

# **Aggregate Revenue Requirement**

**&**

## **Tariff Proposal for**

**FY 2021-22**

**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 2021

- (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 2021-22 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 17<sup>th</sup> December 2015” and Third amendment issued by MPERC dated 27<sup>th</sup> November 2020 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 31<sup>st</sup> 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 31<sup>st</sup> 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 3<sup>rd</sup> 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 05<sup>th</sup> 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 17<sup>th</sup> 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 30<sup>th</sup> November 2018, wherein it has extended the control period to FY 2019-20 and has approved certain norms for FY 2019-20. MPERC has issued second amendment on dated 14<sup>th</sup> Nov’2019 and extended the control period to FY 2020-21 and has approved certain norms for FY 2020-21. MPERC has also issued third amendment on dated 27<sup>th</sup> Nov’2020 and extended the control period to FY 2021-22 and has approved

certain norms for FY 2021-22.

12. It is submitted that the present ARR for MYT FY 2018-19 to FY 2021-22 & Tariff Petition for FY 2021-22 has been prepared in accordance with the normative parameters and clauses as defined under Tariff Regulations 2015 and subsequent First amendment, Second amendment and third 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 44,814/- Crores for MP State, Rs.13,479/- Crores for East Discom, Rs 14,162/- Crores for Central Discom and Rs 17,173/- Crores for West Discom respectively and a Revenue Gap of Rs 2,629/- Crores for MP State, Rs 801/- Crores for East Discom, Rs 846/- Crores for Central Discom and Rs 982/- Crores for West Discom respectively for FY 2021-22. The summary of the Petitioners Claim is shown below:

Sr.	Particular	Unit	MP State	East	Central	West
1	Total ARR	Rs Crs.	44,814	13,479	14,162	17,173
2	Revenue at Current Tariffs	Rs Crs.	42,185	12,679	13,315	16,191
3	Total Revenue Gap (Including True-Up)	Rs Crs.	2,629	801	846	982
4	Average Cost of Supply (Including True-up)	Rs./Unit	7.00	6.91	6.98	7.10

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, Chief General Manager (Commercial) of MPPoKVVCL; Shri Gangaram Patele, General Manager (Regulatory Affairs) of MPMKVVCCL and Shri Shailendra Jain, Deputy Director (Commercial) of MPPaKVVCL 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 2021-22;
- b) To approve the net ARR of **Rs.44,814/- Crores for MP State** (Rs. 13,479/- Crores for East Discom, Rs. 14,162/- Crores for Central Discom and Rs. 17,173/- Crores for West Discom) and a Revenue Gap of **Rs.2629/- Crores for MP State** (Rs.801/- Crores for East Discom, Rs.846/-Crores for Central Discom and Rs.982/- Crores for West Discom) for FY 2021-22;
- 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 2021-22 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 2021-22 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: 15<sup>th</sup> of January' 2021

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

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

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

  
**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.*

<b>Abbreviation</b>	<b>Full Description</b>
<b>ARR</b>	Aggregate Revenue Requirement
<b>APTEL</b>	Appellate Tribunal for Electricity
<b>CERC</b>	Central Electricity Regulatory Commission
<b>CGS</b>	Central Generating Stations
<b>Co-gen</b>	Cogeneration Power Plant
<b>CPP</b>	Captive Power Plant
<b>EA – 2003</b>	The Electricity Act 2003
<b>ERLDC</b>	Eastern Regional Load Dispatch Committee
<b>ERPC</b>	Eastern Regional Power Committee
<b>FY</b>	Financial Year
<b>GFA</b>	Gross Fixed Assets
<b>GoMP</b>	Government of Madhya Pradesh
<b>GoI</b>	Government of India
<b>HT/ HV</b>	High Tension/ High Voltage
<b>IPPs</b>	Independent Power Producers
<b>kV / KVA</b>	Kilo Volt / Kilo Volt Ampere
<b>kW</b>	Kilo Watt
<b>LT/LV</b>	Low Tension/ Low Voltage
<b>MoP</b>	Ministry of Power, Government of India
<b>MPSEB</b>	Madhya Pradesh State Electricity Board
<b>MPERC</b>	Madhya Pradesh Electricity Regulatory Commission
<b>MPMKVVCL</b>	Madhya Pradesh Madhya Kshetra Vidyut Vitran Company Limited
<b>MPPaKVVCL</b>	Madhya Pradesh Paschim Kshetra Vidyut Vitran Company Limited
<b>MPPoKVVCL</b>	Madhya Pradesh Poorv Kshetra Vidyut Vitran Company Limited
<b>MPPMCL</b>	Madhya Pradesh Power Management Company Limited
<b>MPPGCL</b>	Madhya Pradesh Power Generation Company Limited
<b>MPPTCL</b>	Madhya Pradesh Power Transmission Company Limited
<b>MU</b>	Million Units
<b>NCE / NCES</b>	Non-Conventional Energy Sources
<b>PGCIL</b>	Power Grid Corporation India Limited
<b>SSGS</b>	State Sector Generating Stations
<b>SLDC</b>	State Load Dispatch Centre
<b>STOA</b>	Short Term Open Access
<b>TO</b>	Tariff Order
<b>WRLDC</b>	Western Regional Load Dispatch Committee
<b>WRPC</b>	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 2018-19 to FY 2021-22 & Tariff Proposal for FY 2021-22 based on Tariff Regulations, 2015 and Third Amendment issued therein. The following elements have been explained in detail for FY 2019-20 to FY 2021-22:

- 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 2019-20 to FY 2021-22 & Tariff Proposal for FY 2021-22 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 Third 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 2021 to March 2022. 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 2019-20 to FY 2021-22 & Tariff Petition for FY 2021-22 in accordance with the applicable Regulations as expenses and income have been considered while issuing the Tariff Order for FY 2021-22.

#### 1.1.2 For Reference

- FY 2019-20 or FY 20 is from 01<sup>st</sup> April 19 to 31<sup>st</sup> March 20 (Actual)
- FY 2020-21 or FY 21 is from 01<sup>st</sup> April 20 to 31<sup>st</sup> March 21 (Re-Estimate)
- FY 2021-22 or FY 22 is from 01<sup>st</sup> April 21 to 31<sup>st</sup> March 22 (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 17<sup>th</sup> 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 (Third Amendment) Regulations, 2015 dated 25<sup>th</sup> November 2020” (Hereinafter referred to as “Third Amendment of Tariff Regulations, 2020) – Applicable for FY 2021-22;*

**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 the sale of electricity, number of consumers, connected / contracted load, etc. of the preceding four years i.e. FY 2016-17 , FY 2017-18, FY 2018-19, FY 2019-20 and available data of the FY 2020-21 i.e. up to the month of Oct'2020.
- 3.1.2 The distribution licensees, in their previous year's filing for FY 2020-21, had projected the Sales based on the actual data of FY 2018-19. Since the actual data of FY 2019-20 is now available and it has been observed that the actual sales during FY 2019-20 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 2020-21 and thereafter project the sales for FY 2021-22. There is an impact of Covid on sales for four months (April 2020 to Oct 2020) which is considered in the model.
- 3.1.3 The sales for FY 2021-22 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 2020-21.
- 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
LV 1	Domestic	4,791	5,453	6,432	4,999	5,688	6,095	4,913	5,329	5,803	14,704	16,637	18,330
LV 2	Non-Domestic	1,023	1,037	1,103	1,028	1,089	1,153	1,172	1,263	1,363	3,224	3,390	3,619
LV 3	WW & Street Light	353	369	386	378	403	431	415	421	430	1,147	1,194	1,247
LV 4	LT Industrial	369	371	402	295	330	371	642	662	683	1,306	1,363	1,455
LV 5.1	Agriculture Irrigation Pumps	6,067	6,556	7,470	6,746	7,430	7,691	9,692	9,834	9,967	22,505	23,820	25,128
LV 5.2	Agriculture related Use	7	8	8	4	4	5	2	2	2	13	14	15
LV6	LT EV	-	1	1	-	1	1	-	1	1	-	3	3
<b>Total (LT)</b>		<b>12,611</b>	<b>13,795</b>	<b>15,802</b>	<b>13,450</b>	<b>15,111</b>	<b>15,746</b>	<b>16,836</b>	<b>17,513</b>	<b>18,249</b>	<b>42,897</b>	<b>46,420</b>	<b>49,797</b>
HV 1	Railway Traction	-	55	55	-	55	55	-	-	-	-	111	111
HV 2	Coal Mines	477	489	501	25	29	34	-	-	-	503	518	534
HV 3.1	Industrial	2,419	2,397	2,443	3,137	3,325	3,527	4,070	4,197	4,334	9,627	9,920	10,304
HV 3.2	Non-Industrial	243	245	246	447	463	480	479	497	516	1,169	1,204	1,243
HV 4	Seasonal	7	8	9	2	2	2	10	10	10	20	21	21
HV 5.1	Public Water Works	6	6	6	12	13	15	233	238	299	251	257	319
HV 5.1	Irrigation	16	17	17	9	10	11	8	8	8	33	35	36
HV 5.2	Other Agricultural	113	121	139	222	237	254	540	615	741	874	974	1,134
HV 6	Bulk Residential Users	259	268	281	154	163	172	27	27	28	440	458	480
HV 7	Start Up Power	0	0	0	1	1	1	13	14	15	14	15	16
HV 8	HT EV	-	2	2	-	3	3	1	1	1	1	6	6
<b>Total (HT)</b>		<b>3,541</b>	<b>3,607</b>	<b>3,698</b>	<b>4,011</b>	<b>4,303</b>	<b>4,554</b>	<b>5,382</b>	<b>5,607</b>	<b>5,952</b>	<b>12,933</b>	<b>13,517</b>	<b>14,204</b>
<b>TOTAL LT+HT</b>		<b>16,152</b>	<b>17,402</b>	<b>19,500</b>	<b>17,461</b>	<b>19,414</b>	<b>20,300</b>	<b>22,218</b>	<b>23,120</b>	<b>24,201</b>	<b>55,831</b>	<b>59,936</b>	<b>64,001</b>

### 3.2 Category-wise sales Projection.

The methodology adopted by the petitioners for category-wise projection of sales for FY 2021-22 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).

After factoring the growth in consumers, the following projections have 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
Urban	Metered	2,035	2,028	2,489	2,837	3,010	3,140	2,643	2,873	3,125	7,515	7,910	8,754
Urban	Un-metered	0	-	-	2	-	-	-	-	-	2	-	-
Urban	Temporary	16	21	23	18	18	18	31	31	29	65	70	70
<b>Urban</b>	<b>Total</b>	<b>2,050</b>	<b>2,049</b>	<b>2,512</b>	<b>2,857</b>	<b>3,028</b>	<b>3,159</b>	<b>2,675</b>	<b>2,904</b>	<b>3,154</b>	<b>7,582</b>	<b>7,980</b>	<b>8,824</b>
Rural	Metered	2,327	3,030	3,546	1,725	1,828	1,938	2,224	2,420	2,641	6,276	7,278	8,125
Rural	Un-metered	412	372	372	415	996	996	8	2	2	835	1,370	1,370
Rural	Temporary	2	2	2	2	2	2	6	7	7	10	11	11
<b>Rural</b>	<b>Total</b>	<b>2,741</b>	<b>3,404</b>	<b>3,921</b>	<b>2,142</b>	<b>2,827</b>	<b>2,936</b>	<b>2,238</b>	<b>2,428</b>	<b>2,649</b>	<b>7,121</b>	<b>8,659</b>	<b>9,506</b>
Total	Metered	4,361	5,058	6,035	4,562	4,838	5,078	4,868	5,292	5,765	13,791	15,188	16,879
Total	Un-metered	412	372	372	417	996	996	8	2	2	838	1,370	1,370
Total	Temporary	18	23	25	20	20	21	37	38	36	76	81	82
<b>Total</b>	<b>Total</b>	<b>4,791</b>	<b>5,453</b>	<b>6,432</b>	<b>4,999</b>	<b>5,855</b>	<b>6,095</b>	<b>4,913</b>	<b>5,332</b>	<b>5,803</b>	<b>14,704</b>	<b>16,639</b>	<b>18,330</b>

### 3.2.1.2 East Discom

The growth percentages assumed for the category for the FY 2021-22 are as shown below:

**Table 3: Growth Percentage Assumption East Discom**

Area	Category	Urban	Rural	
Metered	Consumer	18.00%	Nominal Growth Considered	15.88% Nominal Growth Considered
	Average Load (kW) per Consumer	0.00%	No Growth Considered	1.03% 3-Year CAGR Considered
	Average consumption per consumer per month	3.54%	7 Month Variation considered	2.00% Nominal Growth Considered
Un-metered	Consumer	0.00%	No growth rate has been considered	8.81%
	Average Load per Consumer	0.00%		3.51% 3-Year CAGR Growth Considered
	Average consumption per consumer per month	0.00%		3.89%
Temporary	Consumer	7.73%	3-year CAGR considered	0.00% No Growth Considered
	Average Load per Consumer	0.00%	No growth Considered	2.64% 3-Year CAGR Considered
	Average consumption per consumer per month	5.91%	7 Month Variation considered	12.31% 3-Year CAGR Considered

### 3.2.1.3 Central Discom

The growth percentages assumed for the category for the FY 2021-22 are as shown below:

**Table 4: Growth Percentage Assumption Central Discom**

Area	Category	Urban	Rural	
Metered	Consumer	3.28%	Nominal growth rate considered	4.94% 7 months variation Considered
	Average Load (kW) per Consumer	1.51	3 Year CAGR Considered	0.77 3 Year CAGR Considered
	Average consumption per consumer per month	1.03%	2 Year CAGR Considered	1.00% Nominal Growth Rate Considered
Un-metered	Consumer	0.00%	No growth rate considered	0.00%
	Average Load per Consumer	0.00%		0.47 No growth rate considered
	Average consumption per consumer per month	0.00%		0.00%
Temporary	Consumer	0.00%	3 Year CAGR Considered	1.24%
	Average Load per Consumer	1.40		1.36 7-Months Variation considered
	Average consumption per consumer per month	0.00%		0.00%

### 3.2.1.4 West Discom

The growth percentages assumed for the category for the FY 2021-22 are as shown below:

**Table 5: Growth Percentage Assumption West Discom**

Area	Category	Urban		Rural	
Metered	Consumer	1.05%	Nominal Growth rate has been considered	2.00%	Nominal Growth rate has been considered
	Average Load (kW) per Consumer	5.00%	Nominal Growth rate has been considered	6.67%	Nominal Growth rate has been considered
	Average consumption per consumer per month	4.03%	2 year CAGR Considered	16.72%	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	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Average Load per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	

3.2.1.5 The no of connection to be served under Saubhagya scheme has already been completed and included in R15 data from West Discom and so no additional impact has been included.

### 3.2.2 LV-2: Non-Domestic

3.2.2.1 The future projections for FY 2021-22 are as below:

**Table 6 : Energy Sales for LV 2 (MUs)**

Sub-category	East Discom			Central Discom			West Discom			MP State		
	FY 20	FY 21 (RE)	FY 22 (P)	FY 20	FY 21 (RE)	FY 22 (P)	FY 20	FY 21 (RE)	FY 22 (P)	FY 20	FY 21 (RE)	FY 22 (P)
Metered	992	1,004	1,068	980	1,039	1,101	1,121	1,218	1,320	3,093	3,261	3,489
Temporary	31	33	35	48	50	52	51	39	43	131	122	129
Total	1,023	1,037	1,103	1,028	1,089	1,153	1,172	1,257	1,363	3,224	3,383	3,619

#### 3.2.2.2 East Discom

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

**Table 7: Growth Percentage Assumption East Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Metered	Consumer	0.00%	No Growth Considered	0.00%	No Growth Considered
	Average Load (kW) per Consumer	0.00%	No Growth Considered	0.00%	No Growth Considered
	Average consumption per kW per month	0.00%	No Growth Considered	0.00%	No Growth Considered
Temporary	Consumer	0.72%	7-month variation considered	5.14%	3-Year CAGR considered
	Average Load (kW) per Consumer	0.00%	No Growth Considered	6.54%	3-Year CAGR considered
	Average consumption per consumer per month	0.00%	No Growth Considered	2.54%	3-Year CAGR considered

### 3.2.2.3 Central Discom

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

**Table 8: Growth Percentage Assumption Central Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Metered	Consumer	3.25%	No Growth Considered	11.14%	No Growth Considered
	Average Load (kW) per Consumer	3.83%	No Growth Considered	0.14%	No Growth Considered
	Average consumption per kW per month	0.00%	No Growth Considered	1.61%	No Growth Considered
Temporary	Consumer	7.69%	3-Year CAGR Considered	7.26%	No Growth Considered
	Average Load (kW) per Consumer	0.00%	3-Year CAGR Considered	0.00%	No Growth Considered
	Average consumption per consumer per month	0.00%	No Growth Considered	0.00%	No Growth Considered

### 3.2.2.4 West Discom

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

**Table 9: Growth Percentage Assumption West Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Metered	Consumer	3.18%	3-year CAGR Considered	9.96%	3-year CAGR Considered
	Average Load (kW) per Consumer	5.00%	YoY Growth Considered	2.00%	Nominal Growth Considered
	Average consumption per kW per month	0.00%	No Growth rate has been Considered	1.39%	3-year CAGR Considered
Temporary	Consumer	7.10%	3-year CAGR Considered	18.22%	3-year CAGR Considered
	Average Load (kW) per Consumer	0%	No growth Considered	4.90%	3-year CAGR Considered

	Average consumption per consumer per month	0%	No Growth rate has been Considered	0%	No Growth rate has been Considered
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### 3.2.3 LV-3.1: Public Water Works & Street Light

The projections for FY 21 and FY 22 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	
	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22
Municipal Corp.	41	43	121	134	48	48	210	225
Nagar Panchayat	57	57	76	76	54	54	187	188
Gram Panchayat	131	143	80	88	159	161	370	392
Temporary	5	6	6	6	7	7	18	19
<b>Total</b>	<b>234</b>	<b>249</b>	<b>283</b>	<b>304</b>	<b>267</b>	<b>270</b>	<b>785</b>	<b>823</b>

The projections for FY 21 and FY 22 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 21	FY 22	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22
Municipal Corp.	51	51	67	73	59	62	176	186
Nagar Panchayat	53	54	46	46	49	50	148	149
Gram Panchayat	31	32	7	7	47	49	84	89
<b>Total</b>	<b>135</b>	<b>138</b>	<b>120</b>	<b>126</b>	<b>154</b>	<b>160</b>	<b>409</b>	<b>424</b>

#### 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	2.83%	3-year CAGR Considered	0.00%	No growth Considered
	Average Load (kW) per Consumer	0.00%	No growth Considered	0.00%	No growth Considered
	Average consumption per kW per month	8.58%	7-month variation Considered	0.00%	No growth Considered

Area	Category	Urban		Rural	
Nagar Panchayat	Consumer	3.29%	3-year CAGR Considered	0.42%	3-year CAGR Considered
	Average Load (kW) per Consumer	0.82%	3-year CAGR Considered	28.34%	3-year CAGR Considered
	Average consumption per consumer per month	2.26%	1-year CAGR considered	14.11%	1-year CAGR considered
Gram Panchayat	Consumer	0.00%	No growth Considered	6.79%	3-year CAGR Considered
	Average Load (kW) per Consumer	0.00%	No growth Considered	1.61%	3-year CAGR Considered
	Average consumption per consumer per month	0.00%	No growth Considered	0.00%	No growth Considered
Temporary	Consumer	0.00%	No growth Considered	0.00%	No growth Considered
	Average Load (kW) per Consumer	0.00%	No growth Considered	0.00%	No growth Considered
	Average consumption per consumer per month	0.00%	No growth Considered	0.00%	No growth 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	4.13%	3-Year CAGR Considered	0.00%	No growth rate Considered
	Average Load (kW) per Consumer	1.32%	3-Year CAGR Considered	3.38%	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	0.11%	3-Year CAGR Considered	1.64%	1-Year CAGR Considered
	Average Load (kW) per Consumer	6.04%	3-Year CAGR Considered	13.27%	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	16.35%	3-Year CAGR Considered
	Average Load (kW) per Consumer	13.57%	3-Year CAGR Considered	7.06%	3-Year CAGR Considered
	Average consumption per consumer per month	0.00%	No growth rate Considered	0.00%	No growth rate Considered
Temporary	Consumer	12.73%	3-Year CAGR Considered	9.37%	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**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Municipal Corporation	Consumer	2.00%	Nominal Considered	5.00%	Nominal Considered
	Average Load (kW) per Consumer	3.08%	3 year CAGR Considered	11.35%	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	2.00%	Nominal Considered	0.00%	No growth rate considered.
	Average Load (kW) per Consumer	4.81%	3 year CAGR Considered	5.78%	2year 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	5.00%	Nominal Growth Considered
	Average Load (kW) per Consumer	19.84%	3 year CAGR Considered	13.17%	3 year CAGR Considered
	Average consumption per consumer per month	3.92%	3 year CAGR Considered	0.00%	No Growth Rate Considered
Temporary	Consumer	1.00%	Nominal Growth Rate Considered	5.00%	Nominal Growth Rate Considered
	Average Load (kW) per Consumer	2.48%	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

### 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**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Municipal Corporation	Consumer	5.00%	Nominal growth considered	4.00%	Nominal growth considered
	Average Load (kW) per Consumer	5.00%	Nominal growth considered	4.00%	Nominal growth considered
	Average consumption per kW per month	5.00%	Nominal growth considered	4.00%	Nominal growth considered
Nagar Panchayat	Consumer	5.00%	Nominal growth considered	4.00%	Nominal growth considered
	Average Load (kW) per Consumer	5.00%	Nominal growth considered	4.00%	Nominal growth considered
	Average consumption per consumer per month	5.00%	Nominal growth considered	4.00%	Nominal growth considered
Gram Panchayat	Consumer	1.00%	Nominal growth considered	1.00%	Nominal growth considered
	Average Load (kW) per Consumer	1.00%	Nominal growth considered	1.00%	Nominal growth considered

Area	Category	Urban		Rural	
	Average consumption per consumer per month	1.00%	Nominal growth considered	1.00%	Nominal growth 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	4.79%	3-Year CAGR Considered	0.00%	No growth rate Considered
	Average Load (kW) per Consumer	2.46%	3-Year CAGR Considered	11.76%	7-months variation considered
	Average consumption per kW per month	2.77%	3-Year CAGR Considered	0.00%	No growth rate Considered
Nagar Panchayat	Consumer	4.06%	3-Year CAGR Considered	4.89%	3-Year CAGR Considered
	Average Load (kW) per Consumer	2.77%	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
Gram Panchayat	Consumer	0.00%	No growth rate Considered	2.28%	7-months variation considered
	Average Load (kW) per Consumer	7.83%	3-Year CAGR Considered	14.12%	7-months variation considered
	Average consumption per consumer per month	0.00%	No growth rate Considered	0.00%	No growth rate Considered

### 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	
Municipal Corporation	Consumer	6.99%	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	6.73%	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	0.00%	No Growth Rate Considered	1.68%	3 Year CAGR Considered

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	3.51%	3 Year CAGR Considered	3.24%	3 Year CAGR Considered
	Average consumption per consumer per month	2.26%	3 Year CAGR Considered	0.00%	No Growth Rate Considered

### 3.2.4 LV-4. Industrial

The projections for FY 21 and FY 22 for LV 4.1 Non- Seasonal Industrial are as follows:

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

Sub Category	East Discom		Central Discom		West Discom		MP State	
	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22
Up to 25HP	169	178	166	182	261	270	595	629
Above 25HP to 100HP	113	120	120	131	239	241	472	492
Above 100HP	72	86	39	52	152	161	264	298
Temporary LT Ind.	16	17	2	2	1	1	19	21
<b>Total</b>	<b>370</b>	<b>400</b>	<b>327</b>	<b>367</b>	<b>653</b>	<b>674</b>	<b>1,350</b>	<b>1,441</b>

The projections for FY 21 and FY 22 for LV 4.2 Seasonal Industrial are as follows:

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

Subcategory	East Discom		Central Discom		West Discom		MP State	
	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22	FY 21	FY 22
Up to 25HP	0	0	0	1	3	3	3	3
Above 25HP to 100HP	1	1	2	2	2	2	5	5
Above 100HP	0	1	1	1	3	4	5	6
<b>Total</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>9</b>	<b>13</b>	<b>14</b>

#### 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**

Area	Category	Urban		Rural	
Upto 25HP	Consumer	0.00%	No Growth considered	0.00%	No Growth considered
	Average Load (kW) per Consumer	0.00%	No Growth considered	0.00%	No Growth considered
	Average consumption per kW per month	3.00%	Nominal Growth considered	3.00%	Nominal Growth considered
Above 25HP to 100HP	Consumer	1.00%	Nominal Growth considered	8.00%	Variation considered

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
	Average Load (kW) per Consumer	0.00%	No Growth considered	0.00%	No Growth considered
	Average consumption per consumer per month	3.00%	Nominal Growth considered	3.00%	Nominal Growth considered
Above 100HP	Consumer	15.00%	3-year CAGR considered	10.00%	Nominal growth considered
	Average Load (kW) per Consumer	0.00%	No Growth considered	0.00%	No Growth considered
	Average consumption per consumer per month	3.00%	Nominal Growth considered	3.00%	Nominal Growth considered
Temporary	Consumer	3.00%	Nominal Growth considered	2.00%	Nominal Growth considered
	Average Load (kW) per Consumer	0.00%	No Growth considered	0.00%	No Growth considered
	Average consumption per consumer per month	3.00%	Nominal Growth considered	3.00%	Nominal Growth considered

### 3.2.4.1.2 Central Discom

The growth percentages assumed are as follows:

**Table 21: Growth Percentage Assumption Central Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Upto 25HP	Consumer	5.00%	Nominal growth rate considered	4.13%	3-Year CAGR Considered
	Average Load (kW) per Consumer	2.44%	7-months variation considered	3.55%	1-Year CAGR Considered
	Average consumption per kW per month	2.06%	3-Year CAGR Considered	1.83%	1-Year CAGR Considered
Above 25HP to 100HP	Consumer	2.92%	3-Year CAGR Considered	12.70%	3-Year CAGR Considered
	Average Load (kW) per Consumer	3.00%	Nominal growth rate considered	0.63%	3-Year CAGR Considered
	Average consumption per consumer per month	1.60%	1-Year CAGR Considered	3.09%	2-Year CAGR Considered
Above 100HP	Consumer	19.23%	3-Year CAGR Considered	28.32%	7-months variation considered
	Average Load (kW) per Consumer	0.56%	3-Year CAGR Considered	1.77%	3-Year CAGR Considered
	Average consumption per consumer per month	4.72%	3-Year CAGR Considered	9.46%	3-Year CAGR Considered
Temporary	Consumer	30.00%	Nominal growth rate considered	10.00%	Nominal growth rate considered
	Average Load (kW) per Consumer	51.63%	7-months variation considered	5.00%	Nominal growth rate considered
	Average consumption per consumer per month	1.84%	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**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Upto 25HP	Consumer	3.00%	Nominal Growth Rate Considered	2.84%	3 Year CAGR Considered
	Average Load (kW) per Consumer	1.05%	3 Year CAGR Considered	1.72%	YoY 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	4.00%	Nominal growth Considered	10.00%	Nominal 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	0.00%	No Growth Rate Considered
Above 100HP	Consumer	4.00%	Nominal Growth rate Considered	10.00%	Nominal Growth rate Considered
	Average Load (kW) per Consumer	0.19%	3 Year CAGR Considered	0.00%	No Growth Rate Considered
	Average consumption per consumer per month	4.51%	YoY Growth Considered	2.68%	3 Year CAGR Considered
Temporary	Consumer	0.00%	No Growth Rate Considered	2.00%	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

### 3.2.4.2 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**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Upto 25HP	Consumer	15.00%	3-year CAGR considered	0.00%	No growth considered
	Average Load (kW) per Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average consumption per kW per month	0.00%	No growth considered	0.00%	No growth considered
Above 25HP to 100HP	Consumer	10.06%	3-year CAGR considered	25.99%	3-year CAGR considered
	Average Load (kW) per Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average consumption per consumer per month	0.00%	No growth considered	0.00%	No growth considered
Above 100HP	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average Load (kW) per Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average consumption per consumer per month	0.00%	No growth considered	0.00%	No growth 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	16.77%	2-Year CAGR Considered 0.00% No growth rate Considered
	Average Load (kW) per Consumer	0.65%	7-months variation considered 0.00% No growth rate Considered
	Average consumption per kW per month	4.84%	3-Year CAGR Considered 0.00% No growth rate Considered
Above 25HP to 100HP	Consumer	8.20%	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	6.66%	2-Year CAGR Considered 0.00% No growth rate Considered
Above 100HP	Consumer	25.99%	3-Year CAGR Considered 0.00% No growth rate Considered
	Average Load (kW) per Consumer	3.16%	3-Year CAGR Considered 0.00% No growth rate Considered
	Average consumption per consumer per month	24.00%	3-Year CAGR 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	2.40% 3 Year CAGR Considered	2.82% 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	0.00% No Growth Rate Considered	5.72% 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
Above 100HP	Consumer	50.00% 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

### 3.2.5 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	East Discom			Central Discom			West Discom			MP State		
		FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
Urban	Metered General	8	11	11	49	48	51	7	13	13	65	72	75
Urban	Metered Temporary	1	1	1	5	6	6	1	1	1	6	7	7
Urban	Unmetered General	292	287	310	164	176	184	170	171	171	626	634	665
Urban	Unmetered Temporary	15	15	16	6	17	17	11	11	11	32	43	44
<b>Urban</b>	<b>Total</b>	<b>315</b>	<b>313</b>	<b>338</b>	<b>225</b>	<b>248</b>	<b>256</b>	<b>189</b>	<b>195</b>	<b>196</b>	<b>729</b>	<b>756</b>	<b>790</b>
Rural	Metered General	2	1	1	5	12	15	2	2	2	9	15	18
Rural	Metered Temporary	0	0	0	1	2	2	0	0	0	1	2	2
Rural	Unmetered General	5,514	5,982	6,846	6,343	7,009	7,267	9,238	9,366	9,493	21,095	22,357	23,605
Rural	Unmetered Temporary	236	259	285	172	159	151	263	271	276	671	689	713
<b>Rural</b>	<b>Total</b>	<b>5,752</b>	<b>6,242</b>	<b>7,132</b>	<b>6,521</b>	<b>7,182</b>	<b>7,434</b>	<b>9,503</b>	<b>9,639</b>	<b>9,772</b>	<b>21,776</b>	<b>23,063</b>	<b>24,338</b>
Total	Metered General	10	12	12	54	60	66	9	15	15	74	87	93
Total	Metered Temporary	1	1	1	6	8	7	1	1	1	8	9	9
Total	Unmetered General	5,806	6,268	7,155	6,507	7,185	7,450	9,409	9,537	9,664	21,722	22,290	24,269
Total	Unmetered Temporary	250	275	302	178	176	167	274	282	287	703	733	756
<b>Total</b>	<b>Total</b>	<b>6,067</b>	<b>6,556</b>	<b>7,470</b>	<b>6,746</b>	<b>7,430</b>	<b>7,691</b>	<b>9,692</b>	<b>9,834</b>	<b>9,967</b>	<b>22,505</b>	<b>23,820</b>	<b>25,128</b>

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	
	2020-21	2021-22	2020-21	2021-22
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**

Figures in Unit	Three Phase		Single Phase		
	Months	Urban	Rural	Urban	Rural
April	95	95	95	95	95
May	95	95	95	95	95
June	95	95	95	95	95
July	95	95	95	95	95
Aug	95	95	95	95	95
Sept	95	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	10%	Nominal Growth considered
	Load	10%	
	Consumption per HP	10%	

Area	Category	Urban		Rural	
Unmetered Permanent	Consumer	10%	Nominal Growth considered	10%	Nominal Growth considered
	Load	10%		10%	
	Consumption per HP	10%		10%	
Metered Temporary	Consumer	10%	Nominal Growth considered	10%	Nominal Growth considered
	Load/ consumer	10%		10%	
	Consumption per HP	10%		10%	

### 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	3.52%	Nominal growth rate considered	3.52%	Nominal growth rate considered
	Load	3.52%		3.52%	
	Consumption per HP	3.52%		3.52%	
Unmetered Permanent	Consumer	3.52%	Nominal growth rate considered	3.52%	Nominal growth rate considered
	Load	3.52%		3.52%	
	Consumption per HP	3.52%		3.52%	
Metered Temporary	Consumer	3.52%	Nominal growth rate considered	3.52%	Nominal growth rate considered
	Load/ consumer	3.52%		3.52%	
	Consumption per HP	3.52%		3.52%	

### 3.2.5.6 West Discom

With the conversion of most of the Agricultural Temporary Connections to Permanent Unmetered Connections under Mukhya Mantri Sthayi Krishi Pump Yojna (MMSKY) introduced in 2016, the petitioner has taken zero growth in FY 2021-22.

**Table 31: Growth Percentage Assumption West Discom**

Area	Category	Urban		Rural	
Metered General	Consumer	1%	Nominal Growth Rate Considered	1%	Nominal Growth Rate Considered
	Load	1%	Nominal Growth Rate Considered	1%	Nominal Growth Rate Considered
	Consumption per HP	1%	Nominal Growth Rate Considered	1%	Nominal Growth Rate Considered
Unmetered Permanent	Consumer	1%	Nominal Growth Rate Considered	1.35%	Nominal Growth Rate Considered
	Load	1%	Nominal Growth Rate Considered	1.35%	Nominal Growth Rate Considered
	Consumption per HP	1%	Nominal Growth Rate Considered	1.35%	Nominal Growth Rate Considered
Metered Temporary	Consumer	0.00%	No Growth Rate Considered	0.00%	No Growth Rate Considered
	Load/ consumer	0.00%		0.00%	
	Consumption per HP	0.00%		0.00%	

### 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
Upto 20HP	5	5	5	2	3	3	1	1	1	8	9	9
greater than 20HP	2	2	3	1	1	1	1	1	1	4	5	5
Temporary	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	8	8	4	4	5	2	2	2	13	14	15

#### 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**

Area	Category	Urban		Rural	
Upto 3HP	Consumer	0.00%	3-year CAGR considered	7.05%	3-year CAGR considered
	Average Load (kW) per Consumer	0.00%		3.00%	
	Average consumption per kW per month	0.00%		3.00%	
Above 3HP to 5HP	Consumer	0.00%	No growth considered	22.00%	
	Average Load (kW) per Consumer	0.00%	3-year CAGR considered	0.00%	3-year CAGR considered
	Average consumption per consumer per month	5.00%		5.00%	
Above 5HP to 10HP	Consumer	0.00%	No growth considered	20.04%	3-year CAGR considered
	Average Load (kW) per Consumer	0.00%	3-year CAGR considered	0.00%	No growth considered
	Average consumption per consumer per month	5.00%		5.00%	3-year CAGR considered
Above 10HP to 20HP	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average Load (kW) per Consumer	0.00%	3-year CAGR considered	0.00%	No growth considered
	Average consumption per consumer per month	5.00%		5.00%	3-year CAGR considered
Above 20HP	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average Load (kW) per Consumer	0.00%		0.00%	
	Average consumption per consumer per month	0.00%		0.00%	
Temporary	Consumer	0.00%		0.00%	

Area	Category	Urban		Rural	
	Average Load (kW) per Consumer	0.00%	No growth considered	0.00%	No growth considered
	Average consumption per consumer per month	0.00%		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	43.75 %	7-months variation considered	5.88%	7-months variation considered 7-months variation considered
	Average Load (kW) per Consumer	4.17%	3-Year CAGR Considered	4.76%	
	Average consumption per kW per month	8.43%	3-Year CAGR Considered	5.96%	7-months variation considered
Above 3HP to 5HP	Consumer	10.87 %	7-months variation considered	1.02%	3-Year CAGR Considered
	Average Load (kW) per Consumer	13.53 %	7-months variation considered	1.03%	3-Year CAGR Considered
	Average consumption per consumer per month	15.00 %	Nominal growth rate considered	15.00	Nominal growth rate considered
Above 5HP to 10HP	Consumer	10.53 %	7-months variation considered	14.58 %	7-months variation considered
	Average Load (kW) per Consumer	3.31%	1-Year CAGR Considered	10.00 %	Nominal growth rate considered
	Average consumption per consumer per month	10.00 %	Nominal growth rate considered	10.00 %	Nominal growth rate considered
Above 10HP to 20HP	Consumer	16.26 %	3-Year CAGR Considered	23.31 %	3-Year CAGR Considered
	Average Load (kW) per Consumer	18.68 %	3-Year CAGR Considered	15.67 %	1-Year CAGR Considered
	Average consumption per consumer per month	11.11 %	3-Year CAGR Considered	4.84%	2-Year CAGR Considered
Above 20HP	Consumer	22.39 %	3-Year CAGR Considered	11.87 %	3-Year CAGR Considered
	Average Load (kW) per Consumer	32.13 %	2-Year CAGR Considered	12.62 %	3-Year CAGR Considered
	Average consumption per consumer per month	5.00%	Nominal growth rate considered	13.52 %	1-Year CAGR Considered
Temporary	Consumer	10.00 %	Nominal growth rate considered	3.88%	1-Year CAGR Considered
	Average Load (kW) per Consumer	10.00 %	Nominal growth rate considered	7.02%	1-Year CAGR Considered
	Average consumption per consumer per month	43.75 %	7-months variation considered	5.88%	7-months variation 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	11.46%	3 Year CAGR Considered
	Average Load (kW) per Consumer	0.00%		No Growth Rate Considered	15.21%	3 Year CAGR Considered
	Average consumption per kW per month	1.60%		3 Year CAGR Considered	7.96%	3 Year CAGR Considered
Above 3HP to 5HP	Consumer	4.26%		3 Year CAGR Considered	16.11%	3 Year CAGR Considered
	Average Load (kW) per Consumer	6.15%		3 Year CAGR Considered	14.17%	3 Year CAGR Considered
	Average consumption per consumer per month	14.31%		3 Year CAGR Considered	11.53%	3 Year CAGR Considered
Above 5HP to 10HP	Consumer	0.00%		No Growth Rate Considered	1.89%	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	1.14%		3 Year CAGR Considered	7.18%	3 Year CAGR Considered
Above 10HP to 20HP	Consumer	5.27%		3 Year CAGR Considered	25.99%	3 Year CAGR Considered
	Average Load (kW) per Consumer	10.00%		Nominal Growth rate considered	25.38%	3 Year CAGR Considered
	Average consumption per consumer per month	10.13%		3 Year CAGR Considered	31.81%	3 Year CAGR Considered
Above 20HP	Consumer	12.62%		No Growth Rate Considered	44.22%	3 Year CAGR Considered
	Average Load (kW) per Consumer	11.31%		3 Year CAGR Considered	59.20%	3 Year CAGR Considered
	Average consumption per consumer per month	11.88%		3 Year CAGR Considered	29.20%	3 Year CAGR Considered
Temporary	Consumer	0.00%		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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
LV-6 EV 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 considered	10.00%	Nominal growth rate considered
	Units (MUS)	15.00%	Nominal growth rate considered	15.00%	Nominal growth rate considered

### 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	1%	No growth rate considered	1%	No growth rate considered
	Load (kW)	5%	Nominal Growth Rate	5%	Nominal Growth Rate
	Units (MUS)	10%	Nominal Growth Rate	10%	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)**

<b>Sub-Category</b>	<b>East Discom</b>			<b>Central Discom</b>			<b>West Discom</b>			<b>MP State</b>		
	<b>FY 20</b>	<b>FY 21 (RE)</b>	<b>FY 22 (Proj.)</b>	<b>FY 20</b>	<b>FY 21 (RE)</b>	<b>FY 22 (Proj.)</b>	<b>FY 20</b>	<b>FY 21 (RE)</b>	<b>FY 22 (Proj.)</b>	<b>FY 20</b>	<b>FY 21 (RE)</b>	<b>FY 22 (Proj.)</b>
HV-1 Railway Traction	-	55	55	-	55	55	-	-		-	111	111

#### **3.2.8.1 East Discom**

There has been no sale to Railways in FY 2017-18, FY 2018-19 and FY 2019-20, 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 2020-21. 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, FY 2018-19 and FY 2019-20, 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 2020-21. 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.

### **HV -2: Coal Mines**

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

**Table 41: Energy Sales for HV 2 (MUs)**

Sub-Categor y	East Discom			Central Discom			West Discom			MP State		
	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
132 kV	225	236	247	-	-	-	-	-	-	225	236	247
33 kV	249	250	250	25	29	34	-	-	-	275	279	284
11 kV	3	3	3	-	-	-	-	-	-	3	3	3
<b>Total</b>	<b>477</b>	<b>489</b>	<b>501</b>	<b>25</b>	<b>29</b>	<b>34</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>503</b>	<b>518</b>	<b>534</b>

### 3.2.8.4 East Discom

**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)	4.83%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
33 kV	Consumer	0.00%	No Growth rate has been considered	2.70%	3 Year CAGR Considered
	Load (kW)	0.00%	No Growth rate has been considered	3.62%	3 Year CAGR Considered
	Units (MUS)	0.50%	Nominal Growth Considered	0.00%	No growth 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

### 3.2.8.5 Central Discom

No Growth has been considered except nominal growth in urban area.

**Table 43: Growth Percentage Assumption Central Discom**

Area	Category	Urban		Rural	
132 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	
33 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate considered	0.00%	
	Units (MUS)	15.00%	Nominal growth rate considered	0.00%	
11 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		0.00%	

### 3.2.8.6 West Discom

West Discom lacks any consumer base for this category.

### 3.2.9 HV 3: Industrial and Non-Industrial

The future projections are as follows:

**Table 44: Energy Sales for HV 3 (MUs)**

Sub-Category		East Discom			Central Discom			West Discom			MP State		
		FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
Industrial - Unit (MU)	220 kV	477	472	477	-	-	-	10	10	10	487	482	487
	132 kV	1,002	990	1,010	1,580	1,711	1,853	988	1,017	1,057	3,570	3,718	3,920
	33 kV	812	808	826	1,493	1,547	1,603	2,884	2,976	3,067	5,189	5,331	5,495
	11 kV	128	127	130	65	67	70	189	194	199	382	389	401
	<b>Total</b>	<b>2,419</b>	<b>2,397</b>	<b>2,443</b>	<b>3,137</b>	<b>3,325</b>	<b>3,527</b>	<b>4,070</b>	<b>4,197</b>	<b>4,334</b>	<b>9,627</b>	<b>9,920</b>	<b>10,304</b>
Non Industrial - Unit (MU)	132 kV	0	0	0	4	4	5	43	45	47	47	50	52
	33 kV	153	153	154	321	335	349	312	324	341	785	813	845
	11 kV	90	91	92	121	124	126	125	127	128	337	342	346
	<b>Total</b>	<b>243</b>	<b>245</b>	<b>246</b>	<b>447</b>	<b>463</b>	<b>480</b>	<b>479</b>	<b>497</b>	<b>516</b>	<b>1,169</b>	<b>1,204</b>	<b>1,243</b>

### 3.2.9.1 East Discom

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

**Table 45: Growth Percentage Assumption East Discom**

Area	Category	Urban		Rural	
440/220 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered
132 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered
33 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered
11 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered

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

**Table 46: Growth Percentage Assumption East Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
132 kV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.50%		0.00%	
33 kV	Consumer	2.73%	3-year CAGR considered		3-year CAGR considered
	Load (kW)	0.00%	No growth considered		3-year CAGR considered
	Units (MUS)	0.50%	Nominal growth considered.		Nominal growth considered
11 kV	Consumer	2.58%	3-year CAGR considered		3-year CAGR considered
	Load (kW)	1.75%	3-year CAGR considered		3-year CAGR considered
	Units (MUS)	0.50%	Nominal growth considered.		Nominal growth considered

### 3.2.9.2 Central Discom

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

**Table 47: Growth Percentage Assumption Central Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
440/220 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate considered	0.00%	
	Units (MUS)	5.00%	No growth rate considered	0.00%	
132 kV	Consumer	1.82%	3 Year CAGR Considered	10.00%	Nominal growth rate considered
	Load (kW)	15.74%	1 Year CAGR Considered	10.00%	
	Units (MUS)	8.50%	Nominal growth rate considered	5.00%	
33 kV	Consumer	7.90%	3 Year CAGR Considered	10.14%	3 Year CAGR Considered
	Load (kW)	4.90%	3 Year CAGR Considered	0.25%	
	Units (MUS)	3.88%	2 Year CAGR Considered	2.87%	
11 kV	Consumer	1.30%	3 Year CAGR Considered	17.57%	3 Year CAGR Considered
	Load (kW)	3.39%	3 Year CAGR Considered	26.21%	3 Year CAGR Considered
	Units (MUS)	3.40%	1 Year CAGR Considered	15.00%	Nominal growth rate considered

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

**Table 48: Growth Percentage Assumption Central Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
132 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	2.00%	Nominal growth rate considered	0.00%	
	Units (MUS)	2.00%	Nominal growth rate considered	0.00%	
33 kV	Consumer	5.58%	1 Year CAGR Considered	4.00%	Nominal growth rate considered
	Load (kW)	3.86%	3 Year CAGR Considered	3.00%	Nominal growth rate considered
	Units (MUS)	4.33%	1 Year CAGR Considered	2.00%	Nominal growth rate considered
11 kV	Consumer	6.16%	1 Year CAGR Considered	2.33%	3 Year CAGR Considered
	Load (kW)	6.59%	1 Year CAGR Considered	11.00%	3 Year CAGR Considered
	Units (MUS)	2.01%	1 Year CAGR Considered	2.51%	3 Year CAGR Considered

### 3.2.9.3 West Discom

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

**Table 49: Growth Percentage Assumption West Discom**

<b>Area</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
440/220 kV	Consumer	0.00%	No Growth rate considered	0.00%	No Growth rate has been considered
	Load (kW)	0.00%		0.00%	
	Units (MUS)	0.00%		2.25%	YoY Growth rate Considered
132 kV	Consumer	0.74%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	16.51%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	3.92%	Nominal Growth Considered	0.00%	Nominal Growth Considered
33 kV	Consumer	6.31%	3 Year CAGR Considered	5.74%	3 Year CAGR Considered
	Load (kW)	3.64%	3 Year CAGR Considered	3.54%	3 Year CAGR Considered
	Units (MUS)	3.00%	3 Year CAGR Considered	3.50%	3 Year CAGR Considered
11 kV	Consumer	7.72%	3 Year CAGR Considered	2.13%	3 Year CAGR Considered
	Load (kW)	9.23%	3 Year CAGR Considered	5.55%	3 Year CAGR Considered
	Units (MUS)	3.00%	3 Year CAGR Considered	3.00%	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 West 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%	No Growth rate has been considered	0.00%	
	Units (MUS)	4.97%	3 Year CAGR Considered	0.00%	
33 kV	Consumer	3.14%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	4.16%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	4.77%	3 Year CAGR Considered	8.08%	3 Year CAGR Considered
11 kV	Consumer	4.05%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	4.07%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	0.00%	No Growth Considered	25.28%	3 Year CAGR Considered

### 3.2.10 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
33 kV	6	7	7	2	2	2	8	8	8	16	17	17
11 kV	1	1	1	0	1	1	2	2	2	4	4	4
Total	7	8	9	2	2	2	10	10	10	20	21	21

#### 3.2.10.1 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	0.00%	No growth considered	7.72%	3-year CAGR considered
	Load (kW)	0.00%	No growth considered	20.59%	% variation considered
	Units (MUS)	2.00%	Nominal growth considered	11.00%	Nominal growth considered
11 kV	Consumer	7.72%	3-year CAGR considered	0.00%	No growth considered
	Load (kW)	2.00%	Nominal growth considered	0.00%	No growth considered
	Units (MUS)	8.00%	Nominal growth considered	11.00%	Nominal growth considered

### **3.2.10.2 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	44.22%	3 Year CAGR Considered	0.00%	No growth rate considered
	Load (kW)	98.53%	7 months variation considered	0.00%	No growth rate considered
	Units (MUS)	11.42%	3 Year CAGR Considered	0.00%	No growth rate considered
11 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	41.25%	3 Year CAGR Considered	0.00%	No growth rate considered
	Units (MUS)	28.19%	1 Year CAGR Considered	0.00%	No growth rate considered

### **3.2.10.3 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	1.00%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	10.81%	3 Year Growth considered	0.00%	No Growth rate has been considered
	Units (MUS)	2.00%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
11 kV	Consumer	1.00%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	9.84%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	1.80%	3 Year CAGR Considered	0.00%	No Growth rate has been considered

### 3.2.11 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
Irrigation - Units (MU)	132 kV	-	-	-	0	0	0	67	67	67	67	67	67
	33 kV	6	6	6	11	12	13	166	171	181	183	189	200
	11 kV	0	0	0	1	1	1	-	-	51	1	1	52
	<b>Total</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>13</b>	<b>15</b>	<b>233</b>	<b>238</b>	<b>299</b>	<b>251</b>	<b>257</b>	<b>319</b>
Water Works - Units (MU)	132 kV	-	-	-	-	-	-	-	-	-	-	-	-
	33 kV	13	13	13	7	7	8	0	0	0	20	20	21
	11 kV	3	4	4	3	3	3	8	8	8	14	14	15
	<b>Total</b>	<b>16</b>	<b>17</b>	<b>17</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>33</b>	<b>35</b>	<b>36</b>
Other than Agricultural - Units (MU)	132 kV	0	0	0	64	66	68	393	411	469	458	478	537
	33 kV	104	112	129	145	157	171	137	190	255	385	460	555
	11 kV	9	9	10	13	14	15	10	14	17	32	36	42
	<b>Total</b>	<b>113</b>	<b>121</b>	<b>139</b>	<b>222</b>	<b>237</b>	<b>254</b>	<b>540</b>	<b>615</b>	<b>741</b>	<b>874</b>	<b>974</b>	<b>1,134</b>

#### 3.2.11.1 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 considered		0.00%	No growth considered
	Load (kW)	0.00%	No growth considered		0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered		0.00%	No growth considered
33 kV	Consumer	11.87%	Nominal growth considered		7.72%	3-year CAGR considered
	Load (kW)	35.29%	Nominal growth considered		0.00%	No growth considered
	Units (MUS)	3.00%	Nominal growth considered		1.00%	Nominal growth considered
11 kV	Consumer	0.00%	No growth considered		0.00%	No growth considered
	Load (kW)	0.00%	No growth considered		0.83%	Nominal growth considered
	Units (MUS)	0.00%	No growth considered		0.00%	No growth 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	0.00%	No Growth rate considered	5.00%	Nominal Growth Considered
	Load (kW)	0.00%	No Growth rate considered	0.00%	No Growth rate considered
	Units (MUS)	0.00%	No Growth rate considered	2.42%	Nominal Growth Considered
11 kV	Consumer	3.57%	Nominal growth considered	5.00%	Nominal Growth Considered
	Load (kW)	5.75%	Nominal growth considered	5.00%	Nominal Growth Considered
	Units (MUS)	4.70%	Nominal growth considered	2.33%	Nominal Growth Considered

### 3.2.11.2 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
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132 kV	Consumer	5.00%	Nominal growth rate considered	0.00%	No growth rate considered
	Load (kW)	5.00%	Nominal growth rate considered	13.68%	2 Year CAGR Considered
	Units (MUS)	2.39%	2 Year CAGR Considered	39.02%	1 Year CAGR Considered
33 kV	Consumer	15.24%	3 Year CAGR Considered	0.00%	No growth rate considered
	Load (kW)	11.15%	3 Year CAGR Considered	10.00%	Nominal growth rate considered
	Units (MUS)	6.74%	2 Year CAGR Considered	28.71%	1 Year CAGR Considered
11 kV	Consumer	26.09%	7 months variation considered	10.00%	Nominal growth rate considered
	Load (kW)	12.00%	7 months variation considered	14.71%	3 Year CAGR Considered
	Units (MUS)	5.00%	Nominal growth rate considered	40.00%	Nominal growth rate 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 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	20.00%	Nominal growth rate considered	9.54%	2 Year CAGR Considered
	Load (kW)	11.57%	7 months variation considered	31.79%	3 Year CAGR Considered
	Units (MUS)	4.33%	3 Year CAGR Considered	10.00%	Nominal growth rate considered
11 kV	Consumer	10.00%	Nominal growth rate considered	25.99%	3 Year CAGR Considered
	Load (kW)	5.00%	Nominal growth rate considered	5.00%	Nominal growth rate considered
	Units (MUS)	3.00%	Nominal growth rate considered	5.85%	3 Year CAGR 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 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	2.04%	3 Year CAGR Considered	0.00%	No growth rate considered

Voltage level	Category	Urban		Rural	
11 kV	Load (kW)	4.06%	3 Year CAGR Considered	8.05%	3 Year CAGR Considered
	Units (MUS)	0.72%	3 Year CAGR Considered	12.10%	3 Year CAGR Considered
	Consumer	14.47%	3 Year CAGR Considered	14.05%	3 Year CAGR Considered
11 kV	Load (kW)	14.13%	3 Year CAGR Considered	10.00%	Nominal growth rate considered
	Units (MUS)	4.21%	3 Year CAGR Considered	20.00%	Nominal growth rate considered

### 3.2.11.3 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%	No Growth rate has been considered	0.00%	No Growth rate has been considered
	Load (kW)	0.00%	No Growth rate has been considered	8.59%	3 Year CAGR Considered
	Units (MUS)	0.00%	No Growth rate has been considered	14.00%	3 Year CAGR Considered
33 kV	Consumer	15.69%	3 Year CAGR Considered	3.23%	3 Year CAGR Considered
	Load (kW)	20.73%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Units (MUS)	40.00%	Nominal Growth rate has been considered	8.94%	Nominal Growth rate has been considered
11 kV	Consumer	11.46%	3 Year CAGR Considered	0.00%	No Growth rate has been considered
	Load (kW)	4.41%	Nominal Growth rate has been considered	3.61%	Nominal Growth rate has been considered
	Units (MUS)	33.00%	Nominal Growth rate has been considered	19.93%	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)	9.50%	Nominal Growth rate has been considered	47.90%	Nominal Growth rate has been considered
	Units (MUS)	10.00%	Nominal Growth Considered	0.00%	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

Voltage level	Category	Urban			Rural		
	Load (kW)	0.00%		Nominal Growth Rate Considered		0.00%	
	Units (MUS)	0.00%		Nominal Growth rate Considered		0.00%	

### 3.2.12 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
132 KV	-	-	-	-	-	-	-	-	-	-	-	-
33 kV	237	245	257	139	146	154	22	22	23	397	414	434
11 kV	23	23	23	15	17	18	5	5	5	43	44	46
<b>Total</b>	<b>259</b>	<b>268</b>	<b>281</b>	<b>154</b>	<b>163</b>	<b>172</b>	<b>27</b>	<b>27</b>	<b>28</b>	<b>440</b>	<b>458</b>	<b>480</b>

#### 3.2.12.1 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	0.00%	No growth considered		0.00%	No growth considered
	Load (kW)	0.00%	No growth considered		0.00%	No growth considered
	Units (MUS)	3.80%	Nominal growth considered		9.95%	Nominal growth considered
11 kV	Consumer	5.27%	3-year CAGR considered		0.00%	No growth considered
	Load (kW)	1.97%	3-year CAGR considered		0.00%	No growth considered
	Units (MUS)	3.50%	Nominal growth considered		3.52%	Nominal growth considered

#### 3.2.12.2 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	5.22%	2 Year CAGR considered		0.00%	3 Year CAGR considered

Voltage level	Category	Urban		Rural	
	Load (kW)	1.07%	2 Year CAGR considered	0.00%	3 Year CAGR considered
	Units (MUS)	5.00%	Nominal growth rate considered	8.64%	3 Year CAGR considered
11 kV	Consumer	5.00%	Nominal growth rate considered	0.00%	Nominal growth rate considered
	Load (kW)	5.00%	Nominal growth rate considered	40.00%	Nominal growth rate considered
	Units (MUS)	5.00%	Nominal growth rate considered	9.25%	2 Year CAGR considered

### 3.2.12.3 West Discom

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

**Table 68: Growth Percentage Assumption West Discom**

		FY 21-22			
Voltage level	Category	Urban		Rural	
33 kV	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	0.00%	No growth rate considered	8.32%	3 Year CAGR Considered
	Units (MUS)	0.00%	No growth rate considered	0.00%	No 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)	1.00%	Nominal growth rate considered	0.00%	No growth rate considered

### 3.2.13 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
132 KV	-	-	-	0	0	0	6	7	8	7	8	9
33 kV	-	-	-	0	0	0	6	6	7	6	6	7
11 kV	0	0	0	0	0	0	0	0	0	1	1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>14</b>	<b>15</b>	<b>16</b>

### 3.2.13.1 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%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered
33 KV	Consumer	0.00%	No growth considered	0.00%	No growth considered
	Load (kW)	0.00%	No growth considered	0.00%	No growth considered
	Units (MUS)	0.00%	No growth considered	0.00%	No growth considered
11 kV	Consumer	25.00%	Nominal growth considered	0.00%	No growth considered
	Load (kW)	20.00%	Nominal growth considered	0.00%	No growth considered
	Units (MUS)	5.00%	Nominal growth considered	0.00%	No growth considered

### 3.2.13.2 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	16.67%	7 months variation has been considered	0.00%	No growth rate has been considered
	Load (kW)	60.87%	7 months variation 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)	0.00%	No growth rate has been considered	0.00%	No growth rate has been considered
	Units (MUS)	16.67%	7 months variation has been considered	0.00%	No growth rate has been considered

### 3.2.13.3 West Discom

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

**Table 72: 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%	Nominal Growth rate Considered		0.00%	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)	0.00%	Nominal Growth rate Considered		0.00%	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	

### 3.2.14 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 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)	FY 20	FY 21 (RE)	FY 22 (Proj.)
LV- 8 EV Charging Stations	0	2	2	0	3	3	1	1	1	1	6	6

#### 3.2.14.1 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 considered		0.00%	No growth considered	
	Load (kW)	5.00%	Nominal growth considered		5.00%	Nominal growth considered	
	Units (MUS)	0.00%	No growth considered		8.00%	Nominal growth considered	

#### 3.2.14.2 Central Discom

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

**Table 75: Growth Percentage Assumption Central Discom**

<b>Sub Category</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Metered	Consumer	0.00%	No growth rate considered	0.00%	No growth rate considered
	Load (kW)	10.00%	Nominal growth rate considered	5.00%	Nominal growth rate considered
	Units (MUS)	15.00%	Nominal growth rate considered	10.00%	Nominal growth rate considered

### **3.2.14.3 West Discom**

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

**Table 76: Growth Percentage Assumption West Discom**

<b>Sub Category</b>	<b>Category</b>	<b>Urban</b>		<b>Rural</b>	
Metered	Consumer	10%	Nominal Growth Rate	0.00%	No growth rate considered
	Load (kW)	10%	Nominal Growth Rate	0.00%	No growth rate considered
	Units (MUS)	10%	Nominal Growth Rate	0.00%	No growth rate considered

## 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 2019-20 for each Discom. This profile is then used to compute monthly sales for the FY 2020-21 & FY 2021-22. The profiling for all Discoms is given in the table below:

**Table 77: Month wise Sales Profile**

Sr.	Discom	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
<b>FY 2019-20 (Actual)</b>														
A	East	7.29%	7.84%	7.81%	7.33%	7.35%	7.53%	8.74%	9.02%	9.44%	9.57%	9.53%	8.55%	100.00%
B	Central	6.91%	7.48%	7.72%	7.57%	7.38%	7.42%	9.04%	9.08%	9.19%	9.44%	9.49%	9.29%	100.00%
C	West	7.24%	7.55%	7.92%	7.49%	7.07%	6.98%	8.86%	9.19%	9.28%	9.40%	9.70%	9.31%	100.00%
<b>FY 2020-21 (Re-Estimate)</b>														
A	East	7.10%	7.56%	7.47%	7.13%	7.17%	7.27%	8.80%	8.81%	9.53%	10.00%	9.66%	9.51%	100.00%
B	Central	6.83%	7.44%	7.65%	7.50%	7.33%	7.47%	9.13%	9.35%	9.38%	9.41%	9.31%	9.19%	100.00%
C	West	6.92%	7.32%	7.51%	7.22%	6.91%	6.91%	9.28%	9.61%	9.62%	9.63%	9.59%	9.46%	100.00%
<b>FY 2021-22 (Projected)</b>														
A	East	7.10%	7.56%	7.47%	7.13%	7.17%	7.27%	8.80%	8.81%	9.53%	10.00%	9.66%	9.51%	100.00%
B	Central	6.83%	7.44%	7.65%	7.50%	7.33%	7.47%	9.13%	9.35%	9.38%	9.41%	9.31%	9.19%	100.00%
C	West	6.92%	7.32%	7.51%	7.22%	6.91%	6.91%	9.28%	9.61%	9.62%	9.63%	9.59%	9.46%	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 Third Amendment to Tariff Regulations, 2015 notified on 25<sup>th</sup> November 2020 has notified the normative distribution loss levels for FY 2021-22. 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 2019-20	FY 2020-21	FY 2021-22
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%	14.00%

The actual losses of the Discom's for FY 2019-20 have been observed at 22.52% for East Discom, 27.59% for Central Discom and 11.61% for West Discom. However, for the purpose of the instant petition the normative loss targets as specified by the Commission in its 3<sup>rd</sup> Amendment to Tariff Regulations' 2015 have been considered for computation of Energy Balance and power purchase costs of Discoms for FY 2020-21 & FY 2021-22 except FY 2019-20 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 of 2.59% for FY 2019-20 as reported by MPPTCL to the MPPMCL. The same has been considered for FY 2020-21 & FY 2021-22 also.

#### **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 2019-20 by the Eastern Region Load Dispatch Centre applicable for Eastern Region Plants (ERLDC- <https://erldc.in/market-operation/52weeksloss/> and POSOCO - <https://posoco.in/side-menu-pages/applicable-transmission-losses/>) & Western Region Load Dispatch Centre applicable for Western Region Plants ([https://www.wrldc.in/content/210\\_1\\_WeeklyLoss.aspx](https://www.wrldc.in/content/210_1_WeeklyLoss.aspx)).
- 2.4.2 The Discoms have considered the actual losses for FY 2019-20 for Western Region, Northern Region & Eastern Region i.e. 2.91%, 3.59% and 1.74% respectively and last 52 weeks moving average losses (1<sup>st</sup> September 19 – 6<sup>th</sup> October 20) for FY 2020-21 & FY 2021-22 i.e. 2.78%, 3.56% and 1.69% 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 Discoms and MP state at the state boundary as shown in tables below:

**Table 79: Energy Requirement- Discom & Ex-Bus (MUs) for FY 2019-20 (Actual)**

S.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
<b>1</b>	<b>Sales</b>	<b>3,986</b>	<b>4,244</b>	<b>4,362</b>	<b>4,163</b>	<b>4,041</b>	<b>4,057</b>	<b>4,951</b>	<b>5,078</b>	<b>5,186</b>	<b>5,276</b>	<b>5,344</b>	<b>5,142</b>	<b>55,831</b>
A	East	1,177	1,267	1,261	1,184	1,188	1,216	1,411	1,458	1,525	1,545	1,539	1,381	16,152
B	Central	1,200	1,300	1,342	1,316	1,283	1,290	1,571	1,578	1,598	1,642	1,650	1,692	17,461
C	West	1,609	1,677	1,759	1,663	1,571	1,551	1,969	2,042	2,062	2,089	2,155	2,069	22,218
<b>2</b>	<b>Distribution Loss (%)</b>													
A	East	33%	36%	29%	30%	29%	20%	6%	16%	16%	13%	23%	14%	22.52%
B	Central	34%	37%	29%	33%	30%	25%	10%	25%	33%	29%	30%	12%	27.59%
C	West	8%	21%	22%	12%	-1%	-7%	-6%	-21%	13%	24%	24%	19%	11.61%
<b>3</b>	<b>Distribution Loss</b>	<b>1,486</b>	<b>1,900</b>	<b>1,476</b>	<b>1,325</b>	<b>1,165</b>	<b>919</b>	<b>626</b>	<b>754</b>	<b>1,608</b>	<b>1,773</b>	<b>1,792</b>	<b>1,229</b>	<b>16,054</b>
A	East	588	704	504	515	490	305	92	270	298	240	468	220	4,694
B	Central	750	758	485	589	690	720	648	839	1,002	867	629	508	8,485
C	West	149	438	487	220	(15)	(106)	(113)	(355)	307	666	695	501	2,875
<b>4</b>	<b>Energy at Discom Periphery</b>	<b>5,472</b>	<b>6,144</b>	<b>5,839</b>	<b>5,488</b>	<b>5,207</b>	<b>4,976</b>	<b>5,578</b>	<b>5,832</b>	<b>6,794</b>	<b>7,049</b>	<b>7,136</b>	<b>6,370</b>	<b>71,885</b>
A	East	1,764	1,971	1,765	1,699	1,678	1,520	1,503	1,727	1,824	1,786	2,007	1,601	20,846
B	Central	1,950	2,057	1,827	1,906	1,972	2,010	2,219	2,417	2,600	2,508	2,279	2,199	25,946
C	West	1,758	2,115	2,247	1,884	1,556	1,445	1,856	1,688	2,370	2,755	2,849	2,570	25,092
<b>5</b>	<b>State Transmission Losses</b>	<b>146</b>	<b>163</b>	<b>155</b>	<b>146</b>	<b>138</b>	<b>132</b>	<b>148</b>	<b>155</b>	<b>181</b>	<b>187</b>	<b>190</b>	<b>169</b>	<b>1,911</b>
A	East	47	52	47	45	45	40	40	46	48	47	53	43	554
B	Central	52	55	49	51	52	53	59	64	69	67	61	58	690
C	West	47	56	60	50	41	38	49	45	63	73	76	68	667
<b>6</b>	<b>Energy at State Boundary</b>	<b>5,618</b>	<b>6,308</b>	<b>5,994</b>	<b>5,634</b>	<b>5,345</b>	<b>5,108</b>	<b>5,726</b>	<b>5,988</b>	<b>6,975</b>	<b>7,237</b>	<b>7,325</b>	<b>6,540</b>	<b>73,796</b>
A	East	1,811	2,024	1,812	1,744	1,723	1,561	1,543	1,773	1,872	1,833	2,061	1,644	21,401
B	Central	2,002	2,112	1,875	1,956	2,025	2,064	2,278	2,482	2,669	2,575	2,340	2,258	26,636
C	West	1,805	2,172	2,306	1,934	1,598	1,483	1,905	1,732	2,433	2,828	2,925	2,638	25,759
<b>7</b>	<b>External/PGCIL Losses (WR/ER)</b>	<b>112</b>	<b>120</b>	<b>123</b>	<b>99</b>	<b>81</b>	<b>69</b>	<b>79</b>	<b>98</b>	<b>91</b>	<b>84</b>	<b>91</b>	<b>89</b>	<b>1,137</b>
A	East	36	39	37	31	26	21	21	29	24	21	26	22	334
B	Central	40	40	39	34	31	28	32	41	35	30	29	31	408

S.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
C	West	36	41	47	34	24	20	26	28	32	33	36	36	395
8	<b>Ex-Bus Energy Requirement including adjustment of UI</b>	<b>5,730</b>	<b>6,428</b>	<b>6,117</b>	<b>5,733</b>	<b>5,426</b>	<b>5,177</b>	<b>5,805</b>	<b>6,085</b>	<b>7,065</b>	<b>7,321</b>	<b>7,416</b>	<b>6,629</b>	<b>74,933</b>
A	East	1,848	2,062	1,850	1,774	1,749	1,582	1,564	1,802	1,897	1,855	2,086	1,666	21,735
B	Central	2,042	2,152	1,914	1,991	2,055	2,092	2,309	2,522	2,704	2,605	2,369	2,289	27,044
c	West	1,841	2,213	2,354	1,968	1,622	1,503	1,932	1,761	2,464	2,861	2,961	2,674	26,154

**Table 80: Energy Requirement- Discom & Ex-Bus (MUs) for FY 2020-21 (Re-Estimate)**

Sr.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
1	<b>Sales</b>	<b>3,468</b>	<b>4,203</b>	<b>4,439</b>	<b>4,456</b>	<b>4,394</b>	<b>4,431</b>	<b>5,514</b>	<b>5,700</b>	<b>5,839</b>	<b>5,931</b>	<b>5,841</b>	<b>5,758</b>	<b>59,974</b>
a	East	1,018	1,263	1,254	1,273	1,258	1,303	1,549	1,573	1,702	1,786	1,726	1,699	17,402
b	Central	1,098	1,299	1,449	1,461	1,431	1,449	1,804	1,889	1,896	1,901	1,881	1,856	19,414
c	West	1,352	1,641	1,737	1,722	1,705	1,680	2,161	2,237	2,241	2,243	2,234	2,204	23,158
2	<b>Distribution Loss (%)</b>													
a	East	25%	24%	15%	16%	20%	22%	14%	16%	17%	10%	7%	5%	16%
b	Central	23%	21%	11%	15%	19%	20%	14%	19%	23%	19%	12%	7%	17%
c	West	19%	24%	16%	8%	4%	8%	11%	17%	25%	24%	15%	10%	15%
3	<b>Distribution Loss</b>	<b>984</b>	<b>1,261</b>	<b>734</b>	<b>649</b>	<b>738</b>	<b>882</b>	<b>800</b>	<b>1,202</b>	<b>1,658</b>	<b>1,343</b>	<b>796</b>	<b>471</b>	<b>11,517</b>
a	East	344	405	228	238	320	365	252	295	347	209	133	85	3,222
b	Central	325	350	178	264	344	367	284	446	564	445	257	150	3,974
c	West	315	506	328	146	74	150	263	460	747	690	407	236	4,321
4	<b>Energy at Discom Periphery</b>	<b>4,452</b>	<b>5,464</b>	<b>5,173</b>	<b>5,104</b>	<b>5,132</b>	<b>5,313</b>	<b>6,313</b>	<b>6,901</b>	<b>7,496</b>	<b>7,274</b>	<b>6,637</b>	<b>6,230</b>	<b>71,491</b>
a	East	1,362	1,667	1,481	1,511	1,578	1,668	1,801	1,868	2,049	1,995	1,858	1,784	20,624
b	Central	1,423	1,649	1,627	1,725	1,775	1,816	2,088	2,336	2,460	2,346	2,138	2,006	23,388
c	West	1,667	2,148	2,065	1,868	1,779	1,830	2,424	2,697	2,988	2,933	2,641	2,440	27,479
5	<b>State Transmission Losses</b>	<b>118</b>	<b>145</b>	<b>138</b>	<b>136</b>	<b>136</b>	<b>141</b>	<b>168</b>	<b>183</b>	<b>199</b>	<b>193</b>	<b>176</b>	<b>166</b>	<b>1,901</b>
a	East	36	44	39	40	42	44	48	50	54	53	49	47	548
b	Central	38	44	43	46	47	48	56	62	65	62	57	53	622
c	West	44	57	55	50	47	49	64	72	79	78	70	65	731

Sr.no.	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
<b>6</b>	<b>Energy at State Boundary</b>	<b>4,570</b>	<b>5,610</b>	<b>5,311</b>	<b>5,240</b>	<b>5,268</b>	<b>5,455</b>	<b>6,481</b>	<b>7,085</b>	<b>7,696</b>	<b>7,468</b>	<b>6,814</b>	<b>6,395</b>	<b>73,392</b>
a	East	1,398	1,712	1,521	1,552	1,620	1,712	1,849	1,918	2,103	2,048	1,908	1,831	21,173
b	Central	1,461	1,693	1,670	1,771	1,822	1,864	2,143	2,398	2,525	2,408	2,195	2,059	24,010
c	West	1,711	2,205	2,120	1,918	1,826	1,878	2,489	2,769	3,068	3,011	2,711	2,504	28,210
<b>7</b>	<b>External/PGCIL Losses (WR/ER)</b>	<b>91</b>	<b>103</b>	<b>83</b>	<b>108</b>	<b>111</b>	<b>97</b>	<b>101</b>	<b>146</b>	<b>149</b>	<b>131</b>	<b>106</b>	<b>136</b>	<b>1,360</b>
a	East	28	31	24	32	34	30	29	39	41	36	30	39	393
b	Central	29	31	26	36	38	33	33	49	49	42	34	44	446
c	West	34	40	33	39	38	33	39	57	59	53	42	53	522
<b>8</b>	<b>Ex-Bus Energy Requirement</b>	<b>4,661</b>	<b>5,712</b>	<b>5,394</b>	<b>5,348</b>	<b>5,379</b>	<b>5,552</b>	<b>6,582</b>	<b>7,231</b>	<b>7,845</b>	<b>7,598</b>	<b>6,920</b>	<b>6,531</b>	<b>74,752</b>
a	East	1,426	1,743	1,545	1,584	1,654	1,743	1,878	1,957	2,144	2,084	1,937	1,870	21,565
b	Central	1,490	1,724	1,696	1,807	1,860	1,897	2,176	2,447	2,574	2,451	2,229	2,103	24,455
c	West	1,745	2,245	2,153	1,957	1,864	1,912	2,528	2,826	3,127	3,063	2,753	2,558	28,731

Table 81: Energy Requirement- Discom &amp; Ex-Bus (MUs) for FY 2021-22 (Projected)

Sr.no	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
<b>1</b>	<b>Sales</b>	<b>4,447</b>	<b>4,757</b>	<b>4,827</b>	<b>4,660</b>	<b>4,559</b>	<b>4,608</b>	<b>5,814</b>	<b>5,941</b>	<b>6,092</b>	<b>6,192</b>	<b>6,096</b>	<b>6,009</b>	<b>64,000</b>
a	East	1,385	1,474	1,457	1,390	1,398	1,418	1,715	1,717	1,858	1,950	1,884	1,855	19,500
b	Central	1,387	1,511	1,553	1,522	1,488	1,517	1,853	1,898	1,905	1,911	1,890	1,865	20,300
c	West	1,675	1,772	1,817	1,747	1,673	1,673	2,246	2,325	2,329	2,331	2,322	2,290	24,200
<b>2</b>	<b>Distribution Loss (%)</b>													
a	East	25%	24%	15%	16%	20%	22%	14%	16%	17%	10%	7%	5%	16%
b	Central	23%	21%	11%	15%	19%	20%	14%	19%	23%	19%	12%	7%	17%
c	West	18%	23%	15%	7%	3%	7%	10%	16%	24%	23%	14%	9%	14%
<b>3</b>	<b>Distribution Loss</b>	<b>1,243</b>	<b>1,396</b>	<b>774</b>	<b>663</b>	<b>768</b>	<b>911</b>	<b>817</b>	<b>1,216</b>	<b>1,681</b>	<b>1,352</b>	<b>794</b>	<b>461</b>	<b>12,076</b>
a	East	467	473	265	260	356	397	279	322	379	228	145	93	3,665
b	Central	411	407	191	275	357	384	292	449	567	447	258	151	4,188
c	West	365	517	318	128	54	130	246	445	735	677	391	217	4,222
<b>4</b>	<b>Energy at Discom Periphery</b>	<b>5,690</b>	<b>6,153</b>	<b>5,600</b>	<b>5,323</b>	<b>5,327</b>	<b>5,519</b>	<b>6,631</b>	<b>7,156</b>	<b>7,772</b>	<b>7,544</b>	<b>6,890</b>	<b>6,471</b>	<b>76,076</b>

Sr.no	Particulars	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
a	East	1,852	1,947	1,721	1,651	1,754	1,815	1,995	2,040	2,237	2,179	2,029	1,948	23,165
b	Central	1,798	1,918	1,744	1,797	1,846	1,901	2,144	2,347	2,471	2,357	2,148	2,016	24,488
c	West	2,040	2,288	2,135	1,875	1,727	1,803	2,492	2,770	3,064	3,008	2,712	2,507	28,422
<b>5</b>	<b>State Transmission Losses</b>	<b>151</b>	<b>164</b>	<b>149</b>	<b>142</b>	<b>142</b>	<b>147</b>	<b>176</b>	<b>190</b>	<b>207</b>	<b>201</b>	<b>183</b>	<b>172</b>	<b>2,023</b>
a	East	49	52	46	44	47	48	53	54	59	58	54	52	616
b	Central	48	51	46	48	49	51	57	62	66	63	57	54	651
c	West	54	61	57	50	46	48	66	74	81	80	72	67	756
<b>6</b>	<b>Energy at State Boundary</b>	<b>5,841</b>	<b>6,316</b>	<b>5,749</b>	<b>5,464</b>	<b>5,468</b>	<b>5,666</b>	<b>6,807</b>	<b>7,347</b>	<b>7,979</b>	<b>7,745</b>	<b>7,073</b>	<b>6,643</b>	<b>78,098</b>
a	East	1,901	1,998	1,767	1,694	1,800	1,863	2,048	2,094	2,296	2,236	2,083	1,999	23,781
b	Central	1,846	1,969	1,790	1,845	1,895	1,952	2,201	2,409	2,537	2,420	2,205	2,069	25,139
c	West	2,094	2,349	2,191	1,925	1,773	1,851	2,558	2,843	3,146	3,088	2,784	2,574	29,178
<b>7</b>	<b>External/PGCIL Losses (WR/ER)</b>	<b>139</b>	<b>140</b>	<b>120</b>	<b>114</b>	<b>126</b>	<b>123</b>	<b>136</b>	<b>144</b>	<b>147</b>	<b>129</b>	<b>104</b>	<b>132</b>	<b>1,554</b>
a	East	45	44	37	35	42	41	41	41	42	37	31	40	476
b	Central	44	44	37	38	44	43	44	47	47	40	32	41	501
c	West	50	52	46	40	41	40	51	56	58	51	41	51	577
<b>8</b>	<b>Ex-Bus Energy Requirement</b>	<b>5,980</b>	<b>6,456</b>	<b>5,869</b>	<b>5,578</b>	<b>5,595</b>	<b>5,789</b>	<b>6,943</b>	<b>7,490</b>	<b>8,126</b>	<b>7,874</b>	<b>7,177</b>	<b>6,775</b>	<b>79,653</b>
a	East	1,946	2,043	1,804	1,730	1,842	1,904	2,089	2,135	2,339	2,274	2,114	2,039	24,257
b	Central	1,890	2,012	1,828	1,883	1,938	1,995	2,245	2,457	2,584	2,460	2,238	2,110	25,641
c	West	2,144	2,401	2,237	1,965	1,814	1,891	2,609	2,899	3,204	3,140	2,825	2,625	29,755

4.5.1 The ex-bus energy to be purchased during FY 2019-20 to FY 2021-22 (Normative & Actual Losses) is shown in the following table:

**Table 82: Energy Requirement- Normative Losses (MUs)**

Normative Distribution Losses													
Sr. no.	Particulars	MP State			East			Central			West		
		FY-20	FY-21	FY-22									
<b>1</b>	<b>Sales (MUs)</b>	<b>55,831</b>	<b>59,936</b>	<b>64,001</b>	<b>16,152</b>	<b>17,402</b>	<b>19,500</b>	<b>17,461</b>	<b>19,414</b>	<b>20,300</b>	<b>22,218</b>	<b>23,120</b>	<b>24,201</b>
a	LT	42,897	46,420	49,797	12,611	13,795	15,802	13,450	15,111	15,746	16,836	17,513	18,249
b	HT	12,933	13,517	14,204	3,541	3,607	3,698	4,011	4,303	4,554	5,382	5,607	5,952
<b>2</b>	<b>Distribution Losses</b>												
a	%	<b>15.92%</b>	<b>16.11%</b>	<b>15.87%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>17.00%</b>	<b>17.00%</b>	<b>17.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>14.00%</b>
b	Mus	10,574	11,517	12,076	3,077	3,222	3,665	3,576	3,974	4,188	3,921	4,321	4,222
<b>3</b>	<b>Energy Requirement at Discom Boundary (MUs)</b>	<b>66,404</b>	<b>71,491</b>	<b>76,076</b>	<b>19,229</b>	<b>20,624</b>	<b>23,165</b>	<b>21,037</b>	<b>23,388</b>	<b>24,488</b>	<b>26,138</b>	<b>27,479</b>	<b>28,423</b>
<b>4</b>	<b>State Transmission Losses</b>												
a	%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%
b	Mus	1,766	1,901	2,023	511	548	616	559	622	651	695	731	756
<b>5</b>	<b>Energy Requirement at State Boundary (MUs)</b>	<b>68,170</b>	<b>73,392</b>	<b>78,099</b>	<b>19,740</b>	<b>21,173</b>	<b>23,781</b>	<b>21,597</b>	<b>24,010</b>	<b>25,139</b>	<b>26,833</b>	<b>28,210</b>	<b>29,179</b>
<b>6</b>	<b>External/PGCIL Losses</b>												
a	WR %	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%
b	NR%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%
c	ER %	1.74%	1.72%	1.72%	1.74%	1.72%	1.74%	1.72%	1.72%	1.72%	1.74%	1.72%	1.72%
d	WR Mus	1,137	1,360	1,554	334	393	476	407	446	501	395	522	577
e	NR Mus												
f	ER Mus												
<b>7</b>	<b>Energy Requirement Ex-Bus</b>	<b>69,307</b>	<b>74,752</b>	<b>79,653</b>	<b>20,074</b>	<b>21,565</b>	<b>24,257</b>	<b>22,004</b>	<b>24,455</b>	<b>25,641</b>	<b>27,229</b>	<b>28,731</b>	<b>29,756</b>

**Table 83: Energy Requirement- Actual Losses (MUs)**

Sr. no.	Particulars	Provisional/Actual Distribution Losses											
		MP State			East			Central			West		
		FY-20	FY-21	FY-22	FY-20	FY-21	FY-22	FY-20	FY-21	FY-22	FY-20	FY-21	FY-22
<b>1</b>	<b>Sales (MUs)</b>	<b>55,831</b>	<b>59,936</b>	<b>64,001</b>	<b>16,152</b>	<b>17,402</b>	<b>19,500</b>	<b>17,461</b>	<b>19,414</b>	<b>20,300</b>	<b>22,218</b>	<b>23,120</b>	<b>24,201</b>
a	LT	42,897	46,420	49,797	12,611	13,795	15,802	13,450	15,111	15,746	16,836	17,513	18,249
b	HT	12,933	13,517	14,204	3,541	3,607	3,698	4,011	4,303	4,554	5,382	5,607	5,952
<b>2</b>	<b>Distribution Losses</b>												
a	%	<b>22.33%</b>	<b>20.53%</b>	<b>20.58%</b>	<b>22.52%</b>	<b>22.52%</b>	<b>22.52%</b>	<b>27.59%</b>	<b>27.59%</b>	<b>27.59%</b>	<b>11.61%</b>	<b>11.61%</b>	<b>11.61%</b>
b	MUs	16,054	15,497	16,582	4,694	5,058	5,668	8,485	7,397	7,735	2,875	3,042	3,179
<b>3</b>	<b>Energy Requirement at Discom Boundary (MUs)</b>	<b>71,885</b>	<b>75,471</b>	<b>80,582</b>	<b>20,846</b>	<b>22,460</b>	<b>25,168</b>	<b>25,946</b>	<b>26,811</b>	<b>28,035</b>	<b>25,092</b>	<b>26,200</b>	<b>27,380</b>
<b>4</b>	<b>State Transmission Losses</b>												
a	%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%
b	MUs	<b>1,911</b>	<b>2,007</b>	<b>2,143</b>	554	597	669	690	713	745	667	697	728
<b>5</b>	<b>Energy Requirement at State Boundary (MUs)</b>	<b>73,796</b>	<b>77,477</b>	<b>82,725</b>	<b>21,401</b>	<b>23,057</b>	<b>25,837</b>	<b>26,636</b>	<b>27,524</b>	<b>28,780</b>	<b>25,759</b>	<b>26,896</b>	<b>28,108</b>
<b>6</b>	<b>External/PGCIL Losses</b>												
a	WR %	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%	2.91%	2.78%	2.78%
b	NR%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%	3.59%	3.56%	3.56%
c	ER %	1.74%	1.72%	1.72%	1.74%	1.72%	1.72%	1.74%	1.72%	1.72%	1.74%	1.72%	1.72%
d	WR MUs												
e	NR MUs												
f	ER MUs												
<b>7</b>	<b>Energy Requirement Ex-Bus</b>	<b>74,933</b>	<b>78,837</b>	<b>84,279</b>	<b>21,735</b>	<b>23,450</b>	<b>26,312</b>	<b>27,044</b>	<b>27,969</b>	<b>29,282</b>	<b>26,154</b>	<b>27,418</b>	<b>28,685</b>

**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 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 2020-21 and FY 2021-22 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 2020-21 & 2021-22 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-2	1x800	65.0%	85.0%	CERC Norms	50%	400	2807	Oct-2020
2	NTPC Lara STPS, Raigarh Unit -2	1x800	65.0%	85.0%	CERC Norms	8%	64	448	Oct-2020
3	NTPC Khargone STPS, Unit-2	1x660	65.0%	85.0%	CERC Norms	50%	330	2316	Apr-2020
	<b>TOTAL</b>	<b>2260</b>					<b>794</b>	<b>5571</b>	

**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-2	569.10	Taken same as NTPC Gadarwara STPS, Unit-1	2.80	Variable charges as weighted average of past 12 months Bills (Nov-19 to Oct-20) of NTPC Gadarwara STPS, Unit-1.
2	NTPC Lara STPS, Raigarh Unit - 2	118.75	Taken same as NTPC Lara STPS, Raigarh Unit -1	2.28	Variable charges as weighted average of past 12 months Bills (Nov-19 to Oct-20) of NTPC Lara STPS, Raigarh Unit -1.
3	NTPC Khargone STPS, Unit-2	771.67	Taken same as NTPC Khargone STPS, Unit-1	3.03	Variable charges proportionate of weighted average of past 9 months Bills (Feb-20 to Oct-20) of NTPC Khargone 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/2020/9876 dated 6<sup>th</sup> Nov'2020 and from **Eastern Region** NTPC Kahalgaon-2 vide GoI MoP letter no. 5/31/2006-Th.2 dated 21<sup>st</sup> February 2007 and **Northern Region** as per Northern Regional Power Committee letter no. NRPC/OPR/103/02/2020/6084/6111 dated 25<sup>th</sup> June 2020 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	Reg- ion	Capacit y (MW)	FY 2019-20 (Provisional)		FY 2020-21 (Re-Estimated)		FY 2021-22 (Projected)	
				%	MW	%	MW	%	MW
<b>I</b>	<b>Central Sector</b>		<b>35,976</b>		<b>4,607</b>		<b>4,658</b>		<b>5,110</b>
1	NTPC Korba	WR	2,100	21%	443	22%	467	22%	467
2	NTPC Korba III	WR	500	15%	75	14%	70	14%	70
3	NTPC Vindyachal I	WR	1,260	33%	416	34%	431	34%	431
4	NTPC Vindyachal II	WR	1,000	30%	297	31%	309	31%	309
5	NTPC Vindyachal III	WR	1,000	22%	224	24%	236	24%	236
6	NTPC Vindyachal IV	WR	1,000	28%	282	27%	272	27%	272
7	NTPC Vindyachal V Unit 1	WR	500	28%	140	27%	135	27%	135
8	NTPC Sipat I	WR	1,980	17%	333	16%	312	16%	312
9	NTPC Sipat II	WR	1,000	17%	166	18%	178	18%	178
10	NTPC Mouda I	WR	1,000	18%	176	17%	166	17%	166
11	NTPC Mouda II Unit 1	WR	1,320	16%	205	17%	231	17%	231
12	NTPC Solapur STPS	WR	1,320	25%	329	24%	315	24%	315
13	NTPC Gadarwara STPS, Unit-1	WR	800	51%	412	51%	412	51%	412
14	NTPC Lara STPS, Raigarh, Unit I	WR	800	11%	85	11%	85	11%	85
15	NTPC Khargone STPS, Unit-I	WR	660	51%	340	51%	340	51%	340
16	NTPC Kawas GPP	WR	656	21%	140	21%	140	21%	140
17	NTPC Gandhar GPP	WR	657	18%	117	18%	117	18%	117
18	KAPP Kakrapar	WR	440	24%	107	25%	111	0%	-
19	TAPP Tarapur	WR	1,080	20%	220	21%	231	0%	-
20	NTPC Gadarwara STPS, Unit-2	WR	800	0%		0%		50%	400
21	NTPC Lara STPS, Raigarh, Unit II	WR	800	0%		0%		8%	64
22	NTPC Khargone STPS, Unit-II	WR	660	0%		0%		50%	330
23	NTPC Auraiya GPP	NR	663	0%	2	0%	2	0%	2
24	NTPC Dadri GPP	NR	830	0%	2	0%	2	0%	2

Allocation Statement For FY 2021-22: MP Share									
Sr. No	Particulars	Region	Capacity (MW)	FY 2019-20 (Provisional)		FY 2020-21 (Re-Estimated)		FY 2021-22 (Projected)	
				%	MW	%	MW	%	MW
25	NTPC Anta GPP	NR	419	0%	1	0%	1	0%	1
26	NTPC Firoz Gandhi Unchahar I	NR	420	0%	0	0%	0	0%	0
27	NTPC Firoz Gandhi Unchahar II	NR	420	0%	1	0%	1	0%	1
28	NTPC Firoz Gandhi Unchahar III	NR	210	0%	1	0%	1	0%	1
29	NTPC Firoz Gandhi Unchahar IV	NR	500	0%	1	0%	1	0%	1
30	NTPC Rihand TPS-I	NR	1,000	0%	2	0%	2	0%	2
31	NTPC Rihand TPS-II	NR	1,000	0%	2	0%	2	0%	2
32	NTPC Rihand TPS-III	NR	1,000	0%	3	0%	3	0%	3
33	NTPC NCTP Dadri II	NR	980	0%	2	0%	2	0%	2
34	NTPC Singrauli	NR	2,000	0%	4	0%	4	0%	4
35	NTPC IGPS I Jhajjar	NR	1,500	0%	2	0%	2	0%	2
36	MEJA Urja Nigam	NR	660	0%	1	0%	1	0%	1
37	NTPC Tanda	WR	660	0%	1	0%	1	0%	1
38	NTPC Badarpur	NR							
39	Rajasthan (NPCIL)	NR	440	0%	2	0%	2	0%	2
40	NARORA (NPCIL)	NR	440	0%	1	0%	1	0%	1
41	NTPC Kahalgaon II	ER	1,500	5%	74	5%	74	5%	74
<b>II</b> <b>MP GENCO (THERMAL &amp; HYDRO)</b>			<b>6,586</b>		<b>6,317</b>		<b>6,317</b>		<b>5,487</b>
	1 Amarkantak TPS Ph-III	State	210	100%	210	100%	210	100%	210
2	Satpura TPS Ph-II & III	State	830	100%	830	100%	830	0%	
3	Satpura TPS Ph-IV	State	500	100%	500	100%	500	100%	500
4	SGTPS Ph-I & II	State	840	100%	840	100%	840	100%	840
5	SGTPS Ph-III	State	500	100%	500	100%	500	100%	500
6	Shri Singaji STPS Phase-I	State	1,200	100%	1,200	100%	1,200	100%	1,200
7	Shri Singaji STPS Phase-II	State	1,320	100%	1,320	100%	1,320	100%	1,320
8	Rani Awanti Bai Sagar, Bargi HPS	State	90	100%	90	100%	90	100%	90
9	Bansagar Ph I HPS (Tons)	State	315	100%	315	100%	315	100%	315
10	Bansagar Ph-II HPS (Silpara)	State	30	100%	30	100%	30	100%	30
11	Bansagar Ph-III HPS (Deolond)	State	60	100%	60	100%	60	100%	60
12	Bansagar Ph-IV HPS (Jhinna)	State	20	100%	20	100%	20	100%	20
13	Birsinghpur HPS	State	20	100%	20	100%	20	100%	20
14	Madikheda HPS	State	60	100%	60	100%	60	100%	60
15	Rajghat HPS	State	45	50%	23	50%	23	50%	23
16	Gandhisagar HPS	State	115	50%	58	50%	58	50%	58
17	Ranapratap Sagar HPS	State	172	50%	86	50%	86	50%	86

Allocation Statement For FY 2021-22: MP Share									
Sr. No	Particulars	Reg- ion	Capacit y (MW)	FY 2019-20 (Provisional)		FY 2020-21 (Re-Estimated)		FY 2021-22 (Projected)	
				%	MW	%	MW	%	MW
18	Jawahar Sagar HPS	State	99	50%	50	50%	50	50%	50
19	Pench HPS	State	160	67%	107	67%	107	67%	107
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>		<b>9,832</b>		<b>2,413</b>		<b>2,413</b>		<b>2,413</b>
1	NHDC Indira Sagar HPS	state	1,000	100%	1,000	100%	1,000	100%	1,000
2	NHDC Omkareshwar HPS	state	520	100%	520	100%	520	100%	520
3	NVDA Sardar Sarovar HPS	WR	1,450	57%	827	57%	827	57%	827
4	Rihand HPS	NR	300	15%	45	15%	45	15%	45
5	Matatila HPS	NR	31	33%	10	33%	10	33%	10
6	SJVN Rampur HPS	NR	412	0%	1	0%	1	0%	1
7	SJVN Jhakri HPS	NR	1,500	0%	2	0%	2	0%	2
8	Tehri HPS	NR	1,000	0%	2	0%	2	0%	2
9	Koteshwar HPP	NR	400	0%	1	0%	1	0%	1
10	NHPC Parbat I II	NR	520	0%	1	0%	1	0%	1
11	NHPC Chamera II	NR	300	0%	1	0%	1	0%	1
12	NHPC Chamera III	NR	231	0%	1	0%	1	0%	1
13	NHPC Dulhasti	NR	390	0%	1	0%	1	0%	1
14	NHPC Dhauliganga	NR	280	0%	1	0%	1	0%	1
15	NHPC Sewa II	NR	120	0%	0	0%	0	0%	0
16	NHPC Uri II	NR	240	0%	1	0%	1	0%	1
17	NHPC Kishanganga	NR	330	0%	1	0%	1	0%	1
18	NTPC Koldam HPP I	NR	800	0%	1	0%	1	0%	1
19	NTPC Singrauli Small HPP	NR	8	0%	0	0%	0	0%	0
<b>IV</b>	<b>DVC</b>		<b>2,840</b>		-		-		-
1	DVC (MTPS & CTPS)	ER	1,840	0%	-	0%	-	0%	-
2	DVC (DTPS)	ER	1,000	0%	-	0%	-	0%	-
<b>V</b>	<b>IPPs</b>		<b>10,318</b>		<b>3,427</b>		<b>3,427</b>		<b>3,427</b>
1	Torrent Power	WR	1,148	7%	75	7%	75	7%	75
2	BLA Power, Unit-I & II	state	90	35%	32	35%	32	35%	32
3	Jaypee Bina Power	state	500	70%	350	70%	350	70%	350
4	Lanco Amarkantak TPS Unit 1	WR	300	100%	300	100%	300	100%	300
5	Reliance UMPP, Sasan	WR	3,960	38%	1,485	38%	1,485	38%	1,485
6	Essar Power STPS	State	1,200	5%	60	5%	60	5%	60
7	Jaiprakash Power STPS, Nigri	State	1,320	38%	495	38%	495	38%	495
8	MB Power STPS, Unit-I	State	600	35%	210	35%	210	35%	210
9	MB Power STPS, Unit-II	State	600	35%	210	35%	210	35%	210
10	Jhabua Power STPS, Unit-1	State	600	35%	210	35%	210	35%	210
<b>VI</b>	<b>Renewables</b>		-		<b>3,978</b>		<b>3,978</b>		<b>5,878</b>

Allocation Statement For FY 2021-22: MP Share								
Sr. No	Particulars	Reg- ion	Capacit y (MW)	FY 2019-20 (Provisional)		FY 2020-21 (Re-Estimated)		FY 2021-22 (Projected)
				%	MW	%	MW	%
1	Renewable Energy (Solar)	State	NA	100%	1,538	100%	1,538	100% 3,438
2	Renewable Energy (other than Solar)	State		100%	2,405	100%	2,405	100% 2,405
3	Renewable Energy (mini micro)	State		100%	35	100%	35	100% 35
<b>VII</b>	<b>Total</b>		<b>65,551</b>	<b>100 %</b>	<b>20,742</b>		<b>20,793</b>	
								<b>22,315</b>

5.2.5 As can be seen from the above table, some relevant information for FY 2021-22 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. 01<sup>st</sup> March 2018 & 15<sup>th</sup> 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 2020-21 & 2021-22. However, in case the PPAs with DVC remains in force in FY 2020-21 & 2021-22, MPPMCL will be obligated to pay fixed charges for these stations.
- During FY 2020-21, power from Essar, BLA & Sugen Torrent Generating Stations has been scheduled following MoD whereas in the Tariff Order for FY 2020-21, 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 2020-21. It is further humbly submitted before the Hon'ble Commission that for FY 2021-22, 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 2019-20 & FY 2020-21 (till October 2020). 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 2021-22 as discussed in previous sections is as given below:

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

Sr. no.	Particulars	FY 2019-20	FY 2020-21 (Proj.)	FY 2021-22 (Proj.)
I	Central Sector	31,872	29,015	35,222
1	NTPC Korba	3,308	3,346	3,245

Sr. no.	Particulars	FY 2019-20	FY 2020-21 (Proj.)	FY 2021-22 (Proj.)
2	NTPC Korba III	526	569	490
3	NTPC Vindyachal I	2,968	2,812	2,918
4	NTPC Vindyachal II	2,088	2,313	2,165
5	NTPC Vindyachal III	1,723	1,704	1,653
6	NTPC Vindyachal IV	2,101	2,047	1,902
7	NTPC Vindyachal V Unit 1	1,112	983	948
8	NTPC Sipat I	2,334	2,298	2,188
9	NTPC Sipat II	1,296	1,433	1,249
10	NTPC Mouda I	1,284	549	1,162
11	NTPC Mouda II Unit 1	1,569	804	1,620
12	NTPC Solapur STPS	2,539	1,124	2,211
13	NTPC Gadarwara STPS, Unit-1	2,777	1,845	2,889
14	NTPC Lara STPS, Raigarh, Unit I	303	455	598
15	NTPC Khargone STPS, Unit-I	613	958	2,383
16	NTPC Kawas GPP	1,110	291	718
17	NTPC Gandhar GPP	958	241	601
18	KAPP Kakrapar	747	772	-
19	TAPP Tarapur	1,554	1,532	-
20	NTPC Gadarwara STPS, Unit-2	-	1,161	2,807
21	NTPC Lara STPS, Raigarh, Unit II	-	185	448
22	NTPC Khargone STPS, Unit-II	-	958	2,316
23	NTPC Auraiya GPP	17	7	11
24	NTPC Dadri GPP	25	12	14
25	NTPC Anta GPP	12	6	7
26	NTPC Firoz Gandhi Unchahar I	33	10	2
27	NTPC Firoz Gandhi Unchahar II	42	19	7
28	NTPC Firoz Gandhi Unchahar III	18	8	3
29	NTPC Firoz Gandhi Unchahar IV	30	14	9
30	NTPC Rihand TPS-I	25	28	14
31	NTPC Rihand TPS-II	26	30	15
32	NTPC Rihand TPS-III	32	24	17
33	NTPC NCTP Dadri II	22	11	16
34	NTPC Singrauli	85	58	29
35	NTPC IGPS I Jhajjar	32	9	13
36	MEJA Urja Nigam	2	1	5
37	NTPC Tanda	5	10	7
38	NTPC Badarpur	-	-	-

Sr. no.	Particulars	FY 2019-20	FY 2020-21 (Proj.)	FY 2021-22 (Proj.)
39	Rajasthan (NPCIL)	11	12	12
40	NARORA (NPCIL)	9	8	7
41	NTPC Kahalgaon II	534	370	519
<b>II</b>	<b>MP GENCO (THERMAL &amp; HYDRO)</b>	<b>35,124</b>	<b>33,166</b>	<b>31,264</b>
1	Amarkantak TPS Ph-III	1,589	1,452	1,446
2	Satpura TPS Ph-II & III	4,245	1,523	-
3	Satpura TPS Ph-IV	3,470	3,608	3,411
4	SGTPS Ph-I & II	5,126	4,674	4,655
5	SGTPS Ph-III	3,054	3,795	3,510
6	Shri Singaji STPS Phase-I	7,267	8,144	7,433
7	Shri Singaji STPS Phase-II	7,866	7,632	8,170
8	Rani Awanti Bai Sagar, Bargi HPS	376	437	344
9	Bansagar Ph I HPS (Tons)	1,239	959	1,082
10	Bansagar Ph-II HPS (Silpara)	91	83	100
11	Bansagar Ph-III HPS (Deolond)	135	86	140
12	Bansagar Ph-IV HPS (Jhinna)	104	109	104
13	Birsinghpur HPS	41	47	50
14	Madikheda HPS	138	95	120
15	Rajghat HPS	51	44	53
16	Gandhisagar HPS	16	69	115
17	Ranapratap Sagar HPS	27	78	201
18	Jawahar Sagar HPS	145	79	147
19	Pench HPS	145	252	183
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>	<b>6,267</b>	<b>5,629</b>	<b>5,232</b>
1	NHDC Indira Sagar HPS	2,837	2,596	2,343
2	NHDC Omkareshwar HPS	1,227	1,315	1,038
3	NVDA Sardar Sarovar HPS	2,153	1,602	1,696
4	Rihand HPS	-	31	82
5	Matatila HPS	-	6	29
6	SJVN Rampur HPS	3	5	2
7	SJVN Jhakri HPS	13	17	9
8	Tehri HPS	5	11	6
9	Koteshwar HPP	2	4	2
10	NHPC Parbati III	2	5	3
11	NHPC Chamera II	4	4	3
12	NHPC Chamera III	3	4	2
13	NHPC Dulhasti	5	8	4

<b>Sr. no.</b>	<b>Particulars</b>	<b>FY 2019-20</b>	<b>FY 2020-21 (Proj.)</b>	<b>FY 2021-22 (Proj.)</b>
14	NHPC Dhauliganga	3	5	3
15	NHPC Sewa II	2	2	1
16	NHPC Uri II	3	3	2
17	NHPC Kishanganga	2	5	3
18	NTPC Koldam HPP I	4	6	3
19	NTPC Singrauli Small HPP	0	0	0
<b>IV</b>	<b>DVC</b>	-	<b>187</b>	-
1	DVC (MTPS & CTPS)	-	141	-
2	DVC (DTPS)	-	46	-
<b>V</b>	<b>IPPs</b>	<b>24,443</b>	<b>21,032</b>	<b>23,587</b>
1	Torrent Power	649	143	256
2	BLA Power, Unit-I & II	106	30	188
3	Jaypee Bina Power	2,338	1,083	2,372
4	Lanco Amarkantak TPS Unit 1	2,105	2,185	2,033
5	Reliance UMPP, Sasan	11,655	11,332	10,422
6	Essar Power STPS	27	172	421
7	Jaiprakash Power STPS, Nigri	3,252	3,047	3,474
8	MB Power STPS, Unit-I	1,441	1,131	1,474
9	MB Power STPS, Unit-II	1,485	1,065	1,474
10	Jhabua Power STPS, Unit-1	1,386	845	1,474
<b>VI</b>	<b>Renewables</b>	<b>6,387</b>	<b>5,264</b>	<b>8,293</b>
1	Renewable Energy (Solar)	2,465	1,617	4,114
2	Renewable Energy (other than Solar)	3,899	3,621	4,149
3	Renewable Energy (mini micro)	24	26	30
<b>VII</b>	<b>Total</b>	<b>104,094</b>	<b>94,293</b>	<b>103,599</b>

**Table 88: Month Wise Power Availability for FY 2021-22**

Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
I	Central Sector	2,948	3,040	2,874	2,761	2,726	2,883	3,165	3,049	3,126	3,037	2,618	2,997	35,222
1	NTPC Korba	294	304	294	304	283	264	295	274	260	223	195	255	3,245
2	NTPC Korba III	45	46	45	0	36	45	46	45	46	46	42	46	490
3	NTPC Vidyachal I	227	227	225	221	248	263	272	263	272	245	205	249	2,918
4	NTPC Vidyachal II	198	205	126	153	132	147	205	198	205	205	185	205	2,165
5	NTPC Vidyachal III	99	152	147	152	152	147	152	147	152	131	89	131	1,653
6	NTPC Vidyachal IV	174	93	152	180	93	152	180	174	180	180	163	180	1,902
7	NTPC Vidyachal V Unit 1	85	88	85	88	3	85	88	85	88	88	79	88	948
8	NTPC Sipat I	197	203	131	138	143	185	203	197	203	203	183	203	2,188
9	NTPC Sipat II	70	113	109	113	113	109	113	109	113	113	102	73	1,249
10	NTPC Mouda I	104	107	104	107	107	104	107	104	107	100	46	63	1,162
11	NTPC Mouda II Unit 1	145	150	145	150	77	73	150	145	150	150	135	150	1,620
12	NTPC Solapur STPS	198	205	198	6	205	198	205	198	205	205	185	205	2,211
13	NTPC Gadarwara STPS, Unit-1	237	245	237	245	245	237	245	237	245	245	222	245	2,889
14	NTPC Lara STPS, Raigarh, Unit I	49	51	49	51	51	49	51	49	51	51	46	51	598
15	NTPC Khargone STPS, Unit-I	196	202	196	202	202	196	202	196	202	202	183	202	2,383
16	NTPC Kawas GPP	61	62	61	63	56	61	63	60	62	63	43	63	718
17	NTPC Gandhar GPP	51	53	51	53	45	51	53	51	51	53	32	53	601
18	KAPP Kakrapar	-	-	-	-	-	-	-	-	-	-	-	-	-
19	TAPP Tarapur	-	-	-	-	-	-	-	-	-	-	-	-	-
20	NTPC Gadarwara STPS, Unit-2	231	238	231	238	238	231	238	231	238	238	215	238	2,807
21	NTPC Lara STPS, Raigarh, Unit II	37	38	37	38	38	37	38	37	38	38	34	38	448
22	NTPC Khargone STPS, Unit-II	190	197	190	197	197	190	197	190	197	197	178	197	2,316
23	NTPC Auraiya GPP	1	1	1	1	1	1	1	1	1	1	1	1	11
24	NTPC Dadri GPP	1	1	1	1	1	1	1	1	1	1	1	1	14

Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
25	NTPC Anta GPP	1	1	1	1	1	1	1	1	1	1	1	1	7
26	NTPC Firoz Gandhi Unchahar I	0	0	0	0	0	0	0	0	0	0	0	0	2
27	NTPC Firoz Gandhi Unchahar II	1	1	1	1	1	1	1	1	1	1	1	1	7
28	NTPC Firoz Gandhi Unchahar III	0	0	0	0	0	0	0	0	0	0	0	0	3
29	NTPC Firoz Gandhi Unchahar IV	1	1	1	1	1	1	1	1	1	1	1	1	9
30	NTPC Rihand TPS-I	1	1	1	1	1	1	1	1	1	1	1	1	14
31	NTPC Rihand TPS-II	1	1	1	1	1	1	1	1	1	1	1	1	15
32	NTPC Rihand TPS-III	1	1	1	1	1	1	1	1	1	1	1	1	17
33	NTPC NCTP Dadri II	1	1	1	1	1	1	1	1	1	1	1	1	16
34	NTPC Singrauli	2	2	2	2	2	2	2	2	2	2	2	2	29
35	NTPC IGPS I Jhajjar	1	1	1	1	1	1	1	1	1	1	1	1	13
36	MEJA Urja Nigam	0	0	0	0	0	0	0	0	0	0	0	0	5
37	NTPC Tanda	1	1	1	1	1	1	1	1	1	1	1	1	7
38	NTPC Badarpur	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Rajasthan (NPCIL)	1	1	1	1	1	1	1	1	1	1	1	1	12
40	NARORA (NPCIL)	1	1	1	1	1	1	1	1	1	1	1	1	7
41	NTPC Kahalgaon II	43	43	43	45	45	43	45	42	43	45	40	45	519
<b>II</b>	<b>MP GENCO (THERMAL &amp; HYDRO)</b>	<b>2,593</b>	<b>2,679</b>	<b>2,234</b>	<b>2,028</b>	<b>2,296</b>	<b>2,470</b>	<b>3,038</b>	<b>2,897</b>	<b>2,945</b>	<b>2,865</b>	<b>2,492</b>	<b>2,727</b>	<b>31,264</b>
1	Amarkantak TPS Ph-III	125	129	125	123	62	119	130	126	130	130	117	130	1,446
2	Satpura TPS Ph-II & III	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Satpura TPS Ph-IV	301	311	301	200	174	292	312	302	312	312	282	312	3,411
4	SGTPS Ph-I & II	411	425	376	295	295	286	437	424	437	437	395	437	4,655
5	SGTPS Ph-III	326	337	326	-	219	318	338	327	338	338	305	338	3,510
6	Shri Singaji STPS Phase-I	674	696	334	605	552	428	706	683	706	706	637	706	7,433
7	Shri Singaji STPS Phase-II	676	699	676	659	659	638	709	686	709	709	641	709	8,170

Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
8	Rani Awanti Bai Sagar, Bargi HPS	10	5	5	25	50	55	55	35	35	30	20	20	344
9	Bansagar Ph I HPS (Tons)	40	40	50	50	150	180	180	150	140	90	10	5	1,082
10	Bansagar Ph-II HPS (Silpara)	2	2	3	10	15	15	20	20	10	3	-	-	100
11	Bansagar Ph-III HPS (Deolond)	-	-	-	-	-	-	30	40	30	20	10	10	140
12	Bansagar Ph-IV HPS (Jhinna)	5	9	9	9	9	9	9	9	9	9	9	9	104
13	Birsinghpur HPS	-	2	3	5	10	10	5	5	5	5	-	-	50
14	Madikheda HPS	-	-	-	10	20	25	20	15	11	10	5	5	120
15	Rajghat HPS	-	-	-	3	3	12	12	9	9	3	3	-	53
16	Gandhisagar HPS	2	2	5	5	10	10	10	15	15	15	15	10	115
17	Ranapratap Sagar HPS	10	10	10	13	28	29	24	17	15	16	14	13	201
18	Jawahar Sagar HPS	7	8	8	10	21	21	18	12	11	12	10	10	147
19	Pench HPS	3	3	3	7	20	23	23	23	23	20	20	13	183
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>	<b>262</b>	<b>246</b>	<b>272</b>	<b>408</b>	<b>785</b>	<b>759</b>	<b>523</b>	<b>445</b>	<b>413</b>	<b>408</b>	<b>351</b>	<b>361</b>	<b>5,232</b>
1	NHDC Indira Sagar HPS	117	110	122	183	351	340	234	199	185	183	157	162	2,343
2	NHDC Omkareshwar HPS	52	49	54	81	156	150	104	88	82	81	70	72	1,038
3	NVDA Sardar Sarovar HPS	85	80	88	132	254	246	170	144	134	132	114	117	1,696
4	Rihand HPS	4	4	4	6	12	12	8	7	7	6	6	6	82
5	Matatila HPS	1	1	2	2	4	4	3	2	2	2	2	2	29
6	SJVN Rampur HPS	0	0	0	0	0	0	0	0	0	0	0	0	2
7	SJVN Jhakri HPS	0	0	0	1	1	1	1	1	1	1	1	1	9
8	Tehri HPS	0	0	0	0	1	1	1	1	0	0	0	0	6
9	Koteshwar HPP	0	0	0	0	0	0	0	0	0	0	0	0	2
10	NHPC Parbati III	0	0	0	0	0	0	0	0	0	0	0	0	3
11	NHPC Chamera II	0	0	0	0	1	0	0	0	0	0	0	0	3
12	NHPC Chamera III	0	0	0	0	0	0	0	0	0	0	0	0	2
13	NHPC Dulhasti	0	0	0	0	1	1	0	0	0	0	0	0	4

Sr.no.	Particulars	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
14	NHPC Dhauliganga	0	0	0	0	0	0	0	0	0	0	0	0	3
15	NHPC Sewa II	0	0	0	0	0	0	0	0	0	0	0	0	1
16	NHPC Uri II	0	0	0	0	0	0	0	0	0	0	0	0	2
17	NHPC Kishanganga	0	0	0	0	0	0	0	0	0	0	0	0	3
18	NTPC Koldam HPP I	0	0	0	0	0	0	0	0	0	0	0	0	3
19	NTPC Singrauli Small HPP	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>IV</b>	<b>DVC</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
1	DVC (MTPS & CTPS)	-	-	-	-	-	-	-	-	-	-	-	-	-
2	DVC (DTPS)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>V</b>	<b>IPPs</b>	<b>2,056</b>	<b>2,011</b>	<b>1,879</b>	<b>1,792</b>	<b>1,661</b>	<b>1,873</b>	<b>2,150</b>	<b>2,075</b>	<b>2,142</b>	<b>2,119</b>	<b>1,766</b>	<b>2,064</b>	<b>23,587</b>
1	Torrent Power	23	23	23	23	23	23	23	17	15	17	21	23	256
2	BLA Power, Unit-I & II	16	17	16	17	10	14	17	16	17	17	15	17	188
3	Jaypee Bina Power	211	218	148	145	190	180	218	211	218	218	197	218	2,372
4	Lanco Amarkantak TPS Unit 1	178	184	178	184	56	178	184	178	184	184	166	184	2,033
5	Reliance UMPP, Sasan	892	821	778	871	808	816	947	917	947	922	756	947	10,422
6	Essar Power STPS	37	25	37	38	38	37	38	37	38	38	34	25	421
7	Jaiprakash Power STPS, Nigri	303	313	303	105	313	303	313	303	313	313	282	313	3,474
8	MB Power STPS, Unit-I	133	138	133	138	99	97	138	133	138	138	87	101	1,474
9	MB Power STPS, Unit-II	133	138	133	138	99	97	138	133	138	138	87	101	1,474
10	Jhabua Power STPS, Unit-1	130	135	130	135	24	130	135	130	135	135	122	135	1,474
<b>VI</b>	<b>Renewables</b>	<b>581</b>	<b>600</b>	<b>581</b>	<b>647</b>	<b>647</b>	<b>719</b>	<b>743</b>	<b>719</b>	<b>743</b>	<b>743</b>	<b>745</b>	<b>825</b>	<b>8,293</b>
1	Renewable Energy (Solar)	237	245	237	292	292	376	388	376	388	388	425	470	4,114
2	Renewable Energy (other than Solar)	341	352	341	352	352	341	352	341	352	352	318	352	4,149
3	Renewable Energy (mini micro)	2	3	2	3	3	2	3	2	3	3	2	3	30
<b>VII</b>	<b>Total</b>	<b>8,439</b>	<b>8,575</b>	<b>7,840</b>	<b>7,636</b>	<b>8,114</b>	<b>8,704</b>	<b>9,619</b>	<b>9,185</b>	<b>9,370</b>	<b>9,171</b>	<b>7,972</b>	<b>8,973</b>	<b>103,599</b>

### 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 31<sup>st</sup> August, 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, 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 & 8.00% for Solar and 9.00% for Non-Solar for FY 2021-22 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 02<sup>nd</sup>, 2015 & National Tariff Policy, 2016 had made an arrangement under various PPA for its compliance. As a result, there was a deficit situation of availability from Solar & Non-solar sources during FY 2019-20 and there will be a deficit during FY 2020-21 also, for complying with RPO targets. 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 2019-20	FY 2020-21	FY 2021-22
<b>A</b>	<b>RPO Obligations (%)</b>	<b>12.00%</b>	<b>14.50%</b>	<b>17.00%</b>
1	Solar	4.00%	6.00%	8.00%
2	Other than Solar	8.00%	8.50%	9.00%
<b>B</b>	<b>Ex-Bus RPO Requirement based on MoD (MUs) excluding Hydro</b>	7,938.99	9,683.72	12,203.06
1	Solar	2,646.33	4,007.06	5,742.62
2	Other than Solar	5,292.66	5,676.66	6,460.45
<b>C</b>	<b>Energy Available from Existing Sources (MU)</b>	<b>6,387.17</b>	<b>5,884.67</b>	<b>8,293.28</b>

Sr.no	Particulars	MP State		
		FY 2019-20	FY 2020-21	FY 2021-22
1	Solar	2,464.72	1,838.24	4,114.46
2	Other than Solar	3,922.45	4,046.43	4,178.82
<b>D</b>	<b>Shortfall (MUs)</b>	<b>1,551.82</b>	<b>3,799.05</b>	<b>3,909.78</b>
1	Solar	181.61	2,168.82	1,628.16
2	Other than Solar	1,370.21	1,630.23	2,281.63
<b>E</b>	<b>Renewable Energy certificate Rate (Rs./kWh)</b>			
1	Solar	1.00	1.00	1.00
2	Other than Solar	1.00	1.00	1.00
<b>F</b>	<b>Cost for procuring Renewable Energy Certificates due to shortage of RPO (Rs. Cr)</b>	<b>155.18</b>	<b>379.91</b>	<b>390.98</b>
1	Solar	18.16	216.88	162.82
2	Other than Solar	137.02	163.02	228.16

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 2021-22 and the Petitioners would meet its Renewable Purchase Obligation requirement from procuring of the Renewable Energy Certificate (REC) with an objective to promote renewable energy. The cost of REC's has been considered in line with the CERC order for determination of Forbearance and Floor Price for REC Framework dated 17.06.2020.

#### 5.4 Backing down of Power

5.4.1 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 2021-22 and thereafter, after considering all generating stations allocated to MPPMCL. The Petitioners have considered the actual data for FY 2019-20 & FY 2020-21 (till October 20) for calculating normative availability including backing down of power for FY 2021-22.

5.4.2 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 12 month, i.e. 310.64 per unit for FY 2021-22, 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.

5.4.3 The following table shows the stations which are considered for partial/full back down for FY 2021-22:

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

Sr. no	Particulars	FY 2021-22		
		Normative Availability	Net Availability	Back Down of Power
<b>I</b>	<b>Central Sector</b>	<b>35,222</b>	<b>26,502</b>	<b>8,720</b>
1	NTPC Korba	3,245	3,245	
2	NTPC Korba III	490	490	
3	NTPC Vindyachal I	2,918	2,918	
4	NTPC Vindyachal II	2,165	2,165	
5	NTPC Vindyachal III	1,653	1,653	
6	NTPC Vindyachal IV	1,902	1,902	
7	NTPC Vindyachal V Unit 1	948	948	
8	NTPC Sipat I	2,188	2,188	
9	NTPC Sipat II	1,249	1,249	
10	NTPC Mouda I	1,162	-	1,162
11	NTPC Mouda II Unit 1	1,620	-	1,620
12	NTPC Solapur STPS	2,211	1,406	805
13	NTPC Gadarwara STPS, Unit-1	2,889	2,651	237
14	NTPC Lara STPS, Raigarh, Unit I	598	598	
15	NTPC Khargone STPS, Unit-I	2,383	202	2,181
16	NTPC Kawas GPP	718	718	
17	NTPC Gandhar GPP	601	496	105
18	KAPP Kakrapar	-	-	
19	TAPP Tarapur	-	-	
20	NTPC Gadarwara STPS, Unit-2	2,807	2,576	231
21	NTPC Lara STPS, Raigarh, Unit II	448	448	
22	NTPC Khargone STPS, Unit-II	2,316	-	2,316
23	NTPC Auraiya GPP	11	1	10
24	NTPC Dadri GPP	14	13	1
25	NTPC Anta GPP	7	7	1
26	NTPC Firoz Gandhi Unchahar I	2	-	2
27	NTPC Firoz Gandhi Unchahar II	7	-	7
28	NTPC Firoz Gandhi Unchahar III	3	-	3
29	NTPC Firoz Gandhi Unchahar IV	9	-	9
30	NTPC Rihand TPS-I	14	14	
31	NTPC Rihand TPS-II	15	15	
32	NTPC Rihand TPS-III	17	17	
33	NTPC NCTP Dadri II	16	-	16
34	NTPC Singrauli	29	29	
35	NTPC IGPS I Jhajjar	13	-	13
36	MEJA Urja Nigam	5	5	
37	NTPC Tanda	7	7	1
38	NTPC Badarpur	-	-	
39	Rajasthan (NPCIL)	12	12	
40	NARORA (NPCIL)	7	7	
41	NTPC Kahalgaon II	519	519	
<b>II</b>	<b>MP GENCO (THERMAL &amp; HYDRO)</b>	<b>31,264</b>	<b>22,793</b>	<b>8,471</b>
1	Amarkantak TPS Ph-III	1,446	1,446	

Sr. no	Particulars	FY 2021-22		
		Normative Availability	Net Availability	Back Down of Power
2	Satpura TPS Ph-II & III	-	-	
3	Satpura TPS Ph-IV	3,411	3,411	
4	SGTPS Ph-I & II	4,655	4,655	
5	SGTPS Ph-III	3,510	3,510	
6	Shri Singaji STPS Phase-I	7,433	5,073	2,360
7	Shri Singaji STPS Phase-II	8,170	2,059	6,111
8	Rani Awanti Bai Sagar, Bargi HPS	344	344	
9	Bansagar Ph I HPS (Tons)	1,082	1,082	
10	Bansagar Ph-II HPS (Silpara)	100	100	
11	Bansagar Ph-III HPS (Deolond)	140	140	
12	Bansagar Ph-IV HPS (Jhinna)	104	104	
13	Birsinghpur HPS	50	50	
14	Madikheda HPS	120	120	
15	Rajghat HPS	53	53	
16	Gandhisagar HPS	115	115	
17	Ranapratap Sagar HPS	201	201	
18	Jawahar Sagar HPS	147	147	
19	Pench HPS	183	183	
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>	<b>5,232</b>	<b>5,231</b>	<b>1</b>
1	NHDC Indira Sagar HPS	2,343	2,343	
2	NHDC Omkareshwar HPS	1,038	1,038	
3	NVDA Sardar Sarovar HPS	1,696	1,696	
4	Rihand HPS	82	82	
5	Matatila HPS	29	29	
6	SJVN Rampur HPS	2	2	
7	SJVN Jhakri HPS	9	9	
8	Tehri HPS	6	6	
9	Koteshwar HPP	2	2	
10	NHPC Parbati III	3	3	
11	NHPC Chamera II	3	3	
12	NHPC Chamera III	2	2	
13	NHPC Dulhasti	4	3	1
14	NHPC Dhauliganga	3	3	
15	NHPC Sewa II	1	1	0
16	NHPC Uri II	2	2	
17	NHPC Kishanganga	3	3	
18	NTPC Koldam HPP I	3	3	
19	NTPC Singrauli Small HPP	0	-	0
<b>IV</b>	<b>DVC</b>	-	-	-
1	DVC (MTPS & CTPS)	-	-	
2	DVC (DTPS)	-	-	
<b>V</b>	<b>IPPs</b>	<b>23,587</b>	<b>20,764</b>	<b>2,823</b>
1	Torrent Power	256	256	
2	BLA Power, Unit-I & II	188	158	30

Sr. no	Particulars	FY 2021-22		
		Normative Availability	Net Availability	Back Down of Power
3	Jaypee Bina Power	2,372	-	2,372
4	Lanco Amarkantak TPS Unit 1	2,033	2,033	
5	Reliance UMPP, Sasan	10,422	10,422	
6	Essar Power STPS	421	-	421
7	Jaiprakash Power STPS, Nigri	3,474	3,474	
8	MB Power STPS, Unit-I	1,474	1,474	
9	MB Power STPS, Unit-II	1,474	1,474	
10	Jhabua Power STPS, Unit-1	1,474	1,474	
<b>VI</b>	<b>Renewables</b>	<b>8,293</b>	<b>8,293</b>	-
1	Renewable Energy (Solar)	4,114	4,114	
2	Renewable Energy (other than Solar)	4,149	4,149	
3	Renewable Energy (mini micro)	30	30	
<b>VII</b>	<b>Total</b>	<b>103,599</b>	<b>83,584</b>	<b>20,015</b>

## 5.5 Management of Surplus Energy

- 5.5.1 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.
- 5.5.2 The IEX rate for the past **twelve months** (From August 2019 to July-2020) is observed to be at Paisa 310.64 per Unit. For the purpose of computation of revenue from surplus energy, the IEX rate is taken at Paisa 310.64 per Unit for FY 2021-22. The Petitioners have considered the Actual data for FY 2019-20 & FY 2020-21 (till October 20) for calculating surplus sale for FY 2021-22.
- 5.5.3 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 91: Management of Surplus Power (MUs)**

Sr.no	Particulars	FY 2021-22 (Proj.)
1.	Ex-Bus Availability	103,599
2.	Backdown of Power excluding Surplus Sale of Power	20,015
3.	Energy Available after Backdown	83,584
4.	Ex-Bus Energy Required by Discom's	79,653
5.	Surplus Units available for Sale	3,930

Sr.no	Particulars	FY 2021-22 (Proj.)
6.	IEX Rate (Paisa/kWh)	311
7.	Revenue from Sale of Surplus Power (Rs Crores)	1,221
8.	Purchase Cost of Surplus Power- Variable (Rs Crores) including Renewables	1,139
9.	Total saving in variable cost of surplus energy from sale of surplus energy (Rs Crore)	82

**5.6.1 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 92: Basis for consideration of Fixed & Variable Charges for FY 2021-22**

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
I	<b>Central Sector</b>				
1	NTPC Korba	244.83	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.48	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
2	NTPC Korba III	78.25	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.45	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
3	NTPC Vidyachal I	258.87	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.86	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
4	NTPC Vidyachal II	160.63	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.84	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
5	NTPC Vidyachal III	175.72	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.81	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
6	NTPC Vidyachal IV	301.40	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.83	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
7	NTPC Vidyachal V Unit 1	157.41	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.84	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
8	NTPC Sipat I	298.21	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.51	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
9	NTPC Sipat II	178.29	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	1.54	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
10	NTPC Mouda I	220.71	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	3.66	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)
11	NTPC Mouda II Unit 1	242.83	Fixed Charge as per Weighted Avg of 12 month Bill (Nov-19 to Oct-20)	3.54	Energy Charge as per Last 12 months Avg (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
12	NTPC Solapur STPS	386.68	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.95	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
13	NTPC Gadarwara STPS, Unit-1	569.10	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.80	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
14	NTPC Lara STPS, Raigarh, Unit I	118.75	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.28	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
15	NTPC Khargone STPS, Unit-I	771.67	Fixed Charge as per Weighted Average of Last 9 month Bill (Feb-20 to Oct-20)	3.03	Energy Charge as per Last 9 months Average (Feb-20 to Oct-20)
16	NTPC Kawas GPP	88.04	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.13	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
17	NTPC Gandhar GPP	89.33	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.87	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
18	KAPP Kakrapar	0.00	-	1.43	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
19	TAPP Tarapur	0.00	-	4.83	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
20	NTPC Gadarwara STPS, Unit-2	569.10	As per NTPC Gadarwara STPS, Unit-1	2.80	As per NTPC Gadarwara STPS, Unit-1
21	NTPC Lara STPS, Raigarh, Unit II	118.75	As per NTPC Lara STPS, Raigarh, Unit I	2.28	As per NTPC Lara STPS, Raigarh, Unit I
22	NTPC Khargone STPS, Unit-II	771.67	As per NTPC Khargone STPS, Unit-I	3.03	As per NTPC Khargone STPS, Unit-I
23	NTPC Auraiya GPP	0.77	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.00	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
24	NTPC Dadri GPP	0.88	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.77	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
25	NTPC Anta GPP	0.56	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.67	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
26	NTPC Firoz Gandhi Unchahar I	0.23	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.18	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
27	NTPC Firoz Gandhi Unchahar II	0.70	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.23	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
28	NTPC Firoz Gandhi Unchahar III	0.46	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.29	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
29	NTPC Firoz Gandhi Unchahar IV	1.36	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.16	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
30	NTPC Rihand TPS-I	0.96	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.44	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
31	NTPC Rihand TPS-II	2.10	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.43	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
32	NTPC Rihand TPS-III	3.15	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.41	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
33	NTPC NCTP Dadri II	2.28	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.86	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
34	NTPC Singrauli	1.93	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.38	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
35	NTPC IGPS I Jhajjar	2.21	-	3.36	Energy charges as per last 4 months Average Bill (July-20 to Oct-20)
36	MEJA Urja Nigam	0.79	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.57	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
37	NTPC Tanda	1.18	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.63	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
38	NTPC Badarpur	0.00	-	0.00	0.00
39	Rajasthan (NPCIL)	0.00	-	3.51	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
40	NARORA (NPCIL)	0.00	-	2.74	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
41	NTPC Kahalgaon II	49.36	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.36	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
<b>II</b>	<b>MP GENCO (THERMAL &amp; HYDRO)</b>				
1	Amarkantak TPS Ph-III	214.39	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.73	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
2	Satpura TPS Ph-II & III	0.00	NIL due to decommissioning of plant	0.00	NIL due to decommissioning of plant
3	Satpura TPS Ph-IV	731.75	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.37	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
4	SGTPS Ph-I & II	451.52	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.50	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
5	SGTPS Ph-III	418.57	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.02	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
6	Shri Singaji STPS Phase-I	1186.65	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.93	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
7	Shri Singaji STPS Phase-II	921.04	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.97	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
8	Rani Awanti Bai Sagar, Bargi HPS	8.69	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.49	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
9	Bansagar Ph I HPS (Tons)	46.70	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.71	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
10	Bansagar Ph-II HPS (Silpara)	5.90	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.53	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
11	Bansagar Ph-III HPS (Deolond)	12.05	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.61	Energy charges as per Weighted Average of past 12 months Bills (Sep-18 to Aug-19) in accordance with the ARR Petition for FY 2020-21
12	Bansagar Ph-IV HPS (Jhinna)	9.03	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.01	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
13	Birsinghpur HPS	2.43	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.59	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
14	Madikheda HPS	17.60	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.79	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
15	Rajghat HPS	7.07	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.72	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
16	Gandhisagar HPS	5.52	Fixed Charge as per Weighted Average of 12 months Bill (Sept-18 to Aug-19)	0.77	Energy Charge as per Last 12 months Average (Sept-18 to Aug-19)
17	Ranapratap Sagar HPS	4.66	Considered as per the Tariff Order FY 2019-20	1.51	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
18	Jawahar Sagar HPS	0.00	-	1.51	As per the RP Sagar
19	Pench HPS	10.93	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.47	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>				
1	NHDC Indira Sagar HPS	285.09	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.79	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
2	NHDC Omkareshwar HPS	198.60	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.29	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
3	NVDA Sardar Sarovar HPS	178.14	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.82	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
4	Rihand HPS	0.00	-	0.40	Energy Charge as per Last 12 months Average (Sept-15 to Aug-16) in absence of supply in previous months
5	Matatila HPS	0.00	-	0.40	Energy Charge as per Last 12 months Average (Sept-15 to Aug-16) in absence of supply in previous months
6	SJVN Rampur HPS	0.82	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.73	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
7	SJVN Jhakri HPS	1.47	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.98	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
8	Tehri HPS	1.18	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.38	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
9	Koteshwar HPP	0.49	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.57	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
10	NHPC Parbati III	0.74	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.54	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
11	NHPC Chamera II	0.18	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.01	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
12	NHPC Chamera III	0.59	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.83	Energy Charge as per Last 11 month Average (Dec-19 to Oct-20)
13	NHPC Dulhasti	1.40	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.65	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
14	NHPC Dhauliganga	0.58	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.21	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
15	NHPC Sewa II	0.42	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.70	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
16	NHPC Uri II	0.22	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.04	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
17	NHPC Kishanganga	0.49	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.97	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
18	NTPC Koldam HPP I	1.09	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.24	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
19	NTPC Singrauli Small HPP	0.00	-	6.44	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
<b>IV</b>	<b>DVC</b>				
1	DVC (MTPS & CTPS)	0.00	-	0.00	0.00
2	DVC (DTPS)	0.00	-	0.00	0.00
<b>V</b>	<b>IPPs</b>				
1	Torrent Power	45.44	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.53	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
2	BLA Power, Unit-I & II	20.05	Fixed Charge as per Weighted Average of 12	2.83	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)

Sr. no.	Particulars	Fixed Charge (Rs. Cr)	Basis for Fixed Charges	Variable Charge (Rs. /kWh)	Basis for Energy Charges
			month Bill (Nov-19 to Oct-20)		
3	Jaypee Bina Power	274.15	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	3.87	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
4	Lanco Amarkantak TPS Unit 1	245.07	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.05	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
5	Reliance UMP, Sasan	174.11	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	1.43	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
6	Essar Power STPS	0.00	-	4.01	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
7	Jaiprakash Power STPS, Nigri	510.71	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	0.72	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
8	MB Power STPS, Unit-I	253.02	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.40	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
9	MB Power STPS, Unit-II	210.54	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.07	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
10	Jhabua Power STPS, Unit-1	255.64	Fixed Charge as per Weighted Average of 12 month Bill (Nov-19 to Oct-20)	2.36	Energy Charge as per Last 12 months Average (Nov-19 to Oct-20)
<b>VI</b>	<b>Renewables</b>				
1	Renewable Energy (Solar)	0.00	-	4.06	As per Weighted Average of all Solar generators with whom PPAs are existing
2	Renewable Energy (other than Solar)	0.86	-	5.50	As per Weighted Average of all Non-Solar generators with whom PPAs are existing
3	Renewable Energy (mini micro)	0.00	-	4.43	As per Weighted Average of other mini micro generators with whom PPAs are existing

## 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 2021-22 is given in the following table:

**Table 93: Merit Order Dispatch for FY 2021-22**

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
1	Rajasthan (NPCIL)	351	12
2	NARORA (NPCIL)	274	7
3	Renewable Energy (Solar)	406	4,114
4	Renewable Energy (other than Solar)	550	4,149
5	Renewable Energy (mini micro)	443	30
6	Rihand HPS	40	82
7	Matatila HPS	40	29
8	Pench HPS	47	183
9	Rani Awanti Bai Sagar, Bargi HPS	49	344
10	Bansagar Ph-II HPS (Silpara)	53	100
11	Torrent Power	53	256
12	Birsinghpur HPS	59	50
13	Bansagar Ph I HPS (Tons)	71	1,082
14	Rajghat HPS	72	53
15	Jaiprakash Power STPS, Nigri	72	3,474
16	Gandhisagar HPS	77	115
17	NVDA Sardar Sarovar HPS	82	1,696
18	SJVN Jhakri HPS	98	9
19	NHPC Chamera II	101	3
20	Bansagar Ph-IV HPS (Jhinna)	101	104
21	NHPC Uri II	104	2
22	NHPC Dhauliganga	121	3
23	Tehri HPS	138	6
24	NTPC Singrauli	138	29
25	NTPC Rihand TPS-III	141	17
26	Reliance UMPP, Sasan	143	10,422
27	NTPC Rihand TPS-II	143	15
28	NTPC Rihand TPS-I	144	14
29	NTPC Korba III	145	490
30	NTPC Korba	148	3,245
31	Ranapratap Sagar HPS	151	201
32	Jawahar Sagar HPS	151	147
33	NTPC Sipat I	151	2,188
34	NHPC Parbati III	154	3
35	NTPC Sipat II	154	1,249

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
36	Koteshwar HPP	157	2
37	Bansagar Ph-III HPS (Deolond)	161	140
38	Amarkantak TPS Ph-III	173	1,446
39	SJVN Rampur HPS	173	2
40	NHDC Indira Sagar HPS	179	2,343
41	Madikheda HPS	179	120
42	NTPC Vidyachal III	181	1,653
43	NHPC Chamera III	183	2
44	NTPC Vidyachal IV	183	1,902
45	NTPC Vidyachal II	184	2,165
46	NTPC Vidyachal V Unit 1	184	948
47	NTPC Vidyachal I	186	2,918
48	NHPC Kishanganga	197	3
49	SGTPS Ph-III	202	3,510
50	Lanco Amarkantak TPS Unit 1	205	2,033
51	MB Power STPS, Unit-II	207	1,474
52	NTPC Kawas GPP	213	718
53	NTPC Koldam HPP I	224	3
54	NTPC Lara STPS, Raigarh, Unit I	228	598
55	NTPC Lara STPS, Raigarh, Unit II	228	448
56	NHDC Omkareshwar HPS	229	1,038
57	NTPC Kahalgaon II	236	519
58	Jhabua Power STPS, Unit-1	236	1,474
59	Satpura TPS Ph-IV	237	3,411
60	MB Power STPS, Unit-I	240	1,474
61	SGTPS Ph-I & II	250	4,655
62	MEJA Urja Nigam	257	5
63	NTPC Tanda	263	7
64	NHPC Dulhasti	265	4
65	NTPC Anta GPP	267	7
66	NHPC Sewa II	270	1
67	NTPC Dadri GPP	277	14
68	NTPC Gadarwara STPS, Unit-1	280	2,889
69	NTPC Gadarwara STPS, Unit-2	280	2,807
70	BLA Power, Unit-I & II	283	188
71	NTPC Gandhar GPP	287	601

Sr.no	Particulars	Variale Charge (Paisa/kWh)	Availability (MUs)
72	Shri Singaji STPS Phase-I	293	7,433
73	NTPC Solapur STPS	295	2,211
74	Shri Singaji STPS Phase-II	297	8,170
75	NTPC Auraiya GPP	300	11
76	NTPC Khargone STPS, Unit-I	303	2,383
77	NTPC Khargone STPS, Unit-II	303	2,316
78	NTPC Firoz Gandhi Unchahar IV	316	9
79	NTPC Firoz Gandhi Unchahar I	318	2
80	NTPC Firoz Gandhi Unchahar II	323	7
81	NTPC Firoz Gandhi Unchahar III	329	3
82	NTPC IGPS I Jhajjar	336	13
83	NTPC Mouda II Unit 1	354	1,620
84	NTPC Mouda I	366	1,162
85	NTPC NCTP Dadri II	386	16
86	Jaypee Bina Power	387	2,372
87	Essar Power STPS	401	421
88	NTPC Singrauli Small HPP	644	0
	Total		103,599

### 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 94: Gross Power Purchase Cost for MP State**

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
I	Central Sector	3,422	4,046	7,467	5,049	5,162	10,211	5,869	5,084	10,953
1	NTPC Korba	219	473	692	253	496	749	245	481	726
2	NTPC Korba III	71	75	147	78	82	161	78	71	149
3	NTPC Vindyachal I	251	454	705	248	524	772	259	544	803
4	NTPC Vindyachal II	143	349	492	158	426	584	161	399	559
5	NTPC Vindyachal III	165	282	447	181	309	490	176	300	476
6	NTPC Vindyachal IV	301	356	657	302	375	678	301	349	650
7	NTPC Vindyachal V Unit 1	156	175	331	158	181	339	157	175	332
8	NTPC Sipat I	298	357	655	289	347	636	298	331	629
9	NTPC Sipat II	152	196	348	184	221	406	178	193	371
10	NTPC Mouda I	199	103	302	221	-	221	221	-	221
11	NTPC Mouda II Unit 1	216	125	341	243	-	243	243	-	243
12	NTPC Solapur STPS	389	37	425	384	233	617	387	198	585
13	NTPC Gadarwara STPS, Unit-1	477	100	577	569	402	971	569	743	1,312
14	NTPC Lara STPS, Raigarh, Unit I	58	44	102	119	98	217	119	137	255
15	NTPC Khargone STPS, Unit-I	81	39	120	817	6	823	772	-	772
16	NTPC Kawas GPP	82	39	122	85	62	147	88	153	241
17	NTPC Gandhar GPP	89	12	101	89	69	158	89	123	212
18	KAPP Kakrapar	-	186	186	-	110	110	-	-	-
19	TAPP Tarapur	-	-	477	477	-	740	740	-	-

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
20	NTPC Gadarwara STPS, Unit-2	-	-	-	235	326	561	569	638	1,207
21	NTPC Lara STPS, Raigarh, Unit II	-	-	-	49	42	91	119	102	221
22	NTPC Khargone STPS, Unit-II	-	-	-	319	-	319	772	-	772
23	NTPC Auraiya GPP	1	2	2	1	0	1	1	-	1
24	NTPC Dadri GPP	1	5	6	1	2	3	1	4	5
25	NTPC Anta GPP	1	1	2	1	1	1	1	2	2
26	NTPC Firoz Gandhi Unchahar I	0	11	11	0	-	0	0	-	0
27	NTPC Firoz Gandhi Unchahar II	1	13	14	1	-	1	1	-	1
28	NTPC Firoz Gandhi Unchahar III	0	5	6	0	-	0	0	-	0
29	NTPC Firoz Gandhi Unchahar IV	1	8	9	1	-	1	1	-	1
30	NTPC Rihand TPS-I	1	3	5	1	4	5	1	2	3
31	NTPC Rihand TPS-II	1	3	5	2	4	7	2	2	4
32	NTPC Rihand TPS-III	3	4	8	3	3	7	3	2	6
33	NTPC NCTP Dadri II	2	4	6	2	-	2	2	-	2
34	NTPC Singrauli	2	12	14	2	8	10	2	4	6
35	NTPC IGPS I Jhajjar	2	7	9	2	-	2	2	-	2
36	MEJA Urja Nigam	0	0	1	1	0	1	1	1	2
37	NTPC Tanda	1	1	2	1	0	1	1	2	3
38	NTPC Badarpur	-	-	-	-	-	-	-	-	-
39	Rajasthan (NPCIL)	-	4	4	-	4	4	-	4	4
40	NARORA (NPCIL)	-	3	3	-	2	2	-	2	2

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
41	NTPC Kahalgaon II	56	82	138	46	82	128	49	122	172
<b>II</b>	<b>MP GENCO (THERMAL &amp; HYDRO)</b>	<b>4,328</b>	<b>5,296</b>	<b>9,624</b>	<b>3,827</b>	<b>3,863</b>	<b>7,690</b>	<b>4,054</b>	<b>4,511</b>	<b>8,566</b>
1	Amarkantak TPS Ph-III	217	263	480	209	251	460	214	250	464
2	Satpura TPS Ph-II & III	348	649	996	93	-	93	-	-	-
3	Satpura TPS Ph-IV	693	610	1,303	703	738	1,441	732	807	1,539
4	SGTPS Ph-I & II	376	611	987	422	626	1,048	452	1,090	1,542
5	SGTPS Ph-III	403	638	1,041	409	765	1,174	419	708	1,126
6	Shri Singaji STPS Phase-I	1,081	1,152	2,233	1,108	827	1,935	1,187	1,031	2,217
7	Shri Singaji STPS Phase-II	1,092	1,149	2,241	764	473	1,237	921	395	1,316
8	Rani Awanti Bai Sagar, Bargi HPS	8	20	29	8	22	30	9	17	26
9	Bansagar Ph I HPS (Tons)	51	88	139	43	68	111	47	77	124
10	Bansagar Ph-II HPS (Silpara)	5	6	12	6	4	10	6	5	11
11	Bansagar Ph-III HPS (Deolond)	12	22	34	12	14	26	12	23	35
12	Bansagar Ph-IV HPS (Jhinna)	9	11	20	9	11	20	9	10	19
13	Birsinghpur HPS	2	4	6	2	3	5	2	3	5
14	Madikheda HPS	17	26	42	17	17	34	18	22	39
15	Rajghat HPS	3	8	12	7	3	10	7	4	11
16	Gandhisagar HPS	1	8	9	2	5	8	6	9	14
17	Ranapratap Sagar HPS	-	4	4	2	12	14	5	30	35
18	Jawahar Sagar HPS	-	22	22	-	12	12	-	22	22
19	Pench HPS	8	7	15	11	12	23	11	9	20

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
<b>III</b>	<b>JV Hydel &amp; Other Hydels</b>	<b>668</b>	<b>942</b>	<b>1,611</b>	<b>660</b>	<b>833</b>	<b>1,494</b>	<b>672</b>	<b>808</b>	<b>1,480</b>
1	NHDC Indira Sagar HPS	286	474	759	281	466	747	285	420	705
2	NHDC Omkareshwar HPS	210	283	493	191	224	415	199	238	436
3	NVDA Sardar Sarovar HPS	163	177	339	178	131	309	178	139	317
4	Rihand HPS	-	-	-	-	1	1	-	3	3
5	Matatila HPS	-	-	-	-	0	0	-	1	1
6	SJVN Rampur HPS	1	1	1	1	1	2	1	0	1
7	SJVN Jhakri HPS	2	1	3	1	2	3	1	1	2
8	Tehri HPS	1	1	3	1	2	3	1	1	2
9	Koteshwar HPP	1	1	1	0	1	1	0	0	1
10	NHPC Parbati III	1	0	1	1	1	2	1	0	1
11	NHPC Chamera II	0	0	1	0	0	1	0	0	1
12	NHPC Chamera III	1	1	1	1	1	1	1	0	1
13	NHPC Dulhasti	1	2	3	1	1	2	1	1	2
14	NHPC Dhauliganga	0	0	1	1	1	1	1	0	1
15	NHPC Sewa II	0	0	1	0	0	1	0	0	1
16	NHPC Uri II	0	1	1	0	0	1	0	0	0
17	NHPC Kishanganga	0	0	1	1	1	1	0	1	1
18	NTPC Koldam HPP I	1	1	2	1	1	2	1	1	2
19	NTPC Singrauli Small HPP	-	0	0	-	-	-	-	-	-
<b>IV</b>	<b>DVC</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>38</b>	<b>-</b>	<b>38</b>	<b>-</b>	<b>-</b>

Power Purchase Cost- MP State (Rs Crores)										
Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	DVC (MTPS & CTPS)	-	-	-	25	-	25	-	-	-
2	DVC (DTPS)	-	-	-	13	-	13	-	-	-
V	<b>IPPs</b>	<b>2,248</b>	<b>3,004</b>	<b>5,252</b>	<b>1,842</b>	<b>2,895</b>	<b>4,736</b>	<b>1,989</b>	<b>3,206</b>	<b>5,195</b>
1	Torrent Power	55	11	66	41	8	49	45	14	59
2	BLA Power, Unit-I & II	21	6	26	19	8	27	20	42	62
3	Jaypee Bina Power	468	211	679	193	-	193	274	-	274
4	Lanco Amarkantak TPS Unit 1	250	432	681	241	448	689	245	416	661
5	Reliance UMPP, Sasan	167	1,583	1,750	169	1,617	1,786	174	1,487	1,662
6	Essar Power STPS	-	8	8	-	-	-	-	-	-
7	Jaiprakash Power STPS, Nigri	567	215	782	475	220	695	511	251	761
8	MB Power STPS, Unit-I	255	197	453	254	188	441	253	344	597
9	MB Power STPS, Unit-II	223	175	398	205	220	425	211	305	516
10	Jhabua Power STPS, Unit-1	241	167	408	244	186	430	256	347	603
VI	<b>Renewables</b>	-	<b>3,283</b>	<b>3,283</b>	<b>4</b>	<b>2,969</b>	<b>2,973</b>	<b>1</b>	<b>3,966</b>	<b>3,967</b>
1	Renewable Energy (Solar)	-	1,127	1,127	-	746	746	-	1,670	1,670
2	Renewable Energy (other than Solar)	-	2,144	2,144	4	2,211	2,215	1	2,282	2,283
3	Renewable Energy (mini micro)	-	12	12	-	12	12	-	13	13
VII	<b>Total</b>	<b>10,666</b>	<b>16,572</b>	<b>27,238</b>	<b>11,419</b>	<b>15,722</b>	<b>27,140</b>	<b>12,585</b>	<b>17,575</b>	<b>30,160</b>

**Table 95: Total Power Purchase Cost for MP State**

Sr. No	Particulars	FY 2019-20 (Actual)			FY 2020-21 (Re-Estimated)			FY 2021-22 (Projected)		
		Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total	Fixed Charge	Variable Charge	Total
1	Gross Power Purchase Cost	10,666	16,572	27,238	11,419	15,722	27,140	12,585	17,575	30,160
2	Less: Saving in variable cost of surplus energy from sale of surplus energy		945	945		129	129		82	82
3	Gross Power Purchase Cost after Saving in Variable Cost	10,666	15,627	26,293	11,419	15,592	27,011	12,585	17,494	30,079
4	Add: MPPMCL Cost	380		380	113		113	113		113
5	Add: Cost due to RPO		155	155		564	564		391	391
<b>6</b>	<b>Net Power Purchase Cost</b>	<b>11,046</b>	<b>15,782</b>	<b>26,828</b>	<b>11,531</b>	<b>16,156</b>	<b>27,687</b>	<b>12,698</b>	<b>17,885</b>	<b>30,583</b>
7	Inter-state Transmission Charges	2,570		2,570	2,698		2,698	2,833		2,833
8	MPPTCL Charges including SLDC Charges	2,956		2,956	3,104		3,104	3,259		3,259
<b>9</b>	<b>Total Power Purchase Cost</b>	<b>16,572</b>	<b>15,782</b>	<b>32,355</b>	<b>17,334</b>	<b>16,156</b>	<b>33,490</b>	<b>18,791</b>	<b>17,885</b>	<b>36,675</b>

The Total Power Purchase cost excluding MPPTCL Charges is again distributed among the three Discoms according to the DBST Methodology for individual Discoms as shown below:

#### 6.4 Distribution Bulk Supply Tariff methodology for Allocation of Power Purchase Cost to Discoms

- 6.4.1 The Government of MP vide gazette notification dated 21<sup>st</sup> 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 Distribution Bulk Supply Tariff (DBST) methodology.
- 6.4.2 With the Implementation of Distribution Bulk Supply Tariff (DBST) with effect from January 2020, the overall Power Purchase Cost of all the three Discoms is being distributed on the basis of Revenue available with Discoms for power purchase and in-proportion of their energy requirement.
- 6.4.3 The Power Purchase cost allocated to Discoms based on DBST methodology for the period FY 2019-20 to FY 2021-22 as provided in the table below:

S.no	Particulars	Unit	FY 2020-21				FY 2021-22			
			MP	EZ	CZ	WZ	MP	EZ	CZ	WZ
A	Revenue from Existing Tariff	Rs. Cr	39,373	11,491	12,685	15,197	42,185	12,679	13,315	16,191
B	Other costs of Discoms (Expenditure other than power purchase cost)	Rs. Cr	8,226	2,825	2,936	2,466	8,139	2,929	3,026	2,184
1	R&M Expense	Rs. Cr	684	223	273	188	787	266	318	203
2	Employee Expenses	Rs. Cr	4,052	1,392	1,311	1,349	3,474	1,205	1,267	1,001
3	A&G Expense	Rs. Cr	496	206	119	171	358	122	107	129
4	Depreciation and Related debits	Rs. Cr	1,286	439	540	307	1,554	669	557	327
5	Interest & Finance Charges	Rs. Cr	968	329	402	236	1,034	351	445	238
6	Other Debits, Write-offs (Prior period and bad debts)	Rs. Cr	394	115	127	152	422	127	133	162
7	RoE	Rs. Cr	1,189	495	441	252	1,391	570	534	286
8	Less: Other income	Rs. Cr	842	374	278	190	880	381	336	163
C	Intra- state transmission Charges including SLDC Charges	Rs. Cr	3,104	896	1,016	1,193	3,259	993	1,049	1,218
D	Aggregated Amount available with Discoms for Power purchase (A-B-C)	Rs. Cr	28,043	7,771	8,734	11,538	30,787	8,757	9,240	12,790

S.no	Particulars	Unit	FY 2020-21				FY 2021-22			
			MP	EZ	CZ	WZ	MP	EZ	CZ	WZ
<b>E</b>	<b>Total Power Purchase Cost</b>	<b>Rs. Cr</b>	<b>30,386</b>				<b>33,416</b>			
<b>F</b>	<b>Surplus/Gap (E-D)</b>	<b>Rs. Cr</b>	<b>2,343</b>				<b>2,629</b>			
<b>G</b>	Ex-Bus Energy Requirement	MU	74,752	21,565	24,455	28,731	79,653	24,257	25,641	29,756
<b>H</b>	Ex-Bus Energy Requirement	%	100%	29%	33%	38%	100%	30%	32%	37%
<b>I</b>	<b>Allocation of surplus/Gap as per the Energy Requirement</b>	<b>Rs. Cr</b>	<b>2,343</b>	<b>676</b>	<b>767</b>	<b>901</b>	<b>2,629</b>	<b>801</b>	<b>846</b>	<b>982</b>
<b>J</b>	<b>Power Purchase Cost for Discom (D+I)</b>	<b>Rs. Cr</b>	<b>30,386</b>	<b>8,447</b>	<b>9,500</b>	<b>12,439</b>	<b>33,416</b>	<b>9,558</b>	<b>10,087</b>	<b>13,772</b>
<b>K</b>	<b>Bulk Supply Tariff</b>	<b>Rs./kWh</b>	<b>4.06</b>	<b>3.92</b>	<b>3.88</b>	<b>4.33</b>	<b>4.20</b>	<b>3.94</b>	<b>3.93</b>	<b>4.63</b>

## 6.5 Estimation of Other Costs associated to Power Purchase.

### 6.5.1 Inter State Transmission Charges

6.5.1.1 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 2019-20 as per Actual figures from power purchase statement and 5% increment in each year considered for FY 2020-21 & FY 2021-22 as shown below:

**Table 96: Inter State Transmission Charges (Rs Crores)**

Sr. no	Particulars	FY 2019-20	FY 2020-21	FY 2021-22
1	East Discom	981.62	778.48	862.84
2	Central Discom	890.33	882.80	912.07
3	West Discom	1,071.03	1,037.17	1,058.45
<b>4</b>	<b>MP State</b>	<b>2,942.98</b>	<b>2,698.44</b>	<b>2,833.36</b>

6.5.2 These Inter-state transmission charges have been allocated to Discoms based on energy allocation from Central Generating Stations and as per Ex-bus Energy requirement.

### **6.5.3 Intra-State Transmission Charges including SLDC Charges and Cash Outflow for Terminal Benefits**

6.5.3.1 These Inter-state transmission charges have been allocated to Discoms based on energy allocation from Central Generating Stations and as per Ex-bus Energy requirement.

### **6.5.4 Intra-State Transmission Charges including SLDC Charges and Cash Outflow for Terminal Benefits**

6.5.4.1 The Petitioners have considered Intra-Transmission Charges for FY 2019-20 as per Actual figures from power purchase statement and 5% increment in each year considered for FY 2020-21 & FY 2021-22 as shown below:

**Table 97: Intra State Transmission Charges including SLDC (Rs Crores)**

Sr.no	Transmission Charges	FY 2019-20	FY 2020-21	FY 2021-22
1	East Discom	981.62	778.48	862.84
2	Central Discom	890.33	882.80	912.07
3	West Discom	1,071.03	1,037.17	1,058.45
<b>4</b>	<b>MP State</b>	<b>2,942.98</b>	<b>2,698.44</b>	<b>2,833.36</b>
Sr.no	SLDC Charges	FY 2019-20	FY 2020-21	FY 2021-22
1	East Discom	4.01	4.07	4.51
2	Central Discom	4.27	4.61	4.76
3	West Discom	5.14	5.42	5.53
<b>4</b>	<b>MP State</b>	<b>13.42</b>	<b>14.10</b>	<b>14.80</b>
Sr.no	Transmission Charges including SLDC Chgs	FY 2019-20	FY 2020-21	FY 2021-22
1	East Discom	985.63	782.54	867.34
2	Central Discom	894.61	887.41	916.84
3	West Discom	1,076.17	1,042.58	1,063.98
<b>4</b>	<b>MP State</b>	<b>2,956.41</b>	<b>2,712.54</b>	<b>2,848.16</b>

6.5.4.2 The Intra-State Transmission charges have been allocated to Discoms based on Ex-bus energy requirement.

## 6.6 MPPMCL Cost

6.5.1 The MPPMCL Cost for the FY 2019-20 to FY 2021-22 is as follows:

**Table 98: MPPMCL Cost Details**

	Particulars	FY 2019-20	FY 2020-21	FY 2021-22
I	Revenue from operations (including Revenue Subsidy)	20.95	0	0
II	Other income	316.55	348.205	383.0255
III	Income from other business allocated to Licensed business			
<b>IV</b>	<b>Total Revenue (I +II+III)</b>	<b>337.50</b>	<b>348.21</b>	<b>383.03</b>
V	Expenses:			
1	Purchase of Power from MP Genco			
2	Purchase of Power from Other Sources	320.52	32.87	31.16
3	Inter-State Transmission charges	135.12	148.63	163.50
4	Intra-State Transmission (MP Transco) Charges	0	-	-
5	SI.DC Charges	0	-	-
6	Depreciation and amortization expenses	7.48	10.87	11.07
7	Interest & Finance Charges	158.43	170.02	187.02
8	Repairs and Maintenance	2.39	2.63	2.89
9	Employee costs	67.81	69.84	71.94
10	Administration and General expenses	18.36	20.20	22.22
11	Net prior period credit charges	0	-	-
12	Other Expenses	5.2	5.72	6.29
13	Lease Rental		-	-
	<b>Total Expenses</b>	<b>715.31</b>	<b>460.78</b>	<b>496.09</b>
<b>VI</b>	<b>Profit before exceptional and extraordinary items and tax (IV-V)</b>	<b>(377.81)</b>	<b>(112.58)</b>	<b>(113.06)</b>
VII	Extraordinary items		-	-
VII I	Profit before extraordinary items and tax (VI-VII)	(377.81)	(112.58)	(113.06)
IX	Exceptional Items	2.1		
<b>X</b>	<b>Profit before tax (VIII- IX)</b>	<b>(379.91)</b>	<b>(112.58)</b>	<b>(113.06)</b>

## 6.7 Total Power Purchase Cost

6.7.1 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 99: Total Power Purchase Cost**

Sr. No	Particulars	UoM	Power Purchase Cost							
			MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom
<b>A</b>	<b>Ex- Bus Net Power Purchase Cost Excluding Transmission Charges (Inter, Intra &amp; SLDC) etc.</b>									
i	Quantum	MUs	74,752	21,565	24,455	28,731	79,653	24,257	25,641	29,756
ii	Fixed Cost	Rs Crores	11,419	3,174	3,570	4,674	12,585	3,599	3,799	5,187
iii	Variable Cost	Rs Crores	16,156	4,491	5,051	6,614	17,885	5,115	5,399	7,371
iv	MPPMCL Cost	Rs Crores	113	31	35	46	113	32	34	47
v	Total Cost	Rs Crores	27,687	7,697	8,657	11,334	30,583	8,747	9,231	12,604
vi	Average Cost	Paisa/kWh	370	357	354	394	384	361	360	424
<b>B</b>	<b>Inter State Transmission</b>									
i	Losses	MUs	1,360	393	446	522	1,554	476	501	577
ii	Charges- Fixed	Rs Crores	2,698	750	844	1,105	2,833	810	855	1,168
<b>C</b>	<b>Power Purchase Cost at State Boundary</b>									
i	Quantum	MUs	73,392	21,173	24,010	28,210	78,099	23,781	25,139	29,179
ii	Fixed Cost	Rs Crores	14,117	3,924	4,414	5,779	15,418	4,410	4,654	6,354
iii	Variable Cost	Rs Crores	16,156	4,491	5,051	6,614	17,885	5,115	5,399	7,371
iv	MPPMCL Cost	Rs Crores	113	31	35	46	113	32	34	47
v	Total Cost	Rs Crores	30,386	8,447	9,500	12,439	33,416	9,558	10,087	13,772
vi	Average Cost	Paisa/kWh	414	399	396	441	428	402	401	472
<b>D</b>	<b>Intra State Transmission including SLDC</b>									
i	Losses	MUs	1,901	548	622	731	2,023	616	651	756

Sr. No	Particulars	UoM	Power Purchase Cost							
			MP State	East Discom	Central Discom	West Discom	MP State	East Discom	Central Discom	West Discom
ii	Charges- Fixed	Rs Crores	3,104	896	1,016	1,193	3,259	993	1,049	1,218
<b>E</b>	<b>Power Purchase Cost at Discom Boundary</b>									
i	<b>Quantum</b>	<b>MUs</b>	71,491	20,624	23,388	27,479	76,076	23,165	24,488	28,423
ii	<b>Fixed Cost including Transmission Charges</b>	<b>Rs Crores</b>	<b>17,221</b>	<b>4,820</b>	<b>5,429</b>	<b>6,972</b>	<b>18,678</b>	<b>5,402</b>	<b>5,703</b>	<b>7,572</b>
iii	<b>Variable Cost</b>	<b>Rs Crores</b>	16,156	4,491	5,051	6,614	17,885	5,115	5,399	7,371
iv	<b>MPPMCL Cost</b>	<b>Rs Crores</b>	113	31	35	46	113	32	34	47
v	<b>Total Cost</b>	<b>Rs Crores</b>	33,490	9,342	10,516	13,632	36,675	10,550	11,136	14,989
vi	<b>Average Cost</b>	<b>Paisa/kWh</b>	468	453	450	496	482	455	455	527

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

## 6.8 Reason for Increase in Power Purchase Cost

- 6.7.2** 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.
- 6.7.3** 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 100: 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
9	FY 2019-20	75,617	30,837	407

- 6.7.4** 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;
- 6.7.5** The hurdles in reduction of power purchase cost are shown in brief below:
- 6.7.5.1** 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 514 per kWh in FY 2019-20 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 101: MPPMCL Cost (Rs Crores)**

Sr. no.	Particulars	FY 20 (Prov.)	FY 21 (RE)	FY 22 (Projected)
I	Revenue from operations (including Revenue Subsidy)	20.95	-	-
II	Other income	316.55	348.21	383.03
III	Income from other business allocated to Licensed business			
<b>IV</b>	<b>Total Revenue (I +II+III)</b>	<b>337.50</b>	<b>348.21</b>	<b>383.03</b>
V	Expenses:			
1	Purchase of Power from MP Genco			
2	Purchase of Power from Other Sources	320.52	32.87	31.16
3	Inter-State Transmission charges	135.12	148.63	163.50
4	Intra-State Transmission (MP Transco) Charges	-	-	-
5	SI.DC Charges	-	-	-
6	Depreciation and amortization expenses	7.48	10.87	11.07
7	Interest & Finance Charges	158.43	170.02	187.02
8	Repairs and Maintenance	2.39	2.63	2.89
9	Employee costs	67.81	69.84	71.94
10	Administration and General expenses	18.36	20.20	22.22
11	Net prior period credit charges	-	-	-
12	Other Expenses	5.20	5.72	6.29
13	Lease Rental		-	-
	<b>Total Expenses</b>	<b>715.31</b>	<b>460.78</b>	<b>496.09</b>
<b>VI</b>	<b>Profit before exceptional and extraordinary items and tax (IV-V)</b>	<b>(377.81)</b>	<b>(112.58)</b>	<b>(113.06)</b>

Sr. no.	Particulars	FY 20 (Prov.)	FY 21 (RE)	FY 22 (Projected)
VII	Extraordinary items		-	-
VIII	Profit before extraordinary items and tax (VI-VII)	(377.81)	(112.58)	(113.06)
IX	Exceptional Items	2.10		
X	<b>Profit before tax (VIII- IX)</b>	<b>(379.91)</b>	<b>(112.58)</b>	<b>(113.06)</b>

## 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, sale of power to others of Rs 20.95 Crs has been taken in FY 2019-20 as the credit for the same could not be passed to the Discoms in the monthly bills. However, from FY 2020-21 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 2020-20 onwards.

### 7.5.2 Other Income

Other Income for FY 2019-20 was Rs 316.55 Crores of MPPMCL. The major components which form part of other income are mainly the rebate received from the long-term power suppliers against timely payment made and interest received. The details of other income of MPPMCL received in FY 2019-20 are as follows:

**Table 102: Other Income (Rs Crores)**

Particulars	Amount (in Crores)
i) Compensation received	4.5
ii) Rebate received on a/c of timely/prompt payments	204.20
iii) Generation based incentive	7.51
iv) Interest received (Includes interest on commitment advances)	33.87
v) Income from RRAS	26.02
vi) Other Income	40.45
<b>TOTAL</b>	<b>316.55</b>

- 7.5.3 Further the other income for FY 2020-21 onwards has been worked out by increasing the income of FY 2019-20 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 2019-20 it includes:

- Bills of power purchase & Transmission charges of Rs. 852.21 Crores.
- Liability for banking of energy of Rs -531.73 Crores.
- Others Cost of Rs. 0.05 Crores

##### **7.6.2.1 Bills of Power Purchase:**

FY 2019-20 includes bills of generators listed above, which could not be passed to Discoms through monthly bills. From FY 2020-21 onwards all the bills are likely to be passed through the monthly bills to the Discoms, hence will be considered in ARR of Discoms.

However, historically it is seen that some bills are left to be passed in the monthly Discom bill and hence an estimated amount of Rs 50 Crores is taken as power purchase bills, which could not be passed through monthly bills to Discoms from FY 2020-21 onwards.

##### **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. (-) 531.73 Crores:**

MPPMCL has to receive back 198.03 MU of banked energy, banked during FY 2019-20, which translates into a financial asset of about Rs 81.78 Crore considering cost per unit of Rs. 4.13 i.e. the average power purchase rate for 2019-20 calculated on the basis of total power purchase cost except Banking for FY 2019-20.

During FY 2019-20, MPPMCL returned 1210.94 MU of banked power received in 2018-19. This was translated into a financial liability of Rs.449.95 Crore @ Rs 3.72 per unit, which was the average cost of power purchase for the year 2018-19.

Therefore, a net banking liability of Rs. (-) 531.73 Crore is booked in FY 2019-20. For FY 20-21, the liability for banking of energy is calculated as follows:

**Table 103: Other Income**

Particulars	Rs Crores
MUs to be received at the end of FY 2019-20	198.03
MUs to be received at the end of FY 2020-21 (increasing the units of FY 2019-20 by 10%) =	217.83
Average purchase cost for FY 2019-20	4.13
Average purchase cost for FY 20-21 (Increasing the rate of FY 2019-20 by 10%)	4.54
Total amount of Banking Asset for FY 2020-21	98.96
Debit for 198.03 MUs billed to Discoms in 2019-20 @ 4.13 Rs/unit	81.78
Net liability to be passed to Discoms for FY 2020-21	(17.18)
For FY 2021-22 (Increasing cost for FY 20-21 by 10%)	(18.90)

#### 7.6.2.4 Other Power Purchase Cost

The other power purchase costs for FY 2020-21 and onwards is taken by increasing the expenses of FY 2019-20 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 104: Depreciation**

Fixed assets	FY 2019-20	FY 2020-21	FY 2021-22
(i) Tangible assets			
Gross Block	99.50	101.50	103.50
Depreciation*	6.08	6.28	6.48
(ii) Intangible assets			
Gross Block	30.56	30.61	30.61
Depreciation**	1.40	4.59	4.59
Total Depreciation (i + ii)	7.48	10.87	11.07
*In case of tangible assets, there is assumed to be an addition of Rs. 2 Crores depreciable @ 10% approximately from FY 2020-21 and onwards.			
**In case of intangible assets, there is an addition of Rs. 28.32 Crores on account of ERP development in FY 2019-20 in the second half of the year. For FY 2020-21 an addition of Rs. 0.05 Crore is expected due to software being developed by the company which is expected to be completed in FY 2020-21. From FY 2021-22 and onwards, no addition is assumed.			

#### 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 instalment 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 2019-20 these amount to Rs. 158.43 Crores.

Interest paid to NHDC in FY 2019-20 is Rs. 3.87 Crores. The final instalment of this loan was 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 2019-20 is Rs. 154.56 Crore. (i.e. Rs 158.43 Crore - Rs.3.87 Crore.). For FY 2020-21 onwards the interest and finance charges (other than interest to NHDC) are taken by increasing the expenses of FY 2019-20 by 10% p.a.

#### 7.6.6 **Repairs and Maintenance:**

These expenses for FY 2020-21 and onwards is taken by increasing the expenses of FY 2019-20 by 10% p.a.

**7.6.7 Employee expenses:**

The employee costs for FY 2019-20 is Rs. 67.81 Crore. For FY 2020-21 onwards the employee expense is taken by increasing the expense of FY 2019-20 by 3%.

**7.6.8 Administration and General Expenses:**

For FY 2019-20, Administration & General Expenses consists of consultancy fees, legal charges, bank charges, Rates and Taxes, printing & stationary, etc.

The total Administration and General Expenses for FY 2019-20 amounts to Rs 18.36 Crore. The Administration and General Expenses for FY 2020-21 and onwards is taken by increasing the expenses of FY 2019-20 by 10% p.a.

**7.6.9 Exceptional Items**

In FY 2019-20, Exceptional items consists of settlement of commitment advance and interest due thereon, due to one-time settlement intimated by PFC. This is a one-time settlement and thus not expected to occur again. Therefore, the exceptional items are taken as NIL from FY 2020-21 onwards

**7.7 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 2019-20 to FY 2021-22. The Commission with its third Amendment of Tariff Regulation, 2015 had notified the normative O&M expenses for the MYT period FY 2021-22.

The O&M expenses based on the provisions of the 3<sup>rd</sup> Amendment to Tariff Regulation, 2015 as notified on 25<sup>th</sup> November 2020 are as below:

### 8.1 Employee Costs

8.1.1 As per the provision of 3rd Amendment to Tariff Regulation, 2015 Clause 34.6 (b) (i), employee costs has been calculated as below:

**Table 105: Employee Costs (Rs Crores)**

Particular	East Discom			Central Discom			West Discom		
	FY 20	FY 21	FY 22	FY 20	FY 21	FY 22	FY 20	FY 21	FY 22
Employees Expenses excluding arrears, DA, terminal benefits and incentives & EL encashment	659	1080	913	593	1009	814	1133	1133	801
DA	92	240	265	98	232	224	170	150	160
Leave encashment	6	12	12	14	15	36	16	17	18
NPS Employer contribution	12	9	9	11	26	183	11	12	15
PF/CFA/GTIS/Annuity	6	7	7	11	11	11	6	7	7
Incentives	0	0	0	0	0	0			
7th Pay DA Arrear	-	44	-	0	0	0	55		
Expense Capitalized	(33)	-	-	(34)	0	0	(32)		
Total	<b>742</b>	<b>1392</b>	<b>1205</b>	<b>692</b>	<b>1293</b>	<b>1267</b>	<b>1359</b>	<b>1319</b>	<b>1001</b>

8.1.2 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 2021-22 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 106: Dearness Allowance Considered (%)**

Particulars (As per 7th Pay)	FY '20	FY '21	FY '22
DA as percentage of Basic for first quarter - Apr to June	12%	12%	27%
DA as percentage of Basic for 2nd and 3rd quarter - July to Dec	12%	25%	29%

Particulars (As per 7th Pay)	FY '20	FY '21	FY '22
DA as percentage of Basic for 4th quarter - Jan to March	12%	27%	31%

- 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

8.2.1 As the Commission in regulation 34.6 (b) (ii) of 3<sup>rd</sup> Amendment to Tariff Regulation, 2015, had notified A&G expenses for the MYT period FY 2016-17 to FY 21-22. The Commission with its third Amendment of Tariff regulation, 2015, had notified the normative A&G expenses for the MYT period FY 2021-22.

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

**Table 107: Administrative & General Expenses (Rs Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
A&G Expenses excluding MPERC fees	116	205	121	101	119	107	169	170	128
MPERC Fees	-	1	1	0.4	0.4	0.4	1	1	1
<b>Total</b>	<b>116</b>	<b>206</b>	<b>122</b>	<b>101</b>	<b>119</b>	<b>107</b>	<b>170</b>	<b>171</b>	<b>129</b>

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

- a. As per the provision of the para 34.1 of the 3<sup>rd</sup> 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 21-22. The Commission with its third Amendment of Tariff Regulation, 2015, had notified the normative R&M expenses for the MYT period FY 2021-22.

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

**Table 108: Repair & Maintenance Expenses (Rs Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
R&M Expenses	150	223	266	230	273	318	174	188	203

#### 8.4 Gist of O&M Expenses

The Gist of O&M expense as per the provisions of 3<sup>rd</sup> Amendment to Tariff Regulation, 2015 is summarized as below:

**Table 109: Gist of O&M Expenses (Rs Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY 20	FY 21	FY 22	FY 20	FY 21	FY 22	FY 20	FY 21	FY 22
Employee Cost (including arrears, DA and others)	742	1347	1205	692	1292	1267	1299	1349	1001
A&G Expenses	116	206	122	101	119	107	170	171	129
R&M expenses	150	223	266	230	273	318	174	188	203
<b>Total</b>	<b>1008</b>	<b>1776</b>	<b>1593</b>	<b>1022</b>	<b>1685</b>	<b>1692</b>	<b>1643</b>	<b>1708</b>	<b>1333</b>

**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 Discoms for FY'20 to FY'22 is given in table below:

**Table 110: Capital expenditure Plan (Rs. Crores)**

EAST DISCOM - CAPEX			
Name of Scheme	FY '20	FY '21	FY '22
ST&D (GoMP)	222	275	291
Feeder Separation Scheme	80	0	0
New Agricultural Pumps	0	0	0
Renovation of 33/11kV SS & DTR Metering	0	0	0
RAPDRP	0	0	0
RGGVY	0	0	0
DDUGVY	284	0	0
DDUGVY Phase II	0	0	0
IPDS	176	25	0
Conversion of TC to PC	338	0	0
Procurement of DTR against failure	0	102	153
Procurement of smart meters	0	200	246
Balance Urban Households Connections (147509 no) not covered elsewhere	0	0	0
Saubhagya Scheme	180	0	0
ADB-3	10	0	0
Scheme for replacement of Stop/defective meters	0	35	35
Schemes for DTR metering in pre-dominant Ag.DTR	0	80	120
<b>Total</b>	<b>1290</b>	<b>717</b>	<b>845</b>

CENTRAL DISCOM - CAPEX			
Name of Scheme	FY '20	FY '21	FY '22
SYSTEM STRENGTHING	147.81	128.82	143.06
FEEDER SEPERATION	125.96	-	-
NEW PUMP CONNECTION & MMSKPY	-	-	-
ADB-II	-	-	-
ADB-III	-	-	-
RGGVY	111.84	-	-
RAPDRP PART A	-	-	-
RAPDRP PART B	-	-	-
Procurement of Distribution Transformers against Failure	-	-	-
IPDS	380.99	-	-
DDUGJY	426.95	-	-
ST&D (GoMP)	-	-	-
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	-	-	-
Procurement of Distribution Transformers against Failure	119.95	106.85	117.52
Procurement of Smart Meters	371.20	212.05	134.96
<b>Total</b>	<b>1,684.70</b>	<b>447.71</b>	<b>395.55</b>

WEST DISCOM - CAPEX			
Name of Scheme	FY '20	FY '21	FY '22
ADB	0.00	0.00	0.00
SSTD	267.23	200.00	244.52
GOMP Scheme	0.00	0.00	0.00
FSP -	0.00	0.00	0.00
Grant Scheme(Govt. Contribution)	0.00	0.00	0.00
New Agricultural pumps	0.00	0.00	0.00
Mukyamantri Sthai Krishi pump Connection Scheme	57.71	0.00	0.00
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution )	0.00	0.00	0.00
Transformore failuer reduction Schenme	42.00	45.00	48.00
Procurement of Smart Meters	70.00	125.00	126.00
RAPDRP (GOI)	0.00	0.00	0.00
JBIC	0.00	0.00	0.00
Others (New EAP)	0.00	0.00	0.00
RGGVY	0.00	0.00	0.00
IPDS	304.51	107.68	0.00
DDUGVY	165.57	51.77	0.00
Installation of meter at agriculture pre- dominant DTR	3.25	0.00	0.00
REC(Departmental Works)	0.00	0.00	0.00
Equity for Nepa Ltd, Nepanagar	0.00	0.00	0.00
<b>Total</b>	<b>910.26</b>	<b>529.45</b>	<b>418.52</b>

## 9.2 Scheme Wise Capitalization

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

**Table 111: Scheme Wise Capitalization (Rs. Crores)**

<b>Scheme Wise Capitalization - East Discom</b>			
<b>Name of Scheme</b>	<b>FY '20</b>	<b>FY '21</b>	<b>FY '22</b>
ST&D (GoMP)	325	550	644
Feeder Separation Scheme	117	0	0
New Agricultural Pumps	0	0	0
Renovation of 33/11kV SS & DTR Metering	0	0	0
RAPDRP	0	0	0
RGGVY	0	0	0
DDUGJY	415	0	0
DDUGJY Phase II	0	0	0
IPDS	257	50	0
Coversion of TC to PC	494	0	0
Procurement of DTR against failure	0	204	339
Procurement of smart meters	0	400	545
Balance Urban Households Connections (147509 no) not covered elsewhere	0	0	0
Saubhagya scheme	263	0	0
ADB-3	15	0	0
Scheme for replacement of Stop/defective meters	0	70	78
Schemes for DTR metering in pre-dominant Ag.DTR	0	160	266
<b>Total</b>	<b>1886</b>	<b>1435</b>	<b>1871</b>

<b>Scheme Wise Capitalization - Central Discom</b>			
<b>Name of Scheme</b>	<b>FY '20</b>	<b>FY '21</b>	<b>FY '22</b>
SYSTEM STRENGTHING	157.88	55.33	83.94
FEEDER SEPERATION	134.54	25.19	25.19
NEW PUMP CONNECTION & MMSKPY	-	-	-
ADB-II	-	-	-
ADB-III	-	-	-
RGGVY	119.46	22.37	22.37
RAPDRP PART A	-	-	-
RAPDRP PART B	-	-	-
Procurement of Distribution Transformers against Failure	-	-	-
IPDS	406.95	76.20	76.20
DDUGJY	456.03	85.39	85.39
Others	-	-	-
ST&D (GoMP)	-	-	-
Renovation of 33/11kv Sub-Stations & DTR metering (NEW SCHEME) TO BE POSED AS EAP)	-	45.36	68.87
Procurement of Distribution Transformers against Failure	128.12	116.65	143.64
Procurement of Smart Meters	396.49	426.48	505.59
<b>Total</b>	<b>1,799</b>	<b>853</b>	<b>1,011</b>

Scheme Wise Capitalization - West Discom			
Name of Scheme	FY '20	FY '21	FY '22
ADB	617	0.00	0.00
SSTD		44.03	90.27
GOMP Scheme		0.00	0.00
FSP -		0.00	0.00
Grant Scheme(Govt. Contribution)		0.00	0.00
New Agricultural pumps		0.00	0.00
Mukyamantri Sthai Krishi pump Connection Scheme		3.46	3.46
Conversion of Temporary Pump Connections to Permanent Pump Connections (Govt. Contribution )		0.00	0.00
Transformore failuer reduction Schenme		8.82	18.24
Procurement of Smart Meters		21.70	46.84
RAPDRP (GOI)		0.00	0.00
JBIC		0.00	0.00
Others (New EAP)		0.00	0.00
RGGVY		0.00	0.00
IPDS		33.35	39.81
DDUGVY		17.18	20.29
Installation of meter at agriculture pre- dominant DTR		0.20	0.20
REC(Departmental Works)		0.00	0.00
Equity for Nepa Ltd, Nepanagar		0.00	0.00
<b>Total</b>	<b>617</b>	<b>129</b>	<b>219</b>

### 9.3 Capital Work in Progress

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

**Table 112: Discom Wise Capital Work in Progress (Rs. Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Opening Balance of CWIP	3,403	3,261	2,543	2,867	2,753	2,347	2,746	3,186	3,166
Fresh Investment during the year	1,290	717	845	1,685	448	396	1,046	644	452
Investment capitalized	1,886	1,435	1,871	1,799	853	1,011	606	664	754
<b>Closing Balance of CWIP</b>	<b>2,807</b>	<b>2,543</b>	<b>1,517</b>	<b>2,753</b>	<b>2,347</b>	<b>1,732</b>	<b>3,186</b>	<b>3,166</b>	<b>2,863</b>

### 9.4 Fixed Assets Addition

The year wise fixed assets addition is as follows:

**Table 113: Fixed Assets Addition (Rs. Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Land & land rights	-	-	-	0	-	0	-	-	-

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Buildings	4	13	18	14	14	14	5	5	6
Hydraulic works	-	-	-	-	-	-	-	-	-
Other civil works	25	-	-	-	-	-	0	0	0
Plant & machinery	507	446	582	96	98	100	124	130	147
Lines, cables, networks	1,316	826	1,078	209	220	231	478	501	569
Vehicles	-	-	-	-	-	-	0	0	0
Furniture & fixtures	-	-	-	0	0	0	0	0	0
Office equipment's	30	6	7	0	0	0	5	5	6
RGGVY	-	143	187	1,437	1,458	1,475	-	17	20
Intangible Assets	5	-	-	0	0	0	6	6	7
Supervision assets				61	62	63			
Capital Stores & Spares				45	46	47	-	-	-
<b>Total</b>	<b>1,886</b>	<b>1,435</b>	<b>1,871</b>	<b>1,863</b>	<b>1,898</b>	<b>1,930</b>	<b>617</b>	<b>664</b>	<b>754</b>

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

As per regulation 32 of 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.

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 Tariff Regulations, 2015.

The depreciation during the FY as worked out for FY 2019-20 to FY 2021-22 is shown below:

**Table 114: Discom Wise Depreciation- As per Regulation (Rs. Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Building	2	2	3	6	6	7	5	4	4
Hydraulic Works	0	0	1	1	1	1	0	0	0
Other Civil Works	1	0	1	0	0	0	1	0	0
Plant & Machinery	180	137	206	151	154	157	122	107	111
Line Cable Networks etc.	246	288	447	213	224	235	197	147	162
Vehicles	0	0	0	0	0	0	0	0	0
Furniture & fixtures	-	0	0	0	0	0	0	0	0
Office Equipment	25	10	11	9	10	10	9	3	4
Asset not belonging to Company (RGGVY, IPDS, Soubhagya, DDUGJY)	0	0	0	91	92	93	0	42	42
Amortization of Intangible Assets	11	0	0	3	3	3	7	3	3
Supervision assets	0	0	0	29	30	30			0
Capital Stores & Spares	0	0	0	19	20	20	13	0	0
<b>Total</b>	<b>464</b>	<b>439</b>	<b>669</b>	<b>523</b>	<b>540</b>	<b>557</b>	<b>355</b>	<b>307</b>	<b>327</b>

### 10.2 Interest and Finance Charges

#### 10.2.1 Interest on Project Loans

Regulation 31 of 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.

The same methodology as adopted by the Hon'ble Commission for calculating Interest and Finance charges on project loan in Tariff Order FY 2020-21 has been adopted for projecting the interest and finance charges on project loan. The details are elaborated in following table:

**Table 115: East Discom Interest on Project Loan - As per Regulation (Rs. Crores)**

Particulars In Rs Crores	MYT 2019-20 to 2021-22		
	2019-20	2020-21	2021-22
<b>FY 20</b>	-	-	-
Debt identified with GFA as on 1st April 2019	1,868.09	1,868.09	1,868.09
70% of addition to net GFA considered as funded through Loan net of consumer contribution	1,203.55	1,203.55	1,203.55
<b>Debt repayment (Equal to depreciation)</b>	464.36	464.36	464.36
Total debt associated with GFA as on 31st March 2020	2,607.27	2,607.27	2,607.27
<b>FY 21</b>	-	-	-
Debt identified with GFA as on 1st April 2020	-	2,607.27	2,607.27
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	955.30	1,232.06
<b>Debt repayment (Equal to depreciation)</b>	-	438.69	669.24
Total debt associated with GFA as on 31st March 2021	-	3,123.89	3,170.10
<b>FY 22</b>	-	-	-
Debt identified with GFA as on 1st April 2021	-	-	<b>3,123.89</b>
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	-	<b>1,232.06</b>
<b>Debt repayment (Equal to depreciation)</b>	-	-	<b>669.24</b>
Total debt associated with GFA as on 31st March 2022	-	-	<b>3,686.71</b>
Average of Loan Balance	<b>2,237.68</b>	<b>2,865.58</b>	<b>3,405.30</b>
<b>Weighted average rate of interest (%) (as per Interest on Project Loans)</b>	<b>7.44%</b>	<b>7.35%</b>	<b>6.73%</b>
Interest and Finance charges on Project Loans	<b>987.57</b>	<b>210.50</b>	<b>229.05</b>
<b>Cost of Raising finance</b>	<b>14.28</b>	<b>15.71</b>	<b>15.71</b>
<b>Total</b>	<b>1,001.85</b>	<b>226.21</b>	<b>244.75</b>

**Table 116: Central Discom Interest on Project Loan - As per Regulation (Rs. Crores)**

Particulars In Rs Crores	MYT 2019-20 to 2021-22		
	2019-20	2020-21	2021-22
<b>FY 20</b>			
Debt identified with GFA as on 1st April 2019	3,127.45	3,127.45	3,127.45
70% of addition to net GFA considered as funded through Loan net of consumer contribution	48.47	48.47	48.47
Debt repayment (Equal to depreciation)	184.53	184.53	184.53
<b>Total debt associated with GFA as on 31st March 2020</b>	<b>2,991.39</b>	<b>2,991.39</b>	<b>2,991.39</b>
<b>FY 21</b>	-	-	-
Debt identified with GFA as on 1st April 2020	-	2,991.39	2,991.39
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	1,328.45	1,328.45

<b>Particulars</b>	<b>MYT 2019-20 to 2021-22</b>		
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>
Debt repayment (Equal to depreciation)	-	539.61	539.61
<b>Total debt associated with GFA as on 31st March 2021</b>	<b>-</b>	<b>3,780.23</b>	<b>3,780.23</b>
<b>FY 22</b>	<b>-</b>		
Debt identified with GFA as on 1st April 2021	-	-	<b>3,780.23</b>
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	-	<b>1,351.18</b>
Debt repayment (Equal to depreciation)	-	-	<b>557.10</b>
<b>Total debt associated with GFA as on 31st March 2022</b>	<b>-</b>	<b>-</b>	<b>4,574.32</b>
<b>Average of Loan Balance</b>	<b>3,059.42</b>	<b>3,385.81</b>	<b>4,177.27</b>
Weighted average rate of interest (%) (as per Interest on Project Loans)	<b>7.97%</b>	<b>8.06%</b>	<b>7.44%</b>
Interest and Finance charges on Project Loans	<b>1,344.59</b>	<b>272.98</b>	<b>310.59</b>
Cost of Raising finance	19.22	21.14	23.25
<b>Total</b>	<b>1,363.81</b>	<b>294.12</b>	<b>333.84</b>

**Table 117: West Discom Interest on Project Loan - As per Regulation (Rs. Crores)**

<b>Particulars</b>	<b>MYT 2019-20 to 2021-22</b>		
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>
<b>FY 20</b>			
Debt identified with GFA as on 1st April 2019	921.64	921.64	921.64
70% of addition to net GFA considered as funded through Loan net of consumer contribution	406.64	406.64	406.64
Debt repayment (Equal to depreciation)	355.09	355.09	355.09
<b>Total debt associated with GFA as on 31st March 2020</b>	<b>973.19</b>	<b>973.19</b>	<b>973.19</b>
<b>FY 21</b>			
Debt identified with GFA as on 1st April 2020	-	973.19	973.19
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	461.99	461.99
Debt repayment (Equal to depreciation)	-	307.30	307.30
<b>Total debt associated with GFA as on 31st March 2021</b>	<b>-</b>	<b>1,127.88</b>	<b>1,127.88</b>
<b>FY22</b>			
Debt identified with GFA as on 1st April 2021	-	-	1,127.88
70% of addition to net GFA considered as funded through Loan net of consumer contribution	-	-	528.15
Debt repayment (Equal to depreciation)	-	-	327.32
<b>Total debt associated with GFA as on 31st March 2022</b>	<b>-</b>	<b>-</b>	<b>1,328.70</b>
Average of Loan Balance	947.41	1,050.53	1,228.29
Weighted average rate of interest (%) (as per Interest on Project Loans)	8.81%	10.26%	8.50%
Interest and Finance charges on Project Loans	83.48	107.77	104.45
Cost of Raising finance	19.15	25.54	34.07
Discount to consumer on timely repayment	4.43	4.88	5.36
<b>Total</b>	<b>107.06</b>	<b>138.19</b>	<b>143.88</b>

### 10.2.2 Interest on Working Capital

Regulation 36 of 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 01<sup>st</sup> April of the relevant year.

Table 118: East Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2019-20 to 2021-22		
		2019-20	2020-21	2021-22
<b>I</b>	<b>Wheeling</b>			
A)	1/6th of annual requirement of inventory for 1% GFA of previous year	13	15	18
B)	O&M expenses			
	R&M expenses	150	223	266
	A&G expense	119	206	122
	Employee expenses	1135	1930	1794
B) i)	Total of O&M expenses	1403	2358	2182
B) ii)	1/12th of total	117	197	182
C)	Receivables	0	0	0
C) i)	Annual Revenue from wheeling charges**	1	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)]	130	212	200
E)	Rate of Interest *	14%	13%	13%
F)	<b>Interest on Working capital (Wheeling)</b>	<b>18</b>	<b>27</b>	<b>26</b>
<b>II</b>	<b>Retail Supply</b>			
A)	1/6th of annual requirement of inventory for previous year	1	1	1
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	10501	11250	12410
B) ii)	Receivables equivalent to 2 months average billing	1750	1875	2068
C)	Power Purchase expenses	8755	8424	9514
C) i)	1/12th of power purchase expenses	730	702	793
D)	Consumer Security Deposit	849	917	1026
E)	Total Working capital (A+B ii) - C i) - D)	<b>172</b>	<b>257</b>	<b>251</b>
F)	Rate of Interest *	13.75%	12.90%	12.90%
G)	<b>Interest on Working capital (Retail Supply)</b>	<b>24</b>	<b>33</b>	<b>32</b>
	<b>Total Interest on Working Capital (Wheeling + Retail Supply)</b>	<b>42</b>	<b>61</b>	<b>58</b>

Table 119: Central Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2019-20 to 2021-22		
		2019-20	2020-21	2021-22
<b>I</b>	<b>Wheeling</b>			
A)	1/6th of annual requirement of inventory for 1% GFA of previous year	13	16	18

Sr. no.	Particulars	MYT 2019-20 to 2021-22		
		2019-20	2020-21	2021-22
B)	O&M expenses			
	R&M expenses	230	273	318
	A&G expenses	101	119	107
	Employee expenses (incl. terminal benefits)	1,114	1,311	1,267
B) i)	Total of O&M expenses	<b>1,445</b>	<b>1,704</b>	<b>1,692</b>
B) ii)	1/12th of total	120.38	142	141
C)	Receivables			
C) i)	Annual Revenue from wheeling charges**	2	2	2
C) ii)	Receivables equivalent to 2 months average billing of wheeling charges	0	0	0
D)	Total Working capital [A) + B) ii) - C) ii)]	134	158	160
E)	Rate of Interest *	<b>13.70%</b>	<b>12.90%</b>	<b>12.90%</b>
F)	<b>Interest on Working capital (Wheeling)</b>	<b>18</b>	<b>20</b>	<b>21</b>
<b>II</b>	<b>Retail Supply</b>			
A)	1/6th of annual requirement of inventory for previous year	3	4	5
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	12,455	12,684	13,315
B) ii)	Receivables equivalent to 2 months average billing	2,076	2,114	2,219
C)	Power Purchase expenses	10,802	10,797	11,136
C) i)	1/12th of power purchase expenses	900	900	928
D)	Consumer Security Deposit	954	1,002	1,052
E)	Total Working capital (A+B ii) - C i) - D)	225	216	244
F)	Rate of Interest *	<b>13.70%</b>	<b>12.90%</b>	<b>12.90%</b>
G)	<b>Interest on Working capital (Retail Supply)</b>	<b>31</b>	<b>28</b>	<b>31</b>
<b>III</b>	<b>Total Interest on Working Capital (Wheeling + Retail Supply)</b>	<b>49</b>	<b>48</b>	<b>52</b>

Table 120: West Discom Interest on Working Capital- As per Regulation (Rs. Crores)

Sr. no.	Particulars	MYT 2019-20 to 2021-22		
		2019-20	2020-21	2021-22
<b>I</b>	<b>Wheeling</b>			
A)	1/6th of annual requirement of inventory for previous year	<b>10</b>	<b>11</b>	<b>12</b>
B)	O&M expenses			
	R&M expenses	175	188	203
	A&G expense	170	171	129
	Employee expenses	1,304	1,349	1,001
B) i)	Total of O&M expenses	1,649	1,708	1,333
B) ii)	1/12th of total	<b>137</b>	<b>142</b>	<b>111</b>
C)	Receivables			

Sr. no.	Particulars	MYT 2019-20 to 2021-22		
		2019-20	2020-21	2021-22
C) i)	Annual Revenue from wheeling charges**	9	9	9
C) ii)	Receivables equivalent to 2 months average billing of wheeling charges	1	1	1
D)	Total Working capital [A) + B) ii) - C) ii)]	149	155	124
E)	Rate of Interest *	13.70%	12.90%	12.15%
F)	<b>Interest on Working capital (Wheeling)</b>	<b>20</b>	<b>20</b>	<b>15</b>
<b>II</b>	<b>Retail Supply</b>			
A)	1/6th of annual requirement of inventory for previous year	3	3	3
B)	Receivables			
B) i)	Annual Revenue from Tariff and charges**	14,915	15,171	16,191
B) ii)	Receivables equivalent to 2 months average billing	2,486	2,529	2,699
C)	Power Purchase expenses	9,857	11,992	13,767
C) i)	1/12th of power purchase expenses	821	999	1,147
D)	Consumer Security Deposit	1,284	1,334	1,384
	<b>Net Consumer Security Deposit</b>	<b>1,284</b>	<b>1,334</b>	<b>1,384</b>
E)	Total Working capital (A+B ii) - C i) - D)	382	198	170
F)	Rate of Interest *	13.70%	12.90%	12.15%
G)	<b>Interest on Working capital (Retail Supply)</b>	<b>52</b>	<b>25</b>	<b>21</b>
	<b>Summary</b>			
1	<b>For wheeling activity</b>	20	20	15
2	<b>For Retail Sale activity</b>	52	25	21
<b>III</b>	<b>Total Interest on working Capital</b>	<b>73</b>	<b>45</b>	<b>36</b>

#### 10.2.3 Interest on Consumer Security Deposit

Interest on Consumer Security Deposit has to be paid to the consumers in accordance with Tariff Regulations, 2015 and MPERC Security Deposit Regulations, 2009. The Petitioner has computed the interest on consumer security deposit as per the norms of the Tariff Regulations, 2015 at RBI latest Bank Rate of 6.50% for FY 2019-20 and 4.65% for FY 2021-22. <https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/RBIJUNE20206CD876E1B1344CAA82A8286E6D65F81D.PDF> and calculated the same for FY 2021-22 as shown in the table below:

Table 121: Discom Wise Interest on Consumer Security Deposit – As per Regulation (Rs. Crores)

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Interest on Consumer Security Deposit	57.43	42.62	47.70	53.91	56.61	59.44	70.84	56.71	58.84

### 10.3 Gist of Interest & Finance Charge

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

**Table 122: Gist of Interest & Finance Charge**

Particulars	East Discom			Central Discom			West Discom		
	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22	FY '20	FY '21	FY '22
Interest on Project Loans	1,002	226	245	1,364	294	334	107	138	144
Total Interest on working Capital	42	61	58	49	48	52	73	45	36
Interest on Consumer Security Deposit	57	43	48	54	57	59	71	57	59

### 10.4 Return on Equity

Regulation 36 of 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 2021-22. 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 123: East Discom Return on Equity- As per Regulation (Rs. Crores)**

Particulars	MYT 2019-20 to 2021-22		
	2019-20	2020-21	2021-22
<b>FY 2019-20</b>			
Equity identified with GFA as on 1st April 2019	2375.63	2375.63	2375.63
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	515.81	515.81	515.81
Total Equity associated with GFA as on 31st March 2020	2891.44	2891.44	2891.44
<b>FY 2020-21</b>			
Equity identified with GFA as on 1st April 2020		2891.44	2891.44
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year		409.41	409.41
Total Equity associated with GFA as on 31st March 2021		3300.85	3300.85
<b>FY 2021-22</b>			
Equity identified with GFA as on 1st April 2021			3,300.85
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year			528.03
Total Equity associated with GFA as on 31st March 2022			3,828.88
<b>Average Equity</b>	2,633.54	3,096.15	3,564.87
<b>Rate of Return</b>	0.16	0.16	0.16
<b>Return on Equity</b>	421.37	495.38	570.38

**Table 124: Central Discom Return on Equity- As per Regulation (Rs. Crores)**

Particulars	MYT 2021-22		
	2019-20	2020-21	2021-22
<b>FY 2019-20</b>			
Equity identified with GFA as on 1st April 2019	1,984.62	1,984.62	1,984.62
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	474.76	474.76	474.76
Total Equity associated with GFA as on 31st March 2020	2,459.38	2,459.38	2,459.38
<b>FY 2020-21</b>			
Equity identified with GFA as on 1st April 2020	-	2,459.38	2,459.38
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	-	594.09	594.09
Total Equity associated with GFA as on 31st March 2021	-	3,053.47	3,053.47
<b>FY 2021-22</b>			
Equity identified with GFA as on 1st April 2021	-	-	3,053.47
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	-	-	566.70
Total Equity associated with GFA as on 31st March 2022	-	-	3,620.17
<b>Average Equity</b>	<b>2,222.00</b>	<b>2,756.43</b>	<b>3,336.82</b>
<b>Rate of Return</b>	16%	16%	16%
<b>Return on Equity</b>	<b>355.52</b>	<b>441.03</b>	<b>533.89</b>

**Table 125: West Discom Return on Equity- As per Regulation (Rs. Crores)**

Particulars	MYT 2019-20 to 2021-22		
	2019-20	2020-21	2021-22
<b>FY 2019-20</b>			
Equity identified with GFA as on 1st April 2019	1304.34	1304.34	1304.34
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year	174.27	174.27	174.27
Total Equity associated with GFA as on 31st March 2020	1478.61	1478.61	1478.61
<b>FY 2020-21</b>			
Equity identified with GFA as on 1st April 2020		1478.61	1478.61
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year		197.99	197.99
Total Equity associated with GFA as on 31st March 2021		1676.61	1676.61
<b>FY 2021-22</b>			
Equity identified with GFA as on 1st April 2021		0.00	1676.61
30% of addition to net GFA considered as funded through Equity net of consumer contribution for half year		0.00	226.35
Total Equity associated with GFA as on 31st March 2022		0.00	1902.96
<b>Average Equity</b>	<b>1,391.48</b>	<b>1,577.61</b>	<b>1,789.78</b>
<b>Rate of Return</b>	16%	16%	16%

Particulars	MYT 2019-20 to 2021-22		
	2019-20	2020-21	2021-22
Return on Equity	222.64	252.42	286.37

## 10.6 Provision for Bad & Doubtful Debts

Regulation 35 of 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. The 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 124 Crores for East Discom, 130 Crores for Central Discom & 158 Crores for West Discom for FY 2021-22.

The detail calculation of the same is shown below:

**Table 126: Discom Wise Provision for Bad & Doubtful Debts- As per Regulation (Rs. Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY20	FY21	FY22	FY20	FY21	FY22	FY20	FY21	FY22
Bad and Doubtful Debts	189.51	114.90	126.78	546.32	126.84	133.15	0.11	151.71	161.91

## 10.7 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 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 2020-21 to FY 2021-22 based on with certain percentage increase line item wise including adjustments during the previous FY. The Petitioner has made the projections for FY 2021-22 as per the Regulatory Requirement specified under the 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 7<sup>th</sup> 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 127: Other Income & Non-Tariff Income (Rs. Crores)**

Particulars	East Discom			Central Discom			West Discom		
	FY20	FY21	FY22	FY20	FY21	FY22	FY20	FY21	FY22
Income from Investment, Fixed & Call Deposits	5	14	16	36	39	43	49	36	27
Interest on loans and Advances to staff	0	0	0	0	0	0	0	0	0
Other Income from Trading/Sale of scrap	12	16	16	0	0	0	8	9	14
Interest on Advances to Suppliers / Contractors	0	6	3	0	0	0	1	1	1
Income/Fee/Collection against staff welfare activities	0	0	0	0	0	0	0	0	0
Miscellaneous receipts	57	45	96	46	41	84	42	50	66
Wheeling charges	1	0	1	2	2	2	9	9	9
Liability of wheeling charges towards MPPTCL written off	161	139	139	0	0	0	0	0	0
Supervision charges	19	16	17	17	18	19	23	27	41
Recovery from theft	5	19	23	0	0	0	0	0	0
Meter Rent	46	46	0	43	41	0	71	54	0
Other Charges from Consumers	64	72	71	0	0	21	0	0	0
Utility Charges	0	0	0	2	2	2	0	0	0
Net gain/(loss) on disposal of stores item	0	0	0	9	7	6	0	0	0
Income from renting	0	0	0	0	0	0	2	3	5
Other miscellaneous income	0	0	0	0	0	63	0	0	0
Any other subsidy other than grant	0	0	0	0	0	181	0	0	0
<b>Total</b>	<b>368</b>	<b>374</b>	<b>381</b>	<b>154</b>	<b>150</b>	<b>336</b>	<b>206</b>	<b>190</b>	<b>163</b>

## 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 128: Summary of ARR for MPPMCL (Rs. Crore)**

	Particulars	FY 20	FY 21	FY 22
I	Revenue from operations (including Revenue Subsidy)	20.95	-	-
II	Other income	316.55	348.21	383.03
III	Income from other business allocated to Licensed business			
<b>IV</b>	<b>Total Revenue (I +II+III)</b>	<b>337.50</b>	<b>348.21</b>	<b>383.03</b>
V	Expenses:			
1	Purchase of Power from MP Genco			
2	Purchase of Power from Other Sources	320.52	32.87	31.16
3	Inter-State Transmission charges	135.12	148.63	163.50
4	Intra-State Transmission (MP Transco) Charges	-	-	-
5	SI.DC Charges	-	-	-
6	Depreciation and amortization expenses	7.48	10.87	11.07
7	Interest & Finance Charges	158.43	170.02	187.02
8	Repairs and Maintenance	2.39	2.63	2.89
9	Employee costs	67.81	69.84	71.94
10	Administration and General expenses	18.36	20.20	22.22
11	Net prior period credit charges	-	-	-
12	Other Expenses	5.20	5.72	6.29
13	Lease Rental		-	-
	<b>Total Expenses</b>	<b>715.31</b>	<b>460.78</b>	<b>496.09</b>
<b>VI</b>	<b>Profit before exceptional and extraordinary items and tax (IV-V)</b>	<b>(377.81)</b>	<b>(112.58)</b>	<b>(113.06)</b>
VII	Extraordinary items		-	-
VIII	Profit before extraordinary items and tax (VI-VII)	(377.81)	(112.58)	(113.06)
IX	Exceptional Items	2.10		
<b>X</b>	<b>Profit before tax (VIII- IX)</b>	<b>(379.91)</b>	<b>(112.58)</b>	<b>(113.06)</b>

### 11.2 Aggregate Revenue Requirement of Discoms

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 129: Summary of ARR for MPPMCL (Rs. Crore)**

Sr. no.	Particulars	UoM	FY 2020-21 (RE)				FY 2021-22 (PROJ.)			
			MP	East	Central	West	MP	East	Central	West
A	<b>Revenue</b>									
1	Revenue from sale of power at current Tariffs	Rs Cr	39,373	11,491	12,685	15,197	42,185	12,679	13,315	16,191
B	<b>Expenditure</b>									
1	Purchase of Power	Rs Cr								
2	MPPMCL Cost	Rs Cr								
3	Inter-State Transmission charges	Rs Cr								
4	Intra-State Transmission (MP Transco) Charges and SLDC Charges	Rs Cr	3,104	896	1,016	1,193	3,259	993	1,049	1,218
5	R&M Expense	Rs Cr	684	223	273	188	787	266	318	203
6	Employee Expenses	Rs Cr	4,052	1,392	1,311	1,349	3,474	1,205	1,267	1,001
7	A&G Expense	Rs Cr	496	206	119	171	358	122	107	129
8	Depreciation and Related debits	Rs Cr	1,286	439	540	307	1,554	669	557	327
9	Interest & Finance Charges	Rs Cr	968	329	402	236	1,034	351	445	238
10	Other Debits, Write-offs (Prior period and bad debts)	Rs Cr	394	115	127	152	422	127	133	162
11	<b>Total Expenses</b>	Rs Cr	<b>41,369</b>	<b>12,046</b>	<b>13,288</b>	<b>16,035</b>	<b>44,304</b>	<b>13,290</b>	<b>13,964</b>	<b>17,050</b>
12	RoE	Rs Cr	1,189	495	441	252	1,391	570	534	286
13	<b>Total Expenses Including RoE</b>	Rs Cr	<b>42,558</b>	<b>12,541</b>	<b>13,729</b>	<b>16,288</b>	<b>45,694</b>	<b>13,860</b>	<b>14,498</b>	<b>17,336</b>
14	Other income	Rs Cr	842	374	278	190	880	381	336	163
C	<b>Total ARR</b>	Rs Cr	<b>41,716</b>	<b>12,167</b>	<b>13,452</b>	<b>16,098</b>	<b>44,814</b>	<b>13,479</b>	<b>14,162</b>	<b>17,173</b>
D	<b>Revenue Gap</b>	Rs Cr	<b>2,343</b>	<b>676</b>	<b>767</b>	<b>901</b>	<b>2,629</b>	<b>801</b>	<b>846</b>	<b>982</b>
E	<b>Average Cost of Supply Excluding True Up</b>	Rs./kWh	<b>6.96</b>	<b>6.99</b>	<b>6.93</b>	<b>6.95</b>	<b>7.00</b>	<b>6.91</b>	<b>6.98</b>	<b>7.10</b>

**A12: TARIFF PROPOSAL FOR FY 2021-22****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 & FY 2020-21, there was 7% & 2% hike respectively. 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. 23,315 MW as on 31<sup>st</sup> March 2020. 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. 01<sup>st</sup> March 2018 & 15<sup>th</sup> 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 130: Summary of proposed tariff for FY 2021-22 (Rs. Crores)**

Particulars	UoM	MP State	East Discom	Central Discom	West Discom
Total ARR	Rs Crs.	44,814	13,479	14,162	17,173
Revenue at Current Tariffs	Rs Crs.	42,185	12,679	13,315	16,191
Total Revenue Gap	Rs Crs.	2,629	801	846	982
Average Cost of Supply	Rs./Unit	7.00	6.91	6.98	7.10

- 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 2021-22 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 131: Category-wise proposed revenue for FY 2021-22 (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
LV-1 Domestic	11,198	12,130	3,866	4,208	3,465	3,749	3,867	4,173
LV-2 Non-Domestic	3,299	3,392	968	996	1,081	1,111	1,250	1,285
LV-3 Public Waterworks & Street Light	828	878	247	265	283	296	297	317
LV-4 LT Industry	1,334	1,417	362	383	348	370	624	663
LV-5 Agriculture	14,446	15,621	4,187	4,552	4,498	4,803	5,761	6,266
LV-6 EV Charging	2	2	1	1	1	1	1	1
<b>TOTAL – LT</b>	<b>31,105</b>	<b>33,439</b>	<b>9,630</b>	<b>10,404</b>	<b>9,676</b>	<b>10,329</b>	<b>11,800</b>	<b>12,705</b>
HV-1 Railway Traction	68	68	41	41	27	27	-	-
HV-2 HV 2: Coal Mines	478	484	443	447	35	37	0	0
HV-3.1 Industrial Use	6,300	6,463	1,354	1,356	2,396	2,547	2,550	2,560
HV-3.2 Non-Industrial	1,041	1,065	235	237	413	426	394	402
HV-3.3 Shopping Mall	96	100	2	2	48	49	46	48
HV-3.4 Power Intensive Industries	1,724	1,747	650	658	384	395	689	695
HV-4 Seasonal & Non Seasonal	21	22	8	9	3	3	10	10
HV-5 PWW Works & Other Agri.	988	1,051	119	123	204	214	665	714
HV-6 Bulk Residential Users	344	355	195	199	127	133	22	23
HV-7 RECs/Synchro of power for Generator connected to Grid	16	17	0	0	0	0	15	16
HV-8 EV Charging	4	4	1	1	2	2	1	1
<b>TOTAL - HT</b>	<b>11,080</b>	<b>11,376</b>	<b>3,049</b>	<b>3,075</b>	<b>3,640</b>	<b>3,833</b>	<b>4,391</b>	<b>4,468</b>
<b>TOTAL (LT+HT)</b>	<b>42,185</b>	<b>44,814</b>	<b>12,679</b>	<b>13,479</b>	<b>13,315</b>	<b>14,162</b>	<b>16,191</b>	<b>17,173</b>

## 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 2021-22 is enclosed with this petition.

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

### 1. *Inclusion of river link projects in HV-5 Tariff Category*

#### **Reasons for proposed changes**

Looking to the prospective Connection of River link project at 220 kV in West Discom the petitioners are proposing to include the same under the Applicability clause of HV-5 High tension Tariff.

### 2. *Reduction in fixed charges for E-Vehicle Tariff Category*

#### **Reasons for proposed changes**

In order to provide impetus to E-vehicles within the State of MP, the petitioners are proposing to reduce the fixed cost by 50% (i.e. from Rs 120 per kVA to Rs 60 per kVA.) so as to maintain the ABR of this category below ACoS of licensee in line with the Central policy for promotion of E-vehicles.

### 3. *Inclusion of Affordable Rental Housing Complex (AHRC) in LV-1 Tariff Category*

#### **Reasons for proposed changes**

Energy Department, GoMP vide letter 7115/3870/2020/ Thirteen dated 08-10-2020, directed to the Discoms / MPPMCL for the necessary action regarding charging of tariff under the Tariff Category LV-1 for the House development under the “Affordable Rental Housing scheme i.e., Affordable Rental Housing Complex (ARHSCs)” under the Pradhan Mantri Awas Yojana (Urban).

### 4. *Amendment in 8(l) of the “Other Terms and Conditions” applicable for LT Tariff*

#### **Reasons for proposed changes**

In view of infrastructure/source of income as per census apart from statutory towns, census towns/ Urban Agglomeration/census outgrowth also covered in definition of Urban areas. Therefore, these census towns/ Urban Agglomeration/census outgrowth may also be considered for applicability of Urban tariff notwithstanding the fact that these areas may not cover under aforesaid definition of Urban areas notified by GoMP.

## **5. Inclusion of Telecom Towers in applicability of LV-2 & HV-3 Tariff Category**

### **Reasons for proposed changes**

For better connectivity, and clarification of consumers for permission to charge the mobile tower with existing connection. The term telecom tower is included in applicability of LV-2 & HV-3 Tariff Category.

## **6. Amendment in applicability of HV-4 Tariff Category**

### **Reasons for proposed changes**

It is submitted that as per Tariff Order maximum permitted period of season is prescribed in terms of number of days, whereas minimum period is prescribed in terms of months i.e., maximum 180 days and minimum 3 months. The Period of 6 months may be greater than 180 days in terms of number of days. Since, billing is being done based on billing months such period should be in terms of month instead of days. HV-3 Tariff schedule is to be done as per tariff order uses different terminology in different clauses i.e., tariff year, financial year.

## **7. 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.

## **8. 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.

## **9. 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.

#### **10. 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.”

#### **11. 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.

#### **12. 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 unless otherwise specified 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.

#### **13. Amendment in clause 7(e) of General Terms & Conditions of LT Tariff.**

##### **Reasons for proposed changes**

In view of above and in order to have clarity in providing the Power factor incentive to the actually eligible consumers in line with the provisions of Supply Code 2013, the petitioners are submitting to amend the existing clause 7 (e) of the General terms and Conditions for LT Tariff.

## 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 Discoms 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 132: Cost of Supply Calculation for MP State for FY22**

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	<b>MP State</b>						
1	<b>Sales</b>	MUs		<b>5,487</b>	<b>7,859</b>	<b>50,654</b>	<b>64,001</b>
2	Loss %	%		4.45%	3.96%	15.52%	19.65%
3	<b>Energy Input</b>	MUs		<b>5,743</b>	<b>8,565</b>	<b>65,346</b>	<b>79,653</b>
4	Energy Lost (Technical up to 33 kV voltage & 11 kV	MUs	4=3-1	256	705	14,692	

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
	+LT technical and Commercial)						
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				7,346	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		630	902	5,814	
7	<b>Net Energy Input</b>	MUs	<b>7=1+4+6</b>	<b>6,372</b>	<b>9,467</b>	<b>63,814</b>	<b>79,653</b>
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		2,934	4,359	29,382	36,675
9	Other costs - allocated based on voltage-wise sales	Rs Cr		773	1,108	7,138	9,019
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		75	108	696	880
11	<b>Total Costs (ARR requirement)</b>	Rs Cr	<b>11=8+9-10</b>	<b>3,632</b>	<b>5,358</b>	<b>35,824</b>	<b>44,814</b>
12	<b>Average Cost of Supply</b>	Rs/kWh	<b>12=11/1*10</b>	<b>6.62</b>	<b>6.82</b>	<b>7.07</b>	<b>7.00</b>

Table 133: Cost of Supply Calculation for East Discom for FY22

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	<b>East Discom</b>						
1	<b>Sales</b>	MUs		<b>1,792</b>	<b>1,643</b>	<b>16,065</b>	<b>19,500</b>
2	Loss %	%		4.50%	2.75%	15.20%	19.61%
3	<b>Energy Input</b>	MUs		<b>1,876</b>	<b>1,769</b>	<b>20,611</b>	<b>24,257</b>
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	84	126	4,546	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,273	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		209	192	1,873	
7	<b>Net Energy Input</b>	MUs	<b>7=1+4+6</b>	<b>2,085</b>	<b>1,961</b>	<b>20,210</b>	<b>24,257</b>
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		907	853	8,790	10,550

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
9	Other costs including true up adjustment - allocated based on voltage-wise sales	Rs Cr		304	279	2,727	3,310
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		35	32	314	381
11	<b>Total Costs (ARR requirement)</b>	Rs Cr	<b>11=8+9-10</b>	<b>1,176</b>	<b>1,100</b>	<b>11,203</b>	<b>13,479</b>
12	<b>Average Cost of Supply</b>	Rs/kW h	<b>12=11/1*10</b>	<b>6.56</b>	<b>6.69</b>	<b>6.97</b>	<b>6.91</b>

Table 134: Cost of Supply Calculation for Central Discom for FY22

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	<b>Central Discom</b>						
1	<b>Sales</b>	MUs		<b>1,985</b>	<b>2,333</b>	<b>15,981</b>	<b>20,300</b>
2	Loss %	%		4.38%	2.22%	29.74%	20.83%
3	<b>Energy Input</b>	MUs		<b>2,076</b>	<b>2,496</b>	<b>21,069</b>	<b>25,641</b>
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	91	162	5,088	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,544	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		249	292	2,003	
7	<b>Net Energy Input</b>	MUs	<b>7=1+4+6</b>	<b>2,325</b>	<b>2,788</b>	<b>20,528</b>	<b>25,641</b>
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		1,010	1,211	8,915	11,136
9	Other costs - allocated based on voltage-wise sales	Rs Cr		329	386	2,646	3,362
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		33	39	264	336
11	<b>Total Costs (ARR requirement)</b>	Rs Cr	<b>11=8+9-10</b>	<b>1,306</b>	<b>1,559</b>	<b>11,297</b>	<b>14,162</b>
12	<b>Average Cost of Supply</b>	Rs/kW h	<b>12=11/1*10</b>	<b>6.58</b>	<b>6.68</b>	<b>7.07</b>	<b>6.98</b>

**Table 135: Cost of Supply Calculation for West Discom for FY22**

Sr. No	Particulars	UoM	Formulae	EHT System (400 kV, 220 kV & 132 kV)	33 KV System	11 KV + LT System	Total
A	<b>West Discom</b>						
1	<b>Sales</b>	MUs		<b>1,710</b>	<b>3,883</b>	<b>18,608</b>	<b>24,201</b>
2	Loss %	%		4.48%	5.47%	28.01%	18.67%
3	<b>Energy Input</b>	MUs		<b>1,790</b>	<b>4,300</b>	<b>23,666</b>	<b>29,756</b>
4	Energy Lost (Technical upto 33 kV voltage & 11 kV +LT technical and Commercial)	MUs	4=3-1	80	417	5,058	
5	Commercial Loss assumed as 50% of 11 kV and LT overall losses	MUs				2,529	
6	Balance 50% Commercial loss for all voltage in proportion to Sales	MUs		179	406	1,945	
7	<b>Net Energy Input</b>	MUs	<b>7=1+4+6</b>	<b>1,969</b>	<b>4,706</b>	<b>23,082</b>	<b>29,756</b>
8	Power Purchase Costs - allocated based on voltage-wise losses	Rs Cr		992	2,370	11,627	14,989
9	Other costs - allocated based on voltage-wise sales	Rs Cr		166	377	1,805	2,347
10	Less: Other income - allocated based on voltage-wise sales	Rs Cr		12	26	125	163
11	<b>Total Costs (ARR requirement)</b>	Rs Cr	<b>11=8+9-10</b>	<b>1,146</b>	<b>2,721</b>	<b>13,307</b>	<b>17,173</b>
12	<b>Average Cost of Supply</b>	Rs/kWh	<b>12=11/1*10</b>	<b>6.70</b>	<b>7.01</b>	<b>7.15</b>	<b>7.10</b>

#### **A14: CROSS SUBSIDY SURCHARGE AND ADDITIONAL SURCHARGE**

##### **14.1 Cross Subsidy Surcharge**

- 14.1.1 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.
- 14.1.2 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.
- 14.1.3 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**

- 14.2.1 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.
- 14.2.2 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.
- 14.2.3 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.

- 14.2.4 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 2019 to August 2020.
- 14.2.5 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 136: Additional Surcharge for FY 2021-22**

Sl no	Months	Energy entitlement (MU)	Energy Scheduled (MU)	Energy Surrendered (MU)	Effective Fixed Cost Applied (Rs/Unit)	OA Units (MU)	Cost of Back Energy Surrendered due to Open Access (Rs. Cr.)
1	2	3	4	5=3-4	6	7	8=(7*6)
1	Sep-19	4,567.82	3,308.27	1,259.55	0.70	26.19	1.84
2	Oct-19	4,614.39	3,316.06	1,298.33	1.05	9.41	0.98
3	Nov-19	5,214.43	4,542.92	671.51	1.44	31.57	4.54
4	Dec-19	6,757.73	5,363.72	1,394.01	1.07	33.40	3.57
5	Jan-20	7,006.37	5,340.60	1,665.77	1.50	35.44	5.30
6	Feb-20	7,116.74	6,044.44	1,072.30	1.54	31.30	4.83
7	Mar-20	5,932.46	4,588.55	1,343.92	1.33	27.75	3.68
8	Apr-20	4,713.00	4,046.53	666.48	1.14	5.65	0.65
9	May-20	5,674.61	4,808.65	865.96	1.14	31.75	3.61
10	Jun-20	5,016.42	3,853.86	1,162.56	1.04	46.08	4.77
11	Jul-20	6,488.65	5,818.64	670.01	1.28	50.35	6.45
12	Aug-20	6,075.55	4,813.87	1,261.68	1.32	48.12	6.37
<b>Total</b>		<b>69,178.18</b>	<b>55,846.09</b>	<b>13,332.09</b>		<b>377.02</b>	<b>46.60</b>
<b>Additional Surcharge on OA Consumers (Rs./Unit) = (8/7)</b>							<b>1.24</b>

- 14.2.6 The Petitioner has thus determined the additional surcharge of Rs 1.24 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: TERMINAL BENEFITS (PENSION, GRATUITY AND LEAVE ENCASHMENT) PROVISION

- 15.1** 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 20<sup>th</sup> 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.
- 15.2** According to actuarial valuation the liability as on 31<sup>st</sup> 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 137: 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 2019-20 to FY 2021-22 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 138: 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
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
<b>Total Provision for FY 18</b>	<b>288</b>	<b>63</b>	<b>11</b>	<b>362</b>	<b>287</b>	<b>65</b>	<b>11</b>	<b>363</b>	<b>281</b>	<b>58</b>	<b>10</b>	<b>349</b>	<b>855</b>	<b>185</b>	<b>33</b>	<b>1,074</b>

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
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	107	25	3	135	129	29	3	162	405	92	13	510
<b>Total Provision for FY 19</b>	<b>305</b>	<b>66</b>	<b>12</b>	<b>383</b>	<b>212</b>	<b>47</b>	<b>9</b>	<b>269</b>	<b>251</b>	<b>51</b>	<b>10</b>	<b>312</b>	<b>768</b>	<b>165</b>	<b>31</b>	<b>964</b>
Provision as on 31.03.2019	2,236	464	99	2,799	1,721	374	99	2,195	1,997	359	101	2,457	5,954	1,198	299	7,451
Discount @7%	156	32	7	196	120	26	7	154	140	25	7	172	417	84	21	522
Current Service cost	163	37	6	206	264	61	8	333	139	32	4	174	567	130	17	714
<b>Total Provision for FY 20</b>	<b>320</b>	<b>70</b>	<b>13</b>	<b>402</b>	<b>385</b>	<b>87</b>	<b>15</b>	<b>486</b>	<b>279</b>	<b>57</b>	<b>11</b>	<b>346</b>	<b>984</b>	<b>213</b>	<b>38</b>	<b>1,235</b>
Provision as on 31.03.2020	2,556	102	20	2,677	2,106	113	22	2,241	2,276	82	18	2,376	6,937	297	59	7,294
Discount @7%	179	7	1	187	147	8	2	157	159	6	1	166	486	21	4	511
Current Service cost	287	65	10	362	260	60	8	328	250	57	7	313	797	182	24	1,004
<b>Total Provision for FY 21</b>	<b>466</b>	<b>73</b>	<b>12</b>	<b>550</b>	<b>408</b>	<b>68</b>	<b>9</b>	<b>485</b>	<b>409</b>	<b>62</b>	<b>8</b>	<b>480</b>	<b>1,283</b>	<b>203</b>	<b>29</b>	<b>1,514</b>
Provision as on 31.03.2021	3,021	80	13	3,114	2,513	76	11	2,600	2,686	68	9	2,763	8,220	223	33	8,476
Discount @7%	211	6	1	218	176	5	1	182	188	5	1	193	575	16	2	593
Current Service cost	256	58	9	323	195	45	6	245	209	47	6	262	660	151	20	831
<b>Total Provision for FY 22</b>	<b>467</b>	<b>64</b>	<b>10</b>	<b>541</b>	<b>371</b>	<b>50</b>	<b>6</b>	<b>427</b>	<b>397</b>	<b>52</b>	<b>6</b>	<b>455</b>	<b>1,235</b>	<b>166</b>	<b>23</b>	<b>1,424</b>

The Discoms are mandated to contribute an annual contribution towards the Trust for the purpose of Terminal Benefits an amount of Rs. 7,451 Crores is estimated to have been accumulated till FY 2019. 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 Discoms against this liability in the annual accounts of the company from FY 2009-10 till FY 2019-20 and projected for FY 2020-21 and FY 2021-22.

**Table 139: Terminal Benefits Provisions Liability for Discoms (Rs. Crores)**

Financial Years	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
<b>Total up to 2016</b>	<b>1401</b>	<b>282</b>	<b>66</b>	<b>1749</b>	<b>1213</b>	<b>199</b>	<b>71</b>	<b>1483</b>	<b>965</b>	<b>204</b>	<b>68</b>	<b>1238</b>	<b>3,579</b>	<b>685</b>	<b>205</b>	<b>4,470</b>
2016-17	242	53	10	305	252	52	9	313	257	58	10	325	751	162	29	943
2017-18	288	63	11	362	281	58	10	349	287	65	11	363	855	185	33	1,074
<b>Total up to 2018</b>	<b>1931</b>	<b>397</b>	<b>87</b>	<b>2416</b>	<b>1746</b>	<b>309</b>	<b>91</b>	<b>2145</b>	<b>1509</b>	<b>327</b>	<b>90</b>	<b>1925</b>	<b>5,186</b>	<b>1,033</b>	<b>268</b>	<b>6,486</b>
2018-19	305	66	12	383	251	51	10	312	212	47	9	269	768	165	31	964
<b>Total up to 2019</b>	<b>2236</b>	<b>464</b>	<b>99</b>	<b>2799</b>	<b>1997</b>	<b>359</b>	<b>101</b>	<b>2457</b>	<b>1721</b>	<b>374</b>	<b>99</b>	<b>2195</b>	<b>5,954</b>	<b>1,198</b>	<b>299</b>	<b>7,451</b>
<b>2019-20</b>	<b>320</b>	<b>70</b>	<b>13</b>	<b>402</b>	<b>279</b>	<b>57</b>	<b>11</b>	<b>346</b>	<b>385</b>	<b>87</b>	<b>15</b>	<b>486</b>	<b>984</b>	<b>213</b>	<b>38</b>	<b>1,235</b>
<b>Total up to 2020</b>	<b>2556</b>	<b>533</b>	<b>112</b>	<b>3201</b>	<b>2276</b>	<b>416</b>	<b>111</b>	<b>2804</b>	<b>2106</b>	<b>461</b>	<b>114</b>	<b>2681</b>	<b>6,937</b>	<b>1,411</b>	<b>337</b>	<b>8,686</b>
<b>2020-21</b>	<b>466</b>	<b>73</b>	<b>12</b>	<b>550</b>	<b>409</b>	<b>62</b>	<b>8</b>	<b>480</b>	<b>408</b>	<b>68</b>	<b>9</b>	<b>485</b>	<b>1,283</b>	<b>203</b>	<b>29</b>	<b>1,514</b>
<b>Total Up to 2021</b>	<b>3021</b>	<b>606</b>	<b>124</b>	<b>3751</b>	<b>2686</b>	<b>478</b>	<b>119</b>	<b>3283</b>	<b>2513</b>	<b>529</b>	<b>123</b>	<b>3165</b>	<b>8,220</b>	<b>1,614</b>	<b>366</b>	<b>10,200</b>
<b>2021-22</b>	<b>467</b>	<b>64</b>	<b>10</b>	<b>541</b>	<b>397</b>	<b>52</b>	<b>6</b>	<b>455</b>	<b>371</b>	<b>50</b>	<b>6</b>	<b>427</b>	<b>1,235</b>	<b>166</b>	<b>23</b>	<b>1,424</b>
<b>Total Up to 2022</b>	<b>3489</b>	<b>670</b>	<b>134</b>	<b>4292</b>	<b>3083</b>	<b>531</b>	<b>126</b>	<b>3739</b>	<b>2884</b>	<b>580</b>	<b>129</b>	<b>3593</b>	<b>9,456</b>	<b>1,780</b>	<b>388</b>	<b>11,624</b>

## A16: COMPLIANCE OF DIRECTIVES

The response of Discoms on the directives issued by Hon'ble Commission in the Retail Supply Tariff Order for FY 2020-21 is given below:

### 16.1 Meterization of Unmetered Connections

***Commission's Directive:***

*The Commission has noted the submission of DISCOMs and has obtained the latest reports from them. The Commission has observed that the progress of the DISCOMs regarding DTR meterisation for the FY 2019-20 is not satisfactory. The Commission further directs the DISCOMs to expedite DTR meterisation. The Commission has observed that simply providing meters is not the total solution but the DISCOMs need to have a complete energy auditing solution in order to monitor the energy pilferage. The DISCOMs shall continue submitting the quarterly progress reports on DTR meterisation along with the energy Audit. The DISCOMs are directed to submit an action plan by the 30th January, 2021.*

***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'20 is having 104089 Agricultural predominant DTRs catering supply to 1055520 agricultural consumers. Out of 104089 agricultural predominant DTRs, 11847 DTRs have been provided with meters as on Sept'20.

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 status of DTR meterisation as of November, 2020 is as under:-

Category	No. of DTRs	No. of DTRs metered	Defective meters	Unmetered DTRs	Total meterisation required
Urban	39358	27064	8878	12294	21172
Rural (Non-Agri.)	77655	30432	15847	47223	63070
Rural (Agri.)	258804	59625	9962	199179	209141
<b>Total</b>	<b>375817</b>	<b>117121</b>	<b>34687</b>	<b>258696</b>	<b>293383</b>

The above work of DTR meterisation could not be completed due to paucity of funds with the Discoms. The Energy Department has been requested to arrange required fund (Rs. 538 Crores). On receipt of fund, action plan will be finalized and the work shall be taken up. The consumer

indexing at DTR level is being initiated in all the Circles. After completion of consumer indexing, the Energy Audit shall be done.

### **Response of West Discom:**

The meterization of predominantly agricultural DTRs has already been incorporated in the Capex plan of the Discom for the FY 2016-17 to FY 2019-20. The same shall also be included in the capex plan to be filed for next control period. The said work of DTR meterisation shall be executed depending upon the availability of the funds.

## **16.2 Accounting of Rebates/Incentives/Surcharges**

### ***Commission Directive:***

*The Commission has noted the submissions of DISCOMs and directs DISCOMs to expedite the process of development of a report and submit the same on quarterly basis.*

### ***Petitioner Compliance to Directive:***

### **Response of East Discom:**

The Discom has submitted the annual data of incentive rebates and surcharge before the Hon'ble Commission in previous years, now the same will be submitted before Hon'ble Commission on quarterly basis as directed.

### **Response of Central Discom:**

The quarterly report is being submitted in time.

### **Response of West Discom:**

The summary of incentive/surcharge for HT Consumers given during the FY 2019-20 and FY 2020-21 (up to Oct- 20) is as under:

<b>Particular / Year</b>		<b>2019-20</b>	<b>2020-21 (up to Oct-20)</b>
<b>Additional charge/surcharge recovered from HT consumer (Rs. Crore)</b>	Power Factor Surcharge	17.81	10.54
	Late Payment Surcharge	26.80	26.93
	<b>Total Additional charge/surcharge Recovered</b>	<b>44.61</b>	<b>37.48</b>
<b>Rebate/Incentive provided to HT consumer (Rs. Crore)</b>			
	Power Factor Incentive	-167.09	-80.61
	Time of Day Incentive	-217.76	-106.51
	Prompt Payment Incentive	-1.76	-0.75
	Captive Incentive	-27.49	-21.10
	Open Access Rebate	0.95	0.00
	Green Field/NSC Rebate	-91.10	-48.88
	Advance Payment Incentive	-0.07	-0.06
	Incremental Rebate	-21.44	-38.52
	Online Payment Rebate	-2.60	-1.24
	<b>Total Rebate</b>	<b>-528.36</b>	<b>-297.69</b>
	<b>Net Impact (Rs. Crore)</b>	<b>-483.75</b>	<b>-260.22</b>

The consumer wise detail of incentive/surcharge is being submitted to the Hon'ble Commission. Further as directed IT section of the Discom has been assigned the task to develop the computerized report in this regard.'

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

***Commission Directive:***

*The Commission has observed that the sample size and the sample selected by the DISCOMs is not the representative sample of the State or the respective DISCOMs. The Commission therefore directs that a comprehensive study with large representative sample covering all consumer categories, climate zone, water level status, crop patterns be conducted through an outsource independent agency of repute to arrive at a meaningful conclusion. The outcome be shared with the Commission within six months of issue of this Tariff Order.*

***Petitioner Compliance to Directive:***

**Response of East Discom:**

As directed by the Hon'ble Commission the desired study shall be carried out with increased sample size and considering the various other factors i.e. climate zone, water level status, crop patterns e.t.c. The outcome of the said study shall be shared with the Hon'ble Commission as per the timeline given by the Hon'ble Commission.

**Response of Central Discom:**

An outsourced agency will be assigned shortly for carrying out survey and to put up details as required by the commission within the time limit.

**Response of West Discom:**

As directed by the Hon'ble Commission the desired study shall be carried out with increased sample size and considering the various other factors i.e. climate zone, water level status, crop patterns etc. The outcome of the said study shall be shared with the Hon'ble Commission as per the timeline given by the Hon'ble Commission.

**16.4 Transfer of Funds to Pension & Terminal Benefit Trust Fund**

***Commission Directive:***

*The Commission has noted the submission of the Petitioners. As separate proceeding is under progress, the matter would be appropriately dealt through the Petition. However, the Commission directs the Petitioners to deposit the amount against the Terminal Benefit Trust Fund allocated in this Tariff Order on monthly basis.*

***Petitioner Compliance to Directive:***

**Response of East Discom:**

The petitioner submits that under cash flow mechanism notified by GoMP Rs. 10.00 Crore has been received from MPPMCL for depositing into Terminal Benefit Trust, same has been deposited into the TBT trust. Requisition of balance fund as approved by the Commission in respective Tariff Orders for depositing into TBT Trust has been submitted to MPPMCL, on receipt of the same, amount shall be deposited into the TBT Trust.

**Response of Central Discom:**

The MPPMCL has deposited Rs.15 Crores to TBT Pension Fund on dtd. 24-12-2020 in which includes share of Rs.5 Crore of Central Discom. The information regarding this deposit has also been sent to the Commission vide MPPMCL letter No. CGM (RM)/VDJ/742 Jabalpur dated 28-12-2020.

**Response of West Discom:**

The MP Vidut Mandal Abhiyanta Sangh had filed a petition (13/2018) before Hon'ble Commission. The matter is still under adjudication before the Commission. As per the directives issued by the Hon'ble MPERC MPPMCL has released Rs 10 Cr. till date under Cash Flow Management for The Terminal Benefit Trust Fund and the same has been deposited in The Terminal Benefit Trust Fund Bank Account by the Company.

**16.5 Replacement of Stopped and Defective Meters**

***Commission Directive:***

*The Commission has noted the submission of the Petitioner. It is observed that the Petitioners have been submitting the quarterly progress report to the Commission. However, the Petitioners have failed to submitted the comprehensive plan to replace all the stopped and defective meters. Accordingly, in view of the higher distribution loss of the DISCOMs, the Commission directs the Petitioners to submit the comprehensive replacement plan of the defective/ stopped meters by 31st January,2021.*

***Petitioner Compliance to Directive:***

**Response of East Discom:**

The Petitioner humbly submits before the Hon'ble Commission that the replacement of Stopped/defective meters is a continuous process. The target for meterisation work of 1- phase Stop Defective/Unmetered was finalized at 1604847 Nos as on 30.06.19 against which 554499 Meters were installed/replaced during June-2019 to Oct-2020. Accordingly, the month wise target and plan finalized for 100% meterisation under company area as on Oct-2020 is as under :-

Total Target as on 30.06.19	Achiev. ( June-19 to Oct-20)	Total Target as on 31.10.20	Action Plan : Month wise installation of meters with availability				
			Nov.20	Dec.20	Jan.21	Feb.21	Mar.21
1	2	3	6	7	8	9	10
1604847	554499	1050348	210069	210069	210069	210069	210072

The Quarterly reports of meterisation is regularly being submitted before Hon'ble Commission.

#### **Response of Central Discom:**

The comprehensive replacement plan of the defective/ stopped meters is tabulated below:-

Sr.	Circle	No. of Stopped / defective meters as of Nov 2020	Till Mar, 2021	During Apr 21 – Jun 21	During Jul 21 – Sep 21	During Oct 21 – Dec 21	During Jan 22 – Mar 22	During Apr 22 – Jun 22	During Jul 22 – Sep 22	During Oct 22 – Dec 22	During Jan 23 – Mar 23
1	Betul	47429	5200	5200	5200	5200	5200	5200	5200	5200	5829
2	Bhopal (O&M)	50519	5600	5600	5600	5600	5600	5600	5600	5600	5719
3	Bhopal (CITY)	82505	9200	9200	9200	9200	9200	9200	9200	9200	8905
4	H-Bad	88613	9800	9800	9800	9800	9800	9800	9800	9800	10213
5	Raisen	36628	4100	4100	4100	4100	4100	4100	4100	4100	3828
6	Rajgarh	6738	750	750	750	750	750	750	750	750	738
7	Sehore	23159	2600	2600	2600	2600	2600	2600	2600	2600	2359
8	Vidisha	60889	6800	6800	6800	6800	6800	6800	6800	6800	6489
9	Ashok Nagar	35239	3900	3900	3900	3900	3900	3900	3900	3900	4039
10	Bhind	132752	15000	15000	15000	15000	15000	15000	15000	15000	12752
11	Datia	67128	7500	7500	7500	7500	7500	7500	7500	7500	7128
12	Guna	73636	8200	8200	8200	8200	8200	8200	8200	8200	8036
13	Gwalior (CITY)	54804	6100	6100	6100	6100	6100	6100	6100	6100	6004
14	Gwalior (O&M)	91130	10100	10100	10100	10100	10100	10100	10100	10100	10330
15	Morena	135192	15000	15000	15000	15000	15000	15000	15000	15000	15192
16	Sheopur	59669	6600	6600	6600	6600	6600	6600	6600	6600	6869
17	Shivpuri	168955	18700	18700	18700	18700	18700	18700	18700	18700	19355
	<b>Central Discom</b>	1214985	135150	135150	135150	135150	135150	135150	135150	135150	133785

#### **Response of West Discom:**

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 are negligible, and meters have 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	3,101	3	0.09%
FY 2017-18	3,312	1	0.03%
FY 2018-19	3,504	0	0.00%
FY 2019-20	3,673	17	0.46%
FY 2020-21 (up to Oct)	3,727	24	0.64%

With regard to LT consumers the DISCOM is continuously replacing the defective meters. It is humbly submitted that the reason due to which meter have got defective may not be attributed solely to the licensee and many a time consumer are also 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.

As directed by the Hon'ble Commission stop defective meter shall be replaced and progress of the same shall be submitted before Hon'ble Commission.

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

##### *Commission Directive:*

*The Commission express its displeasure over casual approach of the DISCOMs in complying the directives provided by the Commission in this regard. It is observed that in absence of proper category / sub-category wise details, the sales projections are being made by the DISCOMs based on assumptions only. The Commission in tariff order for FY 2019-20 had directed to submit the R15 aligned with the rate scheduled approved by the Commission. However, the Petitioner following a lackadaisical approach has still not been able to submit the proper R15 monthly/annual report. The projection of proper estimate of sales, consumer addition and connected load cannot be completed without proper data for the past period. Therefore, the Commission directs the Petitioner to file R15 monthly report as per the rate schedule approved by the Commission for the complete FY 2019-20 and FY 2020-21 along with the tariff filing for FY 2021-22, failing which the Commission may take an appropriate view considering the non-compliance of the Commission's direction.*

##### *Petitioner Compliance to Directive:*

##### **Response of East Discom:**

The R-15 report aligned with tariff order has been designed by IT team of Discom is available on R-15 portal/website of the Discom. The reconciliation with conventional R-15 along with fine tuning of reports is in progress. The Annual Tariff Wise R-15 for the FY 2021-22 shall be submitted before Hon'ble Commission once the R-15 is finalized. The month wise available R-15 is being submitted before Hon'ble Commission.

**Response of Central Discom:**

The East Discom is acting as the nodal company for modification of R-15 statement on behalf of all the three Discoms.

**Response of West Discom:**

The R-15 report aligned with tariff order has been designed by IT team of Discom. The Annual Tariff Wise R-15 for the FY 2021-22 shall be submitted before Hon'ble Commission once the R-15 is finalized. The month wise available R-15 is being submitted before Hon'ble Commission.

## **16.7 Capital Expenditure and Capitalisation details**

***Commission Directive:***

*The Commission expresses its displeasure over casual approach of the DISCOMs in complying the directives provided by this Commission. In order to reprimand the Petitioners, the Commission is not allowing the depreciation as per the rates prescribed in the MPERC Tariff Regulations which is subject to submission of Fixed Asset Registers along with the true up petition of FY 2020-21. Further, the Commission directs the Petitioner to submit the Fixed Asset Register upto FY 2019-20 along with the tariff Petition for FY 2021-22 in the format prescribed by the Commission, failing which the Commission may take an appropriate view considering the non-compliance of the Commission's direction.*

***Petitioner Compliance to Directive:***

**Response of East Discom:**

Asset Register via ERP System which is showing full details of the Assets as per Assets class wise which is duly tallied with the Audited Accounts of the Company is being submitted to the Hon'ble Commission on yearly basis. Further, the format in which the Commission has desired assets register is in process and shall be submitted by the Company along with the filling of True-up Petition of FY 2021-22.

**Response of Central Discom:**

The Petitioner vide letter no. MD/MK/RA/271 dated 13-01-2021 has already submitted the Fixed Asset Register of Central Discom up to FY 2019-20 to the Hon'ble Commission.

**Response of West Discom:**

Asset Register via ERP System which is showing full details of the Assets as per Assets class wise which is duly tallied with the Audited Accounts of the Company for the FY 2019-20 the soft copy of the same is being submitted to the Hon'ble Commission. Further, the format in which the Commission has desired assets register is in process and shall be submitted by the Company along with the filling of True-up Petition of F.Y 2021-22.

**16.8 Submission of report to ascertain the consumption of irrigational pumps**

***Commission Directive:***

*The Commission has observed that none of the DISCOMs has submitted the report to ascertain the consumption of irrigation pumps with the tariff Petition as per the direction of the Commission in the last tariff order. The Commission once again directs the Petitioners to submit report to ascertain the consumption of irrigation 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, failing which the Commission may take an appropriate view considering the non-compliance of the Commission's direction.*

**Response of East Discom:**

As directed by the Hon'ble Commission the detail of consumption on sample agriculture feeders has been submitted vide letter No. CGM/ Comml. /EZ/TRAC/12 Jabalpur, dated **02/01/2020**. As directed same shall be submitted again before Hon'ble Commission.

**Response of Central Discom:**

The details have previously been submitted to MPERC vide T.O. letter no. MDCZ/RA/1728 dtd. 10-12-2019 and MDCZ/RA/255 dtd.10-12-2020.

**Response of West Discom:**

As directed by the Hon'ble Commission the detail of consumption on sample agriculture feeders has been submitted vide letter No. MD/WZ/05/Com/TRAC/69 Indore, dated 02/01/2020. As directed same shall be submitted again before Hon'ble Commission.

**16.9 Action plan for Line Loss reduction**

***Commission Directive:***

*The Commission appreciates the efforts made by the West DISCOM as they have surpassed the distribution loss targets and have achieved 11.10% for FY 2019-20. Whereas, the other two DISCOMs viz. East and Central's progress is far from satisfactory. There is a huge gap between the targeted losses and actual losses. These DISCOMs are losing huge amount*

*against these losses as the Commission has been allowing only the normative losses to be passed on to the Consumers. The Commission opines that it is very necessary and expedient to go into the details of suboptimal performance of the DISCOMs. The Commission directs DISCOMs to arrange a separate exercise to perform Circle wise Energy Audits through an independent agency and submit an action plan to reduce the losses based on this Energy Audit Report to the Commission. The Commission also directs the DISCOMs to submit a quarterly progress reports on this matter.*

**Petitioner Compliance to Directive:**

**Response of East Discom:**

It is submitted that the distribution losses of the East Discom in FY 2018-19 were 30.57% however the Discom has achieved the distribution loss level of 22.52 % in the FY 2019-20 against the normative distribution loss of 16%. Discom is making continuous efforts to reduce the losses.

**Response of Central Discom:**

The Discom will assign an independent agency to perform Circle wise energy audits and will submit Energy Audit Report to the Hon'ble Commission. The progress of the same will also be provided on quarterly basis.

**Response of West Discom:**

It is submitted that West Discom has achieved the distribution loss level of 11.10 % in the FY 2019-20 against the normative distribution loss of 15%. Discom is making continuous efforts to reduce the losses.

**16.10 Meterization of unmetered agricultural and domestic consumers**

***Commission Directive:***

*The Commission is not satisfied with the progress so far achieved by the DISCOMs. The DISCOMs are directed to complete this work within six months and report compliance to the Commission.*

**Petitioner Compliance to Directive:**

**Response of East Discom:**

*The Discom is doing continuous efforts towards 100% meterization, the report of meterization shall be appraised before the Hon'ble Commission on timely basis.*

**Response of Central Discom:**

There are 3.79 Lakhs unmetered domestic consumers as of November, 2020 in Central Discom. The meterisation of these consumers is in progress and is expected to be

completed by March, 2022. The work of meterisation of unmetered agriculture connections shall be taken up thereafter.

#### **Response of West Discom:**

With regard to domestic consumers it is submitted that there are no unmetered connection in Discom area. With regard to agriculture consumers necessary instructions regarding identification and meterisation of urban flat rate agriculture consumer has already been issued to the field offices. Filed offices are working on the desired task and following is the status of progress achieved during the period from 1.10.2019 to 30.09.2020:

Meter Installed (No.)	No. of Connection shifted to 10 Hrs. supply feeder (No.)	Single phasing arrangement done on feeder to restrict supply (No)	Total (No.)
499	1771	4940	7210

Despite the aforesaid progress in the matter it is submitted that exercise of such meterisation may take some further time. Hence Hon'ble Commission is requested to extend the time line to next tariff period.

#### **16.11 Consumer category wise study of hourly consumption pattern**

*The Commission reiterates its directions given to the Petitioners to undertake a detailed study of hourly consumption patterns of various consumer categories, based on ABT metering data, to identify which category is contributing how much to the peak consumption, which category can shift its consumption to off-peak hours, seasonal variation in the peak and off-peak consumption levels. Based on this study, the Petitioners should submit a comprehensive proposal to modify/upgrade the ToD tariff dispensation, along with its next Tariff Petition.*

#### **Petitioner Compliance to Directive:**

#### **Response of East Discom:**

Task of desired study has been assigned to the consultants and outcome of the said study shall be submitted before Hon'ble Commission soon.

#### **Response of Central Discom:**

The Petitioner vide letter no. MD/MK/RA/272 dated 13-01-2021 has already submitted the Report on Month-wise, Category-wise Peak and Off-peak Consumption of Central Discom to the Hon'ble Commission.

#### **Response of West Discom:**

Task of desired study has been assigned to the consultants and outcome of the said study shall be submitted before Hon'ble Commission soon.

## A17: MANNER OF BILLING OF DOMESTIC NET METERED CONSUMERS

**17.1** As per MPERC (Grid Connected Net Metering) Regulations 2015 notified on 14<sup>th</sup> 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:

### **17.2 Manner of billing of fixed charges to the net metered domestic Consumer:**

As per the Tariff Order for FY 2020-21, 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 140: 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
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.

### 17.3 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:

**Table 141: Domestic Tariff as per Tariff order FY-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	413	61 per connection	46 per connection
51 to 150 units	505	102 per connection	82 per connection
151 to 300 units	645	23 for each 0.1 kW of authorized load	20 for each 0.1 kW of authorized load
Above 300 units	665	25 for each 0.1 kW of authorized	23 for each 0.1kW 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
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

**A18: POWER PURCHASE COST ADJUSTMENT (PPCA)**

- 18.1** Hon'ble Commission in its Tariff Order for FY-19 has specified formula for deriving Fuel Cost Adjustment ("FCA") for recovery / adjustment of un-controllable costs due to increase or decrease in the cost of fuel in case of coal, oil, and gas for generating plants only.
- 18.2** 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.
- 18.3** 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.
- 18.4** 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.

**18.5** 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 1<sup>st</sup> April ending 30<sup>th</sup> 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

$$\text{Surcharge formula: } S = T - [C / (1-L/100) + D + R]$$

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

- 18.6** 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”.
- 18.7** 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.
- 18.8** 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.

- 18.9** 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.
- 18.10** 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.
- 18.11** 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.
- 18.12** 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.

# **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, Affordable Rental Housing Complex (AHRC), 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			
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
Up to 50 units	413	61 per connection	46 per connection	448
51 to 100 units	505	102 per connection	82 per connection	548
101 to 300 units	645	23 for each 0.1 kW of authorized load	20 for each 0.1 kW of authorized load	698
Above 300 units	665	25 for each 0.1 kW of authorized load	23 for each 0.1 kW of authorized load	705

**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: 4<sup>th</sup> June 2020

Next Meter Reading: 10<sup>th</sup> 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)*	1.25 times of Existing Tariff			1.25 times of Existing Tariff		
Temporary connection for social/ marriage purposes and religious functions.	830	70 for each one kW of sanctioned or connected or recorded load, whichever is	55 for each one kW of sanctioned or connected or recorded load, whichever is	896	80 for each one kW of sanctioned or connected or recorded load, whichever is	60 for each one kW of sanctioned or connected or recorded load, whichever is

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
		highest, for each 24 hours duration or part thereof.	highest, for each 24 hours duration or part thereof.		highest, for each 24 hours duration or part thereof.	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 up to 500 watts	75 units @ 510 per unit	82 per connection	75 units @ 551 per unit	90 per connection

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

**Specific Terms and Conditions for LV-1 category:**

- The Energy Charges corresponding to consumption recorded in DTR meter for clusters of Jhuggi/Jhopadi shall be equally divided amongst all consumers connected to that DTR for the purpose of billing. The Distribution Licensee will obtain consent of such consumers for billing as per above procedure.
- 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.

- d) 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.
- e) 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.
- f) Other terms and conditions shall be as specified under General Terms and Conditions for Low Tension Tariff.

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## **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)	640	153 per kW	122 per kW	659	156 per kW	125 per kW
Demand based tariff Mandatory for Connected load above 10 kW	640	275 per kW or 220 per kVA of billing demand	235 per kW or 188 per kVA of billing demand	659	278 per kW or 222 per kVA of billing demand	238 per kW or 190 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 <b>up to 50 units</b>	630	82 per kW	67 per kW	649	85 per kW	70 per kW
Sanctioned load based tariff (only for connected load up to 10 kW) On all units in case monthly consumption <b>exceeds 50 units</b>	780	138 per kW	117 per kW	803	141 per kW	120 per kW
Demand based tariff <b>(Mandatory</b> for Connected load above 10 kW)	690	296 per kW or 237 per kVA of billing demand	214 per kW or 171 per kVA of billing demand	711	300 per kW or 240 per kVA of billing demand	218 per kW or 174 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	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 subject to a minimum of Rs.500/-)	87 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.	67 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.	900	92 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.	72 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.

**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.

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## **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	563	306	No Minimum Charges	608	310	No Minimum Charges
Gram Panchayat	532	133		575	135	
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.

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## **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	
<b>4.1</b>	<b>Non seasonal consumers</b>						
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	350 per kW or 260 per kVA of billing demand	220 per kW or 176 per kVA of billing demand	693
4.1 b	Temporary connection	1.25 times of the applicable tariff					

\* In case of consumers having contract demand up to 20 HP or 15 kW, 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 or 15kW, rebate of 30% shall not be applicable for that particular month.

<b>4.2</b>	<b>Seasonal Consumers</b> (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	<b>During Season</b>	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	<b>During Off season</b>	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual recorded	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual recorded	120 % of normal tariff as for Non-seasonal consumers	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual recorded	Normal tariff as for Non-seasonal consumers on 10 % of contract demand or actual recorded	120 % of normal tariff as for Non-seasonal consumers

		demand, whichever is more	demand, whichever is more		demand, whichever is more	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.

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## **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:**

<b>Sr. no.</b>	<b>Sub-Category</b>	<b>Existing</b>		<b>Proposed</b>	
		<b>Monthly Fixed charges (Rs.)</b>	<b>Energy charges (Paise per unit)</b>	<b>Monthly Fixed charges (Rs.)</b>	<b>Energy charges (Paise per unit)</b>
<b>LV-5.1</b>					
a)(i)	First 300 units per month	46	469	52	509
(ii)	Above 300 units up to 750 units in the month	57	572	63	621
(iii)	Rest of the units in the month	62	600	70	651
b)	Temporary connections	62	600	70	651
c)	DTR metered group consumers	Nil	459	Nil	496
<b>LV-5.2</b>					
a)(i)	First 300 units per month	46	469	52	509
(ii)	Above 300 units up to 750 units in the month	57	572	63	621
(iii)	Rest of the units in the month	62	600	70	651
b)	Temporary connections	62	600	70	651
<b>LV-5.3</b>					
a)	Up to 25 HP in <b>Urban areas</b>	102 per HP	530	110 per HP	572
b)	Up to 25 HP in <b>Rural areas</b>	82 per HP	510	90 per HP	551

Sr. no.	Sub-Category	Existing		Proposed	
		Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)	Monthly Fixed charges (Rs.)	Energy charges (Paise per unit)
c)	Demand based tariff (Contract demand up to 150 HP) (Mandatory above 25 HP) in <b>Urban areas</b>	255 per kW or 204 per kVA of billing demand	600	275 per kW or 220 per kVA of billing demand	648
d)	Demand based tariff (Contract demand up to 150 HP) (Mandatory above 25 HP) in <b>Rural areas</b>	133 per kW or 106 per kVA of billing demand	600	145 per kW or 116 per kVA of billing demand	648

<b>LV-5.4</b>					
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
<b>For Agriculture flat rate consumers having load upto 10 HP</b>					
a)	Three phase- urban	375	375	375	375
b)	Three phase- rural	375	375	375	375
c)	Single phase urban	375	375	375	375
d)	Single phase rural	375	375	375	375
<b>For Agriculture flat rate consumers having load more than 10 HP</b>					
a)	Three phase- urban	750	750	750	750
b)	Three phase- rural	750	750	750	750
c)	Single phase urban	750	750	750	750
d)	Single phase rural	750	750	750	750

\*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:

<b>Particulars</b>	<b>No. of units per HP of sanctioned load per month</b>	
	<b>Urban/Rural Area</b>	
<b>Type of Pump/Motor</b>	<b>April to Sept</b>	<b>Oct to March</b>
Three Phase	<b>95</b>	<b>170</b>
Single Phase	<b>95</b>	<b>180</b>

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

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

- 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 –

<b>Sr.no.</b>	<b>Particulars of Energy Saving Devices</b>	<b>Rate of rebate</b>
1.	ISI / BEE star labelled motors for pump sets	15 paise per unit

2.	ISI / BEE star labelled motors for pump sets and use of frictionless PVC pipes and foot valve	30 paise per unit
3.	ISI / BEE star labeled motors for pump sets and use of frictionless PVC pipes and foot valves along with installation of shunt capacitor of appropriate rating	45 paise per unit

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

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## **Tariff Schedule - LV-6**

### **E- VEHICLE / E-RICKSHAWS CHARGING STATIONS**

#### **Applicability:**

The tariff is applicable exclusively for Electric Vehicle / Electric Rickshaws charging stations and E-Vehicle Battery Swapping station. 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:**

<b>Category</b>	<b>Existing</b>		<b>Proposed</b>	
	<b>Monthly Fixed Charges</b>	<b>Energy Charge (Paise/unit)</b>	<b>Monthly Fixed Charges</b>	<b>Energy Charge (Paise/unit)</b>
Electric Vehicle/ Rickshaw charging installations	Rs 100 per kVA or 125 per kW of Billing Demand	600	Rs 48 per kVA or 60 per kW of Billing Demand	600

#### **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.

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## **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 25<sup>th</sup> 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.

<b>Month</b>	<b>Actual cumulative consumption (kWh)</b>	<b>Cumulative minimum consumption (kWh)</b>	<b>Higher of 2 and 3 (kWh)</b>	<b>Already billed in the year (kWh)</b>	<b>To be billed in the month = (4-5) (kWh)</b>
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:

<b>Load factor</b>	<b>Concession in energy charges</b>
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), *whose connected load includes motive power/induction motors(s) of capacity 3HP and above*, 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%	<b>0.5</b>
Above 86% up to 87%	<b>1.0</b>
Above 87% up to 88%	<b>1.5</b>
Above 88% up to 89%	<b>2.0</b>
Above 89% up to 90%	<b>2.5</b>
Above 90% up to 91%	<b>3.0</b>
Above 91% up to 92%	<b>3.5</b>
Above 92% up to 93%	<b>4.0</b>
Above 93% up to 94%	<b>4.5</b>
Above 94% up to 95%	<b>5.0</b>
Above 95% up to 96%	<b>6.0</b>
Above 96% up to 97%	<b>7.0</b>
Above 97% up to 98%	<b>8.0</b>
Above 98% up to 99%	<b>9.0</b>
Above 99%	<b>10.0</b>

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 or census town /Urban Agglomeration/outgrowth (as per census 2011 or any subsequent census), 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.

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## 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:**

<b>Category of consumer</b>	<b>Existing</b>		<b>Proposed</b>	
	<b>Monthly Fixed Charge (Rs. per kVA of billing demand per month)</b>	<b>Energy Charge (paise / unit)</b>	<b>Monthly Fixed Charge (Rs. per kVA of billing demand per month)</b>	<b>Energy Charge (paise / unit)</b>
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.

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## **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	675	700	725	761	640	672
33 kV supply			715	751	620	651
132 kV supply			695	730	600	630
220 kV supply			672	706	576	605

#### **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.

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### **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, telecom tower etc. within 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)
<b>3.1</b>	<b>Industrial</b>						
	11 kV supply	347	710	610	350	730	650
	33 kV supply	570	705	600	570	710	610
	132 kV supply	660	662	565	665	674	575
	220/400 kV supply	660	620	520	665	639	536
<b>3.2</b>	<b>Non-Industrial</b>						
	11 kV supply	327	745	655	340	771	678
	33 kV supply	470	725	630	480	750	640
	132 kV supply	560	680	570	590	704	585
	220/400 kV supply						
<b>3.3</b>	<b>Shopping Malls</b>						
	11 kV supply	336	725	650	346	747	672
	33 kV supply	388	715	610	398	744	634
	132 kV supply	520	665	590	525	692	601
	220/400 kV supply						
<b>3.4</b>	<b>Power Intensive Industries*</b>						
	33 kV supply	565	540	540	570	560	560
	132 kV supply	668	517	517	673	530	530
	220 kV supply	668	510	510	673	525	525

**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 (d) 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 up to 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. ii. The rebate shall be applicable up to 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, 2019, then his base year for calculation of incremental consumption would be FY 2018-19.*

- 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 <sub>1</sub> )	(B <sub>1</sub> )	(A <sub>2</sub> )	(B <sub>2</sub> )	X = A <sub>2</sub> -A <sub>1</sub>	Y = B <sub>1</sub> -B <sub>2</sub>		
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 <sub>1</sub> )	Wheeled Units (B <sub>1</sub> )	Consumption from Discom (A <sub>2</sub> )	Wheeled Units (B <sub>2</sub> )				
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 or during effective period of this tariff order. This rebate is applicable for the effective period of this tariff order for the units billed only after the commencement of HT Agreement.

**(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.

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## **Tariff Schedule - HV-4**

### **SEASONAL:-**

#### **Applicability:**

This tariff shall be applicable to such seasonal industries / consumers requiring energy for the production purposes for a maximum continuous period of 6 months 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)	
<b>During Season</b>						
	Existing	Proposed	Existing	Proposed	Existing	Proposed
11 kV supply	367	377	695	737	590	625
33 kV supply	408	418	675	716	570	604
<b>During Off-Season</b>						
11 kV supply	Rs. 367 on 10% of contract demand or actual recorded demand whichever is higher	Rs. 377 on 10% of contract demand or actual recorded demand whichever is higher	834 i.e. 120% of seasonal energy charge	876 i.e. 120% of seasonal energy charge	Not applicable	Not applicable
33 kV supply	Rs. 408 on 10% of contract demand or actual recorded demand whichever is higher	Rs. 418 on 10% of contract demand or actual recorded demand whichever is higher	810 i.e. 120% of seasonal energy charge	851 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 to the licensee 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 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 current financial 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 current 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.

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**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:**

Sub-Category	Monthly Fixed Charge (Rs. /KVA of billing demand per month)		Energy Charge (paise per unit)	
	Existing	Proposed	Existing	Proposed
11 kV supply	327	337	602	632
33 kV supply			590	620
132 kV supply			550	578
220 kV & above			---	560

**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.

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## **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 9<sup>th</sup> 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:**

<b>Sr no.</b>	<b>Sub-Category</b>	<b>Monthly Fixed Charge (Rs. /KVA of billing demand per month)</b>		<b>Energy Charge for consumption up to 50% load factor (paise / unit)</b>		<b>Energy Charge for consumption in excess of 50% load factor (paise / unit)</b>	
		<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>	<b>Proposed</b>
<b>6.1</b>	<b>For Tariff Sub-Category 6.1</b>						
	11 kV supply	326	336	625	656	560	588
	33 kV supply			610	641	540	567
	132 kV supply			590	620	520	546
<b>6.2</b>	<b>For Tariff Sub-Category 6.2</b>						
	11 kV supply	204	214	625	656	560	588
	33 kV supply			610	641	540	567
	132 kV supply			550	620	510	546

#### **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.

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## **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	960	1008

#### **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 occasion, 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 and E-Vehicle Battery Swapping station. 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	50	590

**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.

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## **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:

<b>Power Factor</b>	<b>Percentage incentive payable on billed energy charges</b>
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 subject to maximum rebate of Rs. 1 per Unit.

**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:

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

- (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) 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 be 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.

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