222	262	78	1,562	1,465	251	80	1,796	4,330	848	235	5,412

Particular	East Discom				West Discom				Central Discom				MP State			
	Pension	Gratuity	Leave Enc.	Total	Pension	Gratuity	Leave Enc.	Total	Pension	Gratuity	Leave Enc.	Total	Pension	Gratuity	Leave Enc.	Total
Discount @7%	115	23	5	144	86	18	5	109	103	18	6	126	303	59	16	379
Current Service cost	173	39	6	218	201	46	6	253	178	40	5	223	552	126	17	695
Total Provision for FY 18	288	63	11	362	287	65	11	363	281	58	10	349	855	185	33	1,074
Provision as on 31.03.2018	1,931	397	87	2,416	1,509	327	90	1,925	1,746	309	91	2,145	5,186	1,033	268	6,486
Discount @7%	135	28	6	169	106	23	6	135	122	22	6	150	363	72	19	454
Current Service cost	170	39	6	214	243	56	7	306	126	29	3	158	539	123	16	679
Total Provision for FY 19	305	66	12	383	349	79	13	441	249	50	10	309	902	196	35	1,133
Provision as on 31.03.2019	2,236	464	99	2,799	1,857	406	103	2,366	1,995	359	101	2,454	6,088	1,228	303	7,619
Discount @7%	156	32	7	196	130	28	7	166	140	25	7	172	426	86	21	533
Current Service cost	273	62	10	345	267	62	8	336	237	54	6	297	777	177	24	978
Total Provision for FY 20	429	95	17	541	397	90	15	502	376	79	13	469	1,203	263	45	1,511
Provision as on 31.03.2020	2,665	127	24	2,816	2,254	118	22	2,395	2,371	104	20	2,495	7,290	349	66	7,290
Discount @7%	187	9	2	197	158	8	2	168	166	7	1	175	510	24	5	510
Current Service cost	284	65	10	359	278	64	8	350	250	57	7	313	812	185	25	812
Total Provision for FY 21	471	74	12	556	436	72	10	518	416	64	8	488	1,322	210	29	1,322

The Discom's are mandated to contribute an annual contribution towards the Trust for the purpose of Terminal Benefits an amount of Rs. 4,470 Crores is estimated to have been accumulated till FY 2016. However, the Discoms were not able to contribute the same due to scarcity of funds. The table given below indicates the actual provisions that are to be made by the Discom's against this liability in the annual accounts of the company from FY 2009-10 till FY 2017-18 and projected for FY 2019-20 and FY 2020-21.

Table 146: Terminal Benefits Provisions Liability for Discom's (Rs. Crores)

FY	East Discom				Central Discom				West 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	58	21	441	326	53	21	400	349	52	20	421	1,037	163	62	1,262
2009-10	101	21	4	126	103	17	7	127	102	23	3	128	306	61	14	381
2010-11	119	25	5	149	80	13	5	98	74	17	2	93	273	55	12	340
2011-12	139	30	6	175	78	13	5	96	79	18	2	99	296	61	13	370
2012-13	157	34	6	197	90	15	6	111	83	20	10	113	330	69	22	421
2013-14	185	40	7	232	170	26	11	207	90	23	12	126	445	89	30	565
2014-15	205	44	8	257	190	39	7	236	94	25	11	130	489	108	26	623
2015-16	133	30	9	172	176	23	9	208	96	25	7	128	405	78	25	508
Total up to 2016	1,401	282	66	1,749	1,213	199	71	1,483	965	204	68	1,238	3,579	685	205	4,470
2016-17	242	53	10	305	252	52	9	313	257	58	10	325	751	424	10	943
2017-18	288	63	11	362	281	58	10	349	287	65	11	363	855	476	11	1,074
Total up to 2018	1,931	397	87	2,416	1,746	309	91	2,145	1,509	327	90	1,925	5,186	2,870	87	6,486
2018-19	305	66	12	383	249	50	10	309	349	79	13	441	902	196	35	1,133
Total up to 2019	2,236	464	99	2,799	1,995	359	101	2,454	1,857	406	103	2,366	6,088	3,065	122	7,619
2019-20	429	95	17	541	376	79	13	469	397	90	15	502	1,203	263	45	1,511
Total up to 2020	2,665	558	116	3,339	2,371	438	114	2,923	2,254	496	118	2,868	7,290	3,329	167	9,130
2020-21	471	74	12	556	416	64	8	488	436	72	10	518	1,322	210	29	1,562
Total Up to 2021	3,136	632	128	3,895	2,787	501	122	3,411	2,690	568	128	3,386	8,613	3,538	197	10,692

A17: POWER PURCHASE COST ADJUSTMENT (PPCA)

- 17.1** Hon'ble Commission in its Tariff Order for FY-19 has specified formula 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 for generating plants only.
- 17.2** The petitioners in their ARR & Tariff petitions of past few years are regularly submitting that the existing calculation mechanism and FCA formula as provided by the Commission does not covers the recovery of incremental power purchase, which is due to other factors other than increase in fuel costs. These factors 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.
- 17.3** 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.
- 17.4** The Commission however on the analysis of the same has come out with the following formula for recovery 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:

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

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,

Billing Quarter: 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 drawl 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.

- 17.5** 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 kind consideration of Hon'ble Commission:

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

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 drawl 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.

The PPCA charge shall be in the form of paisa 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.

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.

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

- 17.6** 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”.
- 17.7** 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. It is proposed that M.P. Power management Co. Ltd., Jabalpur shall be working out the rate of PPCA every quarter and shall be submitting the same to Hon’ble Commission for its approval.
- 17.8** The petitioners also proposes that 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.

- 17.9** Further, 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.
- 17.10** Thus the 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.
- 17.11** After reviewing the details submitted by the M.P. Power management Co. Ltd. Jabalpur, if the Commission finds 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.
- 17.12** Consequent to the approval of Hon'ble Commission the Distribution Companies of the State shall commence billing of PPCA charge from the first day of the billing quarter.

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.

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.

A18: COMPLIANCE OF DIRECTIVES

The response of Discoms on the directives issued by Hon'ble Commission in the Retail Supply Tariff Order for FY 2019-20 is given below:

18.1 Meterization of Unmetered Connections

18.1.1 *Commission's Directive:*

The Commission has noted the submission of Discoms and has obtained the latest reports from the Discoms for Quarter ending March-2019. The Commission has observed that the progress of the Discoms regarding DTR meterization for the FY 2018-19 is not satisfactory. The Commission further directs the Discoms to take all necessary steps to achieve 100% meterization of pre-dominant Agricultural DTRs and submit the progress report to the Commission on quarterly basis. The Commission further directs the Discoms to expedite feeder meterization and DTR meterization on priority basis and submit the action plan by 30th November 2019.

18.1.2 *Petitioners Compliance to Directive:*

Response of East Discom:

The Commission has directed to achieve 100% Meterisation of pre-dominant Agricultural DTRs in this regard it is to state that the Company as on Sept'19 is having 101264 Agricultural predominant DTRs catering supply to 986101 agricultural consumers. Out of 101264 agricultural predominant DTRs, 8070 DTRs have been provided with meters as on Sept'19.

The Meterisation of agricultural DTRs is not covered in any ongoing/sanctioned scheme. Plan for 100% predominant Ag. Consumers will be provided after sanction of loan assistance from financial institutions or from any Govt. Scheme. The Quarterly reports of Ag. DTR Meterisation regularly being submitted before Hon'ble Commission.

Response of Central Discom:

The quarterly progress of meterization of unmetered connections have already been submitted to the MPERC. The feeder meterization have been completed and DTR meterization is under progress. The total no. of unmetered pre-dominant agricultural DTRs are 1,62,476 as of Oct.'19. The same shall be metered @ 9500 meters per month so that 100% Meterisation be done by March'21.

Response of West Discom:

The standing committee of West Discom in the meeting dated 20.03.2019 has observed that the 100% meterization of Agriculture pre-dominant DTR is challenging task due to scarcity of fund. Hence committee recommended a plan for sampling of DTR on Agriculture Feeders.

The Standing committee has also recommended that in IPDS towns (excluding Indore city) around 2000 DTRs be meterised and in Indore city meters be provided on balance around 6000 Nos. DTR. In rural area about few nos. of 11 KV feeders have been identified on which 2500 no. DTR meters would have to be provided. Meterisation of these 10500 DTR requires fund amounting to Rs. 2310 Lakhs. This expenditure is proposed to be met out from Supply Affording Charges collected by Discom or any other fund if made available for this purpose. Out of 100 rural area feeders, 42 Nos Agriculture feeders has been identified on which 1365 Nos connected DTRs are catering agriculture load. Therefore, the West Discom has also prepared plan for meterization of 1365 Nos agriculture DTR of 42 Feeders. For installation of 1365 Nos. of agriculture DTR approx. cost would be around Rs. 3.25 Crore.

The West Discom has contemplated to carryout DTR Meterisation on 10500 DTRs on OPEX Model with provision of maintenance of DTR meters for five years and providing the meter reading to Discom by Turnkey contractor.

18.2 Issue of tariff card with first bill based on new tariff

18.2.1 *Commission Directive:*

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

18.2.2 *Petitioner Compliance to Directive:*

Response of East Discom: East Discom have got printed Tariff rates at the back side of monthly energy bills of bill month Sept-19 for LT Consumers and delivered tariff pamphlets to the areas where spot billing is being done.

Response of Central Discom: The information related to tariff of different categories for FY 2019-20 has been provided to the consumers through tariff cards for LT Consumers and Tariff schedule booklets for all HT Consumers.

Response of West Discom: The Petitioner hereby submit that the detailed information related to tariff of different LT Categories for FY 2019-20 was provided to the consumers. Further, HT tariff schedule is being distributed to HT consumers in the form of printed booklets.

18.3 Accounting of Rebates/Incentives/Surcharges

18.3.1 *Commission Directive:*

The Commission has noted the submissions of Discoms and directs Discoms to submit a comprehensive report to the Commission by 30th November 2019 including consumer wise and category wise increase/decrease in sales and revenue, for each rebate/incentives/surcharge based on new tariff structure with analysis of impact on consumer wise sales/revenue. A proper and meaningful information derived from the available data by using professional Data analytics should be submitted to the Commission.

18.3.2 *Petitioner Compliance to Directive:*

Response of East/Central/West Discom: The work of preparation of desired comprehensive study has been assigned to the consultant of the Discom. The same shall be submitted soon before Hon'ble Commission.

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

18.4.1 *Commission Directive:*

The Commission noted the submission of Discom. The commission directs the Discoms to submit the report on the subjected study along with the next tariff petition.

18.4.2 *Petitioner Compliance to Directive:*

Response of East/Central/West Discoms: A study of Distribution network for segregation of Technical & Commercial losses has been conducted by the Discoms through consultants and have submitted a comprehensive report for the perusal of the Commission. East Discom has also submitted a separate report analyzing their data by simulating through software. Once the Commission approves the methodology adopted in the reports of the Discoms the Discoms shall be proposing their voltage wise cost of supply accordingly.

18.5 Transfer of Funds to Pension & Terminal Benefit Trust Fund

18.5.1 *Commission Directive:*

The Commission has taken note of the submission and the separate proceedings are in progress on this matter.

18.5.2 *Petitioner Compliance to Directive:*

Response of East Discom/Central Discom: The MP Vid�ut Mandal Abhiyanta Sangh had filed a petition (13/2018) before Hon'ble Commission. MPPMCL & Discom have filed their response before Commission. The matter is under adjudication before the Commission.

18.6 Replacement of Stopped and Defective Meters

18.6.1 *Commission Directive:*

The Commission has taken note of the submission. The Commission directs the Discoms to submit the progress report to the Commission on quarterly basis and submit the action plan for 100% meterization by 30th November 2019.

18.6.2 *Petitioner Compliance to Directive:*

Response of East Discom: The action plan and progress of Meterisation of Stopped/Defective and unmetered connection is given below. All efforts are being made by Discom to complete the Meterisation as per target.

Progress & Achievement against Stop / Defective and Un-metered Connections:										
Target	July'19	Aug'19	Sep'19	Oct'19	Nov'19	Dec'19	Jan'19	Feb'19	Mar'19	Achievement Up-to Oct'19
1868971	207892	207892	207892	207802	207482	207482	207482	207482	207565	482590

Response of Central Discom:

The quarterly progress of replacement of stopped and defective meters have already been submitted to the MPERC. The total number of balance stopped/defective meters as of Oct,'19 are 7.50 lakhs. These shall be replaced @ 45,000 per month from Nov.'19 so that 100% replacement be done by March'21.

Response of West Discom Reply:

The Petitioner humbly submits before the Hon'ble Commission that the replacement of Stopped/defective meters is a continuous process. With regard to HT consumers, defective meter is negligible, and meters has got replaced as and when same is reported as defective. The following is the status of the stop defective meters of HT consumers in the last three year:

Year	Total HT consumer	No of Stop defective meters	% HT defective meters
FY 2016-17	3101	3	0.09%
FY 2017-18	3312	1	0.03%
FY 2018-19	3504	0	0.00%
FY 2019-20 (upto Sep 19)	3590	17	0.47%

With regard to LT consumers the Discom is continuously replacing the defective meters. It is humbly submitted that the reason due to which meter has got defective may not be attributed solely to the licensee and many time consumers are responsible for the same. Multiple schemes are being implemented by the Discom to strengthen the metering & meter reading process. The introduction of schemes like Smart Metering Scheme would enable the Discom to provide smart meters to the consumers. The task of replacement of stopped and defective meters is also covered under IPDS and DDUGJY schemes.

It is submitted that Hon'ble Commission in the tariff order of FY 2019-20 has separately issued a directive (7.12) regarding preparation of plan of meterization of unmetered domestic connections. In order to draw a comprehensive loss reduction programme along with a plan for meterization of unmetered domestic connections, action plan for line loss reduction and Meterisation of pre-dominantly agriculture DTRs and a system for monthly energy audit of the DTR meters, as per the directive of the Hon'ble Commission a Committee comprising the officers of the MPPMCL/Discom has been constituted vide MPPMCL order No. CGM (HR&A)/DGM (HR&A)/6073 Jabalpur dated 15/11/2019. After submission of the report by the committee, same shall be finalised in consultation with MPPMCL and Government of Madhya Pradesh for onwards submission before Hon'ble Commission.

18.7 Capital Expenditure and Capitalisation details

18.7.1 *Commission Directive:*

The Commission has noted the submissions of Petitioner. The Commission is not satisfied with the progress made by Discoms in preparing and updating the Fixed Asset Register in the format prescribed by the Commission. This issue was also discussed during the Technical Validation Session held on 27th July, 2019 during which the Discoms officials agreed that the Fixed Asset Register prepared by them is not in accordance with the format and the provisions of Tariff Regulations. The Commission once again directs the Discoms to prepare the Fixed Asset Register strictly in accordance with the format prescribed by the Commission and the provisions of Tariff Regulations and submit the same to the Commission by 30th November, 2019.

18.7.2 *Petitioner Compliance to Directive:*

Response of East Discom: Assets Register generated from ERP System of the Company containing full details of class wise Assets duly tallied with Audited Account up to FY 2017-18 had already been submitted to the Commission at the time of submission of ARR of FY-2019-20. The Assets register up to FY 2018-19 shall be submitted shortly.

Response of Central Discom: As directed by the Hon'ble Commission, necessary instructions have already been issued to the filed regarding maintenance of Fixed Asset cum Depreciation Register vide letter No.MK/05/Fin/R&A/2450 dated 15-11-18. The preparation of Asset Register in the format as prescribed by Hon'ble Commission is in progress and will be submitted in due course of time. Hon'ble Commission is therefore requested to kindly extend the time limit for submission of the Asset Register.

Response of West Discom: Assets Register generated via ERP System of the Company, showing full details of Assets, according to assets class wise duly tallied with Audited Account up to FY 2016-17, has already been submitted to the Hon'ble Commission at the time of ARR of 2018-19. The Assets register up to FY 2017-18 shall be submitted as per the instructions of the Hon'ble Commission.

With regard to scheme wise detail of capital expenditure it is submitted that such bifurcated scheme wise detail is not available in the audited accounts. However, the format in which the Commission has desired assets register shall be submitted in further course of time. Thus, the preparation of Assets Register in the format of the Commission is in process.

18.8 Alignment of R15 statement as per the tariff slabs defined in tariff schedule of Retail Supply tariff order for FY 2018-19.

18.8.1 Commission Directive:

The Petitioners are directed to align of R15 statement as per the tariff slabs defined in tariff schedule of Retail Supply tariff order for FY 2018-19.

18.8.2 Petitioner Compliance to Directive:

Response of East Discom: The tariff wise R-15 is available on R-15 portal/website of the Discom. The reconciliation with conventional R15 along with fine tuning of the reports are in progress.

Central Discom Reply: The alignment of R15 as per the tariff slabs defined in tariff schedule of retail supply tariff order for FY 2019-20 is in process. East Discom is acting as a nodal company for this task. The R-15 report aligned with the tariff order has already been designed and same is being verified/tested with the existing R-15 report to identify any anomaly.

West Discom Reply: It is submitted that all three Discoms are working on the direction of the Hon'ble Commission. East Discom is acting as nodal company for this task. The R-15 report aligned with the tariff order is already been designed by IT team of the Discoms and same is being verified/tested with the existing R-15 report to identify any inconstancy or anomaly.

18.9 Submission of report to ascertain the consumption of irrigational pumps

18.9.1 Commission Directive:

The Commission has observed that none of the Discoms has submitted the report to ascertain the consumption of irrigational pumps with the tariff Petition as per the direction of the Commissioning the last tariff order. The Commission once again directs the Petitioner to submit the report to ascertain the consumption of irrigational pumps based on detailed report for the representative sample agriculture feeders along with sample energy audit on predominantly agricultural DTRs in all the three Discoms justifying their claim in the next tariff filing/ true up to the satisfaction of the Commission.

18.9.2 Petitioner Compliance to Directive:

Central Discom Reply:

In compliance to directives of Hon'ble Commission, various feeders of circles of Discoms have been selected and agricultural consumption have been studied. The month-wise details of feeders studied are as follows:-

Nov.2018	-	574 feeders
Dec.2018	-	810 feeders
Jan.2019	-	621 feeders
Feb.2019	-	607 feeders
Mar.2019	-	421 feeders

It may be observed from the study that minimum value was found as 230 unit/HP/month.

West Discom Reply: The standing committee of West Discom in the meeting dated 20.03.2019 has observed that the 100% meterization of Agriculture pre-dominant DTR is challenging task due to scarcity of fund. Hence committee recommended a plan for sampling of DTR on Agriculture Feeders.

The Standing committee has also recommended that in IPDS towns (excluding Indore city) around 2000 DTRs be meterised and in Indore city meters be provided on balance around 6000 Nos. DTR. In rural area about few nos. of 11 KV feeders have been identified on which 2500 no. DTR meters would have to be provided. Meterisation of these 10500 DTR requires fund amounting to Rs. 2310 Lakhs. This expenditure is proposed to be met out from Supply Affording Charges collected by Discom or any other fund if made available for this purpose. Out of 100 rural area feeders, 42 Nos Agriculture feeders has been identified on which 1365 Nos connected DTRs are catering agriculture load. Therefore the West Discom has also prepared plan for meterization of 1365 Nos agriculture DTR of 42 Feeders. For installation of 1365 Nos. of agriculture DTR approx. cost would be around Rs. 3.25 Crore.

The West Discom has contemplated to carryout DTR Meterisation on 10500 DTRs on OPEX Model with provision of maintenance of DTR meters for five years and providing the meter reading to Discom by Turnkey contractor.

It is further submitted that to generate the meaningful information work of consumer indexing is being carried out on the representative sample agriculture feeders in each circle. After such indexing work, the detail of the consumption of such agriculture feeders shall be submitted before Hon'ble Commission soon.

18.10 Action plan for Line Loss reduction

18.10.1 *Commission Directive:*

The Commission directs that the Discoms, in consultation with the holding company, i.e., MPPMCL, and the State Government, should finalize a comprehensive loss reduction programme along with a plan for meterization of unmetered domestic connections, action plan for line loss reduction and meterization of pre-dominantly agricultural DTRs and a system for monthly energy audit of the DTR meters. The Commission would monitor this on a quarterly basis.

18.10.2 *Petitioner Compliance to Directive:*

East Discom Reply:

For line loss reduction programme a committee has been formed vide MPPMCL order no. 6073 dtd. 15.11.19 which includes the officials of all three Discoms. The Committee will constitute a comprehensive plan for line loss reduction including meterization of unmetered domestic connections, pre-dominant DTR meterization and its monthly energy audit. The suitable actions will be taken accordingly as per the suggestions/observations given by Committee.

Central Discom Reply:

A Committee taking representatives from all the three Discoms has been formed by MPPMCL vide MPPMCL order no. CGM (HR&A)/DGM (HR&A)/6073 Jabalpur dated 15/11/2019. The report prepared by the Committee shall be finalized in consultation with the GoMP. As the work involved in the exercise i.e. compilation and analysis of data may take much time, therefore it is requested to Hon'ble Commission to grant six-month time for the compliance.

West Discom Reply:

It is submitted that in order to draw a comprehensive loss reduction programme along with a plan for meterization of unmetered domestic connections, action plan for line loss reduction and Meterisation of pre-dominantly agriculture DTRs and a system for monthly energy audit of the DTR meters, as per the directive of the Hon'ble Commission a Line Loss Reduction Committee comprising the officers of the MPPMCL/Discom has been constituted vide MPPMCL order No. CGM (HR&A)/DGM (HR&A)/6073 Jabalpur dated 15/11/2019. After submission of the

report by the committee same shall be finalised in consultation with MPPMCL and Government of Madhya Pradesh.

It is submitted this exercise of preparation of desired plans is extensive and the compilation & analysis of the data may take some time. In view of this it is requested to the Hon'ble Commission to grant 6-month time to ensure the compliance of this directive.

18.11 Meterization of unmetered agricultural and domestic consumers

18.11.1 *Commission Directive:*

As regards urban flat rate unmetered consumers and urban agricultural consumers connected to a feeder other than separate feeder, the Petitioners are directed to complete the meterization within FY 2019-20 only. No further extension will be granted for the same.

18.11.2 *Petitioner Compliance to Directive:*

Response of East Discom:

- Meters have been provided on all unmetered domestic connections of urban area.
- In urban area as on March 2019 there were 52902 irrigation unmetered connections which has reduced to 51291 as on September 2019 further it is to mention that balance unmetered irrigation connections of urban area will be metered in coming months.
- The unmetered DLF connections of rural area have reduced from 549355 as on March-19 to 508704 as on Sept'19. Thus total 40651 meters have been provided on unmetered domestic rural connections during 2019-20 up to Sept'19.

Response of Central Discom:

To ensure the compliance of the directives of Hon'ble Commission, it is planned to complete the meterization of urban agricultural consumers by March, 2020.

Response of West Discom:

It is submitted that the necessary instruction regarding identification and Meterisation of the urban flat rate agriculture consumer has already been issued to the field offices. Further Discom has prepared a comprehensive meterization plan and is working on the same to ensure the compliance of the directives of the Hon'ble Commission. Since the exercise of the Meterisation of the flat rate urban agriculture consumers may take some time it is requested to the Hon'ble Commission that time line in this regard may please be extended to next tariff period.

TARIFF SCHEDULES

TARIFF SCHEDULES FOR LOW TENSION CONSUMERS

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Tariff Schedule - LV-1

DOMESTIC:

Applicability:

This tariff is applicable for light, fan and power for residential use. 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

Monthly Consumption (units)	Existing		Proposed	
	Energy Charge (paise per unit)	Monthly Fixed Charge	Energy Charge (paise per unit)	Monthly Fixed Charge
	Urban and Rural		Urban and Rural	Monthly Fixed Charge
Up to 30 units	325	NIL	345	NIL

(b) Minimum Charges: Rs. 45 per connection per month as minimum charges is applicable to this category of consumers.

LV 1.2

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

Monthly Consumption Slab Urban / Rural areas (units)	Existing			Proposed		
	Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)		Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)	
		Urban areas	Rural areas		Urban areas	Rural areas
Up to 50 units	405	60 per connection	45 per connection	435	65 per connection	50 per connection
51 to 100 units	495	100 per connection	80 per connection	525	110 per connection	90 per connection
101 to 300 units	630	23 for each 0.1 kW of authorized load	20 for each 0.1 kW of authorized load	660	25 for each 0.1 KW of authorized load	22 for each 0.1 KW of authorized load
Above 300 units	650	25 for each 0.1 kW of authorized load	23 for each 0.1 kW of authorized load	680	27 for each 0.1 KW of authorized load	25 for each 0.1 KW of authorized load

Minimum Charges: Rs. 70 per connection per month as minimum charges towards energy charges are applicable for above categories.

Notes:

1. The fixed charges shall be levied considering every 15 units of consumption per month or part thereof equal to 0.1 kW of load. **Example:** If consumption during the month is 125 units, then the fixed charges shall be levied for 0.9 kW. In case the consumption is 350 units then the fixed charges shall be levied for 2.4 kW.
2. In cases where the readings are recorded for the duration other than the respective days of the month, the consumption shall be prorated for the month so as to arrive at the proportionate units eligible for different slabs in a particular billing month.

Illustration

Previous Meter Reading: 4th June 2020

Next Meter Reading: 10th July 2020

Consumption period: 36 days

Consumption: 450 units

Slab-wise consumption to be considered for billing:

Slab	Computation of Consumption on Pro-rata basis	Units to be considered for billing (kWh)
0-50	50 units/30 days *36 days	60
51-150	100 units/30 days *36 days	120
151-300	150 units /30 days *36 days	180
Above 300	Balance Units	90
Total		450

Billing of fixed charges shall be done after pro-rating the consumption for 30 days (i.e. billing period) in the above manner.

(i) (b) Energy Charge and Fixed Charge – For temporary connection

Monthly Consumption Slab Urban / Rural areas (units)	Existing			Proposed		
	Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)		Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)	
		Urban areas	Rural areas		Urban areas	Rural areas
Temporary connection for construction of own house (max. up to one year)*	820	250 for each one kW of sanctioned or connected or recorded load, whichever is the highest	200 for each one kW of sanctioned or connected or recorded load, whichever is the highest	970	315 for each one kW of sanctioned or connected or recorded load, whichever is the highest	260 for each one kW of sanctioned or connected or recorded load, whichever is the highest
Temporary connection for social/ marriage purposes and	830	70 for each one kW of sanctioned or connected or	55 for each one kW of sanctioned or connected or	980	75 for each one kW of sanctioned or connected or	65 for each one kW of sanctioned or connected or

Monthly Consumption Slab Urban / Rural areas (units)	Existing		Proposed			
	Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)		Energy Charge with telescopic benefit (paisa per unit) Urban / Rural areas	Monthly Fixed Charge (Rs)	
		Urban areas	Rural areas		Urban areas	Rural areas
religious functions.		recorded load, whichever is highest, for each 24 hours duration or part thereof.	recorded load, whichever is highest, for each 24 hours duration or part thereof.		recorded load, whichever is highest, for each 24 hours duration or part thereof.	recorded load, whichever is highest, for each 24 hours duration or part thereof.

Minimum Charges: Rs. 1000/- per connection per month is applicable towards energy charges for temporary connection.

* Note: For the consumers in this category, the Distribution Licensee shall provide trivector/bivector Meter capable of recording demand in kVA/kW, kWh, kVAH

(ii) Energy Charge and Fixed Charge for un-metered rural domestic connections having connected load upto 500 watts:

Particulars	Existing		Proposed	
	Units and Energy Charge to be billed per month for unmetered connections (Paise per Unit)	Monthly Fixed Charge (Rs)	Units and Energy Charge to be billed per month for unmetered connections (Paise per Unit)	Monthly Fixed Charge (Rs)
Un-metered connection in rural areas having connected load upto 500 watts	75 units @ 500 per unit	80 per connection	75 units @ 540 per unit	95 per connection

Note: 1. Minimum charges: No minimum charges are applicable to this category of consumers.

Specific Terms and Conditions for LV-1 category:

- 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.
- In case of prepaid consumers, a rebate of 25 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.
- Additional charge for Excess connected load or Excess demand: No extra charges are applicable on the energy/fixed charges due to the excess demand or excess connected load.

- d) In case of temporary requirement for renovation/upgradation of premises, additional load is allowed to be used from existing metered connection on the same tariff applicable for permanent connection. Provided that the total load is being used in the premises at a time should not exceed 130% of its sanctioned load.
- e) Other terms and conditions shall be as specified under General Terms and Conditions for Low Tension Tariff.

Tariff Schedule – LV-2

NON-DOMESTIC:

LV 2.1

Applicability:

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

Tariff:

Tariff shall be as given in the following table:

Sub category	Existing			Proposed		
	Energy Charge (paise/unit) Urban/ Rural areas	Monthly Fixed Charge (Rs.)		Energy Charge (paise/unit) Urban/ Rural areas	Monthly Fixed Charge (Rs.)	
		Urban areas	Rural areas		Urban areas	Rural areas
Sanctioned load-based tariff (only for connected load up to 10 kW)	630	150 per kW	120 per kW	650	160 per kW	130 per kW
Demand based tariff Mandatory for Connected load above 10 kW	630	270 per kW or 216 per kVA of billing demand	230 per kW or 184 per kVA of billing demand	650	285 per kW or 228 per kVA of billing demand	245 per kW or 196 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 organisations, 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 which is not covered in other LV categories.

Tariff:

Tariff shall be as given in the following table:

Sub category	Existing			Proposed		
	Energy Charge (paise/unit) Urban/ Rural areas	Monthly Fixed Charge (Rs.)		Energy Charge (paise/unit) Urban/ Rural areas	Monthly Fixed Charge (Rs.)	
		Urban areas	Rural areas		Urban areas	Rural areas
Sanctioned load-based tariff (only for connected load up to 10 kW) On all units if monthly consumption is upto 50 units	620	80 per kW	65 per kW	645	90 per kW	75 per kW
Sanctioned load based tariff (only for connected load up to 10 kW) On all units in case monthly consumption exceeds 50 units	765	135 per kW	115 per kW	785	150 per kW	125 per kW
Demand based tariff (Mandatory for Connected load above 10 kW)	675	290 per kW or 232 per kVA of billing demand	210 per kW or 168 per kVA of billing demand	680	300 per kW or 240 per kVA of billing demand	225 per kW or 180 per kVA of billing demand
Temporary connection for marriage purposes at marriage gardens or marriage halls or any other premises covered under LV 2.1 and 2.2 categories	850 (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 of subject to a	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.	870 (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 of subject to a	95 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.	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.

	minimum of Rs.500/-)			minimum of Rs.500/-)		
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Specific Terms and Conditions for LV-2 category:

- a) **Minimum consumption:** The consumer shall guarantee a minimum annual consumption of 240 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) **For LV-2.1 and LV-2.2:** For the consumers having connected load 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.
- d) In case of prepaid consumers, a rebate of 25 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.
- e) Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.

Tariff Schedule – LV-3

PUBLIC WATER WORKS AND STREET LIGHTS

Applicability:

The tariff LV-3 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 authorised by the Government to supply/ maintain public water works / sewerage installations, 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 and shall also be applicable to electric crematorium maintained by local bodies/trusts.

Note: Private water supply scheme, water supply schemes run by institutions for their own use/ employees/ 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.

Tariff:

Category of consumers/area of applicability	Existing			Proposed		
	Energy Charge (Paise per unit)	Monthly Fixed Charge (Rs per KW)	Minimum charges (Rs)	Energy Charge (Paise per unit)	Monthly Fixed Charge (Rs per KW)	Minimum charges (Rs)
Municipal Corporation/ Cantonment board /Municipality / Nagar Panchayat	550	300	No Minimum Charges	580	325	No Minimum Charges
Gram Panchayat	520	130		545	150	
Temporary supply	1.25 times the applicable tariff			1.25 times the applicable tariff		

Specific Terms and Conditions for LV-3 category:

a) Incentives for adopting Demand Side Management:

An incentive equal to 5 % of Energy Charges shall be given on installation and use of energy saving devices (such as ISI energy efficient motors for pump sets and programmable on-off/ dimmer switch with automation for street lights). Incentive will be admissible only if full bill is paid within due dates failing which all consumed units will be charged at normal rates. Such incentive will be admissible from the month following the month in which energy saving devices are put to use and are verified by a person authorized by the Distribution Licensee. This 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 of above incentive.

- b)** Other terms and conditions shall be as specified under General Terms and Condition 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.)

Tariff:

Sr. no.	Category of consumers/area of applicability	Existing			Proposed		
		Monthly Fixed Charge (Rs per KW)		Energy Charge (Paise per unit)	Monthly Fixed Charge (Rs per KW)		Energy Charge (Paise per unit)
		Urban Areas	Rural Areas		Urban Areas	Rural Areas	
4.1	Non seasonal consumers						
4.1 a	Demand based tariff* (Contract demand up to 150 HP/112kW)	320 per kW or 256 per kVA of billing demand	205 per kW or 164 per kVA of billing demand	660	325 per kW or 260 per kVA of billing demand	215 per kW or 172 per kVA of billing demand	680
4.1 b	Temporary connection	1.25 times of the applicable tariff					

* In case of consumers having contract demand up to 20 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.

For consumers whose recorded maximum demand is more than 20 HP, rebate of 30% shall not be applicable for that particular month.

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	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	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual	120 % of normal tariff as for Non-seasonal consumers	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual	120 % of normal tariff as for Non-seasonal consumers

		recorded demand, whichever is more	recorded demand, whichever is more		recorded demand, whichever is more	recorded demand, whichever is more	
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Specific Terms and Conditions for LV-4 category:

- (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 156 units per kW 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 324 units per kW 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 13 units per kW per month in rural area and 27 units per kW 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 for seasonal consumers:**
 - i. The consumer has to declare months of season and off season for the current financial year within 60 days of issue of this 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 36% of CD (120% of 30% of CD), the consumer will be billed under Non seasonal tariff for the whole financial year as per the tariff in force.
- (f) Other terms and conditions shall be as specified under General Terms and Conditions of Low Tension Tariff.

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, irrigation pumps of lift irrigation schemes including water drawn by agriculture pumps for use by cattle and pump connections for the purpose of fodder farming associated to Gaushalas.

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, irrigation pumps of lift irrigation schemes including water drawn by agriculture pumps for use by cattle to whom flat rate tariff is applicable and pump connections for the purpose of fodder farming associated to Gaushalas.

Tariff:

Sr. no.	Sub-Category	Existing		Proposed	
		Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)
LV-5.1					
a)(i)	First 300 units per month	45	460	60	490
(ii)	Above 300 units up to 750 units in the month	55	560	70	590
(iii)	Rest of the units in the month	60	585	75	610
b)	Temporary connections	60	585	75	610
c)	DTR metered group consumers	Nil	450	Nil	480
LV-5.2					
a)(i)	First 300 units per month	45	460	60	490
(ii)	Above 300 units up to 750 units in the month	55	560	70	590
(iii)	Rest of the units in the month	60	585	75	610
b)	Temporary connections	60	585	75	610
LV-5.3					
a)	Up to 25 HP in Urban areas	100 per HP	520	115 per HP	550
b)	Up to 25 HP in Rural areas	80 per HP	500	100 per HP	530
c)	Demand based tariff (Contract demand up to 150 HP)	250 per kW or 200 per kVA of	590	260 per kW or 208 per kVA of	630

Sr. no.	Sub-Category	Existing		Proposed	
		Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)
	(Mandatory above 25 HP) in Urban areas	billing demand		billing demand	
d)	Demand based tariff (Contract demand up to 150 HP) (Mandatory above 25 HP) in Rural areas	130 per kW or 104 per kVA of billing demand	590	195 per kW or 156 per kVA of billing demand	630

LV-5.4					
Sr. no.	Agriculture flat rate tariff exclusive of subsidy*.	Charges payable by the consumer in Rs. per HP (for period of 6 months) from April to September	Charges payable by the consumer in Rs. per HP (for period of 6 months) from October to March	Charges payable by the consumer in Rs. per HP (for period of 6 months) from April to September	Charges payable by the consumer in Rs. per HP (for period of 6 months) from October to March
For Agriculture flat rate consumers having load upto 10 HP					
a)	Three phase- urban	350	350	350	350
b)	Three phase- rural	350	350	350	350
c)	Single phase urban	350	350	350	350
d)	Single phase rural	350	350	350	350
For Agriculture flat rate consumers having load more than 10 HP					
a)	Three phase- urban	700	700	700	700
b)	Three phase- rural	700	700	700	700
c)	Single phase urban	700	700	700	700
d)	Single phase rural	700	700	700	700

*see para 1.2 of terms and conditions

Note: The agriculture consumers in urban area connected to a feeder other than separated agriculture feeder will be billed as per consumption recorded in the meter. Existing unmetered consumers may be billed as per flat rate till meters are installed. Discoms must ensure that meters on all such connections are installed by the end of the current financial year.

Specific Terms and Conditions for LV-5 category:

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. Energy Department GoMP vide letter No.F 05-15/2011/13 dated 13.2.2019 has conveyed that the flat rate agriculture consumers having load upto 10 HP will pay Rs 700/- per HP per annum and flat rate agriculture consumers having load more than 10 HP will pay Rs 1400/- per HP per annum in two six monthly equal instalments. The State Government would pay subsidy to the Discoms for the difference of applicable tariff for this category and bill payable by the flat rate consumers.

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 of sanctioned load per month	
	Urban/Rural Area	
Type of Pump/Motor	April to Sept	Oct to March
Three Phase	95	170
Single Phase	95	180

- iii) For unmetered temporary agriculture consumers under LV 5.1 category, assessed consumption shall be as per following norms:

Particulars	No. of units per HP of sanctioned load per month	
	Urban Area	Rural Area
Type of Pump Motor		
Three Phase	220	195
Single Phase	230	205

- 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 –

Sr.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
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* 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 website.

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 Low Tension 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 lamp up to 20W 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.

Tariff Schedule - LV-6

E- VEHICLE / E-RICKSHAWS CHARGING STATIONS

Applicability:

The tariff is applicable exclusively for Electric Vehicle / Electric Rickshaws charging stations. However, tariff for other consumers who use electricity for charging their own Vehicle / Rickshaws shall be the same as applicable for the relevant category of metered connection from which the Vehicle / Rickshaws are being charged.

Tariff:

Category	Existing		Proposed	
	Monthly Fixed Charges	Energy Charge (Paise/unit)	Monthly Fixed Charges	Energy Charge (Paise/unit)
Electric Vehicle/ Rickshaw charging installations	Rs 100 per kVA or 125 per kW of Billing Demand	600	Rs 104 per kVA or 130 per kW of Billing Demand	620

Specific Terms and Conditions for LV-6 category:

- (a) **Additional Charge for Excess demand:** Shall be billed as given in General Terms and Conditions of Low Tension tariff.
- (b) For the consumers in this category, demand based tariff is mandatory. The Distribution Licensee shall provide Trivector /Bivector Meter capable of recording Demand in kVA/kW, kWh, kVAh.
- (c) 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** mean those areas notified by the GoMP vide notification no. 2010/F13 /05/13/2006 dated 25th March 2006 as may be amended from time to time. **Urban areas** mean all areas other than those notified by the GoMP as 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) **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 120% of the contract demand, the tariff in this schedule shall apply to the extent of 120 % of the contract demand only. The consumer shall be charged for demand recorded in excess of 120% of contract demand (termed as Excess Demand) 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 Demand:** These charges shall be billed as per following:
 - a. **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 the 120 % of contract demand shall be charged at 1.3 times the normal rate of Fixed Charges.
 - b. **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 130 % of the contract demand shall be charged at 2 times the normal rate of Fixed Charges.
- b) **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 120% of the sanctioned load, the tariff in this schedule shall apply to the extent of 120 % of the sanctioned load only. The consumer shall be charged for the connected load found in excess of 120% of the sanctioned load (termed as Excess Load) 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:
 - a. **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 the 120 % of sanctioned load shall be charged at 1.3 times the normal rate of Fixed Charges.
 - b. **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 130 % 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.
- d) 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.
- e) In case it is found that the actual recorded maximum demand or connected load, as the case may be, of an LT consumers exceeds maximum permissible contract demand or sanctioned load as per supply code 2013, as amended from time to time, the billing shall be done according to the applicable LT tariff, with additional charge for excess connected load or excess demand calculated in accordance with above clause a or b. Further in such case provisions of clause 8 (a) of the other terms and conditions of LT Tariff shall also be applicable.

7. Incentives/Rebates:

- (a) **Rebate on advance payment:** 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 @0.50% of the bill amount (excluding arrears, security deposit, meter rent, any subsidy given by Government 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 where the current month billing amount is equal to or greater than Rs. Ten Thousand. The consumers in arrears shall not be entitled for this incentive.
- (c) **Rebate for online bill payment:** Rebate of 0.50% on the total bill amount maximum up to Rs 20 and minimum of Rs 5 will be applicable for making online payment of bill.
- (d) **Load Factor incentive:** Following slabs of incentive shall be allowed for consumers billed under demand based tariff:

Load factor	Concession in energy charges
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
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
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:

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

- 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.

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.

- (e) **Power Factor Incentive:** If the average monthly power factor of the LT three-phase consumer (other than domestic consumers) 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

Note:

For this purpose, the “average monthly power factor” is defined as the ratio expressed in percentage of total kilo-watt-hours to the total kilo-volt-ampere-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 off to next higher figure and the fraction of less than 0.5 shall be ignored.

In the case of billing or credit of guaranteed minimum consumption incentive shall be provided with respect to energy actually consumed during the month. All the rebates/incentives shall be calculated on amount excluding Government Subsidy.

8. Other Terms and Conditions:

- (a) **The sanctioned load/ connected load (for sanctioned load-based tariff) or contract demand (for demand based tariff), as the case may be, should not exceed 112kW / 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 as the case may be, beyond this ceiling in two consecutive billing months during the tariff period, the Distribution Licensee may insist on the consumer to avail HT supply.**

- (b) 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.
- (c) 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. 200 per cheque shall be levied in addition to delayed payment surcharge
- (d) Other charges as stated in Schedule of Miscellaneous Charges shall also be applicable.
- (e) Existing LT three- phase consumer (excluding domestic consumers)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 LT three- phase consumer (excluding domestic consumers) 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 three-phase consumers (excluding domestic consumers) other than e (1) above:** 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 .

Note:

- a. For this purpose, the “average monthly power factor” is defined as the ratio expressed in percentage of total kilo-watt-hours to the total kilo-volt-ampere-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 off to next higher figure and the fraction of less than 0.5 shall be ignored.
 - b. In the case of billing or credit of guaranteed minimum consumption such surcharge shall be billed with respect to energy actually consumed during the month.
- (f) Levy of 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.
- (g) In case of any dispute on applicability of tariff on a particular LT category, the decision of the Commission shall be final.
- (h) 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.
- (i) **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.
- (j) 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.
- (k) **Use of mix loads in one connection:** Unless otherwise permitted specifically in the tariff category, the consumer using mix loads for different purposes shall be billed for the purpose for which the tariff is higher.
- (l) Consumers in the notified Industrial Growth Centres/Industrial areas/Industrial parks receiving supply under urban discipline shall be billed urban tariff.
- (m) 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.

- (n) 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.
- (o) If any difficulty arises in giving effect to any of the provisions of this order, the Commission may, by general or special order, direct the Licensees to do or undertake things, which in the opinion of the Commission is necessary or expedient for the purpose of removing the difficulties.

9. Additional conditions for Temporary Supply at LT:

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.

- (a) Fixed Charge and Energy Charge for temporary supply shall be billed at **1.25** times the normal charges as applicable to relevant category if not specified otherwise specifically.
- (b) 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.
- (c) The Sanctioned load / connected load (for sanctioned load based Tariff) or contract demand (for demand based tariff), as the case may be, shall not exceed 112kW / 150 HP.
- (d) 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.
- (e) Connection and disconnection charges and other miscellaneous charges shall be paid separately as may be specified in the Schedule of Miscellaneous Charges.
- (f) Load factor concession shall not be allowed on the consumption for temporary connection.
- (g) Power factor incentive/penalty shall be applicable at the same rate as applicable for permanent connection.

- 10.** Wherever, there is contradiction in general terms & conditions and specific terms & conditions given for any particular category, the specific terms and conditions shall prevail for that category.

TARIFF SCHEDULES FOR HIGH TENSION CONSUMERS

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Tariff Schedule - HV-1

RAILWAY TRACTION:

Applicability:

This Tariff shall apply to the Railways for Traction loads only.

Tariff:

Category of consumer	Existing		Proposed	
	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)
Railway Traction on 132 kV / 220 kV	310	590	310	590

Note: A rebate of Rs. 2 per Unit in energy charges is applicable. This rebate shall be applicable up to FY 2021-22.

Specific Terms and Conditions for HV-1 category:

- (a) In order to give impetus to electrification of Railway network in the State, a rebate of 15% in energy charges for new Railway traction projects shall be allowed for a period up to FY 2021-22 for new projects. The rebate provided in earlier orders shall remain in force at the rate and for the duration as mentioned in those tariff orders.
- (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) 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 120% of the contract demand, the tariffs given in various schedules shall apply to the extent of the 120% of the contract demand only. The consumer shall be charged for excess demand computed as difference of recorded maximum demand and 120% of contract demand on fixed charges and while doing so, the other terms and conditions of tariff, if any, shall also be applicable on the said excess demand.
- (e) **Energy charges for excess demand:** No extra charges are applicable on the energy charges due to the excess demand or excess connected load.

(f) The additional fixed charges on excess demand so computed as per above, if any, in any month shall be charged at the following rates:

- (a) 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
- (b) 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.

(g) 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.
- (h) **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.
- (i) Other terms and conditions shall be as mentioned in the General Terms and Conditions of High Tension Tariff.

Tariff Schedule - HV-2**COAL MINES:****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.

Tariff:

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	660	670	715	770	630	670
33 kV supply			705	750	610	650
132 kV supply			685	700	590	570
220 kV supply			665	680	570	580

Specific Terms and Conditions for HV-2 category:

- 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. **Time of Day Surcharge / Rebate:** This surcharge/ rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
- c. 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. This tariff shall also apply to cold storages.

The tariff **HV-3.2 (Non Industrial)** 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 HV-3.3 (Bulk Supply to non-industrial consumers including shopping mall)** shall apply to establishments having group of non-industrials consumers including shopping malls subject to the specific terms and conditions specified in (i) of this schedule. Further any use of power other than non-industrial purpose shall also be permitted under this category.

Shopping Mall shall be a multi-storeyed 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.

Note: This tariff shall apply to only those Mini Steel Plants (MSP), MSP with re-rolling mills / sponge iron plants in the same premises and Ferro Alloy plants where smelting / heating of iron & steel is done using Electric Furnaces only.

Tariff:

S. No.	Sub-Category of consumer	Existing			Proposed		
		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)
3.1	Industrial						
	11 kV supply	340	700	600	385	725	625
	33 kV supply	560	690	590	585	700	600
	132 kV supply	650	650	550	685	660	560
	220/400 kV supply	650	610	510	685	610	520
3.2	Non- Industrial						
	11 kV supply	320	730	640	335	745	655
	33 kV supply	460	710	620	470	725	635
	132 kV supply	550	670	560	560	680	575
	220/400 kV supply						
3.3	Shopping Malls						
	11 kV supply	330	710	635	345	720	645
	33 kV supply	380	700	600	410	710	610
	132 kV supply	510	650	580	530	660	590
	220/400 kV supply						
3.4	Power Intensive Industries*						
	33 kV supply	560	530	530	575	550	550
	132 kV supply	660	510	510	675	530	530
	220 kV supply	660	500	500	670	520	510

Specific Terms and Conditions for HV-3 category:

- (a) **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.

- (b) **Time of Day Surcharge / Rebate:** This surcharge/ rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
- (c) **Rebate for existing HT connections:** A rebate of Rs 1/Unit in energy charges is applicable for incremental monthly consumption w.r.t corresponding month of FY 2015-16. For any new consumer other than the connection covered in clause (e) below, served during and after FY 2015-16, the **base months** for calculation of incremental monthly consumption shall be the first 12 months subsequent to the month of availing the connection. The incremental consumption for any month shall be worked out considering the consumption of the corresponding base month.
- (d) **Rebate for new HT connections:** A rebate of Rs 1/Unit or 20% whichever would be less is applicable in energy charges for new connection for the consumption recorded on or after the effective date of this tariff order. Rebate for the period before the effective date of this tariff order shall be governed as per the provision of the respective tariff order applicable for that particular period. The rebate is applicable subject to following terms and conditions:
- i. New projects for which agreements for availing supply from licensee are finalised during and after FY 2016-17 shall be eligible for this rebate.
 - ii. This rebate shall be allowed upto FY 2021-22 subject to the provisions of the tariff order of the respective year.
 - iii. No rebate shall be applicable for connections obtained by virtue of change in ownership in existing connection or by reconnection.
 - iv. New connection on the permanently disconnected premises shall only be eligible for such rebate, if, the application for new service connection on such premises is received not before the expiry of six months from the date of its permanent disconnection.
 - v. The consumer availing this rebate shall not be entitled for the rebate of incremental consumption under clause (d) above.
- (e) **Rebate for Captive power plant consumers:**

Applicability: The rebate shall be applicable to consumers-

- i. Who have been meeting their demand either fully or partially during FY 2016-17 and/or FY 2017-18 and/or FY 2018-19 through their captive power plants located in Madhya Pradesh.
- ii. The rebate shall be applicable upto FY 2021-22 from the date of request submitted by the consumer to the Licensee during and after FY 2017-18.

The consumer shall be required to apply to the Licensee for the rebate indicating that he would be willing to avail supply from Licensee by switching consumption from his existing captive power plant.

- iii. The **base year** shall be the financial year preceding the year during which the consumer has applied for switching consumption from his captive power plant to the licensee.

e.g., if a consumer applies for switching his consumption from captive power plant to Licensee in August, 2020, then his base year for calculation of incremental consumption would be FY 2019-20.

- iv. Who have recorded an incremental consumption i.e., an increase in the units consumed from the Licensee in any month of the current year (FY 2020-21) compared to the same month in **base year**.
- v. A rebate of Rs 2 per unit shall be applicable on incremental units of the consumer subject to reduction in captive generation as per the methodology given below:-

Scenario	Base Year		Current Financial Year (FY 2019-20)		Incremental Consumption from Discom	Reduction in Captive Generation	Units eligible for 60 paise rebate in energy charges as per Clause (c) of specific terms & conditions	Units eligible for Rs 2/ Unit rebate on incremental units
	Consumption from Discom (Units)	Captive Generation Units	Consumption from Discom (Units)	Captive Generation (Units)	Units	Units	Units	Units
	(A ₁)	(B ₁)	(A ₂)	(B ₂)	X = A ₂ -A ₁	Y = B ₁ -B ₂		
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

- Note:
- 1) *Captive power plant referred above shall be the "Captive Generating Plant" as defined in Rule 3 of the Electricity Rules, 2005.*
 - 2) *For new consumers added during this tariff period who were fully meeting their demand from their captive power Plants during the previous financial year then their consumption from Discom may be treated as zero for the base year.*

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

For all other cases of incremental consumption i.e when $X>Y$, the existing rebate of Rs 1/unit in energy charges will be applicable on $X-Y$ units (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3).

Scenario 1: There is no reduction in Captive Generation but only incremental consumption from Discom, hence a rebate of Rs 1/unit in energy charges is applicable on incremental consumption from Discom (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3).

Scenario 2: The incremental consumption from Discom is due to the reduction of captive consumption by same quantum of units hence it will attract a rebate of Rs 2 per unit on incremental units.

Scenario 3: There is higher reduction in Captive Generation as compared to incremental Consumption from Discom hence incremental units consumed from the Discom as shown in the table, shall qualify for a Rebate of Rs 2 per unit.

Scenario 4: There shall not be any rebate due to absence of incremental Consumption from Discom irrespective of reduction in Captive Generation.

Scenario 5: This scenario depicts higher incremental consumption from Discom (X) than reduction in Captive Generation (Y) hence units corresponding to $(X-Y)$ shall qualify for rebate of Rs 1/unit in energy charges (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3) while units Y shall qualify for Rebate of Rs 2 per unit.

(f) Rebate for Open Access Consumers

Applicability: The rebate shall be applicable to consumers

- i. Who have been availing open accesses during the last financial year ie. FY 2019-20.
- ii. Who have recorded an incremental consumption i.e., an increase in the units consumed from the Licensees in any month of the current year (FY 2020-21) compared to the same month in last year (FY 2019-20).
- iii. The rebate shall be applicable from the date of request submitted by the consumer to the Licensee during FY 2020-21.

- iv. The consumer shall be required to apply with the Licensee for the rebate indicating that he would be willing to avail supply from Licensee by switching consumption from open access.
- v. A rebate of Rs 1 per unit shall be applicable on incremental units of the consumer subject to reduction in open access consumption as per the methodology given below:

Scenarios	FY 2019-20		FY 2020-21		Incremental Consumption from Discom $X = A_2 - A_1$	Reduction in OA units $Y = B_1 - B_2$	60 paisa rebate applicable units as per clause (c) of specific terms & conditions	Rs 1/unit rebate on incremental units of Open Access
	Consumption from Discom (A ₁)	Wheeled Units (B ₁)	Consumption from Discom (A ₂)	Wheeled Units (B ₂)				
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

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

And

Y = the quantum of reduction in units consumed from open access by the consumer in any month of the current financial year as compared to the same month in the base year.

For all other cases of incremental consumption i.e when X>Y, the existing rebate of Rs 1/unit in energy charges will be applicable on X-Y units (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3).

Scenario 1: There is no reduction in open access consumption but only incremental consumption from Discom, hence a rebate of Rs 1/unit in energy charges is applicable on incremental consumption from Discom (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3).

Scenario 2: The incremental consumption from Discom is due to the reduction of open access consumption by same quantum of units hence it will attract a rebate of Rs 1 per unit on incremental units.

Scenario 3: There is higher reduction in open access consumption as compared to incremental Consumption from Discom hence incremental units consumed from the Discom as shown in the table, shall qualify for a Rebate of Rs 1 per unit.

Scenario 4: There shall not be any rebate due to absence of incremental Consumption from Discom irrespective of reduction in open access consumption.

Scenario 5: This scenario depicts incremental consumption from Discom (X) and reduction in open access consumption (Y) hence units corresponding to (X-Y) shall qualify for rebate of Rs 1/unit in energy charges (as per the rebate for incremental consumption given in clause d in the Specific Terms & Conditions for HV-3) while units Y shall qualify for Rebate of Rs 1 per unit.

(g) Conversion of Existing LT Industrial/Non domestic connection to corresponding HT connection

A rebate of Rs. 1 per unit in the energy charges on the HT tariff shall be provided to those existing LT consumers who convert to HV-3 category during FY 2020-21. This rebate is applicable for FY 2020-21 for the units billed only after the commencement of HT Agreement during FY 2020-21.

(h) Additional specific terms and conditions for shopping mall

Individual end user shall not be levied a rate which is exceeding non-domestic-commercial tariff (LV 2.2) in case of LT connection and HT non-industrial tariff (HV 3.2) in case of HT connection, as determined by the Commission.

Tariff Schedule - HV-4**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.

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		During Off-Season			
	Existing	Proposed	Existing	Proposed	Existing	Proposed
11 kV supply	360	380	680	700	580	590
33 kV supply	400	420	660	660	560	560

	During Season		During Off-Season			
	Existing	Proposed	Existing	Proposed	Existing	Proposed
11 kV supply	Rs. 360 on 10% of contract demand or actual recorded demand whichever is higher	Rs. 370 on 10% of contract demand or actual recorded demand whichever is higher	816 i.e. 120% of seasonal energy charge	840 i.e. 120% of seasonal energy charge	Not applicable	Not applicable
33 kV supply	Rs. 400 on 10% of contract demand or actual recorded demand whichever is higher	Rs. 410 on 10% of contract demand or actual recorded demand whichever is higher	792 i.e. 120% of seasonal energy charge	792 i.e. 120% of seasonal energy charge	Not applicable	Not applicable

Specific Terms and Conditions for HV-4 category:

- a) **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
- b) **Time of Day Surcharge / Rebate:** This surcharge/ rebate shall be as specified in General Terms and Conditions of High Tension Tariff.
- c) The consumer has to declare months of season and off season for the current financial year within 60 days of issue of this tariff order and inform the same to the licensee. If the consumer has already informed the Licensee of his season/off-season months during this financial year prior to issue of this order, same shall be accepted and shall be valid for this tariff order.

- d)** The seasonal period once declared by the consumer cannot be changed during the year.
- e)** This tariff schedule is not applicable to composite units having seasonal and other category loads.
- f)** 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.
- g)** 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 36.0% of CD (120% of 30% of CD), the consumer will be billed under HV 3.1 Industrial tariff for the whole financial year as per the tariff in force.
- h)** 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, river link projects implemented by Government or its agency and for energy used in lighting pump house.

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.

The tariff category HV-5.2 shall apply to supply of power to other than 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.

Tariff:

No.	Sub-Category	Monthly Fixed Charge (Rs. /KVA of billing demand per month)		Energy Charge (paise per unit)	
		Existing	Proposed	Existing	Proposed
5.1 Public Water Works, Group Irrigation and Lift Irrigation Schemes					
	11 kV supply	320	330	590	610
	33 kV supply			575	590
	132 kV supply			540	550
	220 kV & above			---	520
5.2 Other than agricultural use					
	11 kV supply	320	330	580	600
	33 kV supply			570	590
	132 kV supply			530	550
	220 kV & above			---	520

Specific Terms and Conditions for HV-5 category:

- (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 Surcharge / Rebate:** This surcharge/ 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 as 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, residential townships (not covered under HV 6.1), 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, old age homes, day care centres for senior citizens, rescue houses and orphanages run by Govt. /charitable trust. 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.

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.** **Tariff:**

Sr no.	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)	
		Existing	Proposed	Existing	Proposed	Existing	Existing
6.1	For Tariff Sub-Category 6.1						
	11 kV supply	320	330	610	630	550	570
	33 kV supply			600	610	530	545
	132 kV supply			580	595	510	525
6.2	For Tariff Sub-Category 6.2						
	11 kV supply	200	215	610	630	550	570
	33 kV supply			600	610	530	545
	132 kV supply			540	555	500	515

Specific Terms and Conditions for HV-6 category:

- (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) The individual end user shall not be levied a rate exceeding the tariff applicable to the corresponding LT category.
- (c) Other terms and conditions shall be as specified under General Terms and Conditions of High Tension Tariff.

Tariff Schedule - HV-7

SYNCHRONIZATION OF POWER FOR GENERATORS CONNECTED TO THE GRID

Applicability:

This Tariff shall apply to those generators who are already connected to the grid.

Tariff for all voltages: Tariff:

Category of consumers	Energy (paisa/unit)	
	Existing	Proposed
Generators connected to the Grid	935	960

Specific Terms and Conditions for HV-7 category:

- (a) The Generators shall not exceed Grid drawal above 15% of the capacity of the Power Plant.
- (b) In case of drawal of power above 15% of the capacity of the power plant on any occassion, entire energy drawn during the billing month shall be billed payable at twice the energy charge.
- (c) Reactive energy charges for reactive energy drawn shall be billed at the rate as may be prescribed by Commission from time to time.
- (d) The condition for minimum consumption shall not be applicable to the generators including CPP. Billing shall be done for the total energy recorded on all occasion of availing supply during the billing month.
- (e) The supply shall not be allowed to the CPP for production purpose for which they may avail stand-by support under the relevant Regulations.
- (f) The grid drawal shall only be made available after commissioning of the plant.
- (g) The generator including CPP shall execute an agreement with the Licensee for drawal of power from the grid incorporating the above terms and conditions.

Tariff Schedule - HV-8**E- VEHICLE / E- RICKSHAWS CHARGING STATIONS****Applicability:**

The tariff is applicable exclusively for Electric Vehicle / Electric Rickshaws charging stations. However, tariff for other consumers who use electricity for charging their own Vehicles/Rickshaws shall be the same as applicable for the relevant category of connection from which the Vehicles/Rickshaws is being charged at such premises.

Tariff:

Category of consumer	Existing		Proposed	
	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)
Electric Vehicle/ Rickshaw charging installations	120	590	120	600

Specific Terms and Conditions for HV-8 category:

- (a) **Additional Charge for Excess demand:** Shall be billed as given in General Terms and Conditions for High Tension tariff.
- (b) For the consumers in this category, demand-based tariff is mandatory. The Distribution Licensee shall provide Trivector /Biverctor Meter capable of recording Demand in kVA/kW, kWh, kVAh.
- (c) Other terms and conditions shall be as specified under General Terms and Conditions for High Tension Tariff.

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:

- 1.1 The contract demand shall be expressed in whole number only.
- 1.2 **Character of Service:** The character of service shall be as per the Madhya Pradesh Electricity Supply Code, 2013 as amended from time to time.
- 1.3 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.
- 1.4 **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.
- 1.5 **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 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 Supply Code, 2013.

The provisions regarding additional charges for excess demand shall be applicable as per clause 1.15 of these conditions.

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.

1.6 Tariff minimum consumption shall be billed as follows:

- 1) 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.
- 2) 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.
- 3) 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.
- 4) 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

1.7 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.

Incentive/ Rebate / Penalties

1.8 Power Factor Incentive:

If the average monthly power factor of the consumer is above 95%, 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)

Note:

(i) For this purpose, the “average monthly power factor” is defined as the ratio expressed in percentage of total kilo-watt-hours to the total kilo-volt-ampere-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.

Provided that in case of billing or credit of guaranteed minimum consumption, incentive shall be provided with respect to energy actually consumed during the month.

(ii) For the removal of doubt it is clarified that in case the consumer is getting power through open access, net energy charges (after deducting units drawn from other sources, from the consumed units) billed to consumer shall only be taken for the purpose of working out power factor incentive

1.9 Load factor calculation

1) The **Load Factor** shall be calculated as per the following formula:

$$\text{Load Factor \%} = \frac{\text{Monthly Consumption} \times 100}{\text{No. of Hours in the billing month} \times \text{Demand (kVA)} \times \text{PF}}$$

- 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 0.9 or actual 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.

1.10 Incentive for advance payment: 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.

1.11 Rebate for online bill payment: Rebate of 0.5% on the total bill amount maximum up to Rs 1000 will be applicable for making online payment of bill.

1.12 Prompt payment incentive: 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 where the current month billing amount is equal to or greater than Rs. One Lakh. The consumers in arrears shall not be entitled for this incentive

1.13 Time of Day (ToD) Surcharge / 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 surcharge / rebate on energy charges according to the period of consumption shall be as per following table:

Sr. no.	Peak / Off-peak Period	Surcharge / Rebate on energy charges on energy consumed during the corresponding period
1.	Evening peak load period (6 PM to 10 PM)	Normal rate of Energy Charge
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 Surcharge / Rebate shall not be applied on Fixed Charges

1.14 Power Factor Penalty (For consumers other than Railway Traction HV-1)

- (i) 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”.

Provided that in case of billing or credit of guaranteed minimum consumption, such penalty will be billed with respect to energy actually consumed during the month.

- (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 Charges”. This penalty shall be subject to the condition that overall penalty on account of low power factor does not exceed 35%.
- (iii) 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.
- (iv) 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.
- (v) 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:
 - a) 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%.

- b) 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.
- c) 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.

1.15 Additional Charges for Excess Demand

- i. 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 120% of the contract demand, the tariffs given in various schedules shall apply to the extent of the 120% of the contract demand only. The consumer shall be charged for excess demand computed as difference of recorded maximum demand and 120% of contract demand on 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.
- ii. **Energy charges for excess demand:** No extra charges are applicable on the energy charges due to the excess demand or excess connected load.
- iii. **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 the 120 % of contract demand shall be charged at 1.3 times the normal 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 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:-

- a) Up to 120 kVA at normal tariff.
 - b) Above 120 kVA up to 130 kVA i.e. for 10 kVA at 1.3 times the normal tariff.
 - c) Above 130 kVA up to 140 kVA i.e. for 10 kVA at 2 times the normal tariff.
- iv. The excess demand computed in any month will be charged along with the monthly bill and shall be payable by the consumer.
- v. 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.

1.16 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.

1.17 All the rebates/incentives shall be calculated on amount excluding Government Subsidy.

1.18 Service Charge for Dishonoured Cheques: In case the cheque(s) presented by the consumer are dishonoured, a service charge at the rate of Rs. 1000/- plus applicable taxes (GST) 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.

1.19 Temporary supply at HT: The character of temporary supply shall be as defined in the M.P. Electricity Supply Code, 2013. If any consumer requires temporary supply then it shall be treated as a separate service and charged subject to the following conditions:

- (a)** Fixed Charges and Energy Charges shall be charged at 1.25 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:

$$\text{Minimum consumption for additional supply for temporary period} = \frac{\text{Annual minimum consumption as applicable to permanent supply}}{\text{No. of days in the year}} \times \frac{\text{No. of days of temporary connection}}{\text{No. of days in the year}}$$

- (c) The billing demand shall be the demand requisitioned by the consumer or the highest monthly maximum demand during the period of supply commencing from the month of connection ending with the billing month, whichever is higher. For example:

Month	Recorded Maximum Demand (kVA)	Billing Demand (kVA)
April	100	100
May	90	100
June	80	100
July	110	110
August	100	110
September	80	110
October	90	110
November	92	110
December	95	110
January	120	120
February	90	120
March	80	120

- (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 existing HT consumer requires temporary supply for the purpose of addition and/or alteration within the premises of existing HT connection, then the consumer is allowed to avail the same through its existing permanent connection to the extent of its Contract Demand and such consumer shall be billed at applicable tariff for permanent connection. Excess demand, if any, shall be treated as per the provisions in clause 1.15 above.
- (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:

- 1.20 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 %. This additional charge of 3% shall be applicable for enhanced maximum demand recorded for fixed charges and incremental units proportionate to enhanced maximum demand recorded for energy charges. In case maximum demand recorded is equal to or below the ceiling of 300 kVA than no billing of additional charge shall be done under this clause.
- 1.21 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%. This additional charge of 2% shall be applicable for enhanced maximum demand recorded for fixed charges and incremental units proportionate to enhanced maximum demand recorded for energy charges. In case maximum demand recorded is equal to or below the ceiling of 10,000 kVA than no billing of additional charge shall be done under this clause.
- 1.22 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%. This additional charge of 1% shall be applicable for enhanced maximum demand recorded for fixed charges and incremental units proportionate to enhanced maximum demand recorded for energy charges. In case maximum demand recorded is equal to or below the ceiling of 50,000 kVA than no billing of additional charge shall eb done under this clause.
- 1.23 Metering Charges 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.
- 1.24 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.
- 1.25 In case any dispute arises regarding interpretation of this tariff order and/or applicability of this tariff, the decision of the Commission shall be final and binding.
- 1.26 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.

- 1.27 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.
- 1.28 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.
- 1.29 If any difficulty arises in giving effect to any of the provisions of this order, the Commission may, by general or special order, direct the Licensees to do or undertake things, which in the opinion of the Commission is necessary or expedient for the purpose of removing the difficulties.
- 1.30 All conditions prescribed herein shall be applicable notwithstanding if any contrary provisions, exist in the agreement entered into by the consumer with the licensee.
- 1.31 Wherever, there is contradiction in general terms & conditions and specific terms & conditions given for any particular category, the specific terms and conditions shall prevail for that category.
