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### No.CE/MEPCO/DG(MIRAD)/ 2009-16

Dated: 20-11-2023

The Registrar, National Electric Power Regulatory Authority (NEPRA), NEPRA Tower, Attaturk Avenue (East), G5/1, Islamabad.

### Sub: <u>ADDENDUM PETITION FOR DETERMINATION OF USE OF SYSTEM</u> CHARGES (UOSC).

In pursuance of Regulation 7 of NEPRA Open Access (Interconnection and wheeling of Electric Power) Regulations, 2022 whereby, a distribution company shall prepare and submit a separate petition to the honorable Authority for its use of system charges (Annex-1), we are pleased to submit attached herewith Use of System Charges Petition for kind consideration and approval of Authority. It may kindly be noted that the instant petition includes Cost of Service Charges Study of MEPCO (FY 2023-24) as Annex-2, thereto forming fundamental basis for the instant petition.

For any clarification or additional information or any other matter relating to the said petition Engr. Muhammad Sohail Ahmad (Director General MIRAD) MEPCO (03028266424, email: <u>dgmirad@mepco.com.pk</u>) is designated as focal person.

DA/as above

Chief Executive Officer

MEPCO H/Q Multan

Copy to:-

**Dated** 

Tariff Division Reco

REGISTRAR OFFICI

Date:

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### **MEPCO USE OF SYSTEM CHARGES PETITION FOR THE FY 2023-24**

SUBMITTED BY

## MULTAN ELECTRIC POWER COMPANY (MEPCO) AS SUPPLIER OF LAST RESORT

IN COMPLIANCE OF NATIONAL ELECTRICITY POLICY (NE POLICY) READ WITH REGULATION 7 OF NEPRA OPEN ACCESS (INTERCONNECTION AND WHEELING OF ELECTRIC POWER) REGULATIONS, 2022 ("OPEN ACCESS REGULATIONS")





MEPCO USE OF SYSTEM CHARGES PETITION

2022-23

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### 1. BACKGROUND

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### **1.1 ABOUT THE PETITIONER MEPCO:**

Multan Electric Power Company (MEPCO) was incorporated on 14<sup>th</sup> May1998 in line with Government policy of unbundling and corporatization of Pakistan power sector. MEPCO is responsible for the electricity delivery to over 7.6 million consumers of 13 administrative districts of southern Punjab i.e. Multan, Muzaffargarh, Layyah, D.G. Khan, Rajanpur, Lodhran, Bahawalpur, R.Y. Khan, Khanewal, Sahiwal, Pakpattan, Vehari and Bahawalnagar, Pakistan as set out in MEPCO's Distribution License no. 06/DL/2002, granted by NEPRA under the NEPRA Act on April 25, 2002 as a result of the restructuring of WAPDA's Power Wing, MEPCO assumed its official operations and since then being headed by a Chief Executive Officer (CEO) and MEPCO Board of Directors.

### **1.2 PETITIONER MEPCO LICENSE DETAILS:**

Under the provisions of Regulation of Generation, Transmission & Distribution of Electric Power (Amendment) Act, 2018, MEPCO is deemed to hold a "Power Supply" License to perform the function of sale of electric power in addition to existing licensee as Distribution Company. The Distribution function now shall, under Section 20, be limited to ownership, operation, management or control of distribution facilities for the movement or delivery to consumers of electric power. After the approval of Competitive Trading and Bilateral Contracts Market (CTBCM) by the honorable Authority on November 12, 2020 (No. NEPRA RJDL/LAM-01/40691-98) several implementation actions were taken. This included issuance of License for the Market Operator (MO) promulgation of several Regulations to ensure smooth implementation of CTBCM and create balance in roles, rights and obligations of the stakeholders in the CTBCM.

### 2. OBLIGATION & RATIONALE FOR PETITION:

Pursuant to the relevant directions of National Electricity Policy (NE Policy) read with regulation 7 of NEPRA Open Access (Interconnection and Wheeling of Electric Power) Regulations, 2022 ("Open Access Regulations"), following are the grounds for petition for determination of use of system charges:

- a) In compliance with the Clause 4.4, Clause 5.5.2(f), Clause 5.5.2(g), Clause 5.5.4 and Clause 5.6.5 of NE Policy and
- b) In compliance with the regulation 7 Open Access Regulations, each distribution licensee, in consultation with the respective supplier of last resort shall, within ninety days following the date of notification of Open Access Regulation, submit separate petition to the Authority for determination of use of system charges.

### 2.1 DIRECTIONS IN NATIONAL ELECTRICITY POLICY:



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- 1. The National Electricity Policy, 2021 issued under Section 14A of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (The Act) was prepared by the the Government of Pakistan for the development, reform, improvement and sustainability of the power market and power sector.
- 2. The National Electricity Policy identifies the major goals sought to be achieved for the power sector, and in this respect, provides policy directions. It also provides the key guiding principles to develop subservient frameworks that will steer the decisionmaking in the power sector to achieve identified goals.
- 3. Various sections of the said National Electricity Policy, 2021, as relevant to the instant case, are provided in the below lines.
- 4. Clause 4.4 (Financial Viability) of the National Electricity Policy provides that sustainability of the entire power sector pivots around the financial and commercial viability of its individual sub-sectors. This will be done by:
- 5. promoting investments on least cost basis balanced with development in the underserved areas;
- 6. having cost-reflective tariffs in transmission and distribution, to the extent feasible;
- 7. <u>timely passing of costs to the consumers</u>, while netting off any subsidies funded by <u>the Government</u>; and
- 8. recovery of costs arising on account of open access, distributed generation, etc.
- 9. Clause 5.5.2(f) of National Electricity Policy also provides:
  - a. "providing a level playing field to all market participants through uniform application of cross-subsidization and other grid charges to consumers of all suppliers;
- 10. Clause 5.5.2(g) of National Electricity Policy also provides:
  - a. <u>"the Government shall take a decision on the recovery of costs that arise due</u> to advent of the open access and market liberalization:"
- 11. Clause 5.5.4 of National Electricity Policy further directs:
  - . a. "In order to ensure implementation of wholesale market design and its further evolution, the Regulator shall in a timely manner frame, modify and evolve regulatory framework for, inter alia, supply, procurement, open access / wheeling, competitive bidding, import of power, and ensure effective market monitoring and enforcement. Provided that after implementation of CTBCM, every transmission licensee and distribution licensee shall offer, to all market participants, non-discriminatory open access / wheeling to its respective transmission or distribution system and interconnection services in accordance with CTBCM on the terms determined under the policy and legal framework."

12. As per Clause 5.6.5 of National Electricity Policy stipulates:

a. <u>"The Regulator, in order to ensure liquidity of the power sector, provides a</u> level playing field for the development of wholesale market and to facilitate





prudent projects of the Government, may impose additional charge(s) which shall be deemed to be costs incurred by the distribution companies / electric power supplier(s). Such additional charge may take into account the sustainability, socio-economic objectives and commercial viability of the sector, affordability for the consumers and the policy of uniform tariff. Similarly, the Government may also incorporate, in the consumer-end tariff, any surcharge imposed by it, which shall also be deemed to be cost incurred by the distribution companies / electric power supplier(s) and shall be collected by them in discharge of their public service obligations."

### 2.2 LEGAL AND REGULATORY FRAMEWORK:

The approved design of Competitive Trading and Bilateral Contracting Market (CTBCM) provides the right of choice to the eligible Bulk Power Consumers (BPCs) to opt for any Supplier of Electric Power. The design, within the framework of the Act, also provides the concept of Competitive Supplier of Electric Power besides the Supplier of Last Resort, for the purposes of said right of choice to the BPCs within the said wholesale market design.

As directed in Clause 5.5.4 of the said National Electricity Policy, 2021, the honorable Authority promulgated / specified several Regulations to ensure effective implementation of the market regime in Pakistan. This included promulgation of National Electric Power Regulatory Authority Open Access (Interconnection and Wheeling of Electric Power) Regulations, 2022 ("Open Access Regulations").

For the purpose of this petition for determination of Use of System Charges in terms of mentioned Open Access Regulations, following terms as defined in the legal and regulatory framework are reproduced as below:

### As per Section 2(ii) of the Act 1997 amended to date:

"bulk-power consumer" means a consumer who purchases or receives electric power, at one premises, in an amount of one megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may specify and the Authority may specify different amounts and voltage levels and with such other characteristics for different areas"

Important definitions provided in Regulation 2 of Open Access Regulations are provided below:

2(1)(m) "open access" means the access to a network licensee's system or its associated facilities for movement and delivery of electric power, subject to the terms and conditions as provided in the Act, these regulations and use of system agreement, on non-discriminatory basis to:

- a) an electric power supplier for supply of electric power to its consumer(s); or
- b) a captive generating plant for delivery of the electric power from generation facility to the destination of its use; or



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c) <u>any other person, including a licensee for delivery of electric power from a designated</u> <u>place to another designated place;</u>

2(1)(n) "open access user" means any person who is availing open access under these regulations; and

2(1)(r) "use of system charges" shall include all charges related to use of distribution system, use of transmission system, system operator services, market operator services, metering service provider services and any other charges as determined by the Authority that may arise due to advent of the open access and market liberalization.

**Part-III (OPEN ACCESS) Regulation 5 (Obligation to provide open access)** of Open Access Regulations is reproduced hereunder:

- i. <u>A network licensee shall establish, operate and maintain its distribution system or</u> <u>transmission system. as the case may be, in a manner that ensure non-discriminatory</u> <u>open access in accordance with the Act, theses regulations, Market Commercial Code,</u> <u>Grid Code, Distribution Code and other applicable documents.</u>
- ii. <u>A network licensee shall, on an annual basis, prepare an open access report</u> <u>demonstrating compliance with these regulations and licence terms and conditions,</u> <u>with the detail of its open access users, available and planned capacity, any issues</u> <u>identified in provision of open access, and any instances where open access was</u> <u>denied along with justification thereof. The said report shall also be made available on</u> <u>the website of the network licensee.</u>
- iii. <u>The report required under sub-regulation (2) shall be prepared and submitted to the</u> <u>Authority within a period of one month from the date of end of respective financial</u> year and shall also be made available on the website of the network licensee.
- iv. The distribution company shall develop the use of system agreement in accordance with the minimum provisions provided in Schedule I within ninety days of the notification of these regulations and shall obtain the approval of the Authority and publish the same in its website.

**Regulation 7 (Filing of petition and determination of use of system charges)** of Open Access Regulations provides as under:

Within ninety days following the date of notification of these regulations, each distribution licensee, in consultation with the respective supplier of last resort, shall prepare and submit separate petition to the Authority for determination of its use of system charges. Such petition shall be accompanied with a statement which will set out the basis upon which the use of system charges shall be calculated in such manner and with such details as shall be necessary.

Regulation 8 (Wheeling of electric power) of Open Access Regulations states under:

An open access use shall be entitled to wheel electric power using system of network licensee subject to compliance with these regulations and the Market Commercial Code, upon coming into effect, and use of system agreement.





### 3. TECHNICAL AND FINANCIAL ATTRIBUTES:

Adjoining the purposes of CTBCM, directions of the National Electricity Policy, 2021 and stipulations of the legal and regulatory framework; following understandings are inferred:

- 1. The network licensee, the MEPCO for the purposes of instant petition, is obligated to provide open access to its network to the open access users on non-discriminatory basis.
- 2. For the said obligation, the MEPCO is entitled for recovery of use of system charges in line with use of system agreement, as determined by the honorable Authority.
- 3. The use of system charges shall include:
  - a. Transmission Use of System Charges (NTDC, PGC) irrespective of the placement of BPC and the respective generator.
  - b. System Operator Charges
  - c. Metering Service Provider Charges
  - d. Market Operator Charges
  - e. Distribution Margin Charges w.r.t to the voltage level (132kV, 11kV etc) and consumer category wise for all possible BPC
  - f. Cross-Subsidy Charges (consumer category wise for all possible BPCs)
  - , g. Stranded Cost/Capacity (consumer category wise for all possible BPCs)
  - h. Technical Transmission and Distribution Losses
- 4. With reference to the above elements of use of system charges, following clarification shall apply for clarity of application:
  - a. Currently applicable Transmission Use of System (TUoS) Charges, as already determined by the honorable Authority, compositely represent the charges relating to Transmission Network Operator(s)/Licensee(s), System Operator and Metering Service Provider. Accordingly, the said TUoS Charges remain part of use of system charges till separate charges for each of the said service providers are separately determined by the honorable Authority.
  - b. Market Operator Fee / Charges (MOF) will be recovered by Market Operator as per the mechanism provided in the Market Commercial Code. Accordingly, without prejudice to being part of Cost of Service of MEPCO, these shall not form part of use of system charges to be recovered directly by MEPCO
  - c. Cross subsidy will be assessed based on Cost of Service analysis for the applicable consumer categories of all possible BPCs, which is according to the principles of uniformity as provided in the National Electricity Policy (referred above).
  - d. Subject to the decision of the Government on the recovery of costs that arise due to advent of the open access and market liberalization, the Stranded Capacity Costs will include the use of system charges.
  - e. As the transmission and distribution losses will be charged to market participants of open access through the mechanism as explained in the Market Commercial Code, therefore, such charges shall not be levied under these use of system charges as requested under this instant petition.





### Explanation

The use of system charges will be determined in terms of metered quantities (kWh or kW), in consideration of allowed %age of losses and also that arrangements under the Market Commercial Code the parties (the BPC, Competitive Supplier and/or Generator) shall be committing to the Capacity Obligation (including all losses and reserve margin up to bus-bar) through Firm Capacity, therefore, such transmission or distribution losses, as the case may be, will not be charged separately. However, for the purposes of transparency of charges, the impact of such losses may be separately disclosed.

- f. The use of system charges, including the Distribution Margin Charges, as requested by MEPCO and to the extent approved by Authority, will be applicable with reference to those eligible Bulk Power Consumers (BPCs) who opt for supply from a competitive supplier, other than supplier of last resort.
- g. The use of system charges shall be with reference to the voltage level (132/66 kV, 11/33 kV) for the applicable consumer categories of all possible BPCs. The component-wise Cost of Service as per outcome detailed Cost of Service Study (Annex-2) and consequent assessment, as detailed above, of component-wise Use of System Charges for the applicable BPCs is provided at Annex 1.
- h. Power Factor Penalty as provided in applicable documents shall remain applicable in addition to the Use of System Charges.
- i. Any taxes and surcharges as imposed by the Government shall be applicable.

Summarizing the above, following is the abstract of entitled entities for each element of the use of system charges:

Sr. No.	Use of System Charge Element	Entitled Entity
1.	Transmission Use of System Charge	NTDC and other TSPs through NTDC/NGC.
2.	System Operator Charge / Fee	System Operator through NTDC.
3.	MSP Charge / Fee	MSP through NTDC
4.	Distribution Use of System Charge	MEPCO as Distribution Licensee
5.	Cross Subsidy	MEPCO as SOLR (Supply Licensee)
6.	Stranded Capacity Costs	MEPCO as SOLR (Supply Licensee)

### 4. BASIS OF USE OF SYSTEM CHARGES:

The instant petition for determination of use of system charges is framed under guidelines provided in the NEPRA Open Access (Interconnection and Wheeling of Electric Power) Regulations, 2022 considering Model year i.e. FY 2022-23 and Prior year i.e. FY 2021-22 as base year. The cost of service study was carried out by MEPCO for the eligible BPCs of



different categories who want to opt for competitive supplier leaving SOLR and wanted to use wire business facilities of SOLR about the cost reflective tariff and cross subsidies as attached hereto Annex-1.

### 4.1 METHODOLOGY FOR RECOVERY OF USE OF SYSTEM CHARGES:

The instant petition is for determination of use of system charges for recovery of costs and charges relating to service providers (SO, TNO, TSP, DNO), stranded capacity costs and the cross-subsidy currently being contributed by the eligible BPCs. It is pertinent to mention that most, if not all, costs and charges are fixed in nature, the natural mode of recovery should be the fixed (in terms of Rs./kW/Month) charge. However, following options are available for consideration and determination:

- Use of system charges recovery in term of Rs./kW/Month metered shall provide guaranteed stream of revenue to cover for costs which are fixed in nature. This may, however, over burden the relevant consumers thus undermining the very purpose of CTBCM and open access regime.
- 2. Use of system charges recovery in term of Rs./kWh will render the service providers and the SOLR to face the revenue loss arising from low load factor of the eligible BPCs. On the other hand the open access users shall be benefitted for any favorable Energy or Capacity Imbalance at the Market this option may not provide a balanced approach to promised sharing of risks and rewards under CTBCM regime.
- 3. Use of system charges recovery through a hybrid approach, i.e. partly through fixed charge in terms of Rs./kW/Month (subject to minimum MDI compared to the contracted load) and partly in terms of Rs./kWh may provide a balanced plausible approach for all the involved parties. It is submitted that, in order to ensure level playing field for consumers of SOLR and Competitive Supplier, the recovery of use of system charges may have same charging mechanism.

As already mentioned, Annex-1 to this petition also include proposed rates to be charged under each of the Three (3) options narrated above.

It is, however, noted that the methodology and process as per FACOS model, for the purpose of allocation of demand (kW or MW) related costs, allocates single system peak demand (of MEPCO) to different categories to arrive at the allocation base. This allocation, irrespective of being rational, judicious and in line with international norms, results in less than actual (billable) MDIs of respective customers. Accordingly, taking the same MW demand as denominator for demand (MW) based rate making will result in higher per MW rates

# 4.2 MECHANISM FOR ADJUSTMENT/INDEXATION OF USE OF SYSTEM CHARGES:

Each component of use of system charges detailed in the instant petition shall be subject to periodic adjustment/indexations. Whenever these components are adjusted for regulated consumers of the suppliers of last resort, at the same time, the corresponding adjustment in





MEPCO USE OF SYSTEM CHARGES PETITION 2022-23

the relevant component of the proposed Use of System Charges for eligible BPCs shall simultaneously be made.

Note: It is further added that as per MEPCO understanding, losses on 132kV and 11kV caused by transportation of energy / capacity by generator / competitive supplier for providing supply to its BPCs shall be adjusted (units shall be credited to MEPCO) as per approved technical losses of MEPCO Network by NEPRA as discussed in section 5.2 & 5.3 of approved Market Commercial Code.

### 4.3 APPLICABLE CATEGORIES OF ELIGIBLE BPCS UNDER EXISTING TARIFF REGIME:

While, in terms of existing stipulation of the Act, a consumer who purchases or receives electric power, <u>at one premises</u>, in an amount of <u>one megawatt or more</u> is considered as Bulk Power Consumer, following position, with regard to consumer with one megawatt or more load at connection voltage 11 kV and above, is brought out for consideration:

Sr.	Consumption	Tariff	Voltage	Remarks
No.	Category	Category	Level	
1.	General	A-2 & A- 3	N/A	As per the existing tariffs, no kW sanctioned load quantification or connection voltage is applicable to A- 2 and A-3 tariff categories. Accordingly, these are not considered BPC for the purposes of this petition. However, these customers, based on the sanctioned load, may be connected at 11 KV level, as required. Any such customer falling within the definition of BPC, and subject to the approval of the Authority, will be considered in the analogy of C2.
2.	Industrial Consumer ranging from 500 kW to 5 MW. [extendable to 7.5 MW under conditions]	B-3	11/33 kV	B 3 consumer ranges from 500 kW to 5 MW.[Extendable to 7.5 MW under conditions] It is clarified here that the consumers of this category below 1MW shall not be treated as eligible BPCs for CTBCM. The use of system charges indicated for B-3 category will apply in case of eligible BPC.
3.	Industrial	B-4	66/132 kV and above	The use of system charges for B-4 category of consumers are assessed in the analogy of B-3 adjusted with differential of allowed losses at 11/33 kV (B-3) and 66/132 kV (B-4)
4.	Bulk Supply Ranging from 500	C-2(b)	11/33 kV	Bulk Supply consumer ranges from 500 kW to 5 MW. [Extendable to 7.5]



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MEPCO USE OF SYSTEM CHARGES PETITION 2022-23

5	kW to 5 MW. [extendable to 7.5 MW under conditions]			MW under conditions] Although the Bulk Supply C-2 customers are at 11/33 KV connection level. It is clarified here that the consumers of this category below 1MW shall not be treated as eligible BPCs for CTBCM. The use of system charges indicated for C-2 category will apply in case of BPC at one premises. Further, the consumers falling under the resale shall not be considered as eligible BPC.
5.	Bulk Supply	С-3(b)	and above	The use of system charges for C-3(b) category of consumers are assessed in the analogy of C-2(b) adjusted with differential of allowed losses at 11/33 kV (C-2) and 66/132 kV (C-3). The consumers falling under the resale shall not be considered as eligible BPC.
6.	Housing Colonies attached to Industries	Н	N/A	As per the existing tariffs, no kW sanctioned load quantification or connection voltage is applicable to H tariff category. Further, these connections are resale in nature. Accordingly these are not considered BPC for the purposes of this petition.
7.	Azad Jammu & Kashmir	K	N/A	The supply feed for AJK customer category is more than 1 MW at 11 kV level. However, the same is primarily for resale purpose, therefore, not considered as BPC.

### 5. OTHER IMPORTANT CONSIDERATIONS IN INSTANT PETITION:

Following paragraphs of the petition highlights other important aspects which shall be taken into account while determining the said charges.

### **Government Subsidies**

Any subsidy provided by the Government to the industrial or any other eligible BPC, as applicable, will be dealt with according to the directions and terms and conditions thereof as decided by the Government. However, for the purposes of this petition, such subsidies are not considered.

### 5.1 CAPTIVE POWER PRODUCERS AND USERS:



- 1. A captive power producer / user using the MEPCO network for wheeling of power to user destination will be considered "Market Participant" in terms of Market Commercial Code and will be dealt with accordingly. The use of system charges, except the Cross-Subsidy and Stranded Capacity cost, shall fully apply.
- 2. The cases of captive generation and consumption points at the same location taking additional supply from the local supplier of last resort (SOLR) shall be considered a regulated consumer of the SOLR with applicable regulated tariff. The quantum of additional sanctioned / contracted load (in terms of MW) shall be considered to determine its status as BPC in terms of the Act.
- 3. In case, the BPC choose to opt for a competitive supplier leaving SOLR, the use of system charges shall apply in full.

### 5.2 APPLICABILITY OF STRANDED CAPACITY COSTS:

The costs arising on account of market liberalization and advent of open access shall be the capacity charges/stranded costs to be paid by all eligible BPCs of a competitive supplier as detailed in this instant petition and the amount of such capacity charges shall be the same as the total generation capacity charges recovered from the equally placed BPCs of the suppliers of last resort either in a volumetric form (kWh) and/or through fixed charges and such charges shall continue to be paid till such time as may be decided by the Federal Government as per the National Electricity Policy.

# 5.3 APPLICABILITY OF USE OF SYSTEM CHARGES FOR NEW ELIGIBLE BPCS:

The Use of System Charges provided in the instant petition shall be applicable to all such BPCs who will opt to avail supply of electric power from competitive supplier including the captive generator using the distribution or/and transmission network to wheel its power to the destination of its use. Such charges shall be fully applicable to any new eligible BPC or incremental consumption, obtaining supply of electric power from competitive supplier without any exception.

### 6. PRAYER OF MEPCO AS PETITIONER:

In view of the above submissions, it is humbly requested that the Authority may kindly consider and determine the Use of System Charges as calculated in the attached Annex-1, containing detailed analysis from eligible BPCs falling under different categories as stated above who want to avail supply of electric power from competitive suppliers leaving SOLR.



### MEPCO COST OF SERVICE STUDY FOR FY 2023-24

### **PREPARED BY**

### MULTAN ELECTRIC POWER COMPANY (MEPCO)

### UNDER GUIDELINES OF

### USAID CONSULTANT, PSIA

THE COST OF SERVICE STUDY OF MEPCO IS CONDUCTED ON THE MS EXCEL BASED FULLY ALLOCATED COST OF SERVICE (FACOS) MODEL DEVELOPED BY USAID TO FACILITATE DISCOS FOR DEVELOPMENT OF COMPETITIVE ENERGY MARKET



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### Multan Electric Power Company (MEPCO) Ltd.

### 1. COST OF SERVICE STUDY:

**Cost of Service** is the total cost incurred by a utility company/DISCO in providing services to its customers and the allocation of the cost to different customer classes and/or voltage levels.

### 1.1 Fully Allocated Cost of Service Study (FACOS) Model

FACOS is a model developed in MS Excel with the support of USAID for DISCOs to conduct Cost of Service Study. The methodology used to build the FACOS Model follows very closely the standards that are used internationally. The Model performs the standard three steps encompassed in most of Cost related Studies, namely, functionalization, classification, and allocation.

### 1.2 Major Steps of Cost of Service Study

A class based cost of service study begins with a detailed documentation of the numerous budgetary elements of the total revenue requirements of a utility. The detailed revenue requirements are the data inputs to the FACOS Model. At a high level, the FACOS process consists of the following three (3) basic steps:

- <u>Functionalization</u> The identification of each cost element as one of the basic utility service "Functions" (e.g. generation/Power Purchase Price, transmission, distribution and customer).
- <u>Classification</u> The classification of the functionalized costs based on the billing component/determinant that each is associated with (e.g. kWs of capacity, kWhs of energy or number of customers).
- <u>Allocation</u> The allocation of the functionalized and classified costs to customer classes, based on respective service requirements / parameters (e.g. kWs of capacity, kWhs of energy and the number of customers) of each class.

### 1.3 Fundamentals of FACOS Model

### Table 1 Major Assumption of FACOS Model

	1
Description	FY 2023-24
Allowed Rate of Return (WACC)	21.14%
Capital Work in Progress ("CWIP")	Total CWIP
Prior Year Adjustment (Direct Input)	20,755,832,504
Demand Allocation Methodology	1 CP
Customer Growth %	3.00%
MODEL YEAR	FY 2023-24
BASE YEAR	2022-23

### 2. PROJECTIONS FOR REVENUE REQUIREMENT OF MEPCO 2023-24:

The Revenue Requirement (RR) is the fundamental input to the Cost of Service Model of MEPCO for revenue allocation to different categories of customers based on Capacity (kW), Energy (kWh) and number of consumers. The Table 2 below explains in detail the projected cost to be incurred for arriving at Revenue Requirement (Overall Cost of Service) of MEPCO for Model Year 2023-24.

DECONDENSION	MODEL YEAR
DESCRIPTION	FY 2023-24
Proj. Units Purchased (MkWh) incl export loss	21,968.66
Export Loss (MkWh)	0.00
Proj. Units Purchased (MkWh) for MEPCO consumers	21,968.66
Proj. Units Sold (MkWh) MEPCO consumers	19,369.73
Assessed T&D Losses	0.12
Average Monthly MDI (MW)	5,518.00
Energy Purchase Price (Rs/kWh)	6.78
Capacity Purchase Price (Rs/kW/Month)	5,052.44
UoS Rate (Rs/kW/Month)	407.32
POWER PURCHASE PRICE	PKR
Energy Charge	148,909,005,665.00
Capacity Charge	334,552,273,647.00
Transmission Charge	26,971,431,740.00
TOTAL	510,432,711,052.00
DISTRIBUTION MARGIN	0.00
Pay & Allowances	16,900,000,000.00
Provision for Retirement Benefits	10,106,000,000.00
Maintenance	1,801,000,000.00
Traveling allowance	1,431,000,000.00
Vehicle maintenance	600,055,513.00
Elec. Bills Collection Charges	0.00
Other expenses	2,645,000,000.00
TOTAL 0&M COST	33,483,055,513.00
Other Income	7,108,000,000.00
Provision for bad debts	0.00
Depreciation	6,207,999,999.57
Return on Assets	13,808,000,000.00
Working Capital Allowance	0.00 .
TOTAL DISTRIBUTION MARGIN	46,391,055,512.57
Prior Year Adjustment	20,755,832,504.41
TOTAL REVENUE REQUIREMENT	577,579,599,068.99
AVERAGE TARIFF (Rs/kWh)	0.00
Power Purchase Price-Unadj.	23.23
Power Purchase Price-Adjusted	26.35
Distribution Margin	2.40
Prior Year Adjustment	1.07

### Table 2 Component Wise Revenue Requirement of MEPCO

### 3. SUMMARY OF REVENUE REQUIREMENT:

The summary of Revenue Requirement of MEPCO is provided in the Table 3 below:

### Table 3 Summary of MEPCO Revenue Requirement

	DESCRIPTION	MODEL YEAR
1	POWER PURCHASE COST	PKR 510,432,711,052
2	DISTRIBUTION MARGIN	
А	Operation and Maintenance Expense	PKR 33,483,055,513
В	Depreciation of Distribution Plant	PKR 6,208,000;000
C*	Return on Rate Base	PKR 13,808,000,000
	GROSS DISTRIBUTION MARGIN	PKR 53,499,055,513
D	Less: Other Income	PKR 7,108,000,000
	NET DISTRIBUTION MARGIN	PKR 46,391,055,513
3	PRIOR YEAR ADJUSTMENTS	PKR 20,755,832,504
	TOTAL REVENUE REQUIRED	PKR 577,579,599,069

### 4. LINE LOSSES ON NETWORK CHARGED TO DIFFERENT VOLTAGE LEVELS:

Line losses taken from as a percentage on purchased units is given in **Table 4**. Line losses as a percentage on received units at each voltage level are calculated on the basis of sales data of FY 2021-22. The network losses of Table 4 are based on the third party studies conducted for STG and Distribution losses and segregation of current losses as per last conducted studies on pro rata basis. However, -any-further study will have immediate effect on Cost of service studies as and when conducted through third party.

	Table 4 MEPCO	Line Losses at Diff	ferent Voltage	levels as p	er Business	plan
--	---------------	---------------------	----------------	-------------	-------------	------

Voltage	0.2	0.4	11 kV	Total	otal	
Level	kV	kV		Distribution	ibution 132kV	
Losses %age	2.6	4%	7.89%	10.53%	1.30%	11.83%

### 5. CUSTOMER CLASSIFICATION BY VOLTAGE LEVEL:

While the Cost of Service study is based on allocation of the Revenue Requirement on Classes (categories) of the consumers at different voltage levels; the Table 5 below provides mapping of existing categories of consumers on the basis of applicable voltage levels.

Table 5 Classification of Different Consumer Categories with respect to Voltage Levels.

Classification by Voltage Level									
Volt	132/66kV	11kV	0.4kV	0.2 kV					
	B4	B3	A1b	Ala					
	C3a	C2a	A2b	A2a					
	C3b	C2b	A2c	B1a					
		H1	A2d	C1a					
		H2	A3a	E1i					
		K1a	B1b	E1ii					
		K1b	B2a	E2					
Customer			B2b						
Class			C1b						
			C1c						
			D1a						
			D1b						
			D2a						
			D2b						
			G1						
			G2						

### 6. MEPCO TARIFF DETERMINED BY NEPRA IN JULY-2023:

Tariffs for various categories of MEPCO consumers as determined by NEPRA vide their adjustments/indexation determination No. NEPRA/R/DG(Trf)/ TRF- 559 & TRF- 560/MEPCO/2021/18185-91 dated 14-07-2023 are provided in Table 6 below.

		14-07-2023			
		Fixed Charges Rs/kW/M	Variable Charges Rs/kWh		
A1 (a)	RESIDENTIAL -A1		7.00		
i	Up to 50 Units Life line		7.00		
ii	51-100 units Life line		11.74		
111	01-1C0 Units (Protected)		14.83		
iv	101-200 Units (Protected)		17.15		
v	01-100 Units		23.87		
VI	101-200 Units		29.34		
VII	201-300 Units		32.53		
Vin	301-4000nits		35.92		
ix	401-500Units		38.13		
X	501-600Units		39.55		
xi	601-700Units		40.69		
xii	Above 700 Units		45.60		
A1(b)	Time of Use (TOU) - Peak		44.65		
	Time of Use (TOU) - Off-Peak		38.32		
E-1(i)	Temporary E-1 (i)		44.78		
	COMMERCIAL - A2				
A2 (a)	Commercial - For peak load requirement up to 5 kW		40.26		
A2 (b)	Sanctioned load 5 kw and above	500.00	41.94		
A2 (c)	Time of Use (TOU) - Peak (A-2)	500.00	43.86		
	Time of Use (TOU) - Off-Peak		37.90		
E-1 (ii)	Temporary E-1 (ii)		40.65		
A2 (d)	Electric Vehicles		42.07		
	INDUSTRIAL				
B1(a)	B1		36.95		
B1(b)	B1- TOU (Peak)		40.51		
	B1 - TOU (Off-peak)		34.95		
B2 (a)	B2	500.00	36.45		
B2 (b)	B2 - TOU (Peak)	500.00	40.45		
	B2 - TOU (Off-peak)		34.74		
B3	B3 - TOU (Peak)	460.00	40.45		
	B3 - TOU (Off-peak)		34.65		
B4	B4 - TOU (Peak)	440.00	40.45		
	84 - TOU (Off-peak)		34.55		
E-2	Temporary E-2		38.03		
	BULK				
		500.00	41.07		
	C1(b) exceeding 5 kW	500.00	40.57		
		500.00	43.99		
(7/2)		160.00	. 37.39		
(2 (8)	Time of Lice (TOU) - Back	460.00	40.37		
(2 (0)	Time of Use (TOU) Off Beak	460.00	43.99		
C2 (2)	C2 Supply above 11 kV	440.00	40.27		
(3 (b)		440.00	40.27		
	Time of Use (TOU) - Off-Peak	440.00	37.09		
	AGRICULTURAL TUBE WELLS - Tariff D		57.05		
D1 (a)	D1 Scarp		37.07		
D2 (a)	D2 Agricultural Tube-wells	200.00	26.74		
D1 (b)	Time of Use (TOU) - Peak		39.99		
	Time of Use (TOU) - Off-Peak	200.00	32.74		
D2 (b)	Time of Use (TOU) - Peak	200.00	26.74		
	Time of Use (TOU) - Off-Peak		26.74		
G	Public Lighting G		40.07		
н	Residential Colonies H/Railway Traction		40.07		
К1	Special Contracts - Tariff K (AJK)	0.00	0.00		
K1 (i)	Time of Use (TOU) - Peak	0.00	0.00		
	Time of Use (TOU) - Off-Peak		0.00		
A3	General Service		40.04		

### Table 6 NEPRA Determined Tariff for Different Consumer Categories of MEPCO

### 7. RESULTS FROM FACOS MODEL:

### 7.1 Proposed Revenue Requirement Allocation (in Percentage)

While developing the Fully Allocated Cost of Service Model, the detailed study for allocation of cost of service and rate base (for each component) to cost drivers (energy, demand and customer) was developed. When the distribution business is isolated from the supply business, the proposed cost allocation percentage may be considered as under proposed in Table 7 below. However, the real cost of distribution and supply business will be depicted when these may run in real business.

# Table 7 Proposed Allocation of COS & RB to Cost Drivers i.e. Energy, Demand and Customer percentages

Revenue Requirement Allocation %age										
Description	Energy	Demand	Customer	Total						
Generation Cost (Energy)	100%	•		100%						
Generation Cost (capacity)		100%		100%						
Transmission UoSC		100%		100%						
MOF		100%		100%						
O&M		82%	18%	100%						
Depreciation		78%	22%	100%						
Other Income		. 87%	13%	100%						
RORB		78%	22%	100%						
DM		80%	20%	100%						
РҮА		80%	20%	100%						

### 7.2 Revenue Requirement Allocation to Energy, Demand and Customer

Based on the allocation percentages given in above table, the revenue requirement allocated to energy, demand and customer (cost triggers) is shown in Table 8 below.

### Table 8 Summary of Revenue Requirement w.r.to Cost Drivers

Summary of Revenue Requ	irement
Description	FY 2023-24 Rs. (M)
Generation Cost (Energy)	148910
Generation Cost (capacity)	334552
Transmission UoSC	26919
MOF	52
Power Purchase Price	510433
0&M	33484
Depreciation	6208
Other Income	-7108
RORB	13808
DM	46391
РҮА	20756
Total	577580

### 7.3 Revenue as per NEPRA Tariff by Customer Category and Voltage Level

The Table 9 below provides detailed category-wise estimated revenue and average (Rs./kWh) thereof. Whereas, the Table 10 is summary of the said category-wise estimated revenue based on the supply Voltage level of relevant customer category, with average rate (Rs./kWh) thereof. As already mentioned, the calculation of revenue is based on NEPRA vide adjustments/indexation determination No. NEPRA/R/DG(Trf)/ TRF- 559 & TRF- 560/MEPCO/2021/18185-91 dated 14-07-2023 already provided in (Table6).

### Table 9 Allocation of Sales and Demand to Category wise & Segregation of Fixed and Variable Costs

	Voltage	Sales	Demand	Revenue a	s per NEPRA Tariff		
Classes			1 CP	Demand Charge	Energy Charge	Total	Rs./kWh
	kV	GWh	MW	Rs. (M)	Rs. (M)	Rs. (M)	
Industrial B3	11kV	1411	248	2,137	50,089	52,227	37.026
Industrial B4	132/66kV	642	157	474	22,792	23,266	36.239
Bulk Supply C2(b)	11kV	209	31	263	8,036	8,299	39.662
Bulk Supply C3(b)	132/66kV	45	9	51	1,723	1,774	39.373

### Table 10 Allocation of Sales and Demand to Voltage Levels & Segregation of Fixed and Variable Costs

TARIFF CATAGORIES	Sales	Demand	NEPRA Revenue	
		1 CP	Fixed Charge	Variable Charge
0.2kV TARIFF CATAGORIES	(kWh)	MW	Rs	Rs
TOTAL 0.2 kV	10894795483	2325	2560554	288605932439
0.4kV TARIFF CATAGORIES				
TOTAL 0.4 kV	6159898938	996	9470612229	193605289785
11kV TARIFF CATAGORIES				
11 Kv	1627977604	283	2401747074	58454414621
132/66kV TARIFF				
CATAGORIES				
132/66 kV	687062865	166	524981032	24514973472
SUB TOTAL	19369734891	3771	12399900888	565180610317

### 8. COST OF SERVICE FUNCTIONALIZED RATES (TARIFF WISE)

Based on the allocation of overall Revenue Requirement of MEPCO to customers categories, the resultant functional amounts (Rs. in million) for each customer category are summarized at **Table 11** below.

	Voltage	Customer	Sales	Demand	Genera	ation Cost	Transmission	MOF	Distribution Cost		
Classes				1 C P					Distribut	tion Margin	Total
Classes	kV	No.	GWh	MW	Energy (Rs. M)	Demand (Rs. M)	Demand (Rs. M)	Rs. M	Demand (Rs. M)	Customer (Rs. M)	Cost
Industrial B3	11kV	384	1411	248	10558	21467	1722	9	3,509	575	37840
Industrial B4	132/66kV	10	642	157	4409	12454	999	5	995	213	19075
Bulk Supply C2(b)	11kV	63	209	31	1566	2656	213	1	434	85	4956
Bulk Supply C3(b)	132/66kV	3	45	9	309	723	58	O	58	15	1163

Table 11 Determination of Functional Rates based on Cost Drivers to Different Customer Categories

Based on the cost drivers (energy, demand & customers) based allocation of overall Revenue Requirement of MEPCO to the customers categories, the resultant functional (generation, transmission, MO Fee & Distribution) rates (in terms of Rs./kWh, Rs./kW/Month and Rs./Customer / Month, as applicable) are summarized at Table 12 below.

### Table 12 Functional Rates of Different Customer Categories Encapsulated in Rs/kW/Month

	Voltage	Customer	Sales	Demand		Rates							
Classes				1 CP	Generation Tariff		Transmission	MOF	Distribution		Rs.		
	kV	No.	GWh	MW	Energy (Rs./kWh)	Demand (Rs/kW/M)	Cost (Rs/kW/M)	Cost (Rs/kW/M)	Demand (Rs/kW/M)	Customer/Month	/kWh		
Industrial B3	'11kV	384	1411	248	7.49	7,204.25	577.74	3.06	1,178	124,742	26.83		
Industrial 84	132/66kV	10	642	157	6.87	6,609.49	530.05	2.81	528	1,767,172	29.71		
Bulk Supply C2(b)	11kV	63	209	31	7.49	7,204.25	577.74	3.06	1,178	113,356	23.69		
Bulk Supply – C3(b)	132/66kV	3	45	9	6.87 <sup>-</sup>	6,609.49	530.05	2.81	528	414,508	25.82		

The above detailed functional rates recapitulated, in terms of Rs./kW/Month, for each function is given in table **Table 13** below.

	Voltage	Customer	Sales	Demand			R	ates			
				1 CP	Generatio	on Tariff	Transmission	MOF	Dis	tribution	Total
Classes	k∨	No.	GWh	MW	Energy (Rs/kWh/M)	Demand (Rs/kW/M)	Cost (Rs/kW/M)	Cost (Rs/kW/M)	Demand (Rs/kW/M)	Customer/Month	Rs./KW/Month
Industrial 83	11kV	384	1411	248	3543.33	7,204.25	577.74	3.06	1,178	124,742	12698.91
Industrial 84	132/66kV	10	642	157	2339.92	6,609.49	530.05	2.81	528	1,767,172	10123.51
Bulk Supply - C2(b)	11kV	63	209	31	4248.03	7,204.25	577.74	3.06	1,178	113,356	13441.96
Bulk Supply C3(b)	132/66kV	3	45	9	2829.47	6,609.49	530.05	2.81	528	414,508	10636.70

### Table 13 Tariff-wise Functional Rate Allocation of RR

### 8.1 Unbundled Rates Rs./kWh (Tariff Wise)

The functional allocation of Revenue Requirement of MEPCO (Generation, Transmission, MO Fee and Distribution Cost) to customers categories, in Rs./kWh are shown in Table 14 below.

Table 14 Tariff-wise	Functional R	ate Allocation	of RR
----------------------	--------------	----------------	-------

	Voltage	Sales	Demand	Generation	T. UoSC	MOF	D. UoSC	Total Rate
Classes			1 CP	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh
	kV	GWh	MW					
Industrial B3	11kV	1411	248	22.70	0.71	0.00	2.90	26.83
Industriai B4	132/66kV	642	157	26.27	0.91	0.00	1.88	29.71
Bulk Supply C2(b)	11kV	209	31	20.18	1.10	0.01	2.48	23.69
Bulk Supply C3(b)	132/66kV	45	9	22.91	0.97	0.00	1.61	25.82

....

### 8.2 Volumetric Rates at Each Customer Category

The above functional rates combined in terms of the nature (Fixed or Variable) and resultant rates interms of Rs./kW/Month and/or Rs./kWh are provided in Table 15 below.

Classes	Voltage	Sales	Allocated	Cost Rs. (M)	Fixed Charge	Variable Charge
Classes	kV	GWh	Fixed Cost	Variable Cost	Rs/kW/Month	Rs/kWh
Industrial B3	11kV	1411	26,707	11,133	8,963	7.9
Industrial 84	132/66kV	642	14,453	4,622	7,671	7.2
Bulk Supply C2(b)	11kV	209	3,305	1,651	8,963	7.9
Bulk Supply C3(b)	132/66kV	45	839	324	7.671	7.2

Table 15 Tariff & Voltage level wise Sales Volume, Allocation of Fixed and Variable Cost in Terms of Rs./kW/Month and/or Rs./kWh

Note: Variable Cost in Table 15 includes energy cost and customer services cost.

### 9. REVENUE, COST OF SERVICE AND SUBSIDIES (TARIFF CATEGORY WISE)

Based on assessment of revenue and the cost of service for each category of consumer, as per the details provided herein before, the Subsidy or Cross Subsidy (the difference between revenue and cost) in terms of million rupees against each customer tariff category is provided in **Table 16** below. It may be noted that the negative figure means the customer is subsidized (revenue less than cost) Whereas, the positive figure shows that the customer is cross subsidizing (revenue more than cost). Average, in terms of Rs./kWh, assessment of subsidy or cross-subsidy, as the case may be, is also arrived in the last column of Table 16 below.

	Voltage	Sales	Demand	Revenue a	is per NEPRA	Tariff	Co	st of Service		Difference Subsidy	subsidy
Classes			1 CP	Demand Charge (M. PKR)	<ul> <li>Energy Charge (M. PKR)</li> </ul>	Total	Demand Cost (M.PKR)	Energy Cost M.PKR	Total M. PKR	M. PKR	Rs./kwh
	kV	GWh	MW								
Industrial B3	11kV `	1411	248	2137	50089	52227	26707	11133	37840	14386	10
Industrial B4	132/66kV	642	157	474	22792	23266	14453	4622	19075	4191	7
Bulk Supply C2(b)	11kV	209	31	263	8036	8299	3305	1651	4956	3343	16
Bulk Supply C3(b)	132/66kV	45	9	51	1723	1774	839	324	1163	611	14

Table 16 Tariff wise Cross Subsidy Determination based on sales and demand

### 10. REVENUE, COST OF SERVICE, SUBSIDY AND REVENUE TO COST RATIOS

Revenue, Cost of Service and Subsidy in terms of million rupees for each category of the consumers is shown in **Table 17** below. The Table also provides the Revenue to Cost Ratio which shows that:

- If this ratio is less than one, the relevant customer class is subsidized, i.e. the tariff revenue is less than the allocated cost;
- If this ratio is greater than one, the relevant customer class is cross subsidizing, i.e. the tariff revenue is higher than the allocated cost; and
- If this ratio is equal to one, the customer class is at adequately priced vis-à-vis the allocated cost.

	Sales	Demand	Revenue NEPRA	e as per Tariff	Cost o	of Service	Differ	ence	Revenu	e to Cost I	Ratio
Classes		1 CP	Demand Charge (M. PKR)	Energy Charge (M. PKR)	Demand Cost (M.PKR)	Energy Cost M.PKR	Demand (M.PKR)	Energy M.PKR	Demand Charge	Energy Charge	total
	GWh	MW									
Industrial B3	1411	248	2137	50089	26707	11133	(24,570)	38956	0.08	4.50	1.38
Industrial B4	642	157	474	22792	14453	4622	(13,979)	18170	0.03	4.93	1.22
Bulk Supply C2(b)	209	31	263	8036	3305	1651	(3,041)	6384	0.08	4.87	1.67
Bulk Supply C3(b)	45	9	51	1723	839	324	(788)	1399	0.06	5.31	1.53

### Table 17 Revenue to Cost Ratio i.e. Difference of NEPRA Allocated and Required Revenue

### 11. REVENUE, COST OF SERVICE AND SUBSIDIES (RS./KWH)

Revenue, Cost of Service and Subsidy in terms of Rs./kWh for each category of the consumers is shown in **Table 18** below. The Table also provides the Revenue to Cost Ratio.

Classes	Voltage	Sales	Revenue	Cost of Service	Subsidy	Revenue to Cost Ratio
		GWh	Rs./kwh	Rs./kwh	Rs./kwh	
Industrial B3	11kV	1411	37.03	26.83	10.20	1.38
Industrial B4	132/66kV	642	36.24	29.71	6.53	1.22
Bulk Supply C2(b)	11kV	209	39.66	23.69	15.98	1.67
Bulk Supply C3(b)	132/66kV	45	39.37	25.82	13.56	1.53

### Table 18 Tariff wise Revenue, Cost of Service and Subsidy in terms of Rs./kWh

### 12. REVENUE, COST OF SERVICE AND SUBSIDIES (11 KV AND ABOVE)

The revenue cost of service and subsidies for customer categories that fall under 11kv aresummarized at Table 19 below.

Tubic 15	C1055 546.		Engine i		und abo						
	Voltage	Sales	Demand	Revenue	as per NEPR	A Tariff	Co	ost of Service	1	Difference Subsidy	CoS
Classes			1 CP	Demand Charge (M. PKR)	Energy Charge (M. PKR)	Total	Demand Cost (M.PKR)	Energy Cost M.PKR	Total M. PKR	M. PKR	Rs./kwh
	kV	GWh	MW								
Industrial B3	11kV	1411	248	2137	50089	52227	26707	11133	37840	14386	26.83
Industrial B4	132/66kV	642	157	474	22792	23266	14453	3 4622 19075		4191	29.71
Buik Supply C2(b)	11kV	209	31	263	8036	8299	3305	1651	4956	3343	23.69
Bulk Supply C3(b)	132/66kV	45	9	51	1723	1774	839	324	1163	611	25.82

Table 19 Cross Subsidy for Eligible BPCs 1MW and above

### 13.REVENUE/KWH, COST OF SERVICE/KWH AND SUBSIDIES/KWH (BPC ONLY)

With regard to the above analysis, the following points are emphasized and limited:

- For the purpose of this study, the connections which do not come in the category of eligible BPCs i.e. Customers connections having load less than 1MW have not been intensively probed into details.
- 2. Currently, there are 132/66 KV customer within MEPCO, therefore, real data, thereof could be assessed for B4 and C3 consumers.
- A broad assessment of the Cost of Service of such customers on analogy of other closest category of customers (e.g. B-3 for B-4 and C-2 for C-3) could be incorporated by adding or subtracting the loss levels.
- Although the Industrial B-3 and Bulk Supply C2 customers are at 11 KV connection level, however, these customers may or may not fall within the definition of BPC as contained in NEPRA Act, 1997, if these are less than 1 MW load.
- The customer categories A-2 and A-3, for purposes of cost of service assessment, have been considered at 0.4 KV level. However, these costumers, based on the sanctioned load, may be connected at 11 KV level, as required.
- Consumer category for tariff H, i.e. housing colonies attached to industries, despite being connected at 11 kV, cannot be considered as BPC for (i) principally being resale in nature and (ii) being less than 1 MW.
- 7. The supply feed for AJK customer category is primarily for resale purpose, therefore, not entitled for consideration as BPC.
- 8. Taking a single peak and analyzing it with total sales may have unrealistic load factors.
- 9. In case of B3 and C2 connections being on the 11kV distribution feeder, the figures of aggregative sales and load may have disrupting outputs in FACOS Model

Based on the above clarification, the abstract of Revenue (Rs./kWh), the Cost of Service (Rs./kWh) and resultant cross-subsidy (Rs./kWh) is appended at Table 20 below.

	Classes	Voltage	Sales	Revenue	Cost of Service
	Classes		GWh	Rs./kwh	Rs./kwh
	Industrial B3	11kV	1411	37.03	26.83
Í	Industrial B4	132/66kV	642	36.24	29.71
	Bulk Supply C2(b)	11kV	209	39.66	23.69
	Bulk Supply C3(b)	132/66kV	45	39.37	25.82

### Table 20 Sales, Revenue, Cost of Service and Cross Subsidy for Eligible BPCs 1MW and Above

# 14. MASTER DATA FOR RESULTS OF MEPCO'S COST OF SERVICE STUDY (FY 2023-24)

For interest of the readers to glance through overall master data for result of MEPCO's Cost of Service Study (FY 2023-24), following Tables (Table 21 to Table 27) are added separately.

### **15.FINAL REMARKS:**

- The above Cost of Service Study Report (FY 2023-24) is a sincere human effort to arrive at judicious assessment of functional (generation, transmission, market operator, distribution and customer services) costs for each category of consumers demonstrating the needs and parameters associated with relevant category.
- The results of the study are to be used for the purposes of rate making of Use of System Charges for possible eligible Bulk Power Consumers.
- The Fully Allocated Cost of Service (FACOS) model used for the purpose of this study is
  realistically elaborate, professionally structured in line with international practices and
  reasonably accurate to provide equitable results in terms of costs associated with
  demonstrated needs of the customers. Human errors and omissions are, however, expected.
- The underlying assumptions made and considerations relied upon in carrying out this Cost of Service Study were adopted with all possible care, without any prejudice and have been disclosed in details to the extent possible.
- Inherent and unforeseen limitations of the FACOS model, assumptions made and consideration relied upon may not be as exhaustive as expected; accordingly, for the purposes of rate making of Use of System Charges, certain out of the model iterations may be necessary.
- While the Cost of Service is substantially (99%) covered by the determined tariffs, inherent cross subsidization and possibility of stranded costs need considerate, careful, concerted and continuous attention for proactive mitigation thereof.
- While currently certain classes of consumers are enjoying benefit of inter and intra tariff subsidies, the other categories of consumers are paying huge (30~35%) cross-subsidies. For a robust, vibrant and successful wholesale, and later retail, power market, minimization, if not elimination, of intra and inter tariff subsidies shall remain fundamental requirement.

Table 10 Master Data for Results of MEPCO's Cost of Service Study (FY 2023-24)

	Rs./k/ Purcha	24.2	29.3	21.4	25.4
	cost Rs./kWh sold	26.83	29.71	23.69	25.82
	Total Cost (Rs. M)	37,840	19,075	4,956	1,163
ution	cust. Cost (Rs.M)	575	213	85	15
Distribu	Demand (Rs.M)	3,509	566	434	58
MOF	Cost (Rs.M)	6	5	1	0
Transm	Cost (Rs.M)	1,722	666	213	58
ion Cost	Demand (Rs.M)	21,467	12,454	2,656	723
Generat	Energy (Rs.M)	10,558	4,409	1,566	309
MW P	at CDP	274	159	34	6
Deman	at Meter	248	157	31	6
gy GWh	Purchased	1,558	650	231	46
Ener	Sold	1,411	642	209	45
	Voltage Level	11kV	132/66kV	11kV	132/66kV
	Classes	Industrial B3	Industrial B4	Bulk Supply C2(b)	Bulk Supply C3(b)

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		Total ( Rs./k' Sol	26.8	29.7	23.6	25.8
	Lived	Cost Rs./kWh sold	19.34	22.84	16.20	18.95
	Total	Fixed Cost (Rs./kw/ M)	9,155.58	7,783.59	9,193.93	7,807.24
	oution	cust. Cost (Rs./kW/M)	192.82	113.02	231.17	136.67
	Distrib	Demand (Rs./kW/M)	1,177.71	528.22	1,177.71	528.22
	MOF	Cost (Rs./kw/M)	3.06	2.81	3.06	2.81
	Transm	Cost (Rs./kW/M)	577.74	530.05	577.74	530.05
n)	tion Cost	Demand (Rs./kW/M)	7,204.25	6,609.49	7,204.25	6,609.49
JUS RWN SUL	Genera	Energy (Rs./kWh)	7.49	6.87	7.49	6.87
L KW O	MW P	at CDP	274	159	34	6
-24 (pe	Deman	at Meter	248	157	31	6
CE FY 2023	rgy GWh	Purchased	1,558	650	231	46
SERVI	Enel	Sold	1,411	642	209	45
2 COST 0F		Voltage Level	11kV	132/66kV	11kV	132/66kV
· Table 2		Classes	Industrial B3	Industrial B4	Bulk Supply C2(b)	Bulk Supply C3(b)

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# Table 23 COST OF SERVICE FY 2023-24 (per kW or kWh at Purchased)

	<u> </u>		L		ļ
	Fixed Cost Rs./kWh Purchased	17.51	22.55	14.67	18.70
Total	Fixed Cost (Rs./kW/ M)	8,290.53	7,682.40	8,325.26	7,705.74
ution .	cust. Cost (Rs./kW/M)	174.61	111.55	209.33	134.89
Distrib	Demand (Rs./kw/M)	1,066.44	521.36	1,066.44	521.36
MOF	Cost (Rs./kW/M)	2.77	2.77	2.77	2.77
Transm	Cost (Rs./kw/M)	523.16	523.16	523.16	523.16
tion Cost	Demand (Rs./kW/M)	6,523.57	6,523.57	6,523.57	6,523.57
Genera	Energy (Rs./kWh)	6.78	6.78	6.78	6.78
d MW	at CDP	274	159	34	6
Deman	at Meter	248	157	31	6
'gy GWh	Purchased	1,558	650	231	46
Ene	Sold	1,411	642	209	45
	Voltage Level	11kV	132/66kV	11kV	132/66kV
	Classes	Industrial B3	Industrial B4	Bulk Supply C2(b)	Bulk Supply C3(b)

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Table 24 COSI OF SERVICE FY 2023-24 (per KWh SOLD)Table 24 COSI OF SERVICE FY 2023-24 (per KWh SOLD)TotalFixed CostTransmMOFDistributionTotalFixed CostClassesEnergy GWhDemand MWGeneration CostTransmMOFDistributionTotalFixed CostClassesLevelSoldPurchasedatatat CDPEnergyDemand CostCostCostDemand cust. CostFixed CostRs./kWhIndustrial-B311kV1,4111,5582482747.4915.221.220.012.490.4119.3419.34Industrial-B4132/66kV6426501571596.8719.401.560.011.550.3322.8422.84Industrial-B4132/66kV6426501571596.8719.401.560.011.550.3322.8422.84Bulk Supply-11kV20923131347.4912.691.020.012.080.4116.2016.20Bulk Supply-132/66kV454696.8716.041.290.011.580.3316.2016.20C2(b)132/66kV4565023131347.4910.20.011.580.4116.2016.20C2(b)132/66kV459996.8716.041.290.011.580.3316.2016.20C2			-	1			
Table 24 COST OF SERVICE FY 2023-24 (per KWh SOLD)           Classes         Energy GWH         Demand MW         Generation Cost         Transm         MOF         Distribution         Total           Classes         Voltage         Energy GWH         Demand MW         Generation Cost         Transm         MOF         Distribution         Total           Classes         Level         Sold         Purchased         at         Demand MW         Generation Cost         Transm         MOF         Distribution         Total           Industrial-B3         11kV         1,411         1,558         248         274         7.49         15.22         1.22         0.01         2.49         0.41         19.34           Industrial-B4         132/66kV         642         650         157         159         6.87         19.40         1.55         0.01         1.55         0.33         22.84           Bulk Supply         11kV         209         231         31         34         7.49         12.69         1.02         0.01         1.55         0.33         22.84           Bulk Supply         11kV         209         231         34         7.49         1.269         1.02         0.01         <		Fived Coct	Rs./kWh Purchased	19.34	22.84	16.20	18.95
Table 24 COST OF SERVICE FY 2023-24 (per KWh SOLD)           Table 24 COST OF SERVICE FY 2023-24 (per KWh SOLD)         MOF         Distribution           Classes         Energy GWh         Demand MW         Generation Cost         Transm         MOF         Distribution           Classes         Level         Sold         Purchased         at         at CDP         Energy         Demand         Cost         Cost         Demand         cust. Cost           Industrial - B4         132/66kV         642         650         157         159         6.87         19.40         1.56         0.01         2.49         0.41           Industrial - B4         132/66kV         642         650         157         159         6.87         19.40         1.56         0.01         2.49         0.41           Bulk Supply         11kV         209         231         31         34         7.49         12.69         1.02         0.01         2.08         0.41           Bulk Supply         11kV         209         231         34         7.49         12.69         1.02         0.01         2.08         0.41           C2(b)         132/66kV         45         9         6.87         16.04		Total	Fixed Cost (Rs./kWh)	19.34	22.84	16.20	18.95
Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)           Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)         MOF         Distribul           Classes         Level         Sold         Purchased         at         At         Generation Cost         Transm         MOF         Distribul           IndustrialB4         11kV         1,411         1,558         248         7.49         15.22         1.22         0.01         2.49           IndustrialB4         132/66kV         642         650         157         159         6.87         19.40         1.56         0.01         1.55           Bulk Supply         11kV         209         231         31         34         7.49         12.69         1.02         0.01         2.08           Bulk Supply         118V         209         231         31         34         7.49         12.69         1.02         0.01         2.08           C2(b)         132/66kV         45         6         9         9         6.87         16.04         1.20         0.01         2.08		ution	cust. Cost (Rs./kWh)	0.41	0.33	0.41	0.33
Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)           Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)         MOF           Classes         Energy GWh         Demand MW         Generation Cost         Transm         MOF           Classes         Voltage         Sold         Purchased         at         CP         Energy         Demand MW         Generation Cost         Transm         MOF           IndustrialB3         11kV         1,411         1,558         248         274         7.49         15.22         1.22         0.01           IndustrialB4         132/66kV         642         650         157         159         6.87         19.40         1.56         0.01           Bulk Supply         11kV         209         231         31         34         7.49         12.69         1.02         0.01           Bulk Supply         132/66kV         45         46         9         6.87         16.04         1.29         0.01		Distrib	Demand (Rs./kWh)	2.49	1.55	2.08	1.28
Table 24 COST OF SERVICE FY 2023-24 (per KWh SOLD)           Table 24 COST OF SERVICE FY 2023-24 (per KWh SOLD)         Generation Cost         Transm           Classes         Voltage         Energy GWh         Demand MW         Generation Cost         Transm           Classes         Voltage         Sold         Purchased         at         CPP         Energy         Demand Cost         Transm           IndustrialB3         11kV         1,411         1,558         248         274         7,49         15.22         1.22           IndustrialB4         132/66kV         642         650         157         159         6.87         19.40         1.56           Bulk Supply         11kV         209         231         31         34         7.49         1.26         1.02           Bulk Supply         132/66kV         45         6         9         9         6.87         1.02         1.26		MOF	Cost (Rs./kWh)	0.01	0.01	0.01	0.01
Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)           Classes         Energy GWh         Demand MW         Generation Cost.           Classes         Voltage         Sold         Purchased         at         Rs./kWh)         Rs./kWh)         Rs./kWh)           Industrial B4         11/kV         1,411         1,558         248         274         7.49         15.22           Industrial B4         132/66kV         642         650         157         159         6.87         19.40           Bulk Supply         11/kV         209         231         31         34         7.49         12.69           Bulk Supply         11/kV         209         231         31         34         7.49         12.69           C2(b)         11/kV         209         231         31         34         7.49         12.69           Bulk Supply         11/kV         209         231         31         34         7.49         12.69           C2(b)         132/66kV         45         46         9         6.87         19.40		Transm	Cost (Rs./kWh)	1.22	1.56	1.02	1.29
Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)           Table 24 COST OF SERVICE FY 2023-24 (per kWh SOLD)         Generat           Classes         Voltage         Energy GWh         Demand MW         Generat           Classes         Voltage         Sold         Purchased         at         Energy           Industrial - B3         11kV         1,411         1,558         248         274         7,49           Industrial - B4         132/66kV         642         650         157         159         6.87           Bulk Supply         11kV         209         231         31         34         7,49           Bulk Supply         1132/66kV         45         650         157         159         6.87           Bulk Supply         1132/66kV         45         46         9         9         6.87		ion Cost	Demand (Rs./kWh)	15.22	19.40	12.69	16.04
I able 24 COSI OF SERVICE FY 2023-24 (per KWh SOLD)           Classes         Energy GWh         Demand MW           Classes         Voltage         Sold         Purchased         at           Industrial B3         11kV         1,411         1,558         248         274           Industrial B4         132/66kV         642         650         157         159           Bulk Supply         11kV         1,613         209         231         31         34           Bulk Supply         132/66kV         45         650         157         159         274           Bulk Supply         118V         209         231         31         34         34           C2(b)         132/66kV         45         46         9         9         9	••	Generat	Energy (Rs./kWh)	7.49	6.87	7.49	6.87
Table 24 COSI OF SERVICE FY 2023-24 (per kW)           Classes         Energy GWh         Deman           Classes         Voltage         Sold         Purchased         at           Industrial B3         11kV         1,411         1,558         248           Industrial B4         132/66kV         642         650         157           Bulk Supply         11kV         209         231         31           C2(b)         132/66kV         45         46         9           C3(b)         C3(b)         132/66kV         45         46         9	n sold)	WM P	· at CDP	274	159	34	6
Iable 24 COSI OF SERVICE FY 2023-24           Classes         Voltage         Energy GWh           Classes         Voltage         50id         Purchased           Industrial - B3         11kV         1,411         1,558           Industrial - B4         132/66kV         642         650           Bulk Supply         11kV         209         231           Bulk Supply         132/66kV         45         46           C3(b)         132/66kV         45         46	perkW	Demar	at Meter	248	157	31	6
I able 24 COSI OF SERVICE Finer       Classes     Voltage     Ener       Classes     Level     Sold       Industrial B3     11kV     1,411       Industrial B4     132/66kV     642       Bulk Supply     11kV     209       Bulk Supply     132/66kV     45       C2(b)     132/66kV     45	Y 2023-24	gy GWh	Purchased	1,558	650	231	46
Table 24 COSI OF Si       Classes     Voltage       Classes     Voltage       Industrial B3     11kV       Industrial B4     132/66kV       Bulk Supply     11kV       Bulk Supply     132/66kV       C3(b)     132/66kV	RVICE	Ener	Sold	1,411	642	209	45
I able 24       Classes       Classes       Industrial B3       Industrial B4       Bulk Supply       C2(b)       Bulk Supply       C3(b)	COST OF SE		Voltage Level	11kV	132/66kV	11kV	132/66kV
	l able 24		Classes	Industrial B3	Industrial B4	Bulk Supply C2(b)	Bulk Supply C3(b)

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# Table 25 COST OF SERVICE FY 2023-24 (per kWh Purchased)

Total	Rs./k	Purchi	24.2	29.5	21.4	25.4	
Eived Coet	Rs./kWh	Purchased	17.51	22.55	14.67	18.70	
Total	Fixed Cost	(Rs./kWh)	17.51	22.55	14.67	18.70	
oution	cust. Cost	(Rs./kWh)	0.37	0.33	0.37	0.33	
Distrik	Demand	(Rs:/kWh)	2.25	1.53	1.88	1.27	
MOF	Cost	(Rs./kWh)	0.006	0.008	0.005	0.007	
Transm	Cost	(Rs./kWh)	1.11	1.54	0.92	1.27	
ion Cost	Demand	(Rs./kWh)	13.78	19.15	11.50	15.83	
Generat	Energy	(Rs./kWh)	6.78	6.78	6.78	6.78	
MW PI	at	CDP	274	159	34	6	
Demar	at	Meter	248	157	31	6	
gy GWh	Prochard	ruicilaseu	1,558	650	231	46	
Ener	Cold	ninc	1,411	642	209	45	
	Voltage	רכאכו	11kV	132/66kV	11kV	132/66kV	
	Classes		Industrial B3	Industrial 84	Bulk Supply C2(b)	Bulk Supply C3(b)	

# Table 26 Impact of Losses on per kW or kWh basis (FY 2023-24)

-				-									
Ener	L .	gy GWh	Demand	MW P	Generat	tion Cost	Transm	MOF	Distrib	oution	Total		•
Sold		Purchased	at Meter	at CDP	Energy (Rs./kWh)	Demand (Rs./kW/M)	Cost (Rs./kW/M)	Cost (Rs./kw/M)	Demand (Rs./kw/M)	cust. Cost (Rs./kW/M)	Fixed Cost (Rs./kW/ M)	Total Fixed Cost (Rs./kWh)	Total (Rs./k
1,411		1,558	248	274	0.71	680.68	54.59	0.29	111.27	18.22	865.05	1.83	2.5
642		650	157	159	0.0	85.92	6.89	0.04	6.87	1.47	101.19	0.30	0.3
209		231	31	34	0.71	680.68	54.59	0.29	111.27	21.84	868.67	1.53	2.2
45		46	6	6	60.0	85.92	6.89	0.04	6.87	1.78	101.50	0.25	0.5

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Table 27 Impact of Losses on per kWh basis ((FY 2023-24)

	Tota (Rs./	. 2	0	2	0	
	Total Fixed Cost (Rs./kWh)	1.83	0.30	1.53	0.25	
Total	Fixed Cost (Rs./kW/ M)	1.83	0.30	1.53	0.25	
ution	cust. Cost (Rs./kW/M)	0.04	0.00	0.04	0.00	
Distrib	Demand (Rs./kw/M)	0.24	0.02	0.20	0.02	
MOF	Cost (Rs./kW/M)	0.0006	0.0001	0.0005	0.0001	
Transm	Cost (Rs:/kW/M)	0.12	0.02	0.10	0.02	
tion Cost	bemand (Rs./kW/M)	1.44	0.25	1.20	0.21	
Generat	Energy (Rs./kWh)	0.71	0.09	0.71	60.0	
MW P	at CDP	274	159	34	6	
Deman	at Meter	248	157	31	6	
gy GWh	Purchased	1,558	650	231	46	
Ener	Sold	1,411	642	209	45	
	Voltage Level	11kV	132/66kV	11kV	132/66kV	
	Classes	Industrial B3	Industrial – B4	Bulk Supply C2(b)	Bulk Supply C3(b)	

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Cost of Service & Proposed Use of System Charges For Eligilble BPC's (One MW & above at One Premisis)

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1.279 14.242 8.789 23.032 1.835 12.963 9.647 0.774 0.707 Rs./kWh PROPOSED. Use of System Charges (Proposal-1) Hybrid 2,745.84 2,486.33 259.51 2,745.84 Industrial B-3 (1 MW or More) 1,957.07 156.95 372.31 Rs./kW/ Month 28.833 20.043 2.622 18.216 8.789 1.105 1.827 0.707 13.781 Volumatric Rs./kWh 523.16 1,241.04 8,528.74 865.05 240.98 6,523.57 9,393.79 2,994.75 12,388.54 MDI Based Rs./kW/ Month 2.535 35.617 2.622 24.293 26.827 8.789 1.105 6.778 0.006 13.781 Rs./kWh Total Cost of Service (Separated Energy Loss Impact) 1.827 2.622 17.514 19.342 0.006 13.781 1.105 Rs./kWh ..... Industrial Fixed B-3 9,155.58 6,523.57 523.16 1,241.04 865.05 2.77 8,290.53 Rs./kW/ Month 7.486 6.778 6.778 0.707 Rs./kWh Variable 26.827 35.617 2.895 26.827 8.789 7.486 15.219 0.006 1.221 Rs./kWh Total Cost of Service (Inclusive of Energy Loss Impact) 19.342 15.219 1.221 0.006 2.895 19.342 Rs./kWh Industrial Fixed B-3 1,370.53 *S77.74* 9,155.58 9,155.58 7,204.25 3.06 Rs./kW/ Month 7.486 7.486 7.486 Variable Rs./kWh Average Applicable Tariff Total Applicable Costs linpact of allowed losses Market Operator's Fee Distribution Use of System Cost Assessment Level Generation Cost -Energy Generation Cost -Capacity Functional Cost Element Total Cost of Service Consumption Category Tariff Category Transmission Charges **Cross Subsidy** 

Annex-I

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PROPOSED Use of System Clarges (Proposal-1) 0.707 8.047 0.645 1.574 10.973 12.044 14.637 26.681 1.07 Rs./kWh Hybrid Bulk Supply C-2(b) (1 MW or More) 1,957.07 156.95 382.73 2,496.75 260.60 2,757.35 2,757.35 Rs./kW/ Month • • • • • • • 18.00 31.540 2.248 0.707 11.495 0.922 15.372 16.903 14.637 1.531 Volumatric Rs./kWh 401.37 523.16 8,723.86 8,306.58 1,275.77 868.67 9,592.53 01.668,71 6.523.57 Sec. Sec. Proprietation MDI Based Rs./kW/ Month 21.448 14.637 6.778 11.495 0.922 0.005 2.248 2.238 23.686 38.323 Rs./kWh Total Cost of Service (Separated Energy Loss Impact) . 11.495 0.922 0.005 2.248 14.670 1.531 16.201 . Rs./kWh **Bulk Supply** C2(b) Fixed 6,523.57 523.16 ,275.77 868.67 2.77 9,193.93 8,325.26 Rs./kW/ Month 6.778 6.778 7.486 0.707 Rs/kWh Variable Cost of Service (Inclusive of Baergy Lass Impact) 1.018 23.686 14.637 7.486 12.695 23.686 38.323 0.005 2.483 Rs./k/Vh Total · i. The state of the state of the 12.695 1.018 0.005 2.483 16.201 16.201 Rs./kWh **Bulk Supply** C2(b) Structure . Fixed 7,204.25 577.74 2.77 1,408.88 9,193.64 Rs./kW/ Month 9,193.64 4.4 7.486 7.486 7.486 Rs./kWh Variable Distribution Use of System Average Applicable Tariff Generation Cost -Energy Total Applicable Costs Impact of allowed losses Market Operator's Fee Functional Cost Element Generation Cost -Capacity Cost Assessment Tariff Category Consumption Category Transmission Charges Total Cost of Service Cross Subsidy Level

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ated Energy lustrial	Cost of Service (Separated Energy Industrial	mpact) Cost of Scrytec (Separated Energy Industrial	e of Energy Loss Impact) Cost of Service (Separated Energy istrial Industrial	Industrial Industrial Industrial Industrial
_			7	B4
	Variable	Total Variable	xed Total Variable	Fixed Total Variable
1.00	Rs./kWh Month	Rs./kWh Rs./kWh Aforth Aforth	Rs./kWh Rs./kWh Rs./kWh Month	Rs./kWh Month Rs./kWh Rs./kWh Rs./kWh Rs./kWh Aonth
	6.778	6.868	6.868 6.778	6.868
S.	6,523	19.398	19.398 19.398 6,523	6,609,49 19.398 19.398 6,523
	523	1.556	1.556 1.556 323	530.05 1.556 1.556 323
2.7		. 0.008		2.81 0.008 0.008
2.9	63	1.882	1.882 1.882 63	641.25 1.882 1.882 63
2.4	6.778	29.712 6.778 7,68		7,783.59 22.844 29.712 6.778 7,68
1.10	0.089	0.089	0.089	0.089
83.5	6.868 7,7	29.712 6.868 7,7	22.844 29.712 6.868 7,7	7,783.59 22.844 29.712 6.868 7,7
		5.821	5.821	5.821
		35.533	35.533	35.533

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posal-1)	y C-3(b)	Hybrid		Rs./kWh	0.089	11.084	0.889		1.115	13.177	0.172	15.353	12.423	27.776
m Charges (Pro				Rs./kW/ Month		1,957.07	156.95		196.87	2,310.89	30.449	2,695.16		2,695.16
ED Use of Syste	Bulk Supp	Valuanteria	Aumatuc	Rs./kWh	0.089	15.834	1.270		1.593	18,786	0.246	19.032	12.423	31.455
PROPOS			MUA Baseu	Rs./kW/ Month	50.67	6,523.57	523.16		656.25	7,753.64	101.50	7,855.13	7,050.17	14,905.30
Impact)			Total	Rs./kWh	6.778	15.834	1.270	0.007	593.1	25.481	0.336	25.817	12.423	38.240
Cost of Service (Separated Energy Loss I	upply	(9)	eđ	Rs./kWh		15.834	1.270	0.007	. 1.593	. 18.703	0.246	18.949		
	Bulk S	G	Fix	Rs./kW/ Month		6,523.57	523.16	2.77	656.25	7,705.74	101.50	7,807.24		
				Variable	Rs./kWh	• 6.778					6.778	0.089	6.868	
Service (Inclusive of Bacrgy Loss Impact)	Bulk Supply	C3(b)	Total	Rs./kWh	6.868	16.042	1.287	0.007	1.614	25.817		25.817	12.423	38.240
			ष	Rs./kWh		16.042	1.287	0.007	1.614	18.949		18.949		
			C3(	Fix	Rs./kW/ Month		6,609.49	530.05	2.81	664.89	7,807.24		7,807.24	
Cost of			Variable	Rs./kWh	6.868					6.868		6.868		
Cost Assessment Level	Consumption Category	Tariff Category	Functional Cost	Element	Generation Cost - Energy	Generation Cost - Capacity	Transmission Charges	Market Operator's Fee	Distribution Use of System	Total Applicable Costs	impact of allowed losses	Total Cost of Service	Cross Subsidy	verage Applicable Tariff

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