



# ISLAMABAD ELECTRIC SUPPLY COMPANY

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No. 377-83 /IESCO/MIRAD/DG/Admn

Dated 27 /02/2023

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

Subject: PETITION FOR DETERMINATION OF USE OF SYSTEM 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 determination of its use of system charges; we are pleased to submit attached herewith Use of System Charges for kind consideration and approval of Authority. It may kindly be noted that the instant petition includes Cost of Service Study of IESCO (FY 2022-23) 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 Mrs. Huma Ghazal (Director General MIRAD) IESCO (0319-5991223, email: [dgmirad@gmail.com](mailto:dgmirad@gmail.com)) is designated as focal person.

## TARIFF (DEPARTMENT)

Dir (T-I)..... Dir (T-II).....  
Dir (T-III)..... Dir (T-IV).....  
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Date: 01-03-23

CHIEF EXECUTIVE OFFICER  
IESCO, ISLAMABAD

DA/ as above.

Copy to:-

1. General Manager (Technical) IESCO for information.
2. General Manager (Operation) IESCO for information.
3. Chief Financial Officer, IESCO for information.
4. DG MIRAD, IESCO for information.
5. Customer Services Director IESCO for information.
6. Chief Law Officer IESCO for information.
7. Master file.

Tariff Division Record

Dy No. 1346

Dated: 01-03-23

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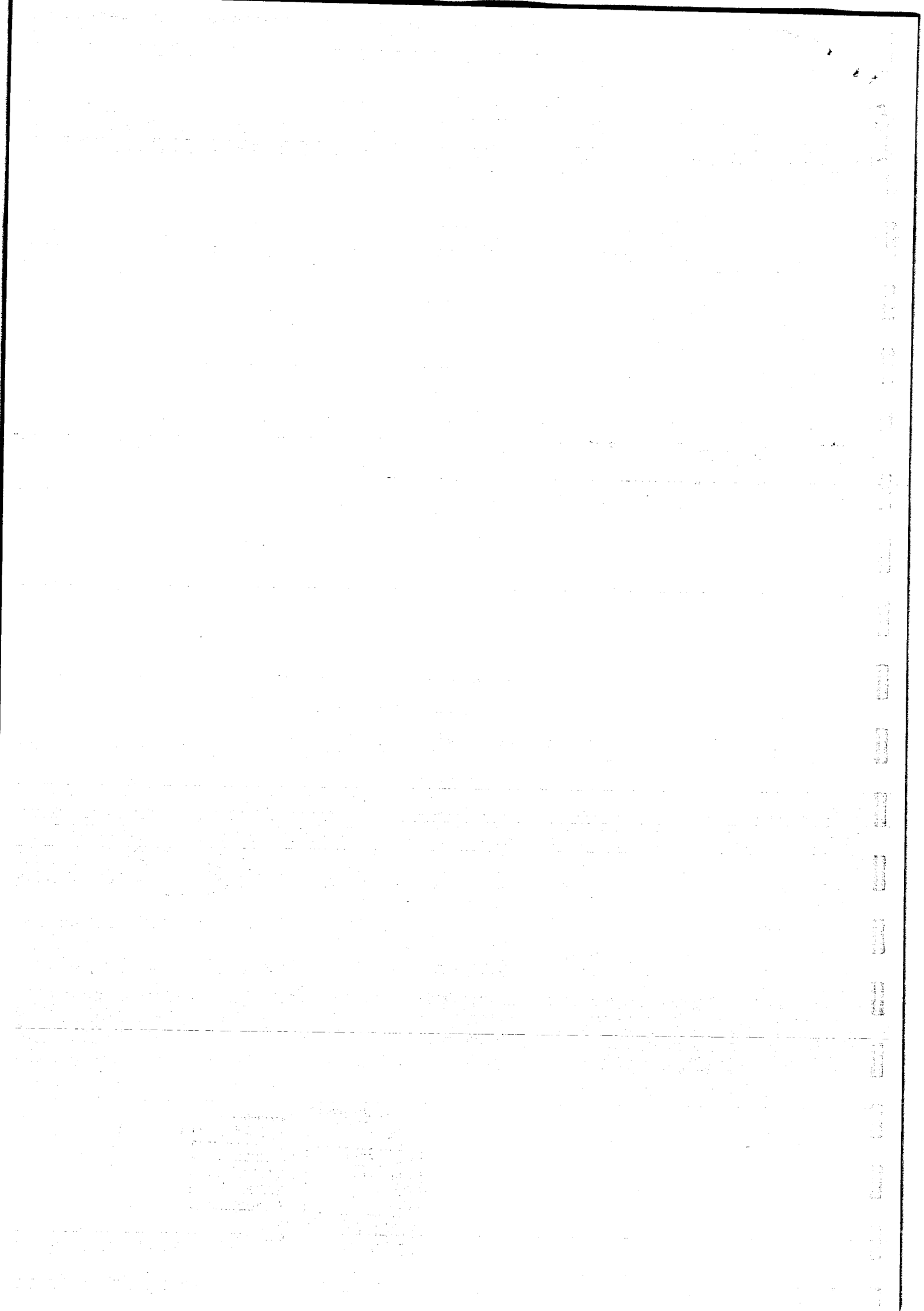
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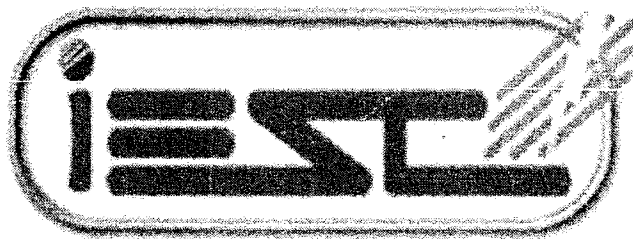
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1. Chairman  
3. M (Lic.)  
5. M (Law)

2. M (Tech.)  
4. M (Trf. & Fin.)



**Petition**  
**for Determination of**  
**Use of System Charges (UoSC)**  
**FY 2022-23**



**ISLAMABAD ELECTRIC SUPPLY COMPANY LTD.**



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## **ISLAMABAD ELECTRIC SUPPLY COMPANY (IESCO) Ltd.**

### **Background**

Islamabad Electric Power Company (IESCO), incorporated as a Public Limited Company, is responsible for the delivery of electricity to its 3.4 million customers spanning 06 districts of Punjab as set out in IESCO's Distribution License number 01/DL/2001, granted by NEPRA under the NEPRA Act. On May 14, 1998, as a result of the restructuring of WAPDA's Power Wing, IESCO assumed its official operations and is since then being headed by a Chief Executive Officer (CEO).

Under the provisions of Regulation of Generation, Transmission & Distribution of Electric Power (Amendment) Act, 2018, IESCO is deemed to hold a license for supply of electric power 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. The deemed licensee status is expiring on May 01, 2023 and, accordingly, IESCO has already submitted a petition for grant of license for supply of electric power with the Authority.

After the approval of Competitive Trading and Bilateral Contracts Market (CTBCM) by the honorable Authority on November 12, 2020 (No. NEPRA/R/DL/LAM-01/40691-98) several implementation actions were taken. This included issuance of License for the Market Operator (MO), approval of Market Commercial Code (MCC) and promulgation of several Regulations to ensure smooth implementation of CTBCM and create balance in roles, rights and obligations of the stakeholders in the CTBCM.

## Grounds of 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.

## Directions in National Electricity Policy

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 Government of Pakistan for the development, reform, improvement and sustainability of the power market and power sector.

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 decision making in the power sector to achieve identified goals.

Various sections of the said National Electricity Policy, 2021, as vent to the instant case, are provided in the below lines.

**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:

- a) *promoting investments on least cost basis balanced with development in the underserved areas;*
- b) *having cost-reflective tariffs in transmission and distribution, to the extent feasible;*
- c) *timely passing of costs to the consumers, while netting off any subsidies funded by the Government; and*
- d) *recovery of costs arising on account of open access, distributed generation, etc.*



**Clause 5.5.2 (f) of National Electricity Policy also provides:**

*"providing a level playing field to all market participants through uniform application of cross-subsidization and other grid charges to consumers of all suppliers;*

**Clause 5.5.2 (g) of National Electricity Policy also provides:**

*"the Government shall take a decision on the recovery of costs that arise due to advent of the open access and market liberalization;"*

**Clause 5.5.4 of National Electricity Policy further directs:**

*"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 as determined under the policy and legal framework."*

**Clause 5.6.5 of National Electricity Policy stipulates:**

*"The Regulator, in order to ensure liquidity of the power sector, provide a 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."*

## 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, terms as defined in the legal and regulatory framework are reproduced as below:

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

*"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:

- (i) an electric power supplier for supply of electric power to its consumer(s); or
- (ii) a captive generating plant for delivery of the electric power from generation facility to the destination of its use; or
- (iii) any other person, including a licensee for delivery of electric power from a designated place to another designated place;

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

**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 here under:

- (1) *"A network licensee shall establish, operate and maintain its distribution system or transmission system, as the case may be, in a manner that ensure non- discriminatory open access in accordance with the Act, these regulations, Market Commercial Code, Grid Code, Distribution Code and other applicable documents.*
- (2) *A network licensee shall, on an annual basis, prepare an open access report demonstrating compliance with these regulations and license terms and conditions, with the detail of its open access users, available and planned capacity, any issues identified in provision of open access, and any instances where open access was denied along with justification thereof. The said report shall also be made available on the website of the network licensee.*
- (3) *The report required under sub-regulation (2) shall be prepared and submitted to the Authority within a period of one month from the date of end of respective financial year and shall also be made available on the website of the network licensee.*
- (4) *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 user 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."*

## **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:

- i) The network licensee, the IESCO for the purposes of instant petition, is obligated to provide open access, to its network, to the open access users on non-discriminatory basis.
- ii) For the said obligation, the IESCO is entitled for recovery of use of system charges in line with use of system agreement, as determined by the honorable Authority.
- iii) 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 the voltage level (132kV, 11kV etc) and consumer category wise for all possible BPCs.
  - 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
- iv) 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 IESCO, these shall not form part of use of system charges to be recovered directly by IESCO.

- 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 be included in 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 IESCO 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	IESCO as Distribution Licensee
5.	Cross Subsidy	IESCO as SOLR (Supply Licensee)
6.	Stranded Capacity Costs	IESCO as SOLR (Supply Licensee)

### Basis of Use of System Charges

The instant petition for determination of use of system charges has been developed based on Cost of Service Study (FY 2022-23) carried out by IESCO through technical help of USAID forming integral part of this petition and provided separately as attached hereto as **Annex-2**.

### Method 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 penitent 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:

- i) 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.
- ii) 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.

- iii) 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 (2) 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, allocate single system peak demand (of IESCO) 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. In consideration thereof, a second proposal (Proposal-2) for arriving at demand based rates as per option (i) above, i.e. whole cost recovery in terms of Rs. /kW and option (iii), hybrid partial cost recovery in terms of Rs./kW; has been developed **based on billable MDIs** of B-3, B-4 and C-2, C-3 customer categories and provided as **Annex-1A** herewith.

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

### **Applicable Categories/ Classification of Eligible BPCs**

While, in terms of existing stipulation contained in the Act, a consumer who purchases or receives electric power, at one premises, in an amount of one megawatt or more 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. No.	Consumption Category	Tariff Category	Voltage Level	Remarks
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 customer, 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	B3 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	For supply to industries for all loads of more than 500 kW receiving supply at 66 kV, 132kV and above.
4.	Bulk Supply Ranging from 500 kW to 5 MW. [extendable to 7.5 MW under conditions]	C-2(b)	11/33 kV	Bulk Supply consumer ranges from 500 kW to 5 MW. [Extendable to 7.5 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 1 MW 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	C-3(b)	66 kV and above	For supply to industries for all loads of more than 500 kW



				receiving supply at 66 kV, 132kV and above.
6.	Housing Colonies attached to Industries	H	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.

### Other Important Aspects

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.

### Captive Power Producers and Users

- (1) A captive power producer / user using the IESCO 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 the total generation capacity charges recovered from the equally placed bulk power consumers 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.

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### **Applicability of Use of System Charges on New Eligible BPCs**

The Use of System Charges provided in the instant petition shall be applicable to all such BPCs who will opt to get supply of electric power from competitive supplier including the captive generator using the 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.

### **Prayer**

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 and Annex-2 which contain detailed analysis.

**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-1A**

**Islamabad Electric Supply Company (IESCO) Ltd.**

**Cost of Service & Proposed Use of System Charges**

**For Possible Eligible Bulk Power Consumers (One MW or More at One Premises)**

**(PROPOSAL -1)**

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-1)			
Consumption Category	Industrial B-3 (1 MW or More)				Industrial B-3 (1 MW or More)				Industrial B-3 (1 MW or More)			
Tariff Category	B-3				B-3				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total	Rs./kW/ Month	Rs./kWh	Rs./kW/ Month	Rs./kWh
Generation Cost - Energy	9.63			9.63	9.02			9.02	687	0.61		0.61
Generation Cost - Capacity		5,298	4.70	4.70		4,962	4.41	4.41	4,962	4.41	1,489	3.08
Transmission Charges		486	0.43	0.43		455	0.40	0.40	455	0.40	137	0.28
Market Operator's Fee		2.28	0.00	0.00		2.13	0.00	0.00	2.13			
Distribution Use of System		2,790	2.48	2.48		2,613	2.32	2.32	2,613	2.32	784	1.62
<b>Total Applicable Costs</b>	<b>9.63</b>	<b>8,576</b>	<b>7.61</b>	<b>17.24</b>	<b>9.02</b>	<b>8,032</b>	<b>7.13</b>	<b>16.15</b>	<b>8,719</b>	<b>7.74</b>	<b>2,409</b>	<b>5.60</b>
Impact of allowed losses					0.61	544	0.48	1.09	544	0.48	163	0.34
<b>Total Cost of Service</b>	<b>9.63</b>	<b>8,576</b>	<b>7.61</b>	<b>17.24</b>	<b>9.63</b>	<b>8,576</b>	<b>7.61</b>	<b>17.24</b>	<b>9,263</b>	<b>8.22</b>	<b>2,572</b>	<b>5.94</b>
Cross Subsidy				7.13				7.13	8,030	7.13		7.13
<b>Average Applicable tariff</b>				<b>24.37</b>				<b>24.37</b>	<b>17,293</b>	<b>15.35</b>	<b>2,572</b>	<b>13.07</b>

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-1)			
Consumption Category	Bulk Supply				Bulk Supply				Bulk Supply C-2(b) (1 MW or More)			
Tariff Category	C2(b)				C2(b)				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total	Rs./kW/ Month	Rs./kWh	Rs./kW/ Month	Rs./kWh
Generation Cost - Energy	9.63			9.63	9.02			9.02	414	0.61		0.61
Generation Cost - Capacity		5,298	7.81	7.81		4,962	7.32	7.32	4,962	7.32	1,489	5.12
Transmission Charges		486	0.72	0.72		455	0.67	0.67	455	0.67	137	0.47
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00	2.13			
Distribution Use of System		2,395	3.53	3.53		2,243	3.31	3.31	2,243	3.31	673	2.32
<b>Total Applicable Costs</b>	<b>9.63</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>9.02</b>	<b>7,663</b>	<b>11.30</b>	<b>20.32</b>	<b>8,077</b>	<b>11.91</b>	<b>2,298</b>	<b>8.52</b>
Impact of allowed losses					0.61	519	0.77	1.38	519	0.77	156	0.54
<b>Total Cost of Service</b>	<b>9.63</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>9.63</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>8,596</b>	<b>12.68</b>	<b>2,454</b>	<b>9.06</b>
Cross Subsidy				3.41				3.41	1,930	3.41		3.41

**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-1A**

Average Applicable Tariff				25.10				25.10	10,526	16.08	2,454	12.46
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Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-1)			
Consumption Category	Industrial				Industrial				Industrial B-4			
Tariff Category	B4				B4				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total				
	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh/ Month	Rs./kWh
Generation Cost - Energy	9.11			9.11	9.02			9.02	51	0.09		0.09
Generation Cost - Capacity		5,012	8.85	8.85		4,962	8.77	8.77	4,962	8.77	1,488.60	6.14
Transmission Charges		460	0.81	0.81		455	0.80	0.80	455	0.80	136.57	0.56
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00	2			
Distribution Use of System		1,855	3.28	3.28		1,837	2.90	2.90	1,837	2.90	551.00	2.03
<b>Total Applicable Costs</b>	<b>9.11</b>	<b>7,329</b>	<b>12.95</b>	<b>22.06</b>	<b>9.02</b>	<b>7,256</b>	<b>12.47</b>	<b>21.49</b>	<b>7,307</b>	<b>12.56</b>	<b>2,176</b>	<b>8.82</b>
Impact of allowed losses					-	73	0.13	0.56	73	0.13	21.77	0.09
<b>Total Cost of Service</b>	<b>9.11</b>	<b>7,329</b>	<b>12.95</b>	<b>22.0556</b>	<b>9.02</b>	<b>7,329</b>	<b>12.60</b>	<b>22.06</b>	<b>7,380</b>	<b>12.69</b>	<b>2,198</b>	<b>8.91</b>
Cross Subsidy				2.16				2.16	1,464	2.16		2.16
<b>Average Applicable Tariff</b>				<b>24.21</b>				<b>24.21</b>	<b>8,844</b>	<b>14.84</b>	<b>2,198</b>	<b>11.06</b>

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-1)			
Consumption Category	Bulk Supply				Bulk Supply				Bulk Supply C-3(b)			
Tariff Category	C3(b)				C3(b)				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total				
	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh	Rs./kWh/ Month	Rs./kWh	Rs./kWh/ Month	Rs./kWh
Generation Cost - Energy	9.11			9.11	9.02			9.02	67	0.09		0.09
Generation Cost - Capacity		5,012	6.75	6.75		4,962	6.69	6.69	4,962	6.69	1,488.60	4.68
Transmission Charges		460	0.62	0.62		455	0.61	0.61	455	0.61	136.57	0.43
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00	2			
Distribution Use of System		1,987	2.68	2.68		1,968	2.65	2.65	1,968	2.65	590.31	1.86
<b>Total Applicable Costs</b>	<b>9.11</b>	<b>7,461</b>	<b>10.06</b>	<b>19.16</b>	<b>9.02</b>	<b>7,387</b>	<b>9.96</b>	<b>18.97</b>	<b>7,454</b>	<b>10.04</b>	<b>2,215</b>	<b>7.06</b>
Impact of allowed losses					-	74	-	0.19	74	-	22.17	-
<b>Total Cost of Service</b>	<b>9.11</b>	<b>7,461</b>	<b>10.06</b>	<b>19.16</b>	<b>9.02</b>	<b>7,461</b>	<b>9.96</b>	<b>19.16</b>	<b>7,528</b>	<b>10.04</b>	<b>2,965</b>	<b>9.34</b>
Cross Subsidy			-	5.21				5.21	3,866	5.21		5.21

IESCO – Petition for Determination of Use of System Charges (2023) – Annex-1A

Average Applicable Tariff				24.37				24.37		11,393	15.25	2,965	14.55
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**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-1A**

**Islamabad Electric Supply Company (IESCO) Ltd.**  
**Cost of Service & Proposed Use of System Charges**  
**For Possible Eligible Bulk Power Consumers (One MW or More at One Premises)**  
**(PROPOSAL -2)**

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-2)			
Consumption Category	Industrial				Industrial				Industrial B-3 (1 MW or More)			
Tariff Category	B-3				B-3				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total				
	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kW/ Month	Rs./kWh
Generation Cost - Energy	9.63			9.63	9.02			9.02	690	0.61		0.61
Generation Cost - Capacity		5,298	4.70	4.70		4,978	4.41	4.41	4,978	4.41	1,493	3.08
Transmission Charges		486	0.43	0.43		457	0.40	0.40	457	0.40	137	0.28
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00				
Distribution Use of System		2,790	2.48	2.48		2,621	2.32	2.32	2,621	2.32	786	1.62
<b>Total Applicable Costs</b>	<b>9.629</b>	<b>8,576</b>	<b>7.614</b>	<b>17.24</b>	<b>9.018</b>	<b>8,057</b>	<b>7.131</b>	<b>16.15</b>	<b>8,745</b>	<b>7.74</b>	<b>2,416</b>	<b>5.60</b>
Impact of allowed losses					0.61	519	0.48	1.09	519	0.48	156	0.34
<b>Total Cost of Service</b>	<b>9.629</b>	<b>8,576</b>	<b>7.614</b>	<b>17.24</b>	<b>9.629</b>	<b>8,576</b>	<b>7.614</b>	<b>17.24</b>	<b>9,264</b>	<b>8.22</b>	<b>2,572</b>	<b>5.94</b>
Cross Subsidy				7.13				7.13		7.13		7.13
<b>Average Applicable Tariff</b>				<b>24.37</b>				<b>24.37</b>	<b>9,264</b>	<b>15.35</b>	<b>2,572</b>	<b>13.07</b>

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-2)			
Consumption Category	Bulk Supply				Bulk Supply				Bulk Supply C-2(b) (1 MW or More)			
Tariff Category	C2(b)				C2(b)				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total				
	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kWh	Rs./kW/ Month	Rs./kWh	Rs./kW/ Month	Rs./kWh
Generation Cost - Energy	9.63			9.63	9.02			9.02	402	0.61		0.61
Generation Cost - Capacity		5,298	7.81	7.81		4,978	7.32	7.32	4,978	7.32	1,493	5.12
Transmission Charges		486	0.72	0.72		457	0.67	0.67	457	0.67	137	0.47
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00				
Distribution Use of System		2,395	3.53	3.53		2,250	3.31	3.31	2,250	3.31	675	2.32
<b>Total Applicable Costs</b>	<b>9.63</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>9.018</b>	<b>7,687</b>	<b>11.30</b>	<b>20.32</b>	<b>8,087</b>	<b>11.91</b>	<b>2,305</b>	<b>8.52</b>
Impact of allowed losses					0.61	495	0.77	1.38	495	0.77	149	0.54
<b>Total Cost of Service</b>	<b>9.63</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>9.629</b>	<b>8,182</b>	<b>12.07</b>	<b>21.70</b>	<b>8,582</b>	<b>12.68</b>	<b>2,454</b>	<b>9.06</b>
Cross Subsidy				3.41				3.41	2,243	3.41		3.41
<b>Average Applicable Tariff</b>				<b>25.10</b>				<b>25.10</b>	<b>10,825</b>	<b>16.08</b>	<b>2,454</b>	<b>12.46</b>

**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-1A**

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-2)			
Consumption Category	Industrial				Industrial				Industrial B-4			
Tariff Category	B4				B4				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total	Rs./kW/ Month	Rs./kWh	Rs. /kW/ Month	Rs. /kWh
Generation Cost - Energy	9.11			9.11	9.02			9.02	40	0.09		0.09
Generation Cost - Capacity		5,012	8.85	8.85		4,708	8.77	8.77	4,708	8.77	1,413	6.14
Transmission Charges		460	0.81	0.81		432	0.80	0.80	432	0.80	130	0.56
Market Operator's Fee		2	0.81	0.81		2	0.00	0.00				
Distribution Use of System		1,855	3.28	3.28		1,743	3.24	3.24	1,743	3.24	523	2.27
<b>Total Applicable Costs</b>	<b>9.108</b>	<b>7,329</b>	<b>13.756</b>	<b>22.86</b>	<b>9.018</b>	<b>6,885</b>	<b>12.819</b>	<b>21.84</b>	<b>6,923</b>	<b>12.91</b>	<b>2,065</b>	<b>9.06</b>
Impact of allowed losses					0.09	443	0.13	1.03	443	0.13	133	0.09
<b>Total Cost of Service</b>	<b>9.108</b>	<b>7,329</b>	<b>13.756</b>	<b>22.86</b>	<b>9.108</b>	<b>7,329</b>	<b>12.947</b>	<b>22.86</b>	<b>7,367</b>	<b>13.03</b>	<b>2,198</b>	<b>9.15</b>
Cross Subsidy				1.35				1.35	1,931	1.35		1.35
<b>Average Applicable Tariff</b>				<b>24.21</b>				<b>24.21</b>	<b>9,298</b>	<b>14.38</b>	<b>2,198</b>	<b>10.50</b>

Cost Assessment Level	Cost of Service (Inclusive of Energy Loss Impact)				Cost of Service (Separated Energy Loss Impact)				PROPOSED Use of System Charges (Proposal-2)			
Consumption Category	Bulk Supply				Bulk Supply				Bulk Supply C-3(b)			
Tariff Category	C3(b)				C3(b)				MDI Based	Volumetric	Hybrid	
	Variable	Fixed		Total	Variable	Fixed		Total	Rs./kW / Month	Rs./kWh	Rs. /kW/ Month	Rs. /kWh
Generation Cost - Energy	9.11			9.11	9.02			9.02		0.09		0.09
Generation Cost - Capacity		5,012	6.75	6.75		4,708	6.69	6.69	4,708	6.69	1,413	4.68
Transmission Charges		460	0.62	0.62		432	0.61	0.61	432	0.61	130	0.43
Market Operator's Fee		2	0.00	0.00		2	0.00	0.00				
Distribution Use of System		1,987	2.68	2.68		1,867	2.65	2.65	1,867	2.65	560	1.86
<b>Total Applicable Costs</b>	<b>9.108</b>	<b>7,461</b>	<b>10.06</b>	<b>19.16</b>	<b>9.018</b>	<b>7,010</b>	<b>9.96</b>	<b>18.97</b>	<b>7,008</b>	<b>10.04</b>	<b>2,102</b>	<b>7.06</b>
Impact of allowed losses					-	418	-	0.19	418	-	125	-
<b>Total Cost of Service</b>	<b>9.108</b>	<b>7,461</b>	<b>10.06</b>	<b>19.16</b>	<b>9.018</b>	<b>7,427</b>	<b>9.96</b>	<b>19.16</b>	<b>7,425</b>	<b>10.04</b>	<b>2,917</b>	<b>9.34</b>
Cross Subsidy				5.21				5.21	2,366	5.21		5.21
<b>Average Applicable Tariff</b>				<b>24.37</b>				<b>24.37</b>	<b>9,791</b>	<b>15.25</b>	<b>2,917</b>	<b>14.55</b>

## **Islamabad Electric Supply Company (IESCO) Ltd.**

### **Cost of Service Study**

A Cost of Service (COS) study is the fundamental tool for evaluating and establishing utility rates. With industry and technology changes, utilities are expanding the scope and use of COS studies and are preparing studies that distinguish full and partial requirements customer classes. This is due to the increasing presence of distributed energy resources and/or to accommodate customers' expectations of having more control over their usage and utility bills.

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

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

FACOS is a model developed in MS Excel with the support of USAID for DISCO's 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 Studies, namely, functionalization, classification, and allocation.

### **Major Steps of Cost of Service Study**

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

1. **Functionalization** — The identification of each cost element as one of the basic utility service "functions" (e.g. generation/Power Purchase Price, transmission, distribution and customer).
2. **Classification** — The classification of the functionalized costs based on the billing component/determinant that each is associated with (e.g. kW's of capacity, kWh's of energy or number of customers).
3. **Allocation** — The allocation of the functionalized and classified costs to customer classes, based on respective service requirements / parameters (e.g. kW's of capacity, kWh's of energy and the number of customers) of each class.



IESCO – Petition for Determination of Use of System Charges (2023) – Annex-2

**Fundamental Assumptions**

**Table 1**

<b>Description</b>	<b>FY 2022-23</b>
Allowed Rate of Return (WACC) (NEPRA Determination)	10.33%
Rate of Return (WACC) (Projected)	17.65%
Capital Work in Progress ("CWIP")	Total CWIP
Working Capital Allowance to be included in Rate Base	NO
Prior Year Adjustment (Rs. In Millions)	13,191.00
Demand Allocation Methodology (highest coincident peak in the year). Alternative is 12CP that means average of 12 months coincident peak.	1 CP (Single Annual Peak)
Customer Growth %	5.28%
Model Year	FY 2022-23
Base Year	FY 2020-21

## **Projections and Revenue Requirement for Financial Year 2022-23**

The Revenue Requirement (RR) is the fundamental input to the Cost of Service of IESCO for allocation to different categories of consumers based on Capacity (kW), Energy (kWh) and number of consumers. The **Table 2** below explains the basis and sources for arriving at Revenue Requirement (or overall Cost of Service) of IESCO.

**Table 2**

<b>Description</b>	<b>FY 2022-23</b>	<b>Source</b>
Units Purchased (MkWh)	12,739	NEPRA MYT Determination FY 2022-23
Units Sold (MkWh)	11,745	
Assessed T&D Losses	7.80%	
Consumer Growth	5.28%	
Average Monthly MDI (MW) (Non-Coincidence at CDPs)	2,295	
Energy Purchase Price (Rs/kWh)	9.02	These rates are calculated from Tariff Determination FY 2022-23. However average rates of energy, capacity and T.UoS for current Financial Year (2022-23 Six months) are Rs. 10.04/kwh, Rs. 3,304.07/KW/M and Rs. 391.51/KW/M respectively
Capacity Charges (Rs/kW/Month)	4,088	
T.UoS Rate (Rs/kW/Month)	373	
MOF (Rs/kW/Month)	1.71	Actual basis in FY 2022-23
Energy Charges (Rs. M)	114,887	Calculated by using above rates
Capacity Charges (Rs. M)	112,582	
T.UoS Rate (Rs. M)	10,262	
MOF (Rs. M)	47	
<b>Power Purchase Price (Rs. M)</b>	<b>237,778</b>	
O&M Cost (Rs. M)	28,056	NEPRA MYT Determination FY 2022-23
Depreciation (Rs. M)	4,656	
RORB (Rs. M)	22,059	
Other Income (Rs. M)	2,255	
Prior Year Adjustment (Rs. M)	13,191	
<b>Revenue Requirement (Rs. M)</b>	<b>303,485</b>	
Cost per KWH (Sold)	25.84	

## Summary of Revenue Requirement

The extract of Revenue Requirement is provided in the **Table 3** below:

**Table 3**

Summary of Revenue Requirement	
Description	FY 2022-23 Rs. (M)
Energy Charges	114,886.61
Capacity Charges	112,582.14
T.UoS Rate	10,261.95
MOF	47.09
<b>Power Purchase Price</b>	<b>237,777.80</b>
O&M Cost	28,056.40
Depreciation	4,656.14
RORB	22,059.07
Other Income	2,255.00
<b>Distribution Margin</b>	<b>52,516.61</b>
Prior Year Adjustment	13,191.00
<b>Revenue Requirement</b>	<b>303,485.41</b>

## Line Losses Charged on Voltage Levels

Line losses taken from IESCO Demand Forecast (Dec-2022) 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.

**Table 4**

Losses FY 2022-23						Source
Voltage Level	0.2 kV	0.4kV	11kV	132kV	Total	
Losses %age on purchased units	1.91%		4.90%	0.99%	7.80%	Target as per NEPRA Determination is 18.57%
Losses %age on received units	2.23%		4.95%	0.99%		Calculated as applied on units received at each voltage level.
Losses %age charged on purchased unit						

Overall the effective %age of energy losses, i.e. (total kWh purchases — total kWh sold)/total kWh purchased remains 7.80% as per target.

## 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 by Voltage Level				
Voltage	132/66kV	11kV	0.4kV	0.2 kV
Customer Class	B4	B3	A1b	A1a
	C3a	C2a	A2b	A2a
	C3b	C2b	A2c	B1a
		H1	A3a	C1a
		H2	B1b	E1i
		K1a	B2a	E1ii
		K1b	B2b	E2
			C1b	
			C1c	
			D1a	
			D1b	
			D2a	
			D2b	
			G1	
			G2	

## IESCO Tariff determined by NEPRA in July-2022

Tariffs for various categories of IESCO consumers as determined by NEPRA vide their determination No. NEPRA/R/ADG(Tariff)/ TRF-100/XWDISCOs/13540- 13542 dated 22-07-2022 are provided in **Table 6** below.

**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-2**

**Table 6**

NEPRA DETERMINED TARIFF (22-07-2022)			
TARIFF CATEGORIES		Fixed Charges	Variable Charges
		Rs/kW/M	Rs/kWh
<b>A1 (a)</b>	<b>RESIDENTIAL -A1</b>		
i	Up to 50 Units Life line		5.00
ii	51-100 units Life line		14.58
iii	01-100 Units		17.55
iv	101-200 Units		19.55
v	01-100 Units		20.20
vi	101-200 Units		23.37
vii	201-300 Units		23.90
viii	301-400Units		25.14
ix	401-500Units		25.58
x	501-600Units		26.58
xi	601-700Units		27.58
xii	Above 700 Units		28.58
<b>A1(b)</b>	Time of Use (TOU) - Peak		27.58
	Time of Use (TOU) - Off-Peak		20.20
<b>E-1(i)</b>	Temporary E-1 (i)		28.58
	<b>COMMERCIAL - A2</b>		
<b>A2 (a)</b>	Commercial - For peak load requirement up to 5 kW		24.56
<b>A2 (b)</b>	Sanctioned load 5 kw and above	500	23.08
<b>A2 (c)</b>	Time of Use (TOU) - Peak (A-2)	500	27.58
	Time of Use (TOU) - Off-Peak	500	21.48
<b>E-1 (ii)</b>	Temporary E-1 (ii)		26.13
	<b>INDUSTRIAL</b>		
<b>B1(a)</b>	B1		23.49
<b>B1(b)</b>	B1- TOU (Peak)		27.48
	B1 - TOU (Off-peak)		21.38
<b>B2 (a)</b>	B2	500	23.48
<b>B2 (b)</b>	B2 - TOU (Peak)	500	27.48
	B2 - TOU (Off-peak)	500	20.88
<b>B3</b>	B3 - TOU (Peak)	460	27.48
	B3 - TOU (Off-peak)	460	22.28
<b>B4</b>	B4 - TOU (Peak)	400	27.48
	B4 - TOU (Off-peak)	400	22.08
<b>E-2</b>	Temporary E-2		26.48
	<b>BULK</b>		
<b>C1 (a)</b>	C1(a) up to 5 kW		24.19
<b>C1 (b)</b>	C1(b) exceeding 5 kW	500	23.99
<b>C1 (c)</b>	Time of Use (TOU) - Peak	500	27.58
	Time of Use (TOU) - Off-Peak	500	20.98
<b>C2 (a)</b>	C2 Supply at 11 kV	460	23.89
<b>C2 (b)</b>	Time of Use (TOU) - Peak	460	27.58
	Time of Use (TOU) - Off-Peak	460	22.38
<b>C3 (a)</b>	C3 Supply above 11 kV	440	23.78
<b>C3 (b)</b>	Time of Use (TOU) - Peak	440	27.58
	Time of Use (TOU) - Off-Peak	440	22.18
	<b>AGRICULTURAL TUBE WELLS - Tariff D</b>		
<b>D1 (a)</b>	D1 Scarp		24.19
<b>D2 (a)</b>	D2 Agricultural Tube-wells	200	24.19
<b>D1 (b)</b>	Time of Use (TOU) - Peak	200	27.58
	Time of Use (TOU) - Off-Peak	200	20.98
<b>D2 (b)</b>	Time of Use (TOU) - Peak	200	27.58
	Time of Use (TOU) - Off-Peak	200	20.98
<b>G</b>	Public Lighting G		27.88
<b>H</b>	Residential Colonies H		28.18
<b>K1</b>	Special Contracts - Tariff K (AJK)	440	24.19
<b>K1 (i)</b>	Time of Use (TOU) - Peak	440	27.58
	Time of Use (TOU) - Off-Peak	440	20.98
<b>A3</b>	General Service		24.61

## Results from FACOS Model

### 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. Overall summary of the allocation is given in below Table 7.

Table 7

Revenue Requirement Allocation %age				
Discription	Energy	Demand	Customer	Total
Energy Charges	100%	-	-	100%
Capacity Charges	-	100%	-	100%
T.UoSC	-	100%	-	100%
MOF	-	100%	-	100%
O&M Cost	-	80%	20%	100%
Depreciation	-	85%	15%	100%
RORB	-	87%	13%	100%
Other Income	-	78%	22%	100%
Prior Year Adjustment	-	65%	35%	100%

### 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

Revenue Requirement Allocation Rs. (M)				
Discription	Energy	Demand	Customer	Total
Energy Charges	114,887	-	-	114,887
Capacity Charges	-	112,582	-	112,582
T.UoSC	-	10,262	-	10,262
MOF	-	47	-	47
<b>Power Purchase Price</b>	<b>114,887</b>	<b>122,891</b>	<b>-</b>	<b>237,778</b>
O&M Cost	-	22,445	5,611	28,056
Depreciation	-	3,958	698	4,656
RORB	-	19,191	2,868	22,059
Other Income	-	1,759	496	2,255
<b>Distribution Margin</b>	<b>-</b>	<b>43,835</b>	<b>8,681</b>	<b>52,517</b>
Prior Year Adjustment	-	8,574	4,617	13,191
<b>Revenue Requirements</b>	<b>114,887</b>	<b>175,301</b>	<b>13,298</b>	<b>303,485</b>

### 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 Tariff determined vide No. NEPRA/R/ADG(Tariff)/ TRF- 100/XWDISCOs/13540- 13542 dated 22-07-2022 already provided in (**Table 6**).

**Table 9**  
**FY 2022-23**

Consumer Category	MDI MW	Sales (GWh)	Fixed Charge Rs. (M)	Variable Charge Rs. (M)	Total Revenue Rs. (M)	Rs./kWh
Residential – A1(a)		5,084	-	108,087	108,087	21.26
Residential – A1(b)		717	-	15,450	15,450	21.56
Commercial – A2(a)		433	-	10,638	10,638	24.56
Commercial – A2(b)	0.05	2	4	37	41	25.86
Commercial – A2(c)	316.54	788	1,899	17,806	19,705	25.00
Industrial – B1(a)		2	-	59	59	23.71
Industrial – B2(a)	0.04	0	0	3	3	28.77
Industrial – B1(b)		54	-	1,202	1,202	22.12
Industrial – B2(b)	240.48	482	1,443	10,457	11,900	24.71
Industrial – B3	113.16	474	625	10,930	11,555	24.37
Industrial – B4	148.79	602	714	13,855	14,569	24.21
Single Point Supply – C1(a)		0.00	-	0	0	23.98
Single Point Supply – C1(b)	0.22	1.1	1	27	28	25.01
Single Point Supply – C1(c)	16.09	8	97	1,415	1,512	184.23
Single Point Supply – C2(a)	1.80	-	10	196	206	-
Single Point Supply – C2(b)	131.25	64	725	10,616	11,341	177.30
Single Point Supply – C3(a)	0.00	456	-	2,233	2,233	4.89
Single Point Supply – C3(b)	108.18	461	571	8,420	8,991	-
Agricultural –D1(a)	11.17	0	-	7	7	23.76
Agricultural –D2(a)		6	27	155	182	28.41
Agricultural –D1(b)	0.69	27	2	20	22	0.82
Agricultural –D2(b)	36.93	1	89	581	670	738.41
Temporary Supply – E1(i)		4	-	124	124	28.66
Temporary Supply – E1(ii)		27	-	717	717	26.14
Temporary Supply – E2		-	-	-	-	-
Public Lighting – G		80	-	2,229	2,229	27.89
Residential Colonies – H		4	-	108	108	28.26
Azad Jammu Kashmir - K1a	9.87	30	52	716	768	-
Azad Jammu Kashmir - K1b	329.04	1,414	1,737	38,999	40,736	-
A3 General		524	-	12,888	12,888	24.61
<b>Total</b>	<b>1464</b>	<b>11,745</b>	<b>7,996</b>	<b>267,975</b>	<b>275,971</b>	<b>23.50</b>

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**Table 10**  
**FY 2022-23**

<b>Consumer Class</b>	<b>MDI MW</b>	<b>Sales (GWh)</b>	<b>Fixed Charge Rs. (M)</b>	<b>Variable Charge Rs.(M)</b>	<b>Total Revenue Rs. (M)</b>	<b>Rs./kWh</b>
0.2 KV	814	5552	79285	63780	143065	25.77
0.4 KV	625	2745	60901	29903	90805	33.08
11 KV	245	2386	22207	25199	47406	19.87
132 KV	140	1062	11602	10608	22210	20.91
<b>G. TOTAL</b>	<b>1823</b>	<b>11,745</b>	<b>173,996</b>	<b>129,490</b>	<b>303,485</b>	<b>25.84</b>



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**Cost of Service Functionalized Rates (Tariff Wise)**

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

**Table 11**

<b>FY 2022-23</b>											
<b>Classes</b>	<b>Voltage Level</b>	<b>No of Customers (M)</b>	<b>Energy</b>	<b>Demand</b>	<b>Generation Cost</b>		<b>Transmission</b>	<b>MOF</b>	<b>Distribution Cost</b>		<b>Total Cost</b>
			<b>GWH</b>	<b>MW</b>	<b>Energy (Rs. M)</b>	<b>Demand (Rs. M)</b>	<b>Cost (Rs. M)</b>	<b>Cost (Rs. M)</b>	<b>Demand (Rs. M)</b>	<b>Customer (Rs. M)</b>	
Residential -- A1(a)	0.2kV	3,056	5,024	193	50,393	12,604	1,155	5.42	5,071	7,905	77,134
Residential -- A1(b)	0.4kV	132,979	717	234	7,103	15,343	1,408	6.59	6,172	666	30,699
Commercial -- A2(a)	0.2kV	437,594	433	504	4,293	32,973	3,025	14.17	13,265	673	54,244
Commercial -- A2(b)	0.4kV	47	2	7	16	479	44	0.21	193	1	733
Commercial -- A2(c)	0.4kV	33,829	788	174	7,811	11,376	1,044	4.89	4,576	733	25,545
Industrial -- B1(a)	0.2kV	5,240	2	65	25	4,245	389	1.82	1,708	4	6,373
Industrial -- B2(a)	0.4kV	466	0	7	1	450	41	0.19	181	0	674
Industrial -- B1(b)	0.4kV	7,661	54	57	538	3,725	342	1.60	1,499	51	6,156
Industrial -- B2(b)	0.4kV	4,716	482	32	4,772	2,103	193	0.90	846	448	8,363
Industrial -- B3	11kV	149	474	35	4,565	2,230	205	0.96	757	417	8,175
Industrial -- B4	132/6 kV	14	602	89	5,481	5,328	489	2.29	1,519	453	13,273
Single Point Supply -- C1(a)	0.2kV	13	0.00	0	0	27	2	0.01	11	0	40
Single Point Supply -- C1(b)	0.4kV	158	1	6	11	369	34	0.16	149	1	564
Single Point Supply -- C2(a)	11kV	25	8	1	79	37	3	0.02	12	7	139
Single Point Supply -- C3(a)	132/6 kV	-	-	0	-	2	0	0.00	1	-	3
Single Point Supply -- C1(c)	0.4kV	540	64	9	634	577	53	0.25	232	59	1,556
Single Point Supply -- C2(b)	11kV	145	456	56	4,394	3,566	327	1.53	1,211	401	9,902
Single Point Supply -- C3(b)	132/6 kV	15	461	52	4,195	3,111	285	1.34	887	347	8,827
Agricultural -- D1(a)	0.4kV	224	0	6	3	361	33	0.16	145	0	543
Agricultural -- D2(a)	0.4kV	4,287	6	14	64	884	81	0.38	356	6	1,391
Agricultural -- D2(b)	0.4kV	2,901	27	13	263	857	79	0.37	345	25	1,569
Agricultural -- D1(b)	0.4kV	291	1	8	9	555	51	0.24	223	1	840
Temporary Supply -- E1(i)	0.2kV	2,369	4	26	43	1,722	158	0.74	693	7	2,624
Temporary Supply -- E1(ii)	0.2kV	7,126	27	25	272	1,610	148	0.69	648	43	2,720
Temporary Supply -- E2	0.2kV	-	-	1	-	57	5	0.02	23	-	86
Public Lighting -- G	0.4kV	2,243	80	28	792	1,856	170	0.80	746	74	3,640
Residential Colonies -- H	11kV	46	4	1	37	44	4	0.02	15	3	103
Azad Jammu Kashmir - K1a	11kV	6	30	1	285	73	7	0.03	25	26	415
Azad Jammu Kashmir - K1b	11kV	124	1,414	151	13,616	9,600	881	4.13	3,260	1,243	28,604
A3 General	0.4kV	20,884	524	30	5,190	1,958	180	0.84	788	487	8,604
<b>Total</b>	<b>-</b>	<b>3,720,67</b>	<b>11,745</b>	<b>1,823</b>	<b>114,887</b>	<b>118,122</b>	<b>10,837</b>	<b>50.77</b>	<b>45,558</b>	<b>14,082</b>	<b>303,536</b>

## IESCO – Petition for Determination of Use of System Charges (2023) – Annex-2

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

**Table 12**

<b>FY 2022-23</b>											
Customer Class	Voltage Level	No. of Customers	Energy	Demand	Generation Cost		Transm	MOF	Distribution		Total Rs./ kWh
			GWh	MW	Energy (Rs /kWh)	Demand (Rs /kW/ Month)	(Rs /kW/ Month)	(Rs /kW/ Month)	(Rs /kW/ Month)	(Rs /Cust/ Month)	
Residential -- A1 (a)	0.2kV	3,056,582	5,084	193	9.91	5,453	500	2.34	2,194	3,420	15.17
Residential -- A1 (b)	0.4kV	132,979	717	234	9.91	5,453	500	2.34	2,194	237	42.84
Commercial -- A2 (a)	0.2kV	437,594	433	504	9.91	5,453	500	2.34	2,194	111	125.27
Commercial -- A2 (b)	0.4kV	47	2	7	9.91	5,453	500	2.34	2,194	17	462.2
Commercial -- A2 (c)	0.4kV	33,829	788	174	9.91	5,453	500	2.34	2,194	351	32.41
Industrial -- B1 (a)	0.2kV	5,240	2	65	9.91	5,453	500	2.34	2,194	5	2,561.1
Industrial -- B2 (a)	0.4kV	466	0	7	9.91	5,453	500	2.34	2,194	1	5,976.1
Industrial -- B1 (b)	0.4kV	7,661	54	57	9.91	5,453	500	2.34	2,194	74	113.31
Industrial -- B2 (b)	0.4kV	4,716	482	32	9.91	5,453	500	2.34	2,194	1,161	17.37
Industrial -- B3	11kV	149	474	35	9.63	5,298	486	2.28	1,799	990	17.24
Industrial -- B4	132/66kV	14	602	89	9.11	5,012	460	2.15	1,429	426	22.06
Single P. Supply C1(a)	0.2kV	13	0	0	9.63	5,453	500	2.34	2,194	0	29,079
Single P. Supply C1(b)	0.4kV	158	1	6	9.91	5,453	500	2.34	2,194	15	504.00
Single P. Supply C2(a)	11kV	25	8	1	9.63	5,298	486	2.28	1,799	1,046	16.88
Single P. Supply C3(a)	132/66kV	-	-	0	-	5,012	460	2.15	1,429	-	-
Single P. Supply C1(c)	0.4kV	540	64	9	9.91	5,453	500	2.34	2,194	562	24.32
Single P. Supply C2(b)	11kV	145	456	56	9.63	5,298	486	2.28	1,799	596	21.70
Single P. Supply C3(b)	132/66kV	15	461	52	9.11	5,012	460	2.15	1,429	558	19.16
Agricultural -- D1(a)	0.4kV	224	0	6	9.91	5,453	500	2.34	2,194	4	1,842.15
Agricultural -- D2(a)	0.4kV	4,287	6	14	9.91	5,453	500	2.34	2,194	37	217.0
Agricultural -- D2(b)	0.4kV	2,901	27	13	9.91	5,453	500	2.34	2,194	157	59.0
Agricultural -- D1(b)	0.4kV	291	1	8	9.91	5,453	500	2.34	2,194	8	925.47
Temporary - E1 (i)	0.2kV	2,369	4	26	9.91	5,453	500	2.34	2,194	21	606.4
Temporary - E1 (ii)	0.2kV	7,126	27	25	9.91	5,453	500	2.34	2,194	144	99.19
Temporary - E2	0.2kV	-	-	1	-	5,453	500	2.34	2,194	-	-
Public Lighting -- G	0.4kV	2,243	80	28	9.91	5,453	500	2.34	2,194	218	45.5
Res Colonies -- H	11kV	46	4	1	9.63	5,298	486	2.28	1,799	408	26.86
A J K - K1a	11kV	6	30	1	9.63	5,298	486	2.28	1,799	1,899	14.07
A J K - K1b	11kV	124	1,414	151	9.63	5,298	486	2.28	1,799	686	20.2
A3 General	0.4kV	20,884	524	30	9.91	5,453	500	2.34	2,194	1,356	16.43
<b>Total</b>	<b>-</b>	<b>3,720,672</b>	<b>11,745</b>	<b>1,823</b>	<b>9.78</b>	<b>5,399</b>	<b>495</b>	<b>2.32</b>	<b>2,082</b>	<b>644</b>	<b>25.8</b>

# IESCO – Petition for Determination of Use of System Charges (2023) – Annex-2

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

**Table 13**

**FY 2022-23**

Customer Class	Voltage	Sales GWh	Energy	Demand	Generation Cost		Trans m	MOF	Distribution		Total Rs./ kWh/ Month
			GWh	MW	Energy (Rs /kW/ Month)	Demand (Rs /kW/ Month)	(Rs /kW/ Month)	(Rs /kW /Month )	(Rs /kW/ Month)	(Rs /kW/ Month)	
Residential – A1 (a)	0.2k V	5,084	5,084	193	21,805	5,453	500	2.34	2,194	3,420	33,375
Residential – A1 (b)	0.4k V	717	717	234	2,525	5,453	500	2.34	2,194	237	10,912
Commercial – A2 (a)	0.2k V	433	433	504	710	5,453	500	2.34	2,194	111	8,971
Commercial – A2 (b)	0.4k V	2	2	7	179	5,453	500	2.34	2,194	17	8,346
Commercial – A2 (c)	0.4k V	788	788	174	3,745	5,453	500	2.34	2,194	351	12,246
Industrial – B1 (a)	0.2k V	2	2	65	32	5,453	500	2.34	2,194	5	8,187
Industrial – B2 (a)	0.4k V	0	0	7	14	5,453	500	2.34	2,194	1	8,165
Industrial – B1 (b)	0.4k V	54	54	57	788	5,453	500	2.34	2,194	74	9,012
Industrial – B2 (b)	0.4k V	482	482	32	12,377	5,453	500	2.34	2,194	1,161	21,688
Industrial – B3	11kV	474	474	35	10,845	5,298	486	2.28	1,799	990	19,421
Industrial – B4	132/6 6kV	602	602	89	5,156	5,012	460	2.15	1,429	426	12,484
Single P. Supply C1(a)	0.2k V	0	0	0	3	5,453	500	2.34	2,194	0	8,153
Single P. Supply C1(b)	0.4k V	1	1	6	164	5,453	500	2.34	2,194	15	8,329
Single P. Supply C2(a)	11kV	8	8	1	11,458	5,298	486	2.28	1,799	1,046	20,089
Single P. Supply C3(a)	132/6 6kV	-	-	0	-	5,012	460	2.15	1,429	-	6,903
Single P. Supply C1(c)	0.4k V	64	64	9	5,993	5,453	500	2.34	2,194	562	14,705
Single P. Supply C2(b)	11kV	456	456	56	6,528	5,298	486	2.28	1,799	596	14,710
Single P. Supply C3(b)	132/6 6kV	461	461	52	6,758	5,012	460	2.15	1,429	558	14,219
Agricultural – D1(a)	0.4k V	0	0	6	44	5,453	500	2.34	2,194	4	8,198
Agricultural – D2(a)	0.4k V	6	6	14	392	5,453	500	2.34	2,194	37	8,579
Agricultural – D2(b)	0.4k V	27	27	13	1,675	5,453	500	2.34	2,194	157	9,982
Agricultural – D1(b)	0.4k V	1	1	8	88	5,453	500	2.34	2,194	8	8,247
Temporary - E1 (i)	0.2k V	4	4	26	136	5,453	500	2.34	2,194	21	8,307
Temporary - E1 (ii)	0.2k V	27	27	25	921	5,453	500	2.34	2,194	144	9,215
Temporary - E2	0.2k V	-	-	1	-	5,453	500	2.34	2,194	-	8,150
Public Lighting – G	0.4k V	80	80	28	2,328	5,453	500	2.34	2,194	218	10,697
Res Colonies – H	11kV	4	4	1	4,466	5,298	486	2.28	1,799	408	12,459
A J K - K1a	11kV	30	30	1	20,797	5,298	486	2.28	1,799	1,899	30,281
A J K - K1b	11kV	1,414	1,414	151	7,514	5,298	486	2.28	1,799	686	15,786
A3 General	0.4k V	524	524	30	14,453	5,453	500	2.34	2,194	1,356	23,959
<b>Total</b>	<b>-</b>	<b>11,745</b>	<b>11,745</b>	<b>1,823</b>	<b>5,251</b>	<b>5,399</b>	<b>495</b>	<b>2.32</b>	<b>2,082</b>	<b>644</b>	<b>13,873</b>

**IESCO – Petition for Determination of Use of System Charges (2023) – Annex-2**

**Unbundled Rates Rs./kWh (Tariff Wise)**

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

**Table 14**

<b>FY 2022-23</b>								
<b>Customer Class</b>	<b>Voltage</b>	<b>Sales GWh</b>	<b>Demand MW</b>	<b>Generation Rs. /kWh</b>	<b>T. UoSC Rs. /kWh</b>	<b>MOF Rs. /kWh</b>	<b>D. UoSC Rs. /kWh</b>	<b>Total Rate Rs/ kWh</b>
Residential -- A1 (a)	0.2kV	5,084	192.59	12.39	0.23	0.00	2.55	15.17
Residential -- A1 (b)	0.4kV	717	234.45	31.32	1.96	0.01	9.54	42.84
Commercial -- A2 (a)	0.2kV	433	503.85	86.04	6.98	0.03	32.18	125.23
Commercial -- A2 (b)	0.4kV	2	7.32	311.95	27.71	0.13	122.44	462.23
Commercial -- A2 (c)	0.4kV	788	173.83	24.35	1.32	0.01	6.74	32.41
Industrial -- B1 (a)	0.2kV	2	64.87	1,716.26	156.54	0.73	688.03	2,561.56
Industrial -- B2 (a)	0.4kV	0	6.88	4,001.98	366.24	1.72	1,606.96	5,976.89
Industrial -- B1 (b)	0.4kV	54	56.92	78.48	6.29	0.03	28.51	113.31
Industrial -- B2 (b)	0.4kV	482	32.13	14.28	0.40	0.00	2.69	17.37
Industrial -- B3	11kV	474	35.08	14.33	0.43	0.00	2.48	17.24
Industrial -- B4	132/66kV	602	88.60	17.96	0.81	0.00	3.28	22.06
Single P. Supply C1(a)	0.2kV	0	0.41	19,460.24	1,784.42	8.36	7,826.61	29,079.63
Single P. Supply C1(b)	0.4kV	1	5.65	339.90	30.27	0.14	133.69	504.00
Single P. Supply C2(a)	11kV	8	0.57	14.08	0.41	0.00	2.39	16.88
Single P. Supply C3(a)	132/66kV	-	0.03	-	-	-	-	-
Single P. Supply C1(c)	0.4kV	64	8.82	18.93	0.83	0.00	4.56	24.32
Single P. Supply C2(b)	11kV	456	56.09	17.44	0.72	0.00	3.53	21.70
Single P. Supply C3(b)	132/66kV	461	51.73	15.86	0.62	0.00	2.68	19.16
Agricultural -- D1(a)	0.4kV	0	5.52	1,235.30	112.42	0.53	493.91	1,842.15
Agricultural -- D2(a)	0.4kV	6	13.51	147.90	12.66	0.06	56.44	217.06
Agricultural -- D2(b)	0.4kV	27	13.10	42.19	2.96	0.01	13.91	59.08
Agricultural -- D1(b)	0.4kV	1	8	621.92	56.15	0.26	247.14	925.47
Temporary - E1 (i)	0.2kV	4	26	408.00	36.52	0.17	161.71	606.40
Temporary - E1 (ii)	0.2kV	27	25	68.61	5.38	0.03	25.17	99.19
Temporary - E2	0.2kV	-	1	-	-	-	-	-
Public Lighting -- G	0.4kV	80	28	33.12	2.13	0.01	10.27	45.53
Res Colonies -- H	11kV	4	1	21.05	1.05	0.00	4.76	26.86
Azad Jammu Kashmir - K1a	11kV	30	1	12.08	0.23	0.00	1.71	14.02
Azad Jammu Kashmir - K1b	11kV	1,414	151	16.42	0.62	0.00	3.18	20.23
A3 General	0.4kV	524	30	13.65	0.34	0.00	2.43	16.43
<b>Total</b>	<b>-</b>	<b>11,745</b>	<b>1,823</b>	<b>19.84</b>	<b>0.92</b>	<b>0.0043</b>	<b>5.08</b>	<b>25.84</b>

### Volumetric Rates at Each Customer Category

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

Table 15

FY 2022-23

Customer Class	Voltage	Sales GWh	Allocated Cost Rs. (M)		Fixed Charge Rs /kW /Month	Variable Charge Rs/ kWh	Total Rate Rs/ kWh
			Fixed Cost	Variable Cost			
Residential -- A1 (a)	0.2kV	5,084	18,836	58,298	8,150	11.47	15.17
Residential -- A1 (b)	0.4kV	717	22,929	7,769	8,150	10.84	42.84
Commercial -- A2 (a)	0.2kV	433	49,277	4,967	8,150	11.47	125.23
Commercial -- A2 (b)	0.4kV	2	716	17	8,150	10.84	462.23
Commercial -- A2 (c)	0.4kV	788	17,001	8,544	8,150	10.84	32.41
Industrial -- B1 (a)	0.2kV	2	6,344	29	8,150	11.47	2,561.56
Industrial -- B2 (a)	0.4kV	0	673	1	8,150	10.84	5,976.89
Industrial -- B1 (b)	0.4kV	54	5,567	589	8,150	10.84	113.31
Industrial -- B2 (b)	0.4kV	482	3,143	5,220	8,150	10.84	17.37
Industrial -- B3	11kV	474	3,193	4,982	7,586	10.51	17.24
Industrial -- B4	132/66k V	602	7,339	5,934	6,903	9.86	22.06
Single P. Supply C1(a)	0.2kV	0	40	0	8,150	11.18	29,079.63
Single P. Supply C1(b)	0.4kV	1	552	12	8,150	10.84	504.00
Single P. Supply C2(a)	11kV	8	52	86	7,586	10.51	16.88
Single P. Supply C3(a)	132/66k V	-	3	-	6,903	-	-
Single P. Supply C1(c)	0.4kV	64	862	693	8,150	10.84	24.32
Single P. Supply C2(b)	11kV	456	5,106	4,796	7,586	10.51	21.70
Single P. Supply C3(b)	132/66k V	461	4,285	4,542	6,903	-	19.16
Agricultural -- D1(a)	0.4kV	0	540	3	8,150	10.84	1,842.15
Agricultural -- D2(a)	0.4kV	6	1,321	69	8,150	10.84	217.06
Agricultural -- D2(b)	0.4kV	27	1,281	288	8,150	10.84	59.08
Agricultural -- D1(b)	0.4kV	1	830	10	8,150	10.84	925.47
Temporary - E1 (i)	0.2kV	4	2,574	50	8,150	11.47	606.40
Temporary - E1 (ii)	0.2kV	27	2,406	314	8,150	11.47	99.19
Temporary - E2	0.2kV	-	86	-	8,150	-	-
Public Lighting -- G	0.4kV	80	2,773	867	8,150	10.84	45.53
Res Colonies -- H	11kV	4	63	40	7,586	10.51	26.86
A J K - K1a	11kV	30	104	311	7,586	-	14.02
A J K - K1b	11kV	1,414	13,745	14,859	7,586	-	20.23
A3 General	0.4kV	524	2,927	5,677	8,150	10.84	16.43
<b>Total</b>	<b>-</b>	<b>11,745</b>	<b>174,568</b>	<b>128,969</b>	<b>7,978</b>	<b>10.98</b>	<b>25.84</b>

### Revenue Volumetric Rates at Each Customer Category

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.

Table 16

FY 2022-23

Customer Class	Voltage	Sales GWh	Demand MW	Revenue As Per NEPRA Tariff			Cost of Service			Difference Subsidy M.PKR	Subsidy Rs.kWh
				Demand Charge (M.PKR)	Energy Charge M.PKR	Total M.PKR	Demand Cost (M.PKR)	Energy Cost M.PKR	Total M.PKR		
Residential A1 (a)	0.2kV	5,084	193	-	108,087	108,087	18,830	58,298	77,129	30,958	6.09
Residential A1 (b)	0.4kV	717	234	-	15,450	15,450	22,923	7,769	30,692	(15,243)	(21.27)
Commercial A2 (a)	0.2kV	433	504	-	10,638	10,638	49,263	4,967	54,230	(43,591)	(100.64)
Commercial A2 (b)	0.4kV	2	7	4	37	40	715	17	733	(692)	(436.74)
Commercial A2 (c)	0.4kV	788	174	1,899	17,806	19,705	16,996	8,544	25,540	(5,834)	(7.40)
Industrial B1 (a)	0.2kV	2	65	-	59	59	6,343	29	6,371	(6,312)	(2,537.24)
Industrial B2 (a)	0.4kV	0	7	0	3	3	673	1	674	(671)	(5,949.51)
Industrial B1 (b)	0.4kV	54	57	-	1,202	1,202	5,566	589	6,155	(4,953)	(91.16)
Industrial B2 (b)	0.4kV	482	32	1,443	10,457	11,900	3,142	5,220	8,362	3,538	7.35
Industrial B3	11kV	474	35	625	10,930	11,554	3,192	4,982	8,174	3,380	7.13
Industrial B4	132/6 kV	602	89	714	13,855	14,570	7,336	5,934	13,270	1,299	2.16
Bulk Supply C1(a)	0.2kV	0	0	-	0	0	40	0	40	(40)	(29,047.08)
Bulk Supply C1(b)	0.4kV	1	6	1	27	28	552	12	564	(536)	(478.71)
Bulk Supply C2(a)	11kV	8	1	10	196	206	52	86	139	67	8.22
Bulk Supply C3(a)	132/6 kV	-	0	-	-	-	3	-	3	(3)	-
Bulk Supply C1(c)	0.4kV	64	9	97	1,415	1,511	862	693	1,555	(44)	(0.69)
Bulk Supply C2(b)	11kV	456	56	725	10,616	11,340	5,105	4,796	9,900	1,440	3.16
Bulk Supply C3(b)	132/6 kV	461	52	571	10,653	11,224	4,284	4,542	8,826	2,399	-
Agricultural D1(a)	0.4kV	0	6	-	7	7	539	3	543	(535)	(1,817.43)
Agricultural D2(a)	0.4kV	6	14	27	155	182	1,321	69	1,390	(1,208)	(188.63)
Agricultural D2(b)	0.4kV	27	13	89	581	670	1,281	288	1,569	(899)	(33.84)
Agricultural D1(b)	0.4kV	1	8	2	20	21	830	10	840	(818)	(901.53)
Temporary E1 (i)	0.2kV	4	26	-	124	124	2,573	50	2,623	(2,499)	(577.64)
Temporary E1 (ii)	0.2kV	27	25	-	717	717	2,405	314	2,720	(2,003)	(73.03)
Temporary E2	0.2kV	-	1	-	-	-	86	-	86	(86)	-
Public Lighting G	0.4kV	80	28	-	2,229	2,229	2,772	867	3,639	(1,410)	(17.64)
Residential Col. H	11kV	4	1	-	108	108	62	40	103	5	1.32
A J K K1a	11kV	30	1	52	716	769	104	311	415	353	-
A J K K1b	11kV	1,414	151	1,737	38,999	40,736	13,741	14,859	28,600	12,136	-
A3 General	0.4kV	524	30	-	12,888	12,888	2,926	5,677	8,603	4,284	8.18

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<b>Total</b>	<b>-</b>	<b>11,745</b>	<b>1,823</b>	<b>7,995</b>	<b>267,972</b>	<b>275,96</b>	<b>174,517</b>	<b>128,969</b>	<b>303,48</b>	<b>(27,519)</b>	<b>(2.34)</b>
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**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.

**Table 17**  
**FY 2022-23**

Customer Class	Voltage	Sales GWh	Demand MW	Revenue As Per NEPRA Tariff		Cost of Service		Difference/ Subsidy		Revenue to Cost Ratio	
				Fixed (Rs. M)	Variable (Rs. M)	Fixed (Rs. M)	Variable (Rs. M)	Fixed Rs. M	Variable Rs. M	Fixed	Variable
Residential A1 (a)	0.2kV	5,084	193	-	108,087	18,830	58,298	(18,830)	49,788	1.00	1.85
Residential A1 (b)	0.4kV	717	234	-	15,450	22,923	7,769	(22,923)	7,680	1.00	1.99
Commercial A2 (a)	0.2kV	433	504	-	10,638	49,263	4,967	(49,263)	5,672	1.00	2.14
Commercial A2 (b)	0.4kV	2	7	4	37	715	17	(712)	19	0.01	2.13
Commercial A2 (c)	0.4kV	788	174	1,899	17,806	16,996	8,544	(15,097)	9,262	0.11	2.08
Industrial B1 (a)	0.2kV	2	65	-	59	6,343	29	(6,343)	30	1.00	2.06
Industrial B2 (a)	0.4kV	0	7	0	3	673	1	(673)	1	0.00	2.17
Industrial B1 (b)	0.4kV	54	57	-	1,202	5,566	589	(5,566)	613	1.00	2.04
Industrial B2 (b)	0.4kV	482	32	1,443	10,457	3,142	5,220	(1,699)	5,237	0.46	2.00
Industrial B3	11kV	474	35	625	10,930	3,192	4,982	(2,568)	5,948	0.20	2.19
Industrial B4	132/66 kV	602	89	714	13,855	7,336	5,934	(6,622)	7,921	0.10	2.33
Bulk Supply C1(a)	0.2kV	0	0	-	0	40	0	(40)	0	1.00	2.16
Bulk Supply C1(b)	0.4kV	1	6	1	27	552	12	(551)	15	0.00	2.21
Bulk Supply C2(a)	11kV	8	1	10	196	52	86	(42)	110	0.19	2.27
Bulk Supply C3(a)	132/66 kV	-	0	-	-	3	-	(3)	-	1.00	1.00
Bulk Supply C1(c)	0.4kV	64	9	97	1,415	862	693	(765)	721	0.11	2.04
Bulk Supply C2(b)	11kV	456	56	725	10,616	5,105	4,796	(4,380)	5,820	0.14	2.21
Bulk Supply C3(b)	132/66 kV	461	52	571	10,653	4,284	4,542	(3,713)	6,111	0.13	2.35
Agricultural D1(a)	0.4kV	0	6	-	7	539	3	(539)	4	1.00	2.23
Agricultural D2(a)	0.4kV	6	14	27	155	1,321	69	(1,294)	86	0.02	2.23
Agricultural D2(b)	0.4kV	27	13	89	581	1,281	288	(1,192)	293	0.07	2.02
Agricultural D1(b)	0.4kV	1	8	2	20	830	10	(828)	10	0.00	2.02
Temporary E1 (I)	0.2kV	4	26	-	124	2,573	50	(2,573)	74	1.00	2.49
Temporary E1 (II)	0.2kV	27	25	-	717	2,405	314	(2,405)	402	1.00	2.28
Temporary E2	0.2kV	-	1	-	-	86	-	(86)	-	1.00	1.00
Public Lighting G	0.4kV	80	28	-	2,229	2,772	867	(2,772)	1,362	1.00	2.57
Residential Col. H	11kV	4	1	-	108	62	40	(62)	68	1.00	2.68
A J K K1a	11kV	30	1	52	716	104	311	(52)	405	0.50	2.30
A J K K1b	11kV	1,414	151	1,737	38,999	13,741	14,859	(12,004)	24,140	0.13	2.62
A3 General	0.4kV	524	30	-	12,888	2,926	5,677	(2,926)	7,210	1.00	2.27
<b>Total</b>	-	<b>11,745</b>	<b>1,823</b>	<b>7,995</b>	<b>267,972</b>	<b>174,517</b>	<b>128,969</b>	<b>(166,5)</b>	<b>139,003</b>	<b>0.05</b>	<b>2.08</b>



### **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.

**Table 18**  
**FY 2022-23**

<b>Customer Class</b>	<b>Voltage</b>	<b>Sales GWh</b>	<b>Revenue Rs. /kWh</b>	<b>Cost Of Service Rs. /kWh</b>	<b>Subsidy Rs. /kWh</b>	<b>Revenue to Cost Ratio</b>
Residential A1 (a)	0.2kV	5,084	21.26	15.17	6.09	1.40
Residential A1 (b)	0.4kV	717	21.56	42.83	(21.27)	0.50
Commercial A2 (a)	0.2kV	433	24.56	125.20	(100.64)	0.20
Commercial A2 (b)	0.4kV	2	25.36	462.10	(436.74)	0.05
Commercial A2 (c)	0.4kV	788	25.00	32.41	(7.40)	0.77
Industrial B1 (a)	0.2kV	2	23.59	2,560.83	(2,537.24)	0.01
Industrial B2 (a)	0.4kV	0	25.66	5,975.18	(5,949.51)	0.00
Industrial B1 (b)	0.4kV	54	22.12	113.28	(91.16)	0.20
Industrial B2 (b)	0.4kV	482	24.71	17.37	7.35	1.42
Industrial B3	11kV	474	24.37	17.24	7.13	1.41
Industrial B4	132/66kV	602	24.21	22.05	2.16	1.10
Bulk Supply C1(a)	0.2kV	0	24.19	29,071.27	(29,047.08)	0.00
Bulk Supply C1(b)	0.4kV	1	25.15	503.86	(478.71)	0.05
Bulk Supply C2(a)	11kV	8	25.10	16.88	8.22	1.49
Bulk Supply C3(a)	132/66kV	-	-	-	-	0.00
Bulk Supply C1(c)	0.4kV	64	23.62	24.32	(0.69)	0.97
Bulk Supply C2(b)	11kV	456	24.85	21.69	3.16	1.15
Bulk Supply C3(b)	132/66kV	461	24.37	19.16	5.21	-
Agricultural D1(a)	0.4kV	0	24.19	1,841.62	(1,817.43)	0.01
Agricultural D2(a)	0.4kV	6	28.38	217.00	(188.63)	0.13
Agricultural D2(b)	0.4kV	27	25.22	59.06	(33.84)	0.43
Agricultural D1(b)	0.4kV	1	23.68	925.21	(901.53)	0.03
Temporary E1 (i)	0.2kV	4	28.58	606.22	(577.64)	0.05
Temporary E1 (ii)	0.2kV	27	26.13	99.16	(73.03)	0.26
Temporary E2	0.2kV	-	-	-	-	0.00
Public Lighting G	0.4kV	80	27.88	45.52	(17.64)	0.61
Residential Col. H	11kV	4	28.18	26.86	1.32	1.05
A J K K1a	11kV	30	25.95	14.02	11.93	-
A J K K1b	11kV	1,414	28.81	20.23	8.58	-
A3 General	0.4kV	524	24.61	16.43	8.18	1.50
<b>Total</b>	<b>-</b>	<b>11,745</b>	<b>23.50</b>	<b>25.84</b>	<b>(2.34)</b>	<b>0.91</b>

## Revenue, Cost of Service and Subsidies (11kV and Above)

The revenue, cost of service and subsidies for customer categories that fall under 11kV are summarized at Table 19 below.

Table 19

FY 2022-23											
Customer Class	Voltage	Sales GWh	Demand MW	Revenue As Per NEPRA Tariff			Cost of Service			Difference Subsidy M.PKR	Subsidy Rs.kV
				Demand Charge (M.PKR)	Energy Charge M.PKR	Total M.PKR	Demand Cost (M.PKR)	Energy Cost M.PKR	Total M.PKR		
Industrial B3	11kV	474	35	625	10,930	11,554	3,192	4,982	8,174	3,380	7.11
Industrial B4	132/66kV	602	89	714	13,855	14,570	7,336	5,934	13,270	1,299	2.16
Bulk Supply C2(a)	11kV	8	1	10	196	206	52	86	139	67	8.22
Bulk Supply C3(a)	132/66kV	-	0	-	-	-	3	-	3	(3)	-
Bulk Supply C2(b)	11kV	456	56	725	10,616	11,340	5,105	4,796	9,900	1,440	3.16
Bulk Supply C3(b)	132/66kV	461	52	571	10,653	11,224	4,284	4,542	8,826	2,399	5.21
Residential Col. H	11kV	4	1	-	108	108	62	40	103	5	1.31

## Revenue/kWh, Cost of Service/kWh and Subsidies/kWh (BPC only)

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

1. Although the Industrial B-3 and Bulk Supply C2 customers are at 11 KV connection level, however, any of these customers may not fall within the definition of BPC as contained in NEPRA Act, 1997, being less than 1 MW.
2. 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 customers, based on the sanctioned load, may be connected at 11 KV level, as required.
3. 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.
4. The supply feed for AJK customer category is primarily for resale purpose, therefore, not entitled for consideration as BPC.

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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.

Table 20					
FY 2022-23					
Customer Class	Voltage	Sale GWH	Revenue Rs. /kWh	Cost of Service Rs. /kWh	Subsidy Rs. /kWh
Industrial B3	11kV	474	24.37	17.24	7.13
Industrial B4	132/66kV	602	24.21	22.05	2.16
Bulk Supply C2(b)	11kV	456	25.10	16.88	8.22
Bulk Supply C3(b)	132/66kV	461	24.37	19.16	5.21

**Master Data for Results of IESCO's Cost of Service Study (FY 2022-23)**

For interest of the readers to glance through overall master data for result of IESCO's Cost of Service Study (FY 2022-23), following Tables (Table 21 to Table 27) are added separately.

**Final Remarks:**

- The above Cost of Service Study Report (FY 2022-23) 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.

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**Table 21: COST OF SERVICE FY 2022-23**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Cost (Rs. M)	Cost Rs./kWh sold	Cost Rs./kWh Purchased
		Sold	Purchased	at Meter	at CDP	Energy (Rs.M)	Demand (Rs.M)	Cost (Rs.M)	Cost (Rs.M)	Demand (Rs.M)	cust. Cost (Rs.M)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	50,393	12,604	1,156	5.42	5,071	7,905	77,134	15.17	13.80
Residential A1(b)	0.4kV	717	788	234	258	7,103	15,343	1,408	6.59	6,172	666	30,699	42.84	38.98
Commercial A2(a)	0.2kV	433	476	504	554	4,293	32,973	3,025	14.17	13,265	673	54,244	125.23	113.95
Commercial A2(b)	0.4kV	2	2	7	8	16	479	44	0.21	193	1	733	462.23	420.58
Commercial A2(c)	0.4kV	788	866	174	191	7,811	11,376	1,044	4.89	4,576	733	25,545	32.41	29.49
Industrial B1(a)	0.2kV	2	3	65	71	25	4,245	389	1.82	1,708	4	6,373	2,561.56	2,330.72
Industrial B2(a)	0.4kV	0	0	7	8	1	450	41	0.19	181	0	674	5,976.89	5,438.26
Industrial B1(b)	0.4kV	54	60	57	63	538	3,725	342	1.60	1,499	51	6,156	113.31	103.10
Industrial B2(b)	0.4kV	482	529	32	35	4,772	2,103	193	0.90	846	448	8,363	17.37	15.80
Industrial B3	11kV	474	506	35	37	4,565	2,230	205	0.96	757	417	8,175	17.24	16.15
Industrial B4	132/66kV	602	608	89	89	5,481	5,328	489	2.29	1,519	453	13,273	22.06	21.84
Single P.Supply C1(a)	0.2kV	0	0	0	0	0	27	2	0.01	11	0	40	29,079.5	27,235.21
Single P.Supply C1(b)	0.4kV	1	1	6	6	11	369	34	0.16	149	1	564	504.00	458.58
Single P.Supply C2(a)	11kV	8	9	1	1	79	37	3	0.02	12	7	139	16.88	15.81
Single P.Supply C3(a)	132/66kV	-	-	0	0	-	2	0	0.00	1	-	3	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	634	577	53	0.25	232	59	1,556	24.32	22.13
Single P.Supply C2(b)	11kV	456	487	56	60	4,394	3,566	327	1.53	1,211	401	9,902	21.70	20.32
Single P.Supply C3(b)	132/66kV	461	465	52	52	4,195	3,111	285	1.34	887	347	8,827	19.16	18.97
Agricultural D1(a)	0.4kV	0	0	6	6	3	361	33	0.16	145	0	543	1,842.15	1,676.13
Agricultural D2(a)	0.4kV	6	7	14	15	64	884	81	0.38	356	6	1,391	217.06	197.50
Agricultural D2(b)	0.4kV	27	29	13	14	263	857	79	0.37	345	25	1,569	59.08	53.75
Agricultural D1(b)	0.4kV	1	1	8	9	9	555	51	0.24	223	1	840	925.47	842.07
Temporary Supply E1(i)	0.2kV	4	5	26	29	43	1,722	158	0.74	693	7	2,624	606.40	551.75
Temporary Supply E1(ii)	0.2kV	27	30	25	27	272	1,610	148	0.69	648	43	2,720	99.19	90.25
Temporary Supply E2	0.2kV	-	-	1	1	-	57	5	0.02	23	-	86	-	-
Public Lighting G	0.4kV	80	88	28	31	792	1,856	170	0.80	746	74	3,640	45.53	41.43
Residential Colonies H	11kV	4	4	1	1	37	44	4	0.02	15	3	103	26.86	25.16
A.J.K K1a	11kV	30	32	1	1	285	73	7	0.03	25	26	415	14.02	13.13
A.J K K1b	11kV	1,414	1,510	151	161	13,616	9,600	881	4.13	3,260	1,243	28,604	20.23	18.95
A3 General	0.4kV	524	576	30	33	5,190	1,958	180	0.84	788	487	8,604	16.43	14.95
<b>Total</b>		<b>11,745</b>	<b>12,739</b>	<b>1,823</b>	<b>1,984</b>	<b>114,887</b>	<b>118,122</b>	<b>10,837</b>	<b>51</b>	<b>45,558</b>	<b>14,082</b>	<b>303,536</b>	<b>25.84</b>	<b>23.83</b>

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<b>Table 22: COST OF SERVICE FY 2022-23 (kW or kWh at Consumer)</b>														
Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs./kW/M)	Fixed Cost Rs./kWh sold	Total Cost Rs./kWh Sold
		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)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	9.91	5,453	500	2.34	2,194	3,420	11,571	5.26	15.17
Residential A1(b)	0.4kV	717	788	234	258	9.91	5,453	500	2.34	2,194	237	8,387	32.93	42.84
Commercial A2(a)	0.2kV	433	476	504	554	9.91	5,453	500	2.34	2,194	111	8,261	115.32	125.23
Commercial A2(b)	0.4kV	2	2	7	8	9.91	5,453	500	2.34	2,194	17	8,167	452.32	462.23
Commercial A2(c)	0.4kV	788	866	174	191	9.91	5,453	500	2.34	2,194	351	8,501	22.50	32.41
Industrial B1(a)	0.2kV	2	3	65	71	9.91	5,453	500	2.34	2,194	5	8,155	2,551.65	2,561.56
Industrial B2(a)	0.4kV	0	0	7	8	9.91	5,453	500	2.34	2,194	1	8,151	5,966.98	5,976.89
Industrial B1(b)	0.4kV	54	60	57	63	9.91	5,453	500	2.34	2,194	74	8,224	103.40	113.31
Industrial B2(b)	0.4kV	482	529	32	35	9.91	5,453	500	2.34	2,194	1,161	9,311	7.46	17.37
Industrial B3	11kV	474	506	35	37	9.63	5,298	486	2.28	1,799	990	8,576	7.61	17.24
Industrial B4	132/66kV	602	608	89	89	9.11	5,012	460	2.15	1,429	426	7,329	12.95	22.06
Single P.Supply C1(a)	0.2kV	0	0	0	0	9.63	5,453	500	2.34	2,194	0	8,151	29,070.01	29,079.63
Single P.Supply C1(b)	0.4kV	1	1	6	6	9.91	5,453	500	2.34	2,194	15	8,165	494.09	504.00
Single P.Supply C2(a)	11kV	8	9	1	1	9.63	5,298	486	2.28	1,799	1,046	8,632	7.25	16.88
Single P.Supply C3(a)	132/66kV	-	-	0	0	-	5,012	460	2.15	1,429	-	6,903	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	9.91	5,453	500	2.34	2,194	562	8,712	14.41	24.32
Single P.Supply C2(b)	11kV	456	487	56	60	9.63	5,298	486	2.28	1,799	596	8,182	12.07	21.70
Single P.Supply C3(b)	132/66kV	461	465	52	52	9.11	5,012	460	2.15	1,429	558	7,461	10.06	19.16
Agricultural D1(a)	0.4kV	0	0	6	6	9.91	5,453	500	2.34	2,194	4	8,154	1,832.24	1,842.15
Agricultural D2(a)	0.4kV	6	7	14	15	9.91	5,453	500	2.34	2,194	37	8,187	207.15	217.06
Agricultural D2(b)	0.4kV	27	29	13	14	9.91	5,453	500	2.34	2,194	157	8,307	49.16	59.08
Agricultural D1(b)	0.4kV	1	1	8	9	9.91	5,453	500	2.34	2,194	8	8,158	915.56	925.47
Temporary Supply E1(i)	0.2kV	4	5	26	29	9.91	5,453	500	2.34	2,194	21	8,171	596.48	606.40
Temporary Supply E1(ii)	0.2kV	27	30	25	27	9.91	5,453	500	2.34	2,194	144	8,295	89.28	99.19
Temporary Supply E2	0.2kV	-	-	1	1	-	5,453	500	2.34	2,194	-	8,150	-	-
Public Lighting G	0.4kV	80	88	28	31	9.91	5,453	500	2.34	2,194	218	8,369	35.62	45.53
Residential Colonies H	11kV	4	4	1	1	9.63	5,298	486	2.28	1,799	408	7,993	17.24	26.86
A.J.K K1a	11kV	30	32	1	1	9.63	5,298	486	2.28	1,799	1,899	9,485	4.39	14.02
A.J.K K1b	11kV	1,414	1,510	151	161	9.63	5,298	486	2.28	1,799	686	8,272	10.60	20.23
A3 General	0.4kV	524	576	30	33	9.91	5,453	500	2.34	2,194	1,356	9,506	6.52	16.43
<b>Total</b>		<b>11,745</b>	<b>12,739</b>	<b>1,823</b>	<b>1,984</b>	<b>9.78</b>	<b>5,399</b>	<b>495</b>	<b>2.32</b>	<b>2,082</b>	<b>644</b>	<b>8,622</b>	<b>16.06</b>	<b>25.84</b>

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**Table 23: COST OF SERVICE FY 2022-23 (kW or kWh CDP)**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs./ kW/ M)	Fixed Cost Rs./kWh Purchased	Total Cost Rs./kWh Purchased
		Sold	Purchased	at Meter	at CDP	Energy (Rs./ kWh)	Demand (Rs./kW/M)	Cost (Rs./k W/M)	Cost (Rs./k W/M)	Demand (Rs./kW/ M)	cust. Cost (Rs./k W/M)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	9.02	4,962	455	2.13	1,996	3,112	10,528	4.79	13.80
Residential A1(b)	0.4kV	717	788	234	258	9.02	4,962	455	2.13	1,996	216	7,631	29.96	38.98
Commercial A2(a)	0.2kV	433	476	504	554	9.02	4,962	455	2.13	1,996	101	7,517	104.93	113.95
Commercial A2(b)	0.4kV	2	2	7	8	9.02	4,962	455	2.13	1,996	15.28	7,431	411.56	420.58
Commercial A2(c)	0.4kV	788	866	174	191	9.02	4,962	455	2.13	1,996	320	7,735	20.47	29.49
Industrial B1(a)	0.2kV	2	3	65	71	9.02	4,962	455	2.13	1,996	4.52	7,420	2,321.70	2,330.72
Industrial B2(a)	0.4kV	0	0	7	8	9.02	4,962	455	2.13	1,996	1.16	7,417	5,429.24	5,438.26
Industrial B1(b)	0.4kV	54	60	57	63	9.02	4,962	455	2.13	1,996	67	7,483	94.08	103.10
Industrial B2(b)	0.4kV	482	529	32	35	9.02	4,962	455	2.13	1,996	1,057	8,472	6.78	15.80
Industrial B3	11kV	474	506	35	37	9.02	4,962	455	2.13	1,685	927	8,032	7.13	16.15
Industrial B4	132/ 66kV	602	608	89	89	9.02	4,962	455	2.13	1,415	422	7,256	12.82	21.84
Single P.Supply C1(a)	0.2kV	0	0	0	0	9.02	4,962	455	2.13	1,996	0	7,416	27,226.19	27,235.21
Single P.Supply C1(b)	0.4kV	1	1	6	6	9.02	4,962	455	2.13	1,996	14	7,430	449.56	458.58
Single P.Supply C2(a)	11kV	8	9	1	1	9.02	4,962	455	2.13	1,685	980	8,084	6.79	15.81
Single P.Supply C3(a)	132/ 66kV	-	-	0	0	-	4,962	455	2.13	1,415	-	6,834	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	9.02	4,962	455	2.13	1,996	512	7,927	13.11	22.13
Single P.Supply C2(b)	11kV	456	487	56	60	9.02	4,962	455	2.13	1,685	558	7,663	11.30	20.32
Single P.Supply C3(b)	132/ 66kV	461	465	52	52	9.02	4,962	455	2.13	1,415	553	7,387	9.96	18.97
Agricultural D1(a)	0.4kV	0	0	6	6	9.02	4,962	455	2.13	1,996	3.77	7,419	1,667.12	1,676.13
Agricultural D2(a)	0.4kV	6	7	14	15	9.02	4,962	455	2.13	1,996	33	7,449	188.48	197.50
Agricultural D2(b)	0.4kV	27	29	13	14	9.02	4,962	455	2.13	1,996	143	7,559	44.73	53.75
Agricultural D1(b)	0.4kV	1	1	8	9	9.02	4,962	455	2.13	1,996	7.54	7,423	833.05	842.07
Temporary Supply E1(i)	0.2kV	4	5	26	29	9.02	4,962	455	2.13	1,996	19	7,435	542.73	551.75
Temporary Supply E1(ii)	0.2kV	27	30	25	27	9.02	4,962	455	2.13	1,996	131	7,547	81.23	90.25
Temporary Supply E2	0.2kV	-	-	1	1	-	4,962	455	2.13	1,996	-	7,416	-	-
Public Lighting G	0.4kV	80	88	28	31	9.02	4,962	455	2.13	1,996	199	7,614	32.41	41.43
Residential Colonies H	11kV	4	4	1	1	9.02	4,962	455	2.13	1,685	382	7,486	16.14	25.16
A.J.K K1a	11kV	30	32	1	1	9.02	4,962	455	2.13	1,685	1,778	8,883	4.11	13.13
A.J.K K1b	11kV	1,414	1,510	151	161	9.02	4,962	455	2.13	1,685	643	7,747	9.93	18.95
A3 General	0.4kV	524	576	30	33	9.02	4,962	455	2.13	1,996	1,234	8,650	5.93	14.95
Total		11,745	12,739	1,823	1,984	9.02	4,962	455	2.13	1,914	592	7,925	14.81	23.83

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**Table 24: COST OF SERVICE FY 2022-23 (kWh at Consumer)**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs. /kWh)	Fixed Cost Rs./kWh Purchased	Total Cost Rs./kWh Sold
		Sold	Purchased	at Meter	at CDP	Energy (Rs. /kWh)	Demand (Rs./kWh)	Cost (Rs. /kWh)	Cost (Rs. /kWh)	Demand (Rs. /kWh)	cust. Cost (Rs. /kWh)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	9.91	2.48	0.23	0.00	1.00	1.55	5.26	5.26	15.17
Residential A1(b)	0.4kV	717	788	234	258	9.91	21.41	1.96	0.01	8.61	0.93	32.93	32.93	42.84
Commercial A2(a)	0.2kV	433	476	504	554	9.91	76.12	6.98	0.03	30.63	1.55	115.32	115.32	125.23
Commercial A2(b)	0.4kV	2	2	7	8	9.91	302.04	27.71	0.13	121.51	0.93	452.32	452.32	462.23
Commercial A2(c)	0.4kV	788	866	174	191	9.91	14.43	1.32	0.01	5.81	0.93	22.50	22.50	32.41
Industrial B1(a)	0.2kV	2	3	65	71	9.91	1,706.35	156.54	0.73	686.47	1.55	2,551.65	2,551.65	2,561.56
Industrial B2(a)	0.4kV	0	0	7	8	9.91	3,992.07	366.24	1.72	1,606.03	0.93	5,966.98	5,966.98	5,976.89
Industrial B1(b)	0.4kV	54	60	57	63	9.91	68.57	6.29	0.03	27.58	0.93	103.40	103.40	113.31
Industrial B2(b)	0.4kV	482	529	32	35	9.91	4.37	0.40	0.00	1.76	0.93	7.46	7.46	17.37
Industrial B3	11kV	474	506	35	37	9.63	4.70	0.43	0.00	1.60	0.88	7.61	7.61	17.24
Industrial B4	132/66kV	602	608	89	89	9.11	8.85	0.81	0.00	2.52	0.75	12.95	12.95	22.06
Single P.Supply C1(a)	0.2kV	0	0	0	0	9.63	19,450.61	1,784.4	8.36	7,825.06	1.55	29,070.0	29,070.01	29,079.63
Single P.Supply C1(b)	0.4kV	1	1	6	6	9.91	329.99	30.27	0.14	132.76	0.93	494.09	494.09	504.00
Single P.Supply C2(a)	11kV	8	9	1	1	9.63	4.45	0.41	0.00	1.51	0.88	7.25	7.25	16.88
Single P.Supply C3(a)	132/66kV	-	-	0	0	-	-	-	-	-	-	-	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	9.91	9.02	0.83	0.00	3.63	0.93	14.41	14.41	24.32
Single P.Supply C2(b)	11kV	456	487	56	60	9.63	7.81	0.72	0.00	2.65	0.88	12.07	12.07	21.70
Single P.Supply C3(b)	132/66kV	461	465	52	52	9.11	6.75	0.62	0.00	1.93	0.75	10.06	10.06	19.16
Agricultural D1(a)	0.4kV	0	0	6	6	9.91	1,225.38	112.42	0.53	492.98	0.93	1,832.24	1,832.24	1,842.15
Agricultural D2(a)	0.4kV	6	7	14	15	9.91	137.99	12.66	0.06	55.51	0.93	207.15	207.15	217.06
Agricultural D2(b)	0.4kV	27	29	13	14	9.91	32.28	2.96	0.01	12.98	0.93	49.16	49.16	59.08
Agricultural D1(b)	0.4kV	1	1	8	9	9.91	612.01	56.15	0.26	246.21	0.93	915.56	915.56	925.47
Temporary Supply E1(i)	0.2kV	4	5	26	29	9.91	398.09	36.52	0.17	160.15	1.55	596.48	596.48	606.40
Temporary Supply E1(ii)	0.2kV	27	30	25	27	9.91	58.70	5.38	0.03	23.61	1.55	89.28	89.28	99.19
Temporary Supply E2	0.2kV	-	-	1	1	-	-	-	-	-	-	-	-	-
Public Lighting G	0.4kV	80	88	28	31	9.91	23.21	2.13	0.01	9.34	0.93	35.62	35.62	45.53
Residential Colonies H	11kV	4	4	1	1	9.63	11.42	1.05	0.00	3.88	0.88	17.24	17.24	26.86
A.J.K K1a	11kV	30	32	1	1	9.63	2.45	0.23	0.00	0.83	0.88	4.39	4.39	14.02
A.J.K K1b	11kV	1,414	1,510	151	161	9.63	6.79	0.62	0.00	2.31	0.88	10.60	10.60	20.23
A3 General	0.4kV	524	576	30	33	9.91	3.74	0.34	0.00	1.50	0.93	6.52	6.52	16.43
Total		11,745	12,739	1,823	1,984	9.78	10.06	0.92	0.00	3.88	1.20	16.06	16.06	25.84

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**Table 25: COST OF SERVICE FY 2022-23 (kWh at CDP)**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs. /kWh)	Fixed Cost Rs./kWh Purchased	Total Cost Rs./kWh Purchased
		Sold	Purchased	at Meter	at CDP	Energy (Rs. /kWh)	Demand (Rs./kWh)	Cost (Rs. /kWh)	Cost (Rs. /kWh)	Demand (Rs. /kWh)	cust. Cost (Rs. /kWh)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	9.02	2.26	0.21	0.00	0.91	1.41	4.79	4.79	13.80
Residential A1(b)	0.4kV	717	788	234	258	9.02	19.48	1.79	0.01	7.84	0.85	29.96	29.96	38.98
Commercial A2(a)	0.2kV	433	476	504	554	9.02	69.26	6.35	0.03	27.87	1.41	104.93	104.93	113.95
Commercial A2(b)	0.4kV	2	2	7	8	9.02	274.82	25.21	0.12	110.56	0.85	411.56	411.56	420.58
Commercial A2(c)	0.4kV	788	866	174	191	9.02	13.13	1.20	0.01	5.28	0.85	20.47	20.47	29.49
Industrial B1(a)	0.2kV	2	3	65	71	9.02	1,552.58	142.44	0.67	624.61	1.41	2,321.70	2,321.70	2,330.72
Industrial B2(a)	0.4kV	0	0	7	8	9.02	3,632.31	333.23	1.56	1,461.29	0.85	5,429.24	5,429.24	5,438.26
Industrial B1(b)	0.4kV	54	60	57	63	9.02	62.39	5.72	0.03	25.10	0.85	94.08	94.08	103.10
Industrial B2(b)	0.4kV	482	529	32	35	9.02	3.97	0.36	0.00	1.60	0.85	6.78	6.78	15.80
Industrial B3	11kV	474	506	35	37	9.02	4.41	0.40	0.00	1.50	0.82	7.13	7.13	16.15
Industrial B4	132/66kV	602	608	89	89	9.02	8.77	0.80	0.00	2.50	0.74	12.82	12.82	21.84
Single P Supply C1(a)	0.2kV	0	0	0	0	9.02	18,216.92	1,671.2	7.83	7,328.74	1.46	27,226.1	27,226.19	27,235.21
Single P Supply C1(b)	0.4kV	1	1	6	6	9.02	300.25	27.55	0.13	120.79	0.85	449.56	449.53	458.58
Single P Supply C2(a)	11kV	8	9	1	1	9.02	4.17	0.38	0.00	1.42	0.82	6.79	6.79	15.81
Single P Supply C3(a)	132/66kV	-	-	0	0	-	-	-	-	-	-	-	-	-
Single P Supply C1(c)	0.4kV	64	70	9	10	9.02	8.21	0.75	0.00	3.30	0.85	13.11	13.11	22.13
Single P Supply C2(b)	11kV	456	487	56	60	9.02	7.32	0.67	0.00	2.49	0.82	11.30	11.30	20.32
Single P Supply C3(b)	132/66kV	461	465	52	52	9.02	6.69	0.61	0.00	1.91	0.74	9.96	9.96	18.97
Agricultural D1(a)	0.4kV	0	0	6	6	9.02	1,114.95	102.29	0.48	448.55	0.85	1,667.12	1,667.12	1,676.13
Agricultural D2(a)	0.4kV	6	7	14	15	9.02	125.55	11.52	0.05	50.51	0.85	188.48	188.48	197.50
Agricultural D2(b)	0.4kV	27	29	13	14	9.02	29.37	2.69	0.01	11.81	0.85	44.73	44.73	53.75
Agricultural D1(b)	0.4kV	1	1	8	9	9.02	556.86	51.09	0.24	224.03	0.85	833.05	833.05	842.07
Temporary Supply E1(i)	0.2kV	4	5	26	29	9.02	362.21	33.23	0.16	145.72	1.41	542.73	542.73	551.75
Temporary Supply E1(ii)	0.2kV	27	30	25	27	9.02	53.41	4.90	0.02	21.49	1.41	81.23	81.23	90.25
Temporary Supply E2	0.2kV	-	-	1	1	-	-	-	-	-	-	-	-	-
Public Lighting G	0.4kV	80	88	28	31	9.02	21.12	1.94	0.01	8.50	0.85	32.41	32.41	41.43
Residential Colonies H	11kV	4	4	1	1	9.02	10.70	0.98	0.00	3.63	0.82	16.14	16.14	25.16
A.J.K K1a	11kV	30	32	1	1	9.02	2.30	0.21	0.00	0.78	0.82	4.11	4.11	13.13
A.J.K K1b	11kV	1,414	1,510	151	161	9.02	6.36	0.58	0.00	2.16	0.82	9.93	9.93	18.95
A3 General	0.4kV	524	576	30	33	9.02	3.40	0.31	0.00	1.37	0.85	5.93	5.93	14.95
Total		11,745	12,739	1,823	1,984	9.02	9.27	0.85	0.00	3.58	1.11	14.81	14.81	23.83



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**Table 26: COST OF SERVICE FY 2022-23 (Cost of Losses on kW or kWh)**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs./kW/ M)	Total Fixed Cost (Rs./kWh)	Total Cost (Rs./kWh)
		Sold	Purchased	at Meter	at CDP	Energy (Rs./ kWh)	Demand (Rs./kW/M)	Cost (Rs./k W/M)	Cost (Rs./k W/M)	Demand (Rs./kW/ M)	cust. Cost (Rs./k W/M)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	0.89	491.46	45.09	0.21	197.72	308.25	1,042.72	0.47	1.37
Residential A1(b)	0.4kV	717	788	234	258	0.89	491.46	45.09	0.21	197.72	21.35	755.83	2.97	3.86
Commercial A2(a)	0.2kV	433	476	504	554	0.89	491.46	45.09	0.21	197.72	10.04	744.51	10.39	11.29
Commercial A2(b)	0.4kV	2	2	7	8	0.89	491.46	45.09	0.21	197.72	1.51	735.99	40.76	41.66
Cominercial A2(c)	0.4kV	788	866	174	191	0.89	491.46	45.09	0.21	197.72	31.67	766.14	2.03	2.92
Industrial B1(a)	0.2kV	2	3	65	71	0.89	491.46	45.09	0.21	197.72	0.45	734.92	229.95	230.85
Industrial B2(a)	0.4kV	0	0	7	8	0.89	491.46	45.09	0.21	197.72	0.11	734.59	537.74	538.63
Industrial B1(b)	0.4kV	54	60	57	63	0.89	491.46	45.09	0.21	197.72	6.67	741.14	9.32	10.21
Industrial B2(b)	0.4kV	482	529	32	35	0.89	491.46	45.09	0.21	197.72	104.66	839.14	0.67	1.57
Industrial B3	11kV	474	506	35	37	0.61	336.04	30.83	0.14	114.13	62.81	543.94	0.48	1.09
Industrial B4	132 /66kV	602	608	89	89	0.09	49.63	4.55	0.02	14.15	4.22	72.58	0.13	0.22
Single P.Supply C1(a)	0.2kV	0	0	0	0	0.61	491.46	45.09	0.21	197.72	0.04	734.52	1,843.81	1,844.42
Single P.Supply C1(b)	0.4kV	1	1	6	6	0.89	491.46	45.09	0.21	197.72	1.39	735.86	44.53	45.42
Single P.Supply C2(a)	11kV	8	9	1	1	0.61	336.04	30.83	0.14	114.13	66.36	547.49	0.46	1.07
Single P.Supply C3(a)	132 /66kV	-	-	0	0	-	49.63	4.55	0.02	14.15	-	68.36	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	0.89	491.46	45.09	0.21	197.72	50.68	785.15	1.30	2.19
Single P.Supply C2(b)	11kV	456	487	56	60	0.61	336.04	30.83	0.14	114.13	37.81	518.94	0.77	1.38
Single P.Supply C3(b)	132 /66kV	461	465	52	52	0.09	49.63	4.55	0.02	14.15	5.53	73.89	0.10	0.19
Agricultural D1(a)	0.4kV	0	0	6	6	0.89	491.46	45.09	0.21	197.72	0.37	734.85	165.12	166.01
Agricultural D2(a)	0.4kV	6	7	14	15	0.89	491.46	45.09	0.21	197.72	3.31	737.79	18.67	19.56
Agricultural D2(b)	0.4kV	27	29	13	14	0.89	491.46	45.09	0.21	197.72	14.16	748.64	4.43	5.32
Agricultural D1(b)	0.4kV	1	1	8	9	0.89	491.46	45.09	0.21	197.72	0.75	735.22	82.51	83.40
Temporary Supply E1(i)	0.2kV	4	5	26	29	0.89	491.46	45.09	0.21	197.72	1.92	736.40	53.75	54.65
Temporary Supply E1(ii)	0.2kV	27	30	25	27	0.89	491.46	45.09	0.21	197.72	13.02	747.49	8.05	8.94
Temporary Supply E2	0.2kV	-	-	1	1	-	491.46	45.09	0.21	197.72	-	734.48	-	-
Public Lighting G	0.4kV	80	88	28	31	0.89	491.46	45.09	0.21	197.72	19.69	754.17	3.21	4.10
Residential Colonies H	11kV	4	4	1	1	0.61	336.04	30.83	0.14	114.13	25.86	507.00	1.09	1.70
A.J.K K1a	11kV	30	32	1	1	0.61	336.04	30.83	0.14	114.13	120.44	601.58	0.28	0.89
A.J.K K1b	11kV	1,414	1,510	151	161	0.61	336.04	30.83	0.14	114.13	43.52	524.65	0.67	1.28
A3 General	0.4kV	524	576	30	33	0.89	491.46	45.09	0.21	197.72	122.22	856.69	0.59	1.48
Total		11,745	12,739	1,823	1,984	0.76	436.60	40.05	0.19	168.39	52.05	697.28	1.25	2.02

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**Table 27: COST OF SERVICE FY 2022-23 (Cost of Losses on kWh)**

Classes	Voltage Level	Energy GWh		Demand MW		Generation Cost		Transm	MOF	Distribution		Total Fixed Cost (Rs./kW/M)	Total Fixed Cost (Rs./kWh)	Total Cost (Rs./kWh)
		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)			
Residential A1(a)	0.2kV	5,084	5,588	193	212	0.89	0.22	0.02	0.00	0.09	0.14	0.47	0.47	1.37
Residential A1(b)	0.4kV	717	788	234	258	0.89	1.93	0.18	0.00	0.78	0.08	2.97	2.97	3.86
Commercial A2(a)	0.2kV	433	476	504	554	0.89	6.86	0.63	0.00	2.76	0.14	10.39	10.39	11.29
Commercial A2(b)	0.4kV	2	2	7	8	0.89	27.22	2.50	0.01	10.95	0.08	40.76	40.76	41.66
Commercial A2(c)	0.4kV	788	866	174	191	0.89	1.30	0.12	0.00	0.52	0.08	2.03	2.03	2.92
Industrial B1(a)	0.2kV	2	3	65	71	0.89	153.77	14.11	0.07	61.86	0.14	229.95	229.95	230.85
Industrial B2(a)	0.4kV	0	0	7	8	0.89	359.76	33.00	0.15	144.73	0.08	537.74	537.74	538.63
Industrial B1(b)	0.4kV	54	60	57	63	0.89	6.18	0.57	0.00	2.49	0.08	9.32	9.32	10.21
Industrial B2(b)	0.4kV	482	529	32	35	0.89	0.39	0.04	0.00	0.16	0.08	0.67	0.67	1.57
Industrial B3	11kV	474	506	35	37	0.61	0.30	0.03	0.00	0.10	0.06	0.48	0.48	1.09
Industrial B4	132/66kV	602	608	89	89	0.09	0.09	0.01	0.00	0.03	0.01	0.13	0.13	0.22
Single P.Supply C1(a)	0.2kV	0	0	0	0	0.61	1,233.69	113.18	0.53	496.32	0.10	1,843.81	1,843.81	1,844.42
Single P.Supply C1(b)	0.4kV	1	1	6	6	0.89	29.74	2.73	0.01	11.96	0.08	44.53	44.53	45.42
Single P.Supply C2(a)	11kV	8	9	1	1	0.61	0.28	0.03	0.00	0.10	0.06	0.46	0.46	1.07
Single P.Supply C3(a)	132/66kV	-	-	0	0	-	-	-	-	-	-	-	-	-
Single P.Supply C1(c)	0.4kV	64	70	9	10	0.89	0.81	0.07	0.00	0.33	0.08	1.30	1.30	2.19
Single P.Supply C2(b)	11kV	456	487	56	60	0.61	0.50	0.05	0.00	0.17	0.06	0.77	0.77	1.38
Single P.Supply C3(b)	132/66kV	461	465	52	52	0.09	0.07	0.01	0.00	0.02	0.01	0.10	0.10	0.19
Agricultural D1(a)	0.4kV	0	0	6	6	0.89	110.43	10.13	0.05	44.43	0.08	165.12	165.12	166.01
Agricultural D2(a)	0.4kV	6	7	14	15	0.89	12.44	1.14	0.01	5.00	0.08	18.67	18.67	19.56
Agricultural D2(b)	0.4kV	27	29	13	14	0.89	2.91	0.27	0.00	1.17	0.08	4.43	4.43	5.32
Agricultural D1(b)	0.4kV	1	1	8	9	0.89	55.15	5.06	0.02	22.19	0.08	82.51	82.51	83.40
Temporary Supply E1(i)	0.2kV	4	5	26	29	0.89	35.88	3.29	0.02	14.43	0.14	53.75	53.75	54.65
Temporary Supply E1(ii)	0.2kV	27	30	25	27	0.89	5.29	0.49	0.00	2.13	0.14	8.05	8.05	8.94
Temporary Supply E2	0.2kV	-	-	1	1	-	-	-	-	-	-	-	-	-
Public Lighting G	0.4kV	80	88	28	31	0.89	2.09	0.19	0.00	0.84	0.08	3.21	3.21	4.10
Residential Colonies H	11kV	4	4	1	1	0.61	0.72	0.07	0.00	0.25	0.06	1.09	1.09	1.70
A.J.K K1a	11kV	30	32	1	1	0.61	0.16	0.01	0.00	0.05	0.06	0.28	0.28	0.89
A.J.K K1b	11kV	1,414	1,510	151	161	0.61	0.43	0.04	0.00	0.15	0.06	0.67	0.67	1.28
A3 General	0.4kV	524	576	30	33	0.89	0.34	0.03	0.00	0.14	0.08	0.59	0.59	1.48
<b>Total</b>		<b>11,745</b>	<b>12,739</b>	<b>1,823</b>	<b>1,984</b>	<b>0.76</b>	<b>0.78</b>	<b>0.07</b>	<b>0.00</b>	<b>0.30</b>	<b>0.09</b>	<b>1.25</b>	<b>1.25</b>	<b>2.02</b>

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$$2+5=7$$