

भारत सरकार
विद्युत मंत्रालय
केन्द्रीय विद्युत प्राधिकरण
वित्तीय एवं वाणिज्यिक मूल्यांकन प्रभाग

Sewa Bhawan, New Delhi-66
दिनांक: 29.07.2024

OFFICE MEMORANDUM

विषय: वितरण लाइसेंसधारियों द्वारा किए गए सभी विवेकपूर्ण लागतों के पूर्ण और स्वचालित पास-थ्रू पर सिफारिशें करने के लिए विद्युत मंत्रालय द्वारा गठित ओ एंड एम मानदंडों पर समिति की सिफारिश -रेग। (Recommendation of the Committee on O&M Norms constituted by Ministry of Power to make recommendations on full and automatic pass-through of all prudent costs incurred by distribution licensees-Reg.)

Ref: 1. Ministry of Power order dated 29.12.2023,

2. Meeting of the committee on dated 11.01.2024, 02.02.2024, 01.03.2024, 25.04.2024 & 05.07.2024.

The undersigned is directed to say that Ministry of Power vide order dated 29th December 2023 constituted a committee under Chairperson, CEA on the subject matter. The TOR of the committee are as follows:-

- a) Operation and maintenance norms for (including Administrative & General Costs, Renovation & Modernisation costs and Employee costs) for distribution licensees that may be issued by Central Electricity Authority
- b) Automatic power-purchase pass-through formula/mechanism, covering all prudent power purchase costs including under section 62, section 62, power exchanges and part load operations which enable absorption of variable renewable energy
- c) Additional prudential norms for sustainable levels of borrowing by distribution licensee based on available funds and cash flows

2. The Committee met on several occasions and deliberations were held on the terms of reference. Based on the discussions, CEA has recommended to MoP for amendment to Rule 14 of the Electricity Amendment Rules 2022 to ensure automatic power purchase pass through of all prudent power purchase and on Additional Prudential Norms (APN).

3. In order to finalize the Guiding Principles of O&M Expenses of distribution licensees, a meeting of the Committee was held on dated 05.07.2024. Based on the discussion in the meeting the Guiding Principles of O&M Expenses have been finalized and enclosed.

4. This issues with the approval of Chairperson, CEA.

Encl.: As above.



(Goutam Ghosh)

Chief Engineer &
Member Convener

To:

1. Chief Engineer (R&R), Ministry of Power, New Delhi

Copy to:

1. Sr PPS to Chairperson/ Member (E&C), CEA
2. CMD, TANGEDCO, Tamil Nadu
3. CMD, APDCL, Assam
4. CMD, MSEDCL, Maharashtra
5. MD, Southern Bihar Power Distribution Company Ltd., Bihar
6. CMD, UPPCL, Uttar Pradesh
7. Joint Secretary (Distribution), Ministry of Power, New Delhi
8. CEO, Tata Power Delhi Distribution Limited, New Delhi
9. CMD, PFC, New Delhi
10. Secretary, Forum of Regulators (FOR)
11. Coordinator, Prayas (Energy Group), Pune
12. Chief Engineer (DP&T), CEA
13. Chief Engineer (FS&A), CEA

GUIDING PRINCIPLES FOR OPERATIONS & MAINTENANCE (O&M) EXPENSES OF DISTRIBUTION LICENSEES

1. INTRODUCTION

Operations and Maintenance (O&M) expenses for electricity distribution system is an essential part of financial planning of distribution companies (DISCOMs). It involves estimating and allocating funds for all the O&M activities judiciously to deliver 24x7 reliable & quality power supply to all the consumers along with meeting the performance parameters notified by SERCs.

O&M expenses include the expenses for salaries and wages of personnel required to maintain the distribution network, repair and maintenance expenses for up keeping and repairing of equipment, such as transformers, lines, poles, and wires etc., contracted services, and other costs associated with operating and maintaining the distribution business and associated infrastructure including various statutory /office expenses and levies etc. The O&M expenses can be grouped in following categories:

- i. Employee Expenses
- ii. Repair and Maintenance (R&M) Expenses
- iii. Administrative and General (A&G) Expenses

Many factors such as infrastructure of network including number of Sub-stations, Distribution Transformers (DTs), line length, number of consumers, energy handled by the utility, consumer type & density, physical area of service, network spread, ageing of the network, overloading of the network, level of automation, hilly/plain area, change in tax rates and statutory levies such as license fee, minimum wages, pay revisions etc. have an impact on O&M expenses of a utility.

2. PIE OF O&M EXPENSE IN DISCOM'S EXPENDITURE BASKET

	2021-22		2022-23	
	O&M cost in % of Total cost	Employee Expenses (%) in O&M cost	O&M cost in % of Total cost	Employee Expenses (%) in O&M cost
State DISCOM	12.65%	73.46%	11.81%	73.66
Private DISCOM	14.59%	56.35%	14.59%	56.35%

All Average	India	12.76%	72.30%	11.96%	72.53%
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It may be seen from the above that employee expense is a major part of total O&M expenses approved by SERCs. It may also be seen that employee expenses as percentage of total O&M expenses is less in Private DISCOMs than in Government owned DISCOMs due to various reasons including outsourcing of services and adoption of IT, automation etc.

3. REGULATORY PRACTICE FOLLOWED BY DISCOMS FOR O&M EXPENSES

Under the Regulatory regime, the respective Electricity Regulators approve the O&M expenses requirements for the next year/years based on the pre-defined formula/past expenses as well as the true-up of the O&M expenses for the past years.

To estimate the budget for O&M expenses, the distribution utilities (DISCOMs) identify all the operational and maintenance activities necessary to upkeep the distribution network functioning effectively to provide 24x7 reliable power to all consumers including SOP (Standards of Performance) requirements as notified by the respective SERC. This includes identifying areas that require maintenance, upgrading, or replacement of equipment, as well as anticipating any unexpected repair or replacement costs that may arise.

After identification of the requisite activities, the associated costs for each activity may be estimated including cost of labor, materials, IT services and any other expenses required for each activity, as well as accounting for any contingencies or unexpected expenses etc. After estimating the costs for all of the activities, DISCOMs can include the same in the annual plan for approval of SERC/JERC. The approved budget may undergo certain changes due to change demand, weather conditions, or other factors that affect the distribution business.

4. METHODS ADOPTED BY SERCS FOR DETERMINING O&M EXPENSES

The practices adopted by some of the SERCs for approving the O&M expenses are detailed at **Annexure-I**. Generally, SERCs are considering following methods for approving O&M expenses in Annual Revenue Requirement (ARR) of DISCOMs:

i. O&M Expenses based on Distribution Asset /No of consumers etc.

Under this method, the O&M expenses of a DISCOM are derived by some SERCs on the basis of actual O&M expenses for last three (3) years based on per Network component expenses (like No of Substations (SS), DTs, Line/cable length etc.) or O&M expenses for past years based on per consumer expenses. The average of such past O&M expenses are considered as O&M expenses for the middle year and then the middle year expenses are escalated with year on year basis with the escalation factor considering CPI and/or WPI of respective years in a defined ratio for subsequent years up to the considered year.

ii. O&M Expenses based on average of last 3/5 years True up values or last year True up value:

Under this method, the Operation and Maintenance expenses of a Discom are derived by some SERCs on the basis of the average of the Trued-Up values for the last Three/Five years or based on True up value of only last year. The average of 3/5 Year O&M expenses are considered as O&M expenses for the middle year and then the middle year expenses are escalated with year on year basis with the escalation factor considering CPI and WPI of respective years in a defined ratio (60:40 or 55:45 or 30:70 etc) for subsequent years up to the considered year otherwise the last year True up value is escalated with escalation factor as above.

The formulas used for computation of various components of O&M expenses are as under:

Sl No	Heads	Formula
1	Employee Expenses	Employee expense are generally computed as per the following formula: $EMP_n = EMP_{n-1} \times (1 + \text{CPI inflation}) + \text{one time expenses like arrears, pay commission etc}$ Where: EMP_n: Employee expense for the nth year; EMP_{n-1}: Employee expense for the (n-1)th year; CPI inflation is the average of Consumer Price Index (CPI) for immediately preceding three Financial Years.

2	Repair and Maintenance Expense	Case 1: Repairs and Maintenance expense are calculated as per the following formula: $R\&M_n = R\&M_{n-1} \times (1 + \text{WPI inflation})$ Where: R&M_n: Repairs & Maintenance expense for the nth year; R&M_{n-1}: Repairs & Maintenance expense for the (n-1)th year; WPI inflation is the average of Wholesale Price Index (WPI) for immediately preceding three Financial Years. OR Case 2: Some SERCs computes the R&M charges based on Gross Fixed Assets (GFA) as: $R\&M_n = k * GFA_{n-1} * (1 + EF)$ Where GFA_{n-1} is the Gross Fixed Assets of (n-1)th year k is the factor governing the relationship of R&M expenses and GFA available with the discom and it is defined by SERCs per unit of Gross Fixed Assets(GFA). EF is the escalation factor defined by SERCs linked to CPI & WPI.
3	Administrative and General (A&G) Expense	A&G expense are being computed as per the following formula : $A\&G_n = A\&G_{n-1} \times (1 + \text{WPI inflation}) + \text{additional implications like legal charges and Statutory levies etc}$

		Where: A&G_n: A&G expense for the nth year; A&G_{n-1}: A&G expense for the (n-1)th year; WPI inflation is the average of Wholesale Price Index (WPI) for immediately preceding three Financial Years.
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5. OBSERVATIONS

O&M Expense is critical component of Tariff determination. Inadequate O&M Expense will have direct bearing on network maintenance as well as services to the consumers. It may be noted that the SERCs approve the O&M expenses based on a normative formulas and in many cases, employee cost make a major part of O&M Expenses approved by SERCs leaving less budget for Repair & Maintenance of infrastructure. While examining the norms followed by different DISCOMs for O&M expenses, following broad observations have been noted:-

- i. Generally, the heads for employee expenses and A&G expenses often had overlaps and were treated for benchmarking in a similar fashion. The methodologies for computation of A&G expenses & Employee expenses are similar. However, as these norms are based on past performance and are escalated with inflation, these methodologies do not account for improvements in efficiency from baseline. R&M expense is a distinct head with separate treatment in regulatory approval processes from the non- R&M heads.
- ii. % of Employee Cost within total O&M Expenses for Private DISCOMs is below the all India average and State DISCOMs. Accordingly, there is a need for adopting automation /outsourcing services in State DISCOMs, so as to reduce the employee cost upto a reasonable level and a major part of O&M expenses may be used in repair & maintenance of distribution infrastructure.
- iii. Across the states, there is significant variation in cost and diversity in O&M requirements across the DISCOMs and even within the DISCOMs, there is variation in O&M expenses depending upon the area and consumer mix.
- iv. There are non-uniform practices of accounting of different expenditure in different heads by different utilities like. For example, some DISCOMs have meter readers

on role (Employee cost) while other discoms have meter reading as outsourced (A&G Expenses). This shows a major non uniform practice among various SERCs.

- v. Presently, many capital intensive works (e.g. smart meter implementation) are carried out in DISCOMs in TOTEX mode, where an external agency make the capital investment and DISCOMs have to pay monthly charges for the capital investment. However, there is no norm/practice to consider such recurring TOTEX expenses under O&M expenses of DISCOM.

6. RECOMMENDATIONS

6.1 Standardization of list of expenses under different heads

As explained above, there is no uniformity across DISCOMs in booking of expenditure under different heads namely Employee Expenses, Repair & Maintenance Expenses and Administrative & General Expenses. Generally, difference in treatment of following expenses have been observed:-

- **Outsourced employees:** The expenses for outsourced employees are booked by various DISCOMs either under Employee expenses or under A&G expenses. Considering that expenses for outsourced employees are in nature of employee expenses, it is recommended that the expenses for outsourced employees should be booked under Employee Expenses.
- **Training & Development Expenses:** There is need for adequate funds for training and development activities of the employee at all level so as to meet the new challenges in the sector. The training and development expenses may be booked under employees expenses.

Accordingly, suggested list of expenditure under different heads of O&M expenses could be as under:-

Employee Expenses	Administrative and General (A&G) Expense	Repair and Maintenance Expense
1) Basic Salary 2) Expenditure towards Contract of Service (Outsourced Employees)	1) Building Rent Rates & Taxes 2) Insurance	1) Plant & Machinery maintenance expenses

3) Dearness Allowances (DA) 4) House Rent Allowances (HRA) 5) Conveyance Allowances 6) Leave Travel Allowances 7) Earned Leave Encashment 8) Medical Reimbursement/Expenses/ Employee insurance expenses 9) Overtime Payment 10) Bonus/Ex-gratia Payment 11) Staff Welfare Expenses 12) Training and development Expenses 13) Payment under Workmen's Compensation Act 14) Provident Fund Contribution 15) Pension Payments 16) Gratuity Payments 17) Employee related insurance expenses 18) Other Allowances & Payments	3) Telephone & Postage, etc. 4) Legal Charges, License fees, Petition filing fees & Audit Fees 5) Professional, Consultancy, & Technical Fees 6) Fees and Subscription 7) Printing, Stationary & Advertisement Expenses 8) Conveyance & Travel 9) Electricity & Water Charges 10) Safety & Security Expenses 11) Vehicle Running & Hiring Expenses 12) Expenditure of meetings/ conference 13) Commissioning and Collection Charges 14) Expenses for contract for Service 15) Other Administrative Expenses 16) Other Scheme Expenses 17) Expenses on Building/Civil works / Hydraulic works/ vehicles.	2) Lines & Cable Network maintenance
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6.2 Expenses incurred by DISCOMs under TOTEX model: Nowadays, smart metering installation is under implementation under TOTEX mode. Further, IT and OT services are also being hosted on cloud instead of 'On premise Servers' with monthly service charges instead of CAPEX expenses. Other expenses related to customer care

center, cloud storage, demand forecasting, GIS mapping, Network analysis, annual technical support for SAP/HANA/Oracle software license, station monitoring system, Annual technical supports of SAP software Licensees, Vehicle tracking Systems, Radio Frequency Data Concentrator Unit (RF DCU), etc may also be in the nature of TOTEX.

It is recommended that expenditure on TOTEX/OPEX scheme shall be treated as separate head under ARR calculation and shall be reimbursed as per actual expenditure after prudence checked by concerned regulatory commission. As TOTEX expenses include OPEX expenses, it should be ensured that no part of expenses claimed under TOTEX are claimed under O&M expenses.

6.3 METHODOLOGY FOR DETERMINATION OF O&M EXPENSES

Based on present regulatory practice, it has generally been observed that regulators have linked employee expenses and administrative & general expenses with either number of consumer or quantum of distribution assets, while repair and maintenance expenses are linked to gross fixed assets (GFA) of DISCOMs.

Generally, SERCs have adopted an approach wherein DISCOM's performance is evaluated /trued ups every year against its own performance in the past, resulting into no incentive for DISCOMs to improve its performance. Therefore, there is need for introducing a normative based approach for determination of O&M expenses of DISCOM, so that past approved expenditure does not become the only yardstick for determination of O&M expenses.

After examination of different models followed by Regulations, following hybrid approach for determination of O&M expenses **is recommended**:

A. Step 1: Business as usual with adjustment for efficiency improvement

In this step, the O&M expenses for DISCOM shall be computed for three components i.e. i) Employee expenses, ii) Repairs and Maintenance (R&M) expenses; and iii) Administrative and Generation (A&G) expenses. Each component of O&M expenses shall be allowed based on past trends, and inflation index after adjustment for efficiency improvement as decided by the Regulator.

Each component of above O&M expenses of a DISCOM can be derived on the basis of actual O&M expenses for last three/five (3/5) years based on per Network component expenses (like No of SS, DTs, Line/cable length etc) subject to adjustment for best O&M practices in other DISCOMs. The average of such O&M expenses can be considered as O&M expenses for the middle year and then the middle year expenses are escalated with year on year basis with the escalation factor considering CPI and WPI of respective years in a defined ratio for subsequent years up to the

considered year to arrive at base year figures for the control period.

Thereafter, O&M expenses for each year of the Control Period shall be computed based on the formula shown below:

$$O\&M_n = EMP_n + R\&M_n + A\&G_n$$

Where,

- $O\&M_n$ – Operation and Maintenance expense for the n^{th} year;
- EMP_n – Employee Costs for the n^{th} year;
- $R\&M_n$ – Repair and Maintenance Costs for the n^{th} year;
- $A\&G_n$ – Administrative and General Costs for the n^{th} year;

The above components shall be computed in the manner specified below:

$EMP_n =$	$EMP_{n-1} \times \text{Estimated Number of Consumers for } n^{th} \text{ year} \times (1 + \text{CPI Inflation}\% - \mathbf{X1})$
$R\&M_n =$	$K \times (GFA_n + GFA_{n-1}) / 2 \times (1 + \text{WPI Inflation} - \mathbf{X2}) +$
$A\&G_n =$	$(A\&G_{n-1}) \times \text{Estimated Number of Consumer for } n^{th} \text{ year} \times (1 + \text{WPI Inflation} - \mathbf{X3})$

Note:

EMP_{n-1} – Employee Costs/consumer for the $(n-1)^{th}$ year;

“K” is a constant specified by the Commission in %. Value of K for each year of the control period shall be determined by the Commission in the MYT order based on distribution licensee’s filing, benchmarking of repair and maintenance expenses, approved repair and maintenance expenses vis-à-vis GFA approved by the Commission in past, age of the assets and any other factor considered appropriate by the Commission; The factor K may be considered as 2-4%

GFA_{n-1} - Gross Fixed Asset = Closing GFA of the distribution licensee for the $n-1^{th}$ year as per audited books of account.

GFA_n – Estimated Gross Fixed Asset for the distribution licensee for the n^{th} year based on approved CAPEX plan.

$A\&G_{n-1}$ – Administrative and General Costs/Consumer for the $(n-1)^{th}$ year;

CPI Inflation – is the point to point change in the Consumer Price Index (CPI) for Industrial Workers (all India) as per Labour Bureau, Government of India; in case CPI Inflation is negative, the escalation/change shall be 0%;

WPI Inflation – is the point to point change in the Wholesale Price Index (WPI) as per the Office of Economic Advisor of Government of India

X1,X2,X3- efficiency factors to be specified by the Commission. The efficiency factors may be considered as 1-2% by the Commission. Further, the efficiency factor may be considered as 0% if the consumer growth is more than 2%.

B. Step 2: Computation of O&M expenses as percentage of GFA

In this step, computation of O&M expenses will be carried out as percentage of GFA of DISCOM.

State-wise Gross Fixed Asset, O&M expenses and O&M expenses as % of Gross Fixed Asset during 2021-22 and 2022-23 available are at **Annexure-II**. All India average of O&M expenses as % of Gross Fixed Asset during 2021-22 and 2022-23 are 16.09% and 17.21% respectively. From Statistical analysis, it has been found that O&M expenses as a percentage of GFA lies between 13%-19% with 95% statistical confidence level with median of 14.70%. However, for hilly States and UTs, O&M cost as percentage of GFA is slightly higher (more than 20%).

In this step, O&M costs will be calculated at 15% (median) of the GFA for normal States/UT and 21% of GFA for hilly states. GFA based O&M expenses will give more flexibility to distribution licensee to optimize their expenses based on requirement and will also shift the focus of DISCOMs to invest in their network, and thus serve the consumers in better way. However, the Regulator may decide any other percentage based on their analysis.

C. Step 3: Hybrid Model:

In this step, the O&M expenses obtained as per Step-1 (Business as Usual) and as per Step-2 (GFA mode) will be compared for determination of O&M expenses by the Regulator. If the O&M expenses under Step-1 is less than O&M expenses under Step-2, then O&M expenses under Step-2 will be considered for determination of O&M expenses by the Regulator. In other cases, O&M expenses as per Step-1 will be considered for determination of O&M expenses by the Regulator.

This hybrid model will ensure that distribution licensee will get atleast certain % of GFA as O&M expenses. As GFA of a distribution licensee depends on network capacity, therefore distribution licensee will be encouraged to invest in network upgradation, which in turn will help in better network availability and power availability to consumers.

6.4 Sharing of gains and losses: It is recommended that any gain or loss on account of difference between actual O&M expenses and expenses approved by the regulator during truing up may be shared with the consumers In line with the provisions in the Electricity (Second Amendment) Rules, 2023,. Accordingly, it is recommended that two third of the gains shall be passed on to the consumers in tariff and rest shall be retained by the distribution licensee and two third of the losses shall be borne by the distribution licensee and rest shall be borne by the consumers.

6.5 Pass through of uncontrollable expenses: It is recommended that there shall be provision for pass through of uncontrollable expenses including change in tax rates/regimes, new statutory levy & legal expenses unless barred, which is beyond control of the Distribution Licensee, and including expected one-time expenses such as implication of pay commission, Interim Relief, emergency response to natural calamities etc.

6.6 For a new deemed distribution licensee commencing operations during a Control Period, the O&M expenses shall be approved based on the proposal of such deemed distribution licensee in its petition for tariff determination.

6.7 Some of the Committee members felt that there is need for bringing out O&M norms for each distribution assets like lines, transformers etc. for different voltage class in line CERC tariff norms. At present, there is huge variation in technical specifications of distribution assets across different states and as such, recommendation of a common O&M expense norm for distribution assets may not be fruitful. Accordingly, technical specification of distribution assets may be standardized first and thereafter, O&M norms for distribution assets can be taken up. Accordingly, a technical committee in CEA would be formed to standardize technical specification of distribution assets.

Annexure-I

Details of O&M calculation practices being adopted by some of the SERCs

Sr. No.	State	O&M Components	Norms and methodology
1.	Andhra Pradesh & Telangana	Employee expenses and A&G expenses	➤ Norms are set for Expenses per sub-station, per distribution network line length, per DT, per consumer. ➤ Norms are escalated year to year basis to arrive at the norms for the next financial year. ➤ These norms are multiplied by the number of sub-stations, line length, number of DTs and number of consumers to arrive at the employee and A&G expenses.
		R&M expenses	➤ % age of Gross Fixed assets (K factor is chosen based on the past data) (presently- 2.05% in AP , 1.01% in TSSPDCL and 1.19% for TSNPDCL)
2.	Bihar	Employee expenses	➤ Norms are- Number of employees per 1000 consumers, Number of personnel per sub-station & annual expenses per personnel. ➤ All these norms are escalated to arrive for the next year. ➤ Employee expenses = (Expense/personnel*No. of personnel) + (No of employee/consumers* No. of consumers) + (No. of sub-stations* No. of personnel per sub-station).
		A&G expenses	➤ Norms are- A&G expenses per 1000 consumers, A&G expenses per employee. ➤ All these norms are escalated to arrive for the next year. ➤ A&G expenses = (Expense/Employee* No. of employees) + (Number of consumers*Expenses/consumer).

		R&M expenses	➤ % age of Gross Fixed Assets based on the past data (presently 1.24% for NBPDCCL and 1.71% for SBPDCL)
3.	Kerela	Employee expenses and A&G expenses	➤ Norms are- Expenses per consumer, Expenses per DT, Expenses per Length of HT line, Expenses per Length of LT line, Expenses per unit of sale ➤ These norms are escalated year to year basis. ➤ These norms are multiplied by the approved parameters and summed up to arrive at the non R&M expenses.
		R&M expenses	➤ % age of Gross Fixed Assets. (presently 3%)
4.	Haryana	Employee expenses and A&G expenses	➤ EMP_n (excluding terminal liabilities) + $A\&G_n = (EMP_{n-1} + A\&G_{n-1}) * (INDX_n / INDX_{n-1})$ Where, $INDX_n$ – Inflation Factor to be used for indexing the Employee Cost and A&G cost. This will be a combination of the Consumer Price Index (CPI) and the Wholesale Price Index (WPI) for immediately preceding year.
		R&M expenses	➤ $R\&M_n = K * GFA * INDX_n / INDX_{n-1}$ Where, 'K' is a constant (expressed in %) governing the relationship between O&M costs and Gross Fixed Assets (GFA) for the nth year, where 'K' is a constant (expressed in %) governing the relationship between O&M costs and Gross Fixed Assets (GFA) for the nth year.
5.	Uttar Pradesh	Employee expenses	➤ $EMP_n = EMP_{n-1} \times (1 + \text{CPI inflation})$, Where: EMP_n: Employee expense for the nth year; EMP_{n-1}: Employee expense for the (n-1)th year; CPI inflation is the average of Consumer Price Index (CPI) for immediately preceding three Financial Years.
		A&G expenses	➤ $A\&G_n = A\&G_{n-1} (1 + \text{WPI inflation})$ where WPI inflation is the average of Wholesale Price

			Index (WPI) for immediately preceding three Financial Years.
		R&M expenses	➤ $R\&M_n = R\&M_{n-1} (1 + \text{WPI inflation})$ where WPI inflation is the average of Wholesale Price Index (WPI) for immediately preceding three Financial Years.
6.	Maharashtra	O&M expenses	➤ The Operation and Maintenance expenses are derived on the basis of the average of the Trued-up Operation and Maintenance expenses after adding/deducting the share of efficiency gains/losses, for the three Years ending March 31, 2019, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission. ➤ These are escalated annually to arrive for the next year O&M expenses with 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, to arrive at the permissible Operation and Maintenance expenses for each year of the Control Period. ➤ Provided further that the efficiency factor shall be considered as zero, in case there is an increase in the number of consumers including Open Access consumers connected to the Distribution Wires of at least 2 percent annually over the last 3 years.

2021-22				
Serial No.	State/UTs(Discom/Power Department)	Average Gross Fixed Asset (GFA) (Rs crore)	O&M Expense (Rs crore)	O&M Expense as % to Avg. GFA
1	Andhra Pradesh			
2	APEPDCL			
3	APCPDCL			
4	APSPDCL			
5	Arunachal Pradesh			
6	Department of Power - Arunachal Pradesh		374.97	
7	ASSAM			
8	APDCL	8184.28	1182.23	14.45
9	Bihar			
10	NBPDCL	19490.28	840.24	4.31
11	SBPDCL	14595.24	1050.38	7.20
12	Chattisgarh			
13	CSPDCL	10670.51	1396.30	13.09
14	Goa			
15	Goa Electricity Department	1116.2	408.96	36.64
16	GUJARAT			
17	DGVCL	8124.43	740.19	9.11
18	MGVCL	6311.96	771.53	12.22
19	PGVCL	20449.93	1925.81	9.42
20	UGVCL	8747.33	909.89	10.40
21	Haryana			
22	DHBVNL	12252.24	1764.05	14.40
23	UHBVNL	9149.11	1905.94	20.83
24	Himachal Pradesh			
25	HPSEBL	7359.8	1889.63	25.68
26	Jharkhand			
27	JBVNL	10722.87	580.79	5.42
28	Karnataka			
29	BESCOM	17192.94	2371.38	13.79
30	CESCOM	3438.24	818.59	23.81
31	GESCOM	5139.14	908.53	17.68
32	HESCOM	10168.62	1283.83	12.63
33	MESCOM	3362.24	694.85	20.67
34	Kerala			
35	KSEBL	13698.88	2828.48	20.65
36	Madhya Pradesh			
37	MP East Discom	7479.99	1248.47	16.69
38	MP West Discom	4717.74	1300.33	27.56
39	MP Central Discom	8983.66	1249.18	13.91
40	Maharashtra			
41	MSEDCL	58183.97	8570.30	14.73

42	Adani Electricity Mumbai Ltd	8169.45	1440.76	17.64
43	BEST	2967.15	638.2	21.51
44	Tata Power Co.Ltd, Mumbai	3068.05	233.53	7.61
45	Manipur			
46	MSPDCL	756.5	85.36	11.28
47	Meghalaya			
48	MEPDCL	1008.8	181.79	18.02
49	Mizoram			
50	Department of Power - Mizoram	1422.11	214.59	15.09
51	Nagaland			
52	Department of Power - Nagaland			
53	Odisha			
54	TPCODL	6015.64	1048.76	17.43
55	TPNODL	3698.71	614.24	16.61
56	TPSODL	3339.05	582.3	17.44
57	TPWODL	5328.17	652.57	12.25
58	PUNJAB			
59	PSPCL	32039.81	4997.32	15.60
60	Rajasthan			
61	AVVNL	12302.79	1058.36	8.60
62	JdVVNL	11553.18	1121.09	9.70
63	JVVNL	16410.96	1394.98	8.50
64	Sikkim			
65	SPDCL			
66	Tamil Nadu			
67	TANGEDCO	67099	10312	15.37
68	Telangana			
69	TSNPDCL			
70	TSSPDCL			
71	TRIPURA			
72	TSECL	710.16	211.96	29.85
73	Uttar Pradesh			
74	DVVNL	10789.51	1178.56	10.92
75	MVVNL	9430.9	1264.54	13.41
76	PuVVNL	9791.78	1667.15	17.03
77	PVVNL	11021.6	1282.54	11.64
78	KESCO	852.32	244.92	28.74
79	NPCL	1428.01	80.91	5.67
80	Uttarakhand			
81	UPCL	5422.32	625.18	11.53
82	West Bengal			
83	WBSEDCL			
84	CESC			
85	Union Territory			
86	Andaman & Nicobar Elect. Dept	558.29	214.55	38.43
87	Chandigarh Elect. Dept	342.19	105.11	30.72
88	DNH&DDPDCL	622.4	38.58	6.20
89	Delhi			

90	BRPL	7419.95	1200.87	16.18
91	BYPL	3988.63	772.79	19.37
92	NDMC	1071.8	253.9	23.69
93	TPDDL	6480.7	820.26	12.66
94	Jammu & Kashmir			
95	JPDCL			
96	KPDCL			
97	Ladakh, Electricity Dept.			
98	Lakshadweep Elect. Dept	192.84	33.64	17.44
99	Puducherry Elect. Dept	992.08	137.99	13.91
	total	515834.45	71724.15	13.90

2022-23				
Serial No.	State/UTs(Discom/Power Department)	Average Gross Fixed Asset (GFA) (Rs crore)	O&M Expense (Rs crore)	O&M Expense as % to Avg. GFA
1	Andhra Pradesh			
2	APEPDCL			
3	APCPDCL			
4	APSPDCL			
5	Arunachal Pradesh			
6	Department of Power - Arunachal Pradesh		417	
7	ASSAM			
8	APDCL	9106.94	1274.87	14.00
9	Bihar			
10	NBPDCL	21519.485	939.2	4.36
11	SBPDCL	16049.79	1113.87	6.94
12	Chattisgarh			
13	CSPDCL	10819.25	1590.02	14.70
14	Goa			
15	Goa Electricity Department	1807.73	487.47	26.97
16	GUJARAT			
17	DGVCL	8973.24	705.08	7.86
18	MGVCL	6642.46	820.11	12.35
19	PGVCL	22056.25	1374.61	6.23
20	UGVCL	9487.89	892.63	9.41
21	Haryana			
22	DHBVNL	12893.28	1959.49	15.20
23	UHBVNL	9693.18	1607.35	16.58
24	Himachal Pradesh			
25	HPSEBL	8206.2	2578.55	31.42
26	Jharkhand			
27	JBVNL	11390.37	628.16	5.51
28	Karnataka			
29	BESCOM	19137.7	2832.17	14.80
30	CESCOM	4913.96	975.82	19.86
31	GESCOM	5331.42	1041.28	19.53
32	HESCOM	12139.71	1493.91	12.31
33	MESCOM	3760.98	817.52	21.74
34	Kerala			
35	KSEBL	14766.34	3345.05	22.65
36	Madhya Pradesh			
37	MP East Discom	7531.94	1316.92	17.48

38	MP West Discom	4717.74	1347.13	28.55
39	MP Central Discom	9148.58	1278.29	13.97
40	Maharashtra			
41	MSEDCL	58869.77	7845.63	13.33
42	Adani Electricity Mumbai Ltd	9047.335	1409.58	15.58
43	BEST	3067.92	635.33	20.71
44	Tata Power Co.Ltd, Mumbai	3232.48	260.51	8.06
45	Manipur			
46	MSPDCL	808.5	91.52	11.32
47	Meghalaya			
48	MEPDCL	1010.19	201.95	19.99
49	Mizoram			
50	Department of Power - Mizoram	1576.1	223.94	14.21
51	Nagaland			
52	Department of Power - Nagaland			
53	Odisha			
54	TPCODL	7323.37	1143.01	15.61
55	TPNODL	4543.97	688.46	15.15
56	TPSODL	3894.96	599.61	15.39
57	TPWODL	6065.81	737.25	12.15
58	PUNJAB			
59	PSPCL	33655.33	7123.53	21.17
60	Rajasthan			
61	AVVNL	11984	1455	12.14
62	JdVVNL	13090	1396	10.66
63	JVVNL	17641	1837	10.41
64	Sikkim			
65	SPDCL			
66	Tamil Nadu			
67	TANGEDCO	84855.52	11952.24	14.09
68	Telangana			
69	TSNPDCL			
70	TSSPDCL			
71	TRIPURA			
72	TSECL	742.65	222.53	29.96
73	Uttar Pradesh			
74	DVVNL	12830.41	1021.83	7.96
75	MVVNL	12024.34	1428.24	11.88
76	PuVVNL	11534.03	1703.34	14.77
77	PVVNL	11866.98	1307.02	11.01
78	KESCO	996.87	255.77	25.66
79	NPCL	1661.87	88.49	5.32
80	Uttarakhand			
81	UPCL	7664.14	681.87	8.90

82	West Bengal			
83	WBSEDCL			
84	CESC			
85	Union Territory			
86	Andaman & Nicobar Elect. Dept	515.02	230.3	44.72
87	Chandigarh Elect. Dept	311.43	115.68	37.14
88	DNH&DDPDCL	645.96	55.41	8.58
89	Delhi			
90	BRPL	7419.95	1200.87	16.18
91	BYPL	3988.63	772.79	19.37
92	NDMC	1071.8	253.9	23.69
93	TPDDL	6480.7	820.26	12.66
94	Jammu & Kashmir			
95	JPDCL			
96	KPDCL			
97	Ladakh, Electricity Dept.			
98	Lakshadweep Elect. Dept	197.91	38.58	19.49
99	Puducherry Elect. Dept	1031.94	157.33	15.25