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National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/R/ADG(Trf)/TRF-566/SEPCO-2021/8754-8756
June 2, 2022

Subject: **DETERMINATION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY SUKKUR ELECTRIC POWER COMPANY LTD. (SEPCO) FOR DETERMINATION OF DISTRIBUTION TARIFF UNDER MYT REGIME FOR THE FOR THE FY 2020-21 TO FY 2024-25** [CASE # NEPRA/TRF-566/SEPCO-2021]

Dear Sir,

Please find enclosed herewith subject Determination of the Authority along with Annex-A, B, C & D and additional note of Engr. Rafique Ahmed Shaikh, Member NEPRA (75 Pages) in Case No. NEPRA/TRF-566/SEPCO-2021.

2. The Determination is being intimated to the Federal Government for the purpose of notification in the official Gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 within 30 days from the intimation of this Decision. In the event the Federal Government fails to notify the subject tariff Decision or refer the matter to the Authority for reconsideration, within the time period specified in Section 31(7), then the Authority shall notify the same in the official Gazette pursuant to Section 31(7) of NEPRA Act.

Enclosure: As above

02.06.22
(Syed Safeer Hussain)

Secretary
Ministry of Energy (Power Division)
'A' Block, Pak Secretariat
Islamabad

CC:
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

National Electric Power Regulatory Authority

(NEPRA)

PETITION NO: NEPRA/TRF-566/SEPCO-2021

DETERMINATION OF DISTRIBUTION TARIFF PETITION

FOR

SUKKUR ELECTRIC POWER COMPANY LIMITED (SEPCO)

FOR THE FY 2020-21 – FY 2024-25

UNDER

NEPRA TARIFF (STANDARDS AND PROCEDURE) RULES - 1998

Islamabad

2 - 6 -, 2022

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Abbreviations

CpGenCap	The summation of the capacity cost in respect of all CpGencos for a billing period minus the amount of liquidated damages received during the months
ADB	Asian Development Bank
AMI	Advance Metering Infrastructure
AMR	Automatic Meter Reading
BoD	Board of Director
BTS	Base Transceiver Station
CAPM	Capital Asset Pricing Model
CDP	Common Delivery Point
COSS	Cost of Service Study
CPPA (G)	Central Power Purchasing Agency Guarantee Limited
CTBCM	Competitive Trading Bilateral Contract Market
CWIP	Closing Work in Progress
DIIP	Distribution Company Integrated Investment Plan
DISCO	Distribution Company
DM	Distribution Margin
DOP	Distribution of Power
ELR	Energy Loss Reduction
ERC	Energy Regulatory Commission
ERP	Enterprise resource planning
FCA	Fuel Charges Adjustment
FY	Financial Year
GIS	Geographical Information System
GOP	Government of Pakistan
GWh	Giga Watt Hours
HHU	Hand Held Unit
HT/LT	High Tension/Low Tension
HSD	High Speed Diesel
IGTDP	Integrated Generation Transmission and Distribution Plan
IESCO	Islamabad Electric Supply Company Limited
KIBOR	Karachi Inter Bank Offer Rates
KSE	Karachi Stock Exchange
KV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt Hour
LPC	Late Payment Charges
MDI	Maximum Demand Indicator
MMBTU	One million British Thermal Units
MoWP	Ministry of Water and Power
MVA	Mega Volt Amp

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MW	Mega Watt
NEPRA	National Electric Power Regulatory Authority
NOC	Network Operation Centre
NTDC	National Transmission & Despatch Company
O&M	Operation and Maintenance
OGRA	Oil and Gas Regulatory Authority
PEPCO	Pakistan Electric Power Company
SEPCO	Sukkur Electric Power Company Limited
PDEIP	Power Distribution Enhancement Investment Program
PDP	Power Distribution Program
PPA	Power Purchase Agreement
PPAA	Power Procurement Agency Agreement
PPP	Power Purchase Price
PYA	Prior Year Adjustment
R&M	Repair and Maintenance
RAB	Regulatory Asset Base
RE	Rural Electrification
RFO	Residual Fuel Oil
RLNG	Re-gasified Liquefied Natural Gas
RoE	Return on Equity
RORB	Return on Rate Base
ROR	Rate of Return
SBP	State Bank of Pakistan
SOT	Schedule of Tariff
STG	Secondary Transmission Grid
SYT	Single Year Tariff
T&D	Transmission and Distribution
TFC	Term Finance Certificate
TOU	Time of Use
TOR	Term of Reference
TPM	Transfer Price Mechanism
USCF	The fixed charge part of the Use of System Charges in Rs./kW/Month
UOSC	Use of System Charges
WACC	Weighted average cost of capital
WAPDA	Water and Power Development Authority
XWDISCO	Ex-WAPDA Distribution Company

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DETERMINATION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY SUKKUR ELECTRIC POWER COMPANY LIMITED (SEPCO) FOR DETERMINATION OF DISTRIBUTION TARIFF UNDER MYT REGIME FOR THE FY 2020-21 TO FY 2024-25

CASE NO. NEPRA/TRF-566/SEPCO-2021

PETITIONER

Sukkur Electric Power Company Limited (SEPCO), Thermal Power Station, Old Sukkur, Sukkur.

INTERVENER

M/s PTCL
M/S Telenor
M/S Pak Telecom Mobile Ltd.

COMMENTATOR

M/s Deodar PMCL (Jazz)

REPRESENTATION

Chief Executive Officer and along-with its Technical and Financial team

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1. Background

1.1. The amendments in the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 was passed by the National Assembly on 15th March, 2018, which was published in the official Gazette on 30th April 2018 (the "**Amendment Act**"), resulting in restructuring of the energy sector. One of the fundamental changes as per the amendment Act is the introduction of a competitive retail energy sector, wherein, supply function has been segregated from the distribution license.

1.2. As per the amended Act, function of sale of electric power traditionally being performed by the Distribution Licensees has been amended under Section 21(2)(a), whereby 'sale' of electric power has been removed from the scope of 'Distribution Licensee' and transferred to 'Supply Licensee'.

1.3. The newly introduced section 23(E) of the Act, provides NEPRA with the powers to grant Electric Power Supply License for the supply of electric power. As per Section 23E(1), the holder of a distribution license on the date of coming into effect of the Amendment Act, shall be deemed to hold a license for supply of electric power under this section for a period of five years from such date. Thus, all existing Distribution Licensees have been deemed to have Power Supplier Licenses, to ensure distribution licensees earlier performing both the sale and wire functions, can continue to do so. Section 23E, further states that the eligibility criteria for grant of license to supply electric power to be prescribed by the Federal Government, and shall include, provision with respect to a supplier of the last resort, as the case may be.

1.4. As per Section 23F (2)(b), the Supplier possess the right to make sales of electric power to consumers within their specified territories on a non-discriminatory basis to all the consumers who meet the eligibility criteria laid down by the Authority.

1.5. In view thereof, Sukkur Electric Power Company Limited (SEPCO), hereinafter called "the Petitioner", being a Distribution as well as deemed Supplier filed separate tariff petitions for the determination of its Distribution and Supply of Electric Power Tariff under the MYT Regime for a period of five years i.e. from FY 2020-21 to FY 2024-25, in terms of Rule 3 (1) of Tariff Standards & Procedure Rules-1998 (hereinafter referred as "Rules").

1.6. The Petitioner, inter alia, requested the following Distribution Margin in its Petition for the five years MYT period;

Sr. No.	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	Return on Net Fixed Assets in Operation (RRB * Profit Rate Base) @15.02%.	3,035	3,564	3,941	4,267	4,521
2	O&M (Million Rs.)	9,672	10,215	11,237	12,084	13,001
3	Depreciation (Million Rs.)	1,573	1,769	1,976	2,189	2,407
4	Other Income (Million Rs.)	-1,059	-1,140	-1,230	-1,330	-1,441
6	Distribution Margin Cost (Million Rs.)	13,222	14,407	15,925	17,210	18,488
7	Sales Volume (Gwh)	2,793	2,942	3,059	3,721	4,102
8	Average Distribution Margin (6/7) Rs./Kwh	**4.73**	**4.56**	**5.21**	**4.62**	**4.51**

2. Proceedings

2.1. In terms of rule 4 of the Tariff standard and Procedure Rules, 1998 (hereinafter referred to as "Rules"), the petition was admitted by the Authority. Since the impact of any such adjustments has to be made part of the consumer end tariff, therefore, the Authority, in

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order to provide an opportunity of hearing to all the concerned and meet the ends of natural justice, decided to conduct a hearing in the matter.

2.2. Hearing in the matter was initially scheduled on November 29, 2021, for which notice of admission / hearing along-with the title and brief description of the petition was published in newspapers on November 20, 2021 and also uploaded on NEPRA website; Individual notices were also issued to stakeholders/ interested parties. However, on the request of SEPCO, the hearing was re-scheduled for December 16, 2021, for which notice of rescheduling was uploaded on NEPRA website on 27.11.2021.

3. **Issues of Hearing**

3.1. For the purpose of hearing, and based on the pleadings, following issues were framed to be considered during the hearing and for presenting written as well as oral evidence and arguments;

i. Whether the request of Petitioner to allow MYT for a period of five years is justified?

ii. Whether the Petitioner has complied with the direction of the Authority given in the tariff determination of FY 2019-20?

iii. Whether the projected energy purchases are justified?

iv. Whether the requested T&D loss targets stated in the instant MYT petition are justified?

v. Whether the requested investment along-with its prospective benefits are justified?

vi. Whether the indicated Capital Cost of Rs. 26,186.5 Million for next five years is justified?

vii. Whether the projected O&M is justified?

viii. Whether the projected Return on Regulatory Asset base (RORB), Depreciation & Other Income is justified?

ix. What are the basis used by the Petitioner for bifurcation of its costs into supply and distribution segments?

x. What should be the adjustment mechanisms during the MYT? Whether there should any efficiency factor (X Factor)?

xi. Whether SEPCO has provided at least 95% of new connections to its eligible consumers as specified in the Consumer Eligibility Criteria and Performance Standard Distribution Rules, 2005? Provide detail of pending connections till 30 June 2021.

xii. Whether project-wise detailed report for the investment carried out along with their cost-benefit analysis and technical/financial savings achieved by June 30, 2021.

xiii. What steps were taken by SEPCO to target high loss feeders to bring down AT&C losses? Whether a detailed plan in this regard was furnished?

xiv. What is the load shedding criteria of SEPCO to meet the load demand?

xv. What are the system constraints due to which SEPCO draws less power as compared to the allocated quota?

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xvi. What curative measures have been taken to tackle the future demand and removal of constraints?

xvii. Provide justified reasoning regarding the less drawl of Power against allocated quota?

xviii. Provide project details/investments done during FY 2020-21 along with the impact on system improvement?

xix. What are the remedial measures taken for the achievement of performance standards (targets of SAIFI & SAIDI given by the Authority during FY 2019-20) as laid down in Performance Standards (Distribution) Rules 2005?

xx. Provide loading position of distribution network and submit a report regarding the plans/investments executed to improve the system constraints?

xxi. Whether the loading position of Power Transformers, Distribution Transformers and 11kV Feeders has been improved? Provide the detail for last three years?

xxii. Provide details of preventive measures taken during FY 2020-21 to cater to the safety incidents?

xxiii. Whether TOU meters installed to all the eligible connections? Submit details in this regard.

xxiv. Progress regarding the installation of AMI meters at the consumer end?

xxv. What steps were taken to control the theft of electricity?

xxvi. Whether SEPCO submitted IGTDP for last five years? If yes, what are the achievements of SEPCO in this regard?

xxvii. Whether SEPCO fully utilized the investments allowed previously in FY 2018-19 and FY 2019-20?

xxviii. Whether the concerns raised by the intervener/ commentator if any are justified?

xxix. Any other issue that may come up during or after the hearing?

4. Filing Of Objections/ Comments

4.1. Comments/replies and filing of Intervention Request (IR), if any, were desired from the interested person/ party within 7 days of the publication of notice of admission in terms of Rule 6, 7 & 8 of the Rules. In response thereof, IR has been filed by M/s PTCL, M/s Pak Telecom Mobile, M/s Telenor and M/s CM Pak (Zong). Written comments also received from M/s Deodar PMCL (Jazz). A brief of the concerns raised in the IR/ comments is as under;

Telecom Sector including Cellular Operators (CMOs) has been declared as an Industry vide Ministry of Industries notification dated 20.04.2004, therefore, for the purpose of charging of electricity, industrial tariff may be applied to CMOs instead of currently applicable Commercial tariffs.

4.2. The Authority during the tariff determinations of the Petitioner GEPCO for the FY 2019-20, on the request of Telenor regarding charging of Industrial tariff from Telecom Operators decided as under;

"The Authority observed that the issue highlighted by the commentator M/s Telenor

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Pakistan regarding applicability of Industrial tariff to Cellular Mobile Operator (CMOs) pertains to all the DISCOs including K-Electric as CMOs are operating all over Pakistan, therefore, the issue requires deliberations involving all stakeholders i.e. DISCOs, CMOs, Ministry of Energy, MoIT etc. The Authority noted that proceedings regarding Tariff petitions filed by all XWDISCOs for the FY 2018-19 and FY 2019-20, except GEPCO, have already been completed, therefore, the Authority has decided to consider the request of M/s Telenor as a separate issue during the proceedings for the upcoming tariff Petitions of DISCOs for the FY 2020-21 & onward".

4.3. In view thereof, in the instant tariff Petition, the subject matter has been discussed as a separate issue.

4.4. The Energy Wing of the Ministry of Planning, Development and Special Initiatives has submitted that for the distribution petition of SEPCO for the FY 2020-21 to 2024-25 the Authority should approve the investment plan before considering the MYT petition. Similarly, it also submitted that the investment plan should be linked with the actual performance of SEPCO. These targets should be realistic and should incorporate performance incentives for the DISCOs to retain earnings, if they do better than the targeted AT&C loss levels. It also submitted that the bad debt write-off mechanism should be on the lines of already approved mechanism for KE.

4.5. PPDB in its comments submitted that projected tariff requested by SEPCO will definitely result in hike of overall uniform tariff for all the consumer categories. Further increase in in T&D losses projected for MYT period will also be payable by consumers of electricity at good performing DISCOs including Punjab Consumers. PPDB requested that while MYT tariff NEPRA to cap the T&D losses based on the last allowed number determined for the FY 2019-20), which would also enable SEPCO to project the prudent cost reflective numbers for ascertaining the efficient sale & distribution tariff numbers. PPDB also requested that while allowing MYT tariff, NEPRA should not enhance basket price tariff, so that end consumer may be protected from this change.

4.6. During the hearing, the Petitioner was represented by its Chief Executive Officer along-with its technical and financial teams; On the basis of pleadings, evidence/record produced and arguments raised during the hearing, issue-wise findings are given as under;

5. **Whether the request of Petitioner to allow MYT for a period of five years is justified?**

5.1. The Authority noted that the Petitioner has filed its MYT Petition for a period of five years i.e. FY 2020-21 to FY 2024-25, as its Distribution license is valid till August 2031. It has also been noted that Section 23E(1) of the Amended Act, provides that holder of a distribution license on the date of coming into effect of the Amendment Act, shall be deemed to hold a license for supply of electric power under this section for a period of five years from such date. Thus, all existing Distribution Licensees have been deemed to have Power Supplier Licenses, to ensure distribution licensees earlier performing both the sale and wire functions, can continue to do so including the Petitioner.

5.2. The Authority, considering the fact that DISCOs are going concern, has decided to consider the distribution tariff request of the Petition under the MYT tariff regime. However, the Authority is also aware of the fact that under Section 21 (2) (a) of the NEPRA Act, the word "exclusive" has been omitted, meaning thereby that the Petitioner does not possess the

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exclusive right for provision of distribution services in its specified territory. Thus, the grant of distribution tariff under the MYT regime shall in no way be construed as a basis for claiming any exclusivity in the licensed territory of the Petitioner. The terms & conditions, given by the Authority, in the new license of the Petitioner would be applicable during the MYT control period and the MYT would be governed by the terms & conditions of the new license.

6. **Directions given to the Petitioner in its previous Tariff determination**

6.1. The Authority gave certain directions to the Petitioner in its tariff determination for the FY 2019-20. The Authority understands that periodic monitoring of the directions given by the Authority is absolutely necessary in order to analyze the Petitioner's performance, therefore, the Authority has decided to have a half yearly review of the given directions, instead of discussing the same only during the tariff proceedings. However, the directions which are directly relevant to the tariff determination of the Petitioner are discussed hereunder;

7. **File Multi Year Tariff Petition for a tariff control period of five year to avoid any delay in tariff determinations.**

7.1. The Petitioner submitted during the hearing that in compliance of the direction, it has filed Multi Year tariff petition for the FY 2020-21 to 2024-25 in the instant case.

8. **To immediately stop the existing practice of deducting 20% of SAP funds for grid augmentation and carry out the augmentation of the grid after coordinating with the Ministry of Energy and report be shared with the Authority by December 31, 2020.**

8.1. The Authority in the MYT determination of the Petitioner for the FY 2019-20 directed the Petitioner to stop the existing practice of deducting 20% of SAP funds for grid augmentation and carry out the augmentation of the grid after coordinating with the Ministry of Energy.

9. **To restrain from unlawful utilization of receipts against deposit works and security deposits, and the same is reflected in the Audited accounts for the FY 2020-21 & onward.**

10. **To ensure that consumer's deposits are not utilized for any other purpose and the same is reflected in the Audited accounts for the FY 2020-2 1 & onward.**

11. **To give clear disclosures in its Financial Statements with respect to the consumer financed spares and stores, work in progress and cash & bank balance for the FY 2020- 21 & onward.**

11.1. The Authority during the tariff determination of the Petitioner for the FY 2015-16 and onward, noted that the Petitioner had insufficient cash balance as on 30th June 2015 against its pending liability of receipt against deposit works and consumer security deposits, which indicated that the amount received against the aforementioned heads has been utilized somewhere else and the Petitioner failed to provide details in this regard. The Authority observed that the amount collected as security deposit cannot be utilized for any other reason and any profit earned thereon has to be distributed to the consumers. Also, the amount collected under the head of receipt against deposit works has to be spent for the purpose for which it has been collected. The utilization of the money collected against deposit works and security deposits other than the works for which it has been received is illegal and unlawful. In view thereof, the Petitioner was directed to provide rational / justification for improper utilization of the money because the consumers have to face unnecessary delay for their applied connections.

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11.2. Similarly for the FY 2018-19 & FY 2019-20, the Authority again observed that the Petitioner as per its provisional accounts had insufficient cash balance, against its pending liability of receipt against deposit works and consumer security deposits, thus, indicating that the amount received against the aforementioned heads has been utilized somewhere else for which no details have been provided.

11.3. Accordingly, the Authority decided, to include the amount of receipts against deposit works as a part of Deferred Credits for RAB for FY 2018-19 & FY 2019-20, after excluding therefrom cash/ bank balances and amount of stores & Spares available with the Petitioner and also directed the Petitioner to restrain from unlawful utilization of receipts against deposit works & security deposits, and to give clear disclosures in its Financial Statements with respect to the consumer financed spares and stores, work in progress and cash & bank balance.

11.4. The Petitioner submitted that the consumers' deposit are not being utilized for any other purpose, and the Security deposits are placed in separate account. It has further been stated that consumer deposits would be reflected in the Audited accounts of FY 2020-21. The Petitioner further submitted that disclosures of consumer financed spares and stores, work in progress and cash & bank balances has already been incorporated in annual accounts.

11.5. The matter has also been deliberated under the issue of RoRB.

12. <u>To give clear disclosures in its Financial Statements with respect to the break-up of costs in terms of Distribution and Supply Businesses for the FY 2019-20 and onward.</u>

12.1. As explained in earlier paragraphs, the function of sale of electric power traditionally being performed by the Distribution Licensees has been amended through NEPRA Act, 2018, whereby 'sale' of electric power has been removed from the scope of Distribution Licenses and transferred to 'Supply Licensee'.

12.2. In light of the aforementioned provisions of the Act, the Petitioner was directed for segment reporting with clear break-up of costs in financial statements for the Distribution and Supply Functions in light of the amended NEPRA Act for the FY 2020-21 & onward bifurcate its costs in terms of Distribution and Supply Function and provide basis thereof.

12.3. The Petitioner has submitted that the direction has been noted for compliance.

12.4. In view thereof, the Authority again directs the Petitioner to ensure segment reporting with clear break-up of costs in financial statements for the Distribution and Supply Functions in light of the amended NEPRA Act for the FY 2020-21 & onward.

13. <u>To ensure proper tagging of assets so that costs incurred are properly classified as per their nature and report be submitted to the Authority by June 30, 2021.</u>

13.1. The Petitioner submitted that it has conducted the exercise of fixed assets for proper tagging, revaluation. Verification & preparation of Fixed Assets Register (FAR) that has been done by the consultant and issued its reports to the SEPCO for the period ending June 2020. The Petitioner submitted that the report has been submitted to NEPRA,

14. <u>To provide the required details of late payment charges recovered from the consumers and any invoice raised by CPPA (G) under the head of mark-up on delayed payments for the period from FY 2014-15 to FY 2019-20, by March 31, 20201.</u>

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14.1. The Petitioner submitted that the details of late payment charges recovered from the consumers and invoices raised by CPPA (G) under the head of mark-up on delayed payments for the period from FY 2014-15 to FY 2019-20 are as under:

Year	LPS Collection	Invoices rasied by CPPA-G
2014-15	231	-
2015-16	271	2,354
2016-17	277	2,788
2017-18	235	1,677
2018-19	221	4,705
2019-20	260	7,877
Total	**1,495**	**19,401**

14.2. Since the amount of LPS is collected is less than the amount of supplemental charges, therefore, no adjustment in this regard has been made in the instant tariff determination, in light of the decision of the Authority LPS amount is to be netted off against amount of supplemental charges.

15. Transfer the already collected provision on account of Post-Retirement benefits into the Fund and also provide break-up of the said postretirement benefits indicating the provision amount pertaining to the prior period and the current portion by June 30, 2021.

15.1. The Petitioner on the issue has submitted that it has opened its Pension Fund Account in UBL, Sukkur. However, no further details regarding deposit of any amount in the Fund or break-up of provision for postretirement benefits indicating the provision amount pertaining to the prior period and the current portion. The instead has only submitted break-up of post-retirement benefits for the period ending June 2021 as under;

Mln. Rs.

Sr. #	Description	Amount
i	Pesnion Expense	4,181
ii	Electricity Expense	133
iii	Medical Expense	280

15.2. The matter has been discussed in detail the ensuing paragraphs.

15.3. **To provide details of PEPCO Management Fees, if any, claimed previously so that same could be adjusted in the subsequent tariff determinations.** The Authority, in the tariff determination of the Petitioner for the FY 2018-19 & FY 2019-20 observed that each DISCO is an independent entity having its own board of Directors, thus, allowing any cost on the pretext of PEPCO Management fee is not logical. It was also noted that the Ministry of Energy (MoE), itself in the Peshawar High Court submitted that PEPCO shall be dissolved after June 2011.

15.4. In view thereof, the cost of PEPCO fee was not allowed to the Petitioner and it was directed to provide details of PEPCO Management Fees, if any, claimed previously so that same could be adjusted in the subsequent tariff determinations.

15.5. The Petitioner has not provided any response in this regard.

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15.6. The Authority therefore, again directs the Petitioner to provide the detail of PEPCO fee claimed in tariff till June 30, 2021 in its subsequent tariff adjustment/indexation request.

16. Whether the projected energy purchases are justified?

16.1. The Petitioner has submitted that Power Purchase Price is a pass-through item and consists of the following four components:

- Energy Charges
- Variable Operating and Maintenance (O& M) Charges
- Capacity Charges
- NTDC Use of System Charges & CPPAG Market Operations Fee

16.2. The Petitioner during the hearing submitted the following projected Energy (GWh) for the FY 2020-21 to FY 2024-25;

Description	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Units Purchased	GWH	4,317	4,482	4,593	5,505	5,979
Power Purchase Cost	Rs. In M	54,329	70,135	79,711	99,734	115,598
Av: PPP	Rs./kWh	12.66	15.65	17.36	18.12	19.34
Increased in PPP	%	-7%	24%	11%	4%	7%

16.3. The Petitioner submitted the following justification for the projected purchases;

Description	%
[A] Actual:	
Av: Energy Purchase (GWH) Growth Rate for last 5 years	-0.27%
Average Energy Sale (GWH) Growth Rate for Last 5 Years	0.35%
Average T&D Losses reduce during last 5 years	-0.38%
[B] Projection	
Av: Energy Purchase (GWH) Growth Rate Projected	7.25%
Average Energy Sale (GWH) Growth Rate Projected	8.85%
Average T&D Losses reduce Projected	1%

16.4. The Authority observed that the issue of Power Purchase Price being relevant with the Supply Business has been deliberated in detail under Supply Tariff Petition of the Petitioner for the MYT control period.

17. What are the basis used by the Petitioner for bifurcation of its costs into supply and distribution segments?

17.1. The Petitioner submitted the following bifurcation of costs, into supply and distribution segments, during the hearing:

SUPPLY OF POWER	DISTRIBUTION OF POWER
•CHIEF COMMERCIAL OFFICER •01 MANAGER (COMMERCIAL) •01 MANAGER (S&I) MANAGER TMCM) & MANAGER (M&T). •DY MANAGER (COMMERCIAL) •REVENUE OFFICERS •100% EXPENSES ARE ALLOCATED •SALARIES AND OTHER EXPENSES OF HEAD QUARTER, ALLOCATED ON THE BASIS OF SERVICE PROVIDE. •85% OF EXPENSES OF COMPUTER CENTER	•C.E TECHNICAL, C.E (DEV.) PMU, C.E OPERATIONS. •03 X OPERATION CIRCLES, 16 OPERATION DIVISIONS, 62 OPERATION SUB DIVISIONS. •PD GSC, 1 X GSO CIRCLE •PD (CONSTRUCTION) •SALARIES AND OTHER EXPENSES OF HEAD QUARTER, ALLOCATED ON THE BASIS OF SERVICE PROVIDE. •15% OF EXPENSES OF COMPUTER CENTER

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17.2. The Petitioner also submitted the following percentage wise breakup of costs in terms of Distribution and Supply of Power Functions;

Description	Distribution Share	Supply Share	Overall
Salaries, Pension & Benefits	90%	10%	100%
Repair & Maintenance	99.99%	0.03%	100%
Travelling	89%	11%	100%
Transportation	97%	3%	100%
Miscellaneous Expenses	97%	3%	100%
Total O&M	**91%**	**9%**	**100%**
Provision for Bad Debts	-	100%	100%
Deprication	99.65%	0.35%	100%
RORB	99.82%	0.18%	100%
Less Onther Income	**92%**	**8%**	**100%**
D.M	84%	16%	100%

17.3. The Authority understands that as per the Amended Act, the Distribution Licensee is responsible to provide distribution service within its territory on a non-discriminatory basis and develop, maintain and publicly make available, with the prior approval of the Authority, an investment program, meaning thereby, that installation/investment, operation, maintenance and controlling of distribution networks, form part of the Distribution License and activities like billing and collection form part of the Supply License.

17.4. The Authority in the determination of the Petitioner for the FY 2019-20 decided the following;

"The Authority believes that after amendments in NEPRA Act, all the Public Sector Distribution companies are required to make organizational restructuring in terms of segregation of responsibilities of the Distribution and Sale functions and in order to ensure appropriate coordination between both functions. Hence, keeping in view the fact that it is operational issue and DISCOs are owned by the Federal Government, it would be more appropriate that a centralized restructuring plan at the level of Federal Government is prepared to be implemented by all the public sector DISCOs in order to have a uniformity and consistency in the structure."

17.5. It is again desired that a centralized restructuring plan at the level of Federal Government is prepared, so that a uniform & consistent basis/ approach is adopted by all the DISCOs. Till such time, the submissions of the Petitioner are considered.

18. <u>Whether the projected O&M is justified?</u>

19. <u>What should be the adjustment mechanisms during the MYT? Whether there should any efficiency factor (X Factor)?</u>

20. **<u>Whether the requested Return on Regulatory Asset base (RORB), Depreciation & Other Income is justified?</u>**

20.1. The Petitioner submitted that the requested O&M expenses includes salaries and other benefits of employees, repair and maintenance expenses, traveling allowance, vehicle maintenance allowance and other operating costs related to its distribution and supply business.

20.2. The Petitioner has requested the following O&M for Power Distribution Business in its Petition.

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Description	Unit	FY 2020-21 Projected	FY 2021-22 Projected	FY 2022-23 Projected	FY 2023-24 Projected	FY 2024-25 Projected
Commercial Cost						
Employees Cost **						
Salaries, Wages & Benefits	[Mln Rs]	4,247	4,610	4,969	5,341	5,744
Retirement Benefits	[Mln Rs]	3,868	4,008	4,469	4,808	5,175
Total Employees Cost	[Mln Rs]	8,116	8,618	9,439	10,149	10,919
Repair & Maintenance	[Mln Rs]	818	758	946	1,017	1,095
Travelling	[Mln Rs]	255	347	295	317	341
Transportation	[Mln Rs]	183	183	211	227	245
Miscellaneous Expenses	[Mln Rs]	300	308	347	373	402
Total O&M	[Mln Rs]	9,672	9,209	11,237	12,084	13,001

20.3. The Petitioner submitted that for projecting O&M expenses impact of inflation is incorporated on operating expenses from the latest available provisional accounts of the FY 2019-20 and 10% increase in Salaries & Allowances in the FY 2020-21 to 2024 to 2025.

21. Pay and Allowances:

21.1. The Petitioner has submitted that its pay and allowances includes salaries of regular and contract employees, wages of daily wages, which includes all benefits such as house rent allowances, medical allowances and facilities, free electricity and pension contribution. Considering the impact of increase in salaries annual increment by the Govt: as per the finance bill.

22. Disparity Reduction Allowance:

22.1. For Disparity Reduction Allowance, the Petitioner submitted that the Government of Pakistan approved Disparity Reduction Allowance @ 25% of the basic pay of basic pay scale 2017 to all Federal Government Employees BPS-01 to BPS-19 w.e.f. 1st March, 2021.

22.2. In the same manner, the petitioner also submitted that Government of Pakistan has grant of Disparity Reduction Allowance @ 25% of the Basic Pay of Basic Pay Scale 2017 to government employees in BPS 20–22, with effect from 01.07.2021 vide Finance Division (Regulations Wing) Islamabad Office Memorandum F.No.14(1)R-3/ 2021-324, dated 08.07.2021.

23. Grant of Ad-Hoc Allowance 2021 @ 10% of Basic Pay to SEPCO Employees

23.1. For Grant of Ad-Hoc Allowance the Petitioner submitted that the Government of Pakistan has allowed Ad-Hoc Relief Allowance-2021 @ 10% of the basic pay to all the Federal Government Employees w.e.f 1st July 2021 vide Finance Division (Regulation Wing), Islamabad office Memorandum No F.1(1)Imp/2021-216 dated 08.07.2021. in the light of clarification Finance Division's No. 4(3)R-4/2011-Revision dated July 26, 2021 circulated by Section Officer (Admin) Ministry of Energy (Power Division), Government of Pakistan, Islamabad vide his letter No. 2(8)/2021-Admn, dated 30.08.2021.

24. Grant of Increase in Pension to Pensioners of the Federal Government

24.1. The petitioner submitted that the Government of Pakistan has sanctioned an increase of @ 10% of net pension to the pensioners of the Federal Government w.e.f 1st July 2021 vide Finance Division (Regulation Wing), Islamabad office MemorandumF.No.4(1)-/Reg.6/2021-486 dated 08.07.2021.

25. Revision of Rate of Orderly Allowance

25.1. The petitioner submitted that the Government of Pakistan has revised the rate of orderly allowance from Rs.14,000/- to Rs.17,500/- per month to BPS-20 to BPS-22 officers with

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effect from 01.07.2021 for the civil employees of the Federal Government vide Finance Division (Regulations Wing), Islamabad, vide his Office Memorandum F.No.1(13) Imp/ 2016-217, dated 08.07.2021.

26. Revision of Rate of Integrated Allowance

26.1. The petitioner submitted that the Government of Pakistan, has allowed revision of rate of integrated allowance from Rs.450/- to Rs.900/- per month for Qasids, Naib Qasids, and Daftaries to all the Federal Government Employees with effect from 01.07.2021 vide Finance Division (Regulations Wing) Office Memorandum F.No.6(1)R-5/2005, dated 08.07.2021.

27. Repair and Maintenance:

27.1. Regarding Repair and maintenance expenditures, the Petitioner has stated that it pertain to the Computers and Equipment.

28. Travelling Allowance:

28.1. For travelling cost, it has been mentioned that these are for daily movement from allied formation to all bank branched and collect the scroll from banks and submit to MIS Directorate.

29. Transportation Charges:

29.1. The transportation charges, as per the Petitioner, include repair and maintenance of vehicles, POL and annual renewal of registration fees.

30. Other Miscellaneous Expenditures:

30.1. Other miscellaneous expenditures, includes repair of furniture and office equipment, stationery and Photostat charges, postage and telecommunications.

31. Plan for Additional hiring:

31.1. On the issue of additional Hiring, the Petitioner presented the following detail of its existing manpower and vacant posts during the hearing;

BPS	Sanctioned Strength	Working Strength	Vacany Posts	Vacant Posts (%)
BPS-17 & Above	331	149	182	55%
BPS-01To 16	9159	6052	3107	34%
TOTAL	**9490**	**6201**	**3289**	**35%**

32. MIRAD

32.1. On the issue of MIRD, the Petitioner submitted that it has a functional MIRAD w.e.f. 27.09.2021 by handing over the additional charge to various posts. The Petitioner submitted the following total no. of posts required for the MIRAD.

Particular	No of Posts
D.G (BPS-20)	1
Manager (BPS-19)	3
Deputy Manager (BPS-18)	6
Assistant Manager (BPS-17)	10
Total	20

32.2. It also stated that advertisement for DG MIRAD has been published for the 3rd time, and the selection process in underway. The Petitioner also stated that internal reallocation for

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various posts of MIRAD has been done on permanent basis as mentioned below and for the remaining posts, advertisements was published, against which shortlisting of candidates is in progress and interview letters will be issued shortly.;

Sr. #	Description of Posts	No.
1	Deputy Manager (Demand forecasting)	1
2	Deputy Manager (Transmission planning)	1
3	Assistant Manager (Demand forecasting)	2
4	Assistant Manager (Transmission planning)	1
	Total	**5**

32.3. The Petitioner provided the financial impact of the MIRAD as under;

Mln. Rs.

	Monthly Impact	Annual Impact
Pay & Allowances	1.316	15.793
Employee Benefits	0.18	2.159
TOTAL	**1.496**	**17.953**

33. Post Retirement Fund

33.1. The Petitioner has requested provisions for post-retirement benefits as under;

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Post-Retirement Benefits	3,868	4,008	4,469	4,808	5,175

34. RORB

34.1. On the issue of RoRB, the Petitioner submitted as per NEPRA mechanism, the return on Rate Base is being calculated as follows:

Weighted Average Cost of Capital (WACC) X Rate Base

34.2. It stated that NEPRA allowed WACC to SEPCO 15.02% in its tariff determination for FY 2019-20, which comprises of cost of debt and cost of equity as under;

Ke=RF + (RM – RF) x β = 13.7687% + (15% x 1.1) = 15.12%
The cost of debt; kd = 15.02%
Accordingly, the rate calculated for SEPCO is: WACC = [Ke x (E/V)] + [Kd x (D/V)]
Where E/V and D/V are equity and debt ratio respectively taken as 30% & 70%.

34.3. The Petitioner further stated that Profit Rate Base is defined for the FY 2020-21 to FY 2024-25 as the sum of followings;

(i) Gross Fixed Assets in Operation beginning of the year

(ii) (ii) The capital expenditures for the year (New Investments), in accordance with the proposed investment program.

(iii) Less Cumulative Depreciation

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(iv) Plus Closing Capital Work in Progress

(v) Less: Differed Credit.

34.4. The also submitted that Annual Rate of Return is a pre-tax return on the Profit Rate Base and since the investment is typically financed with a combination of debt & equity, the appropriate rate of return should be a market-based weighed average of the cost of capital. The Petitioner accordingly proposed the following RoRB for the MYT control period for its Distribution Function;

Mln. Rs.

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
RORB	3,035	3,564	3,941	4,267	4,521

35. Depreciation:

35.1. Regarding depreciation charges, the Petitioner submitted that the projected depreciation of assets is provided in accordance with the accounting policy of the Company and projected the following amounts during the MYT control period;

Mln. Rs.

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Depreciation	1,573	1,769	1,976	2,189	2,407

36. Other Income:

36.1. On the issue of Other Income, the Petitioner submitted the following figures for other income charged to Distribution of Power.

Mln. Rs.

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Other Income	1,059	1,140	1,230	1,330	1,441

36.2. The Authority observed that the Amended NEPRA Act under Section 31(3), inter alia, has prescribed that the following general guidelines shall be applicable to the Authority in the determination, modification or revision of rates, charges and terms and conditions for provision of electric power services;

- ✓ *"(a) tariffs should allow licensees the recovery of any and all cost prudently incurred to meet the demonstrated needs of their customers Tariff."*
- ✓ *(b) tariffs should generally be calculated by including a depreciation charge and a rate of return on the capital investment of each licensee commensurate to that earned by other investments of comparable risk;*
- ✓ *(c) tariffs should allow licensees a rate of return which promotes continued reasonable investment in equipment and facilities for improved and efficient service;*
- ✓ *(d) tariffs should include a mechanism to allow licensees a benefit from and penalties for failure to achieve the efficiencies in the cost of providing the service and the quality of service;"*

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36.3. Further, as per NEPRA determination of Consumer-end-Tariff (Methodology & Process) Guidelines, 2015, the Authority shall choose a base year for the purpose of determining the affected company's revenue requirement under multi-year tariff regime or annual tariff regime. "Base Year" has been defined as the year on which the annual or multiyear tariff projection is being made, which may be a historical financial year, for which the actual results/audited accounts are available. It may be a combination of actual results and projected results for the same financial year or it may be a pure projection of a future financial year.

36.4. The Authority noted that as per the approved tariff methodology the Power Purchase Price is the only uncontrollable cost which is allowed a pass through item. The other remaining costs are to be treated as controllable costs.

36.5. Considering the fact that the MYT has been filed for the period pertaining to the FY 2020-21 to FY 2024-25, and the cost for the FY 2020-21 i.e. test year, is being assessed as reference cost during the MYT control period, the Authority has decided to consider the costs as per the Provisional accounts of the Petitioner for the FY 2019-20, and/or the request of the Petitioner in this regard as base year.

36.6. The Authority considers that for projections or assessment of OPEX costs, the two commonly used approaches are the Ex-Ante approach and the Ex-Post approach. In a regime where the allowed OPEX is determined Ex-Ante, there will inevitably be deviations between the allowed and actual OPEX in the form of efficiency savings or losses. Thus resulting in two broad options, one that the utility bears all savings or losses, i.e. no action is taken by the Regulator. The 2nd that the utility shares the savings or losses with consumers. The former provides the utility with a profit incentive to cut costs, but at the same time places the utility at greater financial risk in the face of losses. The latter somewhat dilutes efficiency incentives, but also limits the losses/gains for the utility and its customers. However, the widely used approach is that no adjustments to allowed Revenues or OPEX allowances are made in the next period to compensate for a deviation from allowed OPEX in the current period except for certain allowed adjustments in terms of CPI etc.

36.7. In view thereof, the head wise assessment of the Petitioner under each of the requested costs is as discussed hereunder.

37. <u>Salaries and wages:</u>

37.1. The Petitioner submitted that Salaries & Wages including employee's retirement benefits is the major component of O&M expense. The Authority understands that employees of XWDISCOs are hired on Government pay scales, thus, any salary increase announced by the Federal Government in Fiscal Budget is also applicable on the employees of XWDISCOs. Therefore, salaries & wages cost of employees can be considered as un-controllable cost for XWDISCOs as long as they remain in public sector.

37.2. Considering the fact that the cost for the FY 2020-21 is being assessed, which would be used as reference during the MYT control period, the Authority has decided to consider the costs as per the accounts of the Petitioner for the FY 2019-20 as base year as explained in the preceding paras. It is also pertinent to mention that being a public sector company, the Petitioner is required to pay, its employees, increases in salaries & wages announced by the Federal Government through Budget.

37.3. The actual cost reflected in the accounts of the Petitioner for the FY 2019-20, under Salaries & Wages *(excluding postretirement benefits, discussed separately)* is Rs.4,082 million. Accordingly, the said amount has been considered as base cost and by applying thereon the increases as approved by the Federal Government on Salaries and Wages in the Federal Budget for the FY 2020-21, and the impact of inflation on certain heads, the cost of Salaries & Wages *(excluding postretirement benefits, discussed separately)*, for both the Distribution and Supply Functions works out as Rs.4,504 million.

37.4. Here it is pertinent to mention that the Petitioner, despite the Authority's clear directions, has still not provided the replacement hiring certificate. Therefore, the replacement hiring Cost, which works out as Rs.116 million for the FY 2020-21, which has been adjusted from the cost of Salaries & Wages assessed for the FY 2020-21.

37.5. In view thereof, net amount of Rs. 4,388 million net of replacement hiring cost is hereby allowed to the Petitioner for the FY 2020-21 for both its distribution and Supply Functions as reference cost, to be adjusted in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

37.6. The Petitioner is also directed to provide certificate of replacement hiring from its Auditors as directed by the Authority in its previous tariff determinations. Once the requisite certificate is provided by the Petitioner, the Authority may consider allowing the cost of replacement hiring prospectively and no adjustment would be allowed for previous periods deducted cost.

37.7. Since the accounts of the Petitioner, do not provide bifurcation of the Salaries, Wages and other benefits costs in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of total cost of Salaries, Wages and other benefits in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the cost of Salaries, Wages and other benefits *(excluding postretirement benefits)* for the FY 2020-21 pertaining to the distribution function works out as Rs.3,627 million.

37.8. The assessed Salaries & Wages costs for the FY 2020-21 i.e. Rs.3,627 million, shall be considered as the reference cost for working out future Salaries & Wages expenses of Distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

38. Additional Hiring

38.1. Regarding additional recruitment, the Authority observed that Salaries & Wages cost for the FY 2019-20, as per the accounts of the Petitioner, have been considered as base cost, therefore, impact of any new recruitment already made till FY 2019-20 has been accounted for. For the proposed recruitment to be carried out in FY 2020-21 and onward, the Authority understands that allowing cost of additional hiring, upfront would be unfair with the consumers, without considering/ analyzing the benefits of such recruitment. The Authority understands that it will be in a better position to adjudicate on the issue once the Petitioner provides details of the actual cost incurred in this regard and substantiates the same with the quantified benefits accrued. In view thereof, the Authority has decided to consider the financial impact of any additional hiring during the midterm review, which will be carried out after expiry of 3rd year of the MYT control period, whereby the Petitioner would provide complete detail/ justification of the recruitment made along-with benefits achieved. The mid-term review would be carried out, in case the Petitioner remains in the Public sector.

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39. **Hiring for MIRAD**

39.1. The Authority observed that detailed design and implementation plan of the Competitive Trading Bilateral Contract Market (CTBCM) has been approved on November 12, 2020 to make a competitive wholesale electricity market functional in near future. Pursuant thereto, DISCOs have created a Market Implementation & Regulatory Affairs Department (MIRAD). The department would be a dedicated central interface between DISCOs and the competitive electricity market equipped with staff having specialized knowledge and competency and supported by necessary infrastructure, inter-alia, to administer the market operations including bilateral contracts portfolio management, short and medium-term demand forecasting, transmission planning, and overseeing legal and regulatory affairs.

39.2. In view thereof, the Authority has decided to allow hiring for MIRAD in principal and allow the incremental financial impact of the same as part of PYA in the subsequent adjustment requests and would also be made part of reference cost for future indexations, once the Petitioner completes its recruitment process and submits complete details in this regard. Here it is pertinent to mention that impact of employees internally transferred to MIRAD has already been largely accounted for while assessing the salaries & wages cost.

40. **Post-retirement benefits**

40.1. On the issue of Post-retirement benefits, it is also pertinent to mention that the Authority in its previous determinations, considering the overall liquidity position in the power sector and in order to ensure that XWDISCOs fulfil their legal obligations with respect to the post-retirement benefits, directed the XWDISCOs to create a separate fund in this regard. The rationale behind creation of separate fund was to ensure that DISCOs record their liability prudently as the funds would be transferred into a separate legal entity, which would also generate its own profits, as it would be kept separate from the Company's routine operations, thus reducing the Distribution Margin and eventually consumer-end tariff in longer run.

40.2. The Petitioner has submitted that it has opened a Pension Fund account in UBL Sukkur. However, no further details regarding deposit of any amount in the Fund has been provided.

40.3. The last four years pension payment as provided by the Petitioner is as under;

Sr.	Paid Rs in mln	FY 2020	FY 2019	FY 2018	FY 2017
1	Post retirement benefits	1,435	1,281	1,144	746
2	Medical Facilities	-	126	99	80
3	Free Electricity	-	0	1	2
	Total	1,435	1,407	1,244	828

40.4. Based on the above breakup of pension expense for the FY 2019 the requested amount has broken down as under;

Rs mln

	FY 21	FY 22	FY 23	FY 24	FY 25
Post retirement benefits	3,521.34	3,649	4,068	4,377	4,711
Medical Facilities	345	358	399	429	462
Free Electricity	1	1	2	2	2
	3,868	4,008	4,469	4,808	5,175

40.5. Although, the Petitioner has created the Fund, however, the Authority is also cognizant of the operational performance of the Petitioner in terms of achieving the Regulatory Targets of T&D losses and Recoveries etc. The actual losses of the Petitioner for the FY 2019-20

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40.6. The Authority is also cognizant of the fact that payment of postretirement benefits to the retired employees is a compulsory obligation of the Petitioner which can be best fulfilled through a separate postretirement Fund having sufficient funds. However, failure of the Petitioner to create a Fund or deposit the amount of already collected provision of postretirement benefits into the Fund, would not absolve the Petitioner from its responsibility in this regard.

40.7. In view thereof, the Authority has decided to considered the amount of actual payments as per the provisional accounts of the Petitioner for the FY 2019-20 as base cost and by applying thereon the increases as approved by the Federal Government on Pension Benefits in the Federal Budget for the FY 2020-21, the cost of post-retirement benefits for the FY 2020-21 for both the Distribution and Supply Functions works out as Rs.1,435 million. The same is hereby allowed to the Petitioner for the FY 2020-21 for both its distribution and Supply Functions as reference cost, to be adjusted in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

40.8. Since the Audited accounts of the Petitioner, do not provide bifurcation of post-retirement benefits in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of total cost of post-retirement benefits in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the cost of post-retirement benefits for the FY 2020-21 pertaining to the Distribution function works out as Rs.1,428 million. At the same time the Petitioner is again directed to create a separate Fund for its post-retirement benefits and deposit the amount of already collected provision of postretirement benefits into the Fund.

40.9. **Regarding Repair and Maintenance expenses,** the Petitioner has although requested an amount of Rs.818 million for the 1st year of the MYT control period, however, no further details/ justification has been provided for the requested amount.

40.10. The Authority however understands that adherence to service standards and improvement of customer services is only possible through continuous repair and maintenance of distribution network. In view thereof, and keeping in view the current approved tariff methodology, the Authority has decided to consider the amount as per the accounts of the Petitioner for the FY 2019-20 and allow inflationary impact thereon, to work out the amount to be allowed for the FY 2020-21 as reference cost, for the Repair & Maintenance. The same would be adjusted in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

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40.11. The Authority noted that as per the accounts for the FY 2019-20, and the amount requested by the Petitioner has decided to the R&M costs is Rs.737 million, which after incorporating the inflationary impact works out as Rs.804 million. The same is allowed to the Petitioner for the FY 2020-21, for both the Distribution and Supply Functions.

40.12. Since the accounts of the Petitioner, do not provide bifurcation of the R&M costs in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of total cost of R&M costs in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the entire cost of repair & maintenance for the FY 2020-21 allocated to the Distribution function.

40.13. The assessed repair and maintenance cost for the FY 2020-21 i.e. Rs.804 million, shall be considered as the reference cost for working out future repair and maintenance expenses for its distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

40.14. **For other O&M Expenses including travelling & transportation**, the Authority noted that as per the approved tariff methodology, all other operating expenses are part of O&M costs which are to be assessed through CPI-X formulae for the whole tariff control period. Accordingly, for the assessment pertaining to the FY 2020-21 (reference cost), the Authority keeping in view the cost as per the accounts of the Petitioner for the FY 2019-20, and the request of the Petitioner has assessed the other O&M expenses as Rs.642 million for both the distribution and Supply of Power Function for the FY 2020-21.

40.15. Since the accounts of the Petitioner, do not provide bifurcation of the other O&M costs in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of total cost of other O&M costs in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the cost of other O&M for the FY 2020-21 pertaining to the Distribution function works out as Rs.604 million.

40.16. The assessed Other O&M cost for the FY 2020-21 i.e. Rs.604 million, shall be considered as the reference cost for working out future repair and maintenance expenses for its distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

40.17. By considering the figures as per the financial statements/ request of the Petitioner, the Authority has incorporated all the costs including bill collection, building rent, NEPRA fee, insurance cost, rent, rates & taxes, and travelling, transportation etc. However, Management Fees of PEPCO, has not been considered as each DISCO is an independent entity having its own board of Directors, thus, allowing any cost on the pretext of PEPCO Management fee is not logical. Further, the Ministry of Energy (MoE), itself in the Peshawar High Court submitted that PEPCO shall be dissolved after June 2011. Accordingly, the cost of PEPCO fee, if any, has not been allowed to the Petitioner.

41. <u>RORB</u>

41.1. The Authority observed that as per Section 31(3) of the amended NEPRA Act, the following general guidelines shall be applicable to the Authority in the determination, modification or revision of rates, charges and terms and conditions for provision of electric power services;

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- *(b) tariffs should generally be calculated by including a depreciation charge and a rate of return on the capital investment of each licensee commensurate to that earned by other investments of comparable risk;*
- *(c) tariffs should allow licensees a rate of return which promotes continued reasonable investment in equipment and facilities for improved and efficient service;*

41.2. The Authority uses the Capital Asset Pricing Model (CAPM) for calculation of Return of Equity (RoE) component of the WACC, being the most widely accepted model, which is applied by regulatory agencies all over the world to estimate the cost of capital for regulated utilities. Further, as per the Tariff methodology, in case of negative equity the Authority would consider a minimum of 20% equity and any equity in excess of 30% would be considered as debt.

41.3. Keeping in view the above, the Authority for the assessment of RoE component for the FY 2020-21, has considered weighted average yield on 05 Years Pakistan Investment Bond (PIB) as of July 22, 2020 as risk free rate, which is 8.2139%.

41.4. The expected return on any investment is the sum of the risk-free rate and an extra return to compensate for the risk. This extra return or 'risk premium' is the difference between market rate of return and risk free rate. Generally, the return on stock market index is taken as a measure of market rate of return. To have an appropriate measure of the market rate of return, analyzed KSE-100 Index return, over a period of 10 years i.e. FY 2011 to FY 2020, which remained at around 13.9%. The Authority also analyzed returns offered by stock exchanges of the neighboring countries, and noted that return of KSE-100 index remained higher than those of neighboring countries.

41.5. Based on the above analysis, the Authority has considered the rate of return on KSE-100 index as expected market return in WACC formula for calculation of Return of equity. The rate of return on KSE-100 index of around 13.9%, translates into risk premium of around 5.68% *(with risk free rate of 8.2139%, Weighted Average Yield of 5-Year PIB as of July 22, 2020)*. Therefore, keeping in view the aforementioned, Market Risk Premium of 5.68% is considered as reasonable for calculation of cost of equity component.

41.6. Regarding assessment of beta, the Authority has considered the earlier studies in the matter, range of betas used by international Regulators, and accordingly decided to use the beta of 1.10, while assessing the RoE component.

41.7. As regard the cost of debt, it is the interest rate on which a company would get borrowing from the debt market / commercial banks i.e. a rate at which banks lend to their customers. In order to have a fair evaluation of the cost of debt, the Authority has taken cost of debt as 3 month's KIBOR + 2.00% spread. Consequently, the cost of debt has been worked out as 9.03% i.e. 3 Months KIBOR of 7.03% as of 3rd July 2020 plus a spread of 2.00% *(200 basis points)*.

41.8. In view thereof, the WACC for the FY 2020-21 has been worked out as under;

Cost of Equity;

$Ke = R_F + (R_M - R_F) \times \beta$

$= 8.2139\% + (13.9\% - 8.2139\% = 5.686\% \times 1.1) = 14.47\%$

The cost of debt is;

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Kd = 9.03%

WACC= ((Ke x (E / V) + (Kd x (D / V))

Where E/V and D/V are equity and debt ratios respectively taken as 30% and 70%;

WACC = ((14.47% x 30%) + (9.03% x 70%)) = 10.66%

42. Treatment of Capital Work in Progress (CWIP) while calculating the RoRB

42.1. The Authority noted that as per the existing practice of XWDISCOs, CWIP in made part of RAB, while calculating RoRB. Considering the fact that CWIP also includes Interest during Construction (IDC), which once capitalized becomes part of total fixed assets, the Authority, regarding treatment of CWIP as part of RAB, has considered the best practices adopted by different Regulators across the world and observed the following;

43. Energy Regulators Regional Association (ERRA) Practices for RAB

43.1. As per the Energy Regulators Regional Association (ERRA) tariff data base, regarding CWIP, most of the regulators think that new CAPEX should be introduced in the RAB on the basis of actual costs incurred up to the point at <u>which the assets become operational</u>. Some regulators include construction work in progress in the RAB when construction is to be completed within a relatively short period of time, e.g. in one year. Accordingly RAB is calculated as per the following formula;

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RAB calculation: net approach

The regulatory asset base for the year t is calculated according to the following formula:

$$CB = OB + Inv - D - AD - DC + DWC$$

where:

OB - opening value of regulatory assets for year t of the regulatory period;

Inv - investment (capital expenditures) for year t of the regulatory period;

D - depreciation for year t of regulatory period;

AD - assets disposal for year t of regulatory period;

DC - annual change over year t in the value of assets funded by capital contributions;

D*WC* - annual change over year t in working capital;

CB - closing value of regulatory assets for year t of the regulatory period

43.2. Similarly, in India, the Maharashtra Electricity Regulatory Commission, while calculating return only considers assets that have been capitalized and any amount beyond 30% of equity portion is treated as part of debt.

43.3. In view of the above international practices and the fact that CWIP includes IDC, which once capitalized becomes part of total fixed assets, the Authority has decided to allow Return on Equity only up-to 30% of the CWIP separately and make the same as part of total RoRB.

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43.4. Based on above and using WACC of 10.66% on RAB by including allowed investment for the FY 2020-21 and excluding therefrom the amount of CWIP, and allowing RoE at 30% of the closing value of CWIP, the RoRB of the Petitioner for the FY 2020-21 has been worked out as under;

Description	FY 2019-20	FY 2020-21
Fixed Assets O/B	35,600	36,301
Addition	701	1,061
Fixed Assets C/B	36,301	37,362
Depreciation	17,196	18,596
Net Fixed Assets	19,105	18,766
Capital WIP C/B	-	-
Fixed Assets Inc. WIP	19,105	18,766
Less: Deferred Credits	13,171	12,979
Total	**5,933**	**5,787**
RAB		**5,860**
WACC		10.66%
RORB		**625**
Capital WIP C/B		8,614
Equity Portion of CWIP 30%		2,584
ROE on CWIP		374
Total RORB		**999**

43.5. The total amount of RoRB as worked out above has been allocated in terms of Distribution and Supply Functions, as per the criteria adopted by the Petitioner itself. Accordingly, the entire amount of RORB i.e. Rs.997 million for the FY 2020-21 has been allocated to the distribution function.

43.6. The reference RoRB determined for the FY 2020-21 would be adjusted annually as per the adjustment mechanism prescribed in the instant determination.

43.7. The Authority from the annual accounts of the Petitioner for the FY 2019-20, has again observed that the Petitioner as per its accounts has insufficient cash balance as on 30th June 2020, against its pending liability of receipt against deposit works and consumer security deposits, thus, indicating that the amount received against the aforementioned heads has been utilized somewhere else for which no details have been provided. Thus, it would be unfair and unjust with the consumers to suffer due to the unlawful act of the Petitioner.

43.8. Accordingly, the Authority has decided, to include the amount of receipts against deposit works as a part of Deferred Credits for the assessment of RAB for FY 2020-21, after excluding therefrom the cash/ bank balances and the amount of stores & Spares available with the Petitioner as on June 30, 2020.

44. <u>Depreciation</u>

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44.1. The Authority noted that as per the Methodology, depreciation expense for the test year, which in the instant case is FY 2020-21, will be determined by applying depreciation charge on the Gross Fixed Assets in Operation, including new investment and will be considered reference for the tariff control period.

44.2. In order to make fair assessment of the depreciation expense, the Authority accounts for the investments approved for the year. After taking into account the new investments, the Gross Fixed Assets in Operation for the FY 2020-21 have been worked out as Rs.41,324 million. Accordingly, the depreciation charge for the FY 2020-21 has been assessed as Rs.1,400 million calculated on actual depreciation rates for each category of Assets as per the Company policy, which will be considered as reference cost for working out future depreciation Expenses for the remaining tariff control period, to be adjusted as per the mechanism provided in the instant determination.

44.3. After carefully examining the relevant details and information pertaining to the deferred credit and amortization as per the accounts for the FY 2019-20, the Authority has projected amortization of deferred credit to the tune of Rs.608 million for the FY 2020-21. Accordingly, the consumers would bear net depreciation of Rs.791 million.

44.4. The actual depreciation reflected in the accounts of the Petitioner for the FY 2019-20, do not provide bifurcation of depreciation cost in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of depreciation cost in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the depreciation cost of Rs.1,394 million for the FY 2020-21 has been allocated to the distribution function.

44.5. The reference expense determined for the FY 2020-21 would be adjusted annually as per the mechanism provided in the instant determination.

45. Other income

45.1. Other income is considered to be a negative cost which may include, but not be limited to, amortization of deferred credit, meter and rental income, late-payment charges, profit on bank deposits, sale of scrap, income from non-utility operations, commission on PTV fees and miscellaneous income.

45.2. Since the other income would be trued up every year as per the mechanism provided in the instant determination, therefore, for the FY 2020-21, the Authority has assessed Rs.1,157 million as Other Income of the Petitioner for the FY 2020-21, which does not include late payment charge but includes amortization of deferred credit.

45.3. The Authority in consistency with its earlier decision, on the issue, has not included the amount of LPS while assessing the other income for the FY 2020-21. Here it is pertinent to mention that the LPS recovered from the consumers on utility bills shall be offset against the late payment invoices raised by CPPA (G) against respective XWDISCO only and in the event of non-submission of evidence of payment to CPPA (G), the entire amount of Late Payment charge recovered from consumers shall be made part of other income and deducted from revenue requirement in the subsequent year.

45.4. The total amount of Other Income as worked out above has been allocated in terms of Distribution and Supply Functions, as per the criteria adopted by the Petitioner itself. Accordingly, Other Income for the FY 2020-21 pertaining to the distribution function works

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out as Rs.1,059 million, to be adjusted during the MYT control period as per the adjustment mechanism prescribed in the instant determination.

46. **Adjustment Mechanism:**

46.1. The Petitioner regarding adjustment mechanism proposed the following during hearing;

O&M Rev= [O&M Ref (Controllable Cost) * {1+(ΔCPI-X}] + Uncontrollable Cost (Actual)

Where:-

O&M (Rev)= Revised O&M expenses for the Current Year

O&M (Ref)= Reference O&M expenses for the Reference Year

CPI latest = Change in Consumers Price Index published by Pakistan Bureau of Statics available on 1st july against CPI of the Reference Year in term of %

X = Efficiency factor

46.2. The Petitioner although has proposed to adjust the controllable O&M costs with CPI – X factor, however, nothing has been submitted regarding value of X-Factor. Similarly, no break-up of costs in terms of controllable or uncontrollable items has been provided.

46.3. The Authority, while assessing the O&M costs of the Petitioner i.e. rent, rates & taxes, Injuries & damages, collection expenses, legal charges, management fee, and Audit Charges etc., has incorporated these costs in the reference cost, keeping in view the accounts of the Petitioner for the FY 2019-20 and the request of the Petitioner, to be adjusted in the remaining MYT control period as per the adjustment mechanism given below. The risk / benefits of any future cost fluctuations thereof lies with the Petitioner along with an opportunity for optimizing overall costs under these head. The treatment is in line with the very sprit of multi- year tariff regime and in accordance with Authority's approved tariff methodology.

46.4. Regarding adjustment of O&M costs with the efficiency factor X, the Authority noted that the Petitioner although has proposed to index its O&M to be adjusted with efficiency factor "X", however, no value of X has been proposed by the Petitioner. The Authority, therefore, in line with its decisions in the matter of XWDISCOs which have been allowed MYTs, has decided to keep the efficiency factor "X", as 30% of increase in CPI for the relevant year of the MYT control period. The Authority has further decided to implement the efficiency factor from the 3rd year of the control period, in order to provide the Petitioner with an opportunity to improve its operational performance, before sharing such gains with the consumers.

46.5. The Authority also noted that as per the approved tariff methodology the Power Purchase Price is the only uncontrollable cost which is allowed a pass through item. The other remaining costs are to be treated as controllable costs. Accordingly, the Authority prescribes the following mechanism for adjustment of costs allowed as part of Distribution Margin, during the MYT control period;

47. **Salaries & Wages and Post-retirement Benefits;**

47.1. The reference costs shall be adjusted every year with the increase announced by the GoP, being beyond the Petitioner's control, for the respective year till the time the Petitioner remains in the public sector. In addition a 5% increase as requested by the Petitioner would

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be allowed on the amount of Basic pay to account for the impact of annual increment. In case, the Petitioner is privatized during the MYT period, the allowed cost of Salaries & Wages would be adjusted with CPI-X factor.

48. Post-retirement benefits

48.1. Similarly, the allowed amount of post-retirement benefits would be adjusted every year with the Pension increase announced by the GoP for the respective year, till the time the Petitioner remains in the public sector. In case, the Petitioner is privatized during the MYT period, the allowed cost of Salaries & Wages would be adjusted with CPI-X factor.

49. O&M Costs

49.1. Regarding O&M costs, the reference costs would be adjusted every Year with CPI-X factor. However, the X factor would be applicable from the 3rd year of the MYT control period. The Adjustment mechanism would be as under;

Adjustment Mechanism -Operation & Maintenance Exp.	
Operation & Maintenance Exp.	= Ref. O&M cost x [1+(CPI -X factor)]

50. RORB

50.1. The reference RoRB would be adjusted every Year based on the amount of RAB worked out for the respective year after taking into account the amount of investment allowed for that year as per the following mechanism;

Adjustment Mechanism - RoRB	
RORB(Rev)	=RORB(Ref) x RAB(Rev) / RAB(Ref)

50.2. In addition the allowed RAB for previous year will be trued up downward only, keeping in view the amount of investment allowed for the respective year. In case, the Petitioner ends up making higher investments than the allowed, the same would be the Petitioner's own commercial decision and would not be considered while truing up the RAB, unless due to any regulatory decisions/interventions/approved plans for which the Petitioner obtains prior approval of the Authority. In such case the Authority may also revise the efficiency targets in terms of T&D losses etc.

50.3. The Authority also understands that interest payment is an obligatory cash flow liability unlike discretionary dividend payment and considering the fact that any default may hamper the financial position of the Petitioner, hence the Authority has decided to cover the risk of floating KIBOR. This addresses the concern of the Petitioner to recalculate WACC for changes in input parameters. Accordingly, fluctuation in the reference KIBOR would be adjusted biannually. In addition, the Authority has also decided to allow sharing of benefit by introducing a claw back mechanism for any savings resulting from cheaper financing by the Petitioner to the extent of 2.00% spread. If the Petitioner manages to negotiate a loan below 2.00% spread, the savings would be shared equally between the consumers and the Petitioner through PYA mechanism annually. In case of more than one loan, the saving with respect to the spread would be worked out by a weighted average cost of debt. The sharing would be only to the extent of savings only i.e. if the spread is greater than 2.00%, the additional cost would be borne by the Petitioner.

51. Depreciation Expenses

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51.1. The reference Depreciation charges would be adjusted every Year as per the following formula;

$$DEP\ (Rev) = DEP\ (Ref) \times \frac{GFAIO\ (Rev)}{GFAIO\ (Ref)}$$

Where: DEP (Rev) = Revised Depreciation Expense for the Current Year

DEP (Ref) = Reference Depreciation Expense for the Reference Year

GFAIO (Rev) = Revised Gross Fixed Assets in Operation for the Current Year

GFAIO (Ref) = Reference Gross Fixed Assets in Operation for the Reference Year

51.2. In addition the allowed Depreciation for previous year will be trued up downward only, keeping in view the amount of investment allowed for the respective year. In case, the Petitioner ends up making higher investments than the allowed, the same would be the Petitioner's own commercial decision and would not be considered while truing up the depreciation expenses, unless due to any regulatory decisions/interventions/approved plans for which the Petitioner obtains prior approval of the Authority. In such case the Authority may also revise the efficiency targets in terms of T&D losses etc.

52. Other Income

52.1. Other Income shall be adjusted annually as per the following mechanism during the MYT control period to calculate future Other Income.

$OI_{(Rev)} = OI_{(1)} + (OI_{(1)} - OI_{(0)})$
$OI_{(Rev)}$ = Revised Other Income for the Current Year
$OI_{(1)}$ = Actual Other Income as per latest Financial Statement.
$OI_{(0)}$ = Actual/Assessed Other Income used in the previous year.

53. Taxation

53.1. The Petitioner has also requested certain amounts under the head of taxation during the MYT control period as under, however, no justification/ workings of the requested amount has been provided.

Mln. Rs.

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Taxation	127	127	991	1,189	1,486

53.2. Regarding Taxation, the Authority while going through the financial statements of the DISCOs including the Petitioner, has observed that significant amount of tax refund is appearing from FBR. In view thereof, the Authority has decided to allow actual tax paid by the Petitioner net off of the amount of Tax Refund outstanding from FBR, if any, once the Petitioner provides detail of actual tax assessments vis a vis tax paid for the last five years. Accordingly, the Petitioner is directed to provide details of actual tax assessments, tax allowed and the amount of tax paid for the last five years

54. PYA

54.1. The Petitioner has not requested any amount on account of Prior Year Adjustments (PYA).

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54.2. The Authority, however, understands that the Prior Year Adjustment includes the impact of variation in the following;

- ✓ Difference between the actual PPP billed and the amount recovered by the DISCO.
- ✓ Difference between the assessed DM and the amount actually recovered.
- ✓ Difference between the previously assessed PYA/ quarterly adjustment and the amount actually recovered.
- ✓ Difference between actual other income and the amount allowed
- ✓ Variation due to Sales Mix

54.3. It is important to highlight that variation between the PPP billed to DISCOs by CPPA-G and the amount recovered by the DISCOs are being accounted for separately through Quarterly/Bi-Annual Adjustment mechanism, therefore, the PYA only includes only the remaining components.

54.4. The Authority is also cognizant of the fact that for the FY 2020-21, for which the assessment is being made has already lapsed, therefore, while calculating the PYA of the Petitioner, the Authority has also included therein the impact of under/ over recovery of the assessed DM for the FY 2020-21.

54.5. Based on the discussion made in the preceding paras, the PYA of the Petitioner has been worked out as under;

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Description	Rs. Mln SEPCO
1st & 2nd Qtr. FY 2018-19	
Allowed Amount	6,593
Qtr. Rs./kWh	1.5680
Recovered	6,876
Under/(Over) Recovery	(283)
3rd & 4th Qtr. FY 2018-19	
Allowed Amount	3,462
Qtr. Rs./kWh	1.0291
Recovered	3,425
Under/(Over) Recovery	37
Interim D.M FY 2018-19	
Allowed Amount	882
Qtr. Rs./kWh	0.2622
Recovered	873
Under/(Over) Recovery	9
1st Qtr. FY 2019-20	
Allowed Amount	2,367
Qtr. Rs./kWh	0.7038
Recovered	2,289
Under/(Over) Recovery	78
Distribution Margin FY 2019-20	
Allowed	8,817
Recovered	7,602
Under/(Over) Recovery	1,215
Other Income FY 2019-20	
Allowed	(1,084)
Actual	(1,134)
Under/(Over) Recovery	(50)
Sales Mix Variances	
FY 2019 20	1,755
	1,755
Distribution Margin FY 2020-21	
Allowed	8,817
Recovered	7,681
Under/(Over) Recovery	1,136
Total Prior Period Adjustment	3,895

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54.6. The Authority in line with its earlier decision in the matter of negative FCA, has calculated the impact of negative FCA pertaining to the FY 2019-20 in the matter of lifeline consumers, domestic consumers (consuming up-to 300 units) and Agriculture Consumers which has been retained by the Petitioner. The Authority has also worked out the impact of positive FCAs not recovered by the Petitioner from life line consumers. The Authority also considered the relevant clauses of the S.R.O. 189 (1)/2015 dated March 05, 2015 issued by GoP and the amount of subsidy claims filed by the Petitioner for the FY 2019-20.

54.7. After considering all the aforementioned factors, the Authority observed that the Petitioner has retained a net amount of Rs.400 million on account of negative FCA for the FY 2019-20, pertaining to the lifeline consumers, domestic consumers (consuming up-to 300 units) and Agriculture Consumers, which is still lying with the Petitioner. The Authority also considered the amount of subsidy claims filed by the Petitioner for the FY 2019-20, which shows a net subsidy claim filed by the Petitioner.

54.8. The Authority in view of the above and in line with its earlier decisions, has decided not to adjust the impact of negative FCA across different consumer categories. Thus, the net negative FCA amount pertaining to the lifeline consumers, domestic consumers (consuming up-to 300 units) and Agriculture Consumers for the FY 2019-20 i.e. Rs.400 million, which is still lying with the Petitioner, must be adjusted by the Federal Government, against the overall Tariff Differential Subsidy claim in the matter of the Petitioner eventually reducing GOP's overall Tariff Differential Subsidy burden. The above working has been carried out based on the data/ information provided by PITC, as DISCOs have not submitted the required information. In case DISCOs own calculations are different from the aforementioned numbers, keeping in view the last slab benefits etc., the same may be shared with the Authority in its subsequent adjustment request. This decision of the Authority is only applicable under a subsidy regime, whereby aforementioned classes of consumers are receiving subsidy directly in their base tariff.

54.9. Here it is pertinent to mention that the impact of under/ over recovery of quarterly adjustments for the FY 2018-19 and 1st quarter of the FY 2019-20 has been worked out based on total units i.e. without adjusting the impact of life line units as DISCOs have neither submitted their workings in this regard nor provided break-up of category wise units sold for the period. In view thereof, the Petitioner is directed to provide its working in the matter along-with break-up of units sold for each category for the period from FY 2019-20 till FY 2021-22, for consideration of the Authority. Any adjustment in this regard would be adjusted subsequently as PYA.

55. **Whether the requested investment along-with its prospective benefits are justified?**

56. **Whether the indicated Capital Cost of Rs. 26,186.5 Million for next five years is justified?**

56.1. The Petitioner in its MYT Petition submitted the following details of its proposed investment plan under the MYT control period;

S.NO	HEAD	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	STG	1131	4862	2620	3098	1076	**12787.0**
2	ELR	1386.1	1475.5	1561.6	1653.6	1747.8	**7824.6**
3	DOP	848	975	1099	1232	1421	**5575**
4	ERP	200	280	-	-	-	**480**
TOTAL		2565	7592	5280	5984	4245	26,666

56.2. Further, the petitioner provided following financing plan:

Sr.#	HEAD	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	Own Resources	3645	7512	5280	5984	4245	26,666
2	Consumer Contribution	416	478	539	604	697	2734
TOTAL		4061	7990	5819	6588	4942	29400

56.3. The Petitioner during the hearing submitted that the five years Investment Plan has been prepared to meet the requirement of SEPCO Infrastructure and the plan has been prepared on the basis of load flow studies carried out as per Demand Forecast. All the projects included in the Plan i.e. STG network expansion, ELR & DOP works have been found feasible.

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56.4. In order to arrive an informed decision on the investments claimed by SEPCO for its five years tariff control period, the Authority desired SEPCO to present its investment plan before the Authority. Accordingly, SEPCO presented its investment plan on 17-2-2022. The Authority directed SEPCO to revise its DIIP plan keeping in view the improvement of Safety, Consumer Services, compliance with NEPRA standards, improvements in T&D Losses & Recovery. Subsequently, SEPCO submitted a revised investment plan vide its letter dated 24-2-2022. The overall summary of additional investments claimed by SEPCO are as follows:

Sr. No	Description	2021-22	2022-23	2023-24	2024-25	Total
1	**Safety**					
i	Bucket Mounted Truck Cost	47	79	126	110	362
ii	Fire prove Uniform for GSO Staff	-	38	-	-	38
2	**Digitalization**					
i	Relays on Grid Stations	42	-	-	-	42
ii	SCADA	-	2,400	3,600	-	6,000
iii	AMI Meter system on Industrial Consumers	-	303	228	1,445	1,975
iv	GIS Grid Station	-	-	-	1,600	1,600
3	**Customer Care**					
i	Establishment of Customer Care Centre	44	-	-	-	44
ii	Model Sub-Division	14	-	-	-	14
4	Procurement of Crane	18	12	-	-	30
	Total	164	2,831	3,954	3,155	10,104

56.5. In addition to above, SEPCO identified following three Sub Divisions to be made model sub divisions. In model sub divisions SEPCO will provide reliable and uninterrupted power supply and offer quality customer care services to address complains of consumers.

Name of Model Sub Division	Division	No. of Connections	No. of 11 KV Feeders	Technical Loss %		Recovery %	
				2021-22	Target 2024-25	2021-22	Target 2024-25
Sukkur-II	Sukkur	17092	05	10.6	10.11	101.5	100
Jinnah Bagh	Larkana City	18381	09	36.0	18.11	62.9	100
Bhirya Road	N'Feroze	8598	05	42.9	18.11	52.7	100

A. STG Projects:

56.6. The Petitioner has provided following year wise breakup of STG Projects.

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S. No	Description	Unit	2020-21	2021-22	2022-23	2023-24	2024-25	2020-25
1	New Grid Station	No.	1	3	2	1	-	7
2	Conversion of 66 to 132 kV	No.	-	3	2	1	3	9
3	Extension of Power T/F	No.	4	-	-	4	-	8
4	Augmentation of Power T/F	No.	6	4	-	1	-	11
5	Extension of Line Bay	No.	2	-	-	-	-	2
6	New 132 kV T/L	km	21	278.6	179	128	68	674.5
8	Installation 132 kV Capacitors	No.	-	1	-	-	1	2
COST								
Million (Rs)			1131	4862	2620	3098	1076	12787
BENEFITS								
Energy (MKwh)			39.41	69.67	78.91	88.58	97.54	97.54

B. **Distribution Expansion Plan (DOP):**

56.7. The Petitioner envisages expansion of Distribution network during the years 2020-2021 to 2024-2025 which consists of the following works:

a) Providing 84,505 new electricity connections to the prospective customers as per following details:

Category	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Domestic	10204	12245	13605	14966	17007	**68027**
Commercial	2028	2434	2704	2975	3380	**13521**
Industrial	215	259	287	316	359	**1437**
Agricultural	215	259	287	316	359	**1437**
Other	13	15	17	19	21	**85**
Total	12676	15211	16901	18591	21126	**84505**

b) Addition of 2650 km 11 KV line.

c) Addition of 1440 km LT line.

d) Installation of 3536 Distribution Transformers of different capacities.

56.8. The summary of expansion plan under DOP of SEPCO is given below:

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Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
11 KV Line (KM)	397.5	477.0	530.0	583.0	662.5	**2650**
LT Line (KM)	216.0	259.2	288.0	316.8	360.0	**1440**
Transformers (No.)	530	636	707	778	884	**3536**
Offices (Future Expansion)	0	0	0	6	4	**9**
Residential Bungalows &Quarters	0	0	25	26	26	**77**
Roads, Boundary Walls and Sewerage / Water supply for residential colonies	0	0	3	3	3	**9**
Additional Sales Through implementation of DOP (GWh)	27.9	61.3	99.3	142.2	192.2	**192.172**

C. **<u>Energy Loss Reduction (ELR) Program of SEPCO:</u>**

56.9. The Petitioner claimed that the Distribution Rehabilitation Project will reduce system technical loss, resulting from power loss in the distribution conductor and equipment including loss due to additional current flowing in the system on account of poor power factor of consumer loads. Further, 85 feeders have been selected for rehabilitation based on scientific evaluation of technical losses and is made on the ranking by technical loss index which will yield the best return on capital investment i.e. proposals with highest benefit cost ratio. Distribution Rehabilitation Measures aim at:

- Energy Loss Reduction
- Improvement in Quality of Supply
- improvement in Reliability
- Improvement in Safety
- Release of Generation, Transmission and Distribution Capacity
- Improve Customer Service and Reduce Complaints
- Reduce Cost of Operation and Maintenance
- Improve Length of Life of Equipment

56.10. A year wise breakup of the targets in terms of proposals and quantities to be executed under ELR projects is given below:

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S.NO	Description	Unit	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	HT Proposals	Nos.	15	16	17	18	19	**85**
2	LT Proposals	Nos.	262	275	289	304	320	**1450**
Details of ELR Quantities								
1	11 KV New line for New Feeders	KM	150	160	170	180	190	**850**
2	11 KV lines (Extension Due to LTP)	KM	87	92	96	101	107	**483**
3	11 KV Re-conductoring (Osprey, Dog, Rabbit, Gopher)	KM	90	96	102	108	114	**510**
4	11 KV 450 KVAR fixed capacitors	Nos.	15	16	17	18	19	**85**
5	Replacement of overloaded transformers	Nos.	270	288	306	324	342	**1530**
6	Replacement of D-Fitting	Nos.	135	144	153	162	171	**765**
7	New Transformers substations (Rehabilitation)		68	72	76	80	86	**382**
8	New 3-Phase LT line (WASP)	KM	8	9	9	10	11	**47**
9	New 3-Phase LT Line (ANT)	KM	25	26	28	30	31	**140**
10	LT line Reconductoring (3Phase WASP)	KM	16	17	18	19	20	**90**
11	LT line Reconductoring (3-Phase ANT)	KM	10	11	12	13	14	**60**
12	11 KV Sectionalizer (manual)	Nos.	30	32	34	36	38	**170**
13	11 KV Panels with Installation	Nos.	15	16	17	18	19	**85**
14	Energy Meters 1-Phase & 3-Phase	NOS.	3000	3130	3370	3600	3750	**16850**
15	PVC Cables 7/0.52, 7/0.83 & 19/0.83	KM	119	127	135	143	154	**678**
16	11 KV 500 MCM XLPE Cable (85+20%) =102	KM	4.5	4.6	4.8	5.4	5.7	**25**

56.11. The Authority observed that the earlier submissions by SEPCO with respect to their investment plans were without linking those to achieve performance targets as determined by the Authority. Further the investment plans neither used to refer to the base-line conditions nor about the expected conditions post investment. It is also observed that the instant MYT petition filed by SEPCO has been filed for multiyear tariff i.e. for a period of five (5) years, keeping following responsibilities and functions which include:

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- STG strengthening and expansion at high voltage (132 and 66 kV) for removing constraints for power transfer from NTDC transmission system to GEPCO system.
- Increasing sales in their service territory and corresponding expansion of their network at the medium (11kV) and low voltage (LT) level through DOP projects.
- Rehabilitation, Augmentation and Expansion in system through ELR projects for reduction in T&D losses and improving quality parameters including performance indices as laid down in NEPRA Performance Standards (Distribution) Rules, 2005.
- Administrative measures, financial improvements (ERP) and Commercial improvement (AMI, AMR etc.) including metering and IT development.
- Human resource and capacity building.

56.12. The above functions have been grouped as follows:

S. #	Major Area	Sub-Projects
1	**Secondary Transmission and Grid (STG) Expansion and Rehabilitation Projects**	Construction of New 132 kV Grid Stations
		Up gradation of 66 kV Grid Stations to 132 kV Grid Stations
		Augmentation of 132 kV and 66 kV Grid Stations
		Extension of 132 kV and 66 kV Transformer Bays
		Extension of 132 kV and 66 kV Line Bays
		Erection of New 132 kV D/C Transmission Lines
		Erection of New 132 kV SDT Transmission Lines
		Circuit Stringing of New 132 kV SDT Transmission Lines
		Re-Conductoring of Existing 132 kV Transmission Lines
		Installation of Capacitors at 132 kV Grid Stations
2	**Distribution of Power (DOP) Expansion and Rehabilitation Projects**	Installation of New 11 kV Lines
		Installation of New Distribution Transformers
		Reinforcement of Overloaded Distribution Transformers
		Installation of New LT Lines
3	Energy and Loss Reduction (ELR) Projects	Replacement of Defective/Burnt Distribution Transformers
		Rehabilitation of Existing LT Lines
		GIS Mapping/Re-routification of 11 kV Feeders
		GIS Mapping of LT Lines

56.13. As per requirement under Para 23 of NEPRA's Consumer-end Tariff Methodology Guidelines, 2015, SEPCO was required to provide its investment plans for next 5-years under MTY regime. It is noted that, under Optimally Achievable Case, SEPCO is required to prepare its investment plans which are foreseen to represent the minimum requirement to meet the performance targets determined by the Authority.

56.14. Pursuant to above requirements, SEPCO has submitted its investment plans, required for expansion and removal of system constraints for the next five years, under Optimally Achievable Case and claimed a total investment of Rs.39,506.6 Million against following heads:

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(Million Rs.)

	Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	STG CAPEX	1131	4862	2620	3098	1076	**12787**
2	ELR CAPEX	1386.1	1475.5	1561.6	1653.6	1747.8	**7824.6**
3	DOP CAPEX	848	975	1099	1232	1421	**5575**
4	Financial Improvements Plan (ERP)	200	280	-	-	-	**480**
5	Safety (T&P), Vehicles, Cranes and Office Buildings	-	123	129	126	110	**488**
6	Commercial Improvements Plan (AMI/AMR and GIS)	-	42	303	228	3045	**3618**
7	Communication Improvements Plan (SCADA)	-	-	2400	3600	-	**6000**
8	Consumer Contribution	416	478	539	604	697	**2734**
9	**TOTAL**	**3981.1**	**8235.5**	**8651.6**	**10541.6**	**8096.8**	**39506.6**

56.15. As discussed in the preceding paragraph, the investment plans prepared by SEPCO would be reflective of its current base line conditions with respect to its existing network conditions and constraints in the existing T&D networks. For the purpose, following base line conditions and network constraints have been considered as starting point for future proposed investments which will be improved accordingly after implementation of such planned investments:

Existing System of SEPCO (As on 30-June-2021):

Description	Unit	Quantity
Grid Stations		
132 kV Grid Stations	No.	58
66 kV Grid Stations	No.	9
33 kV Grid Stations	No.	NIL
132 kV Consumer Owned Grid Stations	No.	2
66 kV Consumer Owned Grid Stations	No.	1
Power Transformers	No.	133
Capacity of Power Transformers	MVA	3010
Transmission Lines (132 kV & 66 kV)		
Total Length of 132kV Transmission Lines	KM	2262
Total Length of 66kV Transmission Lines	KM	687
Total Length of 33kV Transmission Lines	KM	NIL
Distribution System		
11 kV Feeders	No.	548
Total Length of 11 kV Lines	KM	25682
Total Length of LT Lines	KM	13352
Distribution Transformers	No.	39076

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Capacity of Distribution Transformers	KVA	2178305
Existing HT / LT Ratio	Ratio	1.92
Average Length of 11kV Feeder	KM	46.86

Constraints in Existing System of SEPCO:

Description	Unit	Quantity
Overloaded Power Transformers	No.	20
Overloaded 11 kV Feeders	No.	83
Overloaded Distribution Transformers	No.	2677

56.16. In order to assess the above investment requirements of the Petitioner, a review of the investments requested by the petitioner, allowed by NEPRA Vis a Vis actual utilization by the petitioner revealed the following:

(Million Rs.)

Description	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL
Requested	4,322	977	4,071	2,433	4,688	**16,491**
Allowed	1,671	977	3,400	3,467	4,000	**13,515**
Actual	1,671	977	3,062	3,467	2,137	**11,314**
Excess/(Less)	-	-	(338)	-	(1,863)	**(2,201)**
%age	100.00	100.00	90.06	100.00	53.43	**83.71**

56.17. From above, it is observed that during last 5-years, SEPCO has utilized 100% of the allowed investment in FY 2015-16, FY 2016-17 and FY 2018-19. It is also observed that SEPCO spent a maximum of Rs.3,467 million in FY 2018-19 in last five years period.

56.18. Based on the aforementioned observations, analysis, assessment, discussion and keeping in view the historical capability of SEPCO to utilize the allocated budget against investment requirements, the Authority considers that SEPCO will make all necessary efforts to carry out its proposed investment plans under Optimally Achievable Case so that MYT regime proves to be a success. Accordingly the following investment is hereby allowed to SEPCO for the MYT control period of 5-years from FY 2020-21 to FY 2024-25:

(Million Rs.)

Description	Requested under Optimal Case	Recommended Investments
STG CAPEX	12787	12787
ELR CAPEX	7824.6	7824.6
DOP CAPEX	5575	5575
Financial Improvements Plan (ERP)	480	480
Safety (T&P), Vehicles, Cranes and Office Buildings	488	488
Commercial Improvements Plan (AMI/AMR and GIS)	3618	3618
Communication Improvements Plan (SCADA)	6000	6000
Consumer Contribution	2734	2734
TOTAL	39506.6	39506.6

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56.19. The detailed additions to be included in T&D networks of SEPCO are attached at **Annex – A, B and C** along-with this determination.

56.20. Based on the above, a year-wise detail about the recommended investments under Optimally Achievable Case are tabulated hereunder:

Mln. Rs.

	Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	STG CAPEX	1,131	4,862	2,620	3,098	1,076	**12,787**
2	ELR CAPEX	1,386	1,476	1,562	1,654	1,748	**7,825**
3	DOP CAPEX	848	975	1,099	1,232	1,421	**5,575**
4	Financial Improvements Plan (ERP)	200	280	-	-	-	**480**
5	Safety (T&P), Vehicles, Cranes and Office Buildings	-	123	129	126	110	**488**
6	Commercial Improvements Plan (AMI/AMR and GIS)	-	42	303	228	3,045	**3,618**
7	Communication Improvements Plan (SCADA)	-	-	2,400	3,600	-	**6,000**
8	Consumer Contribution	416	478	539	604	697	**2,734**
9	TOTAL	**3,981**	**8,236**	**8,652**	**10,542**	**8,097**	**39,507**

56.21. In order to examine the investments made by SEPCO viz-a-viz the amount allowed and the yearly targets, the Authority has decided to carryout quarterly monitoring of the allowed investments.

56.22. The Authority also directs SEPCO to prioritize its investments claimed under STG, DOP and ELR etc. In this respect, removal of system constraints for transferring power from NTDC system must be the first priority, followed by reduction in T&D losses and improvement in metering systems through ELR and overloaded grids and 11kV feeders. The main components would include STG, DOP, ELR and Commercial Improvement.

57. Whether the requested T&D loss targets stated in the instant MYT petition are justified?

57.1. The Petitioner in its MYT petition has mentioned that it will reduce T&D losses from 35.30% in FY 2020-21 to 31.40% by FY 2024-25 i.e. to the tune of 3.90%. The year wise projected reduction in Technical Losses as provided by petitioner is given below:

Year	2019-20 (Actual)	2020-21	2021-22	2022-23	2023-24	2024-25
Losses	36.30 %	35.30 %	34.40 %	33.40 %	32.40 %	31.40 %

57.2. The petitioner provided the following detailed breakup regarding projected losses in its instant MYT petition:

Year	Units Purchased (GWh)	Units Sold (GWh)	Units Lost (GWh)	Total T&D (%)	Breakup of T&D Losses (%)		Breakup of Technical Losses (%)		
					Technical Losses	Admin. Losses	132 kV	11 kV	L.T
2019-20 (Actual)	4252.5	2710.08	1542.42	36.27	19.33	16.94	1.79	13.89	3.65
2020-21	4332.19	2802.28	1529.91	35.31	19.33	15.99	1.69	13.99	3.65
2021-22	4481.93	2941.99	1539.94	34.36	19.33	15.03	1.59	14.09	3.65

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2022-23	4592.66	3059.66	1532.99	33.38	19.33	14.05	1.49	14.19	3.65
2023-24	5504.63	3721.32	1783.32	32.40	19.33	13.07	1.39	14.29	3.65
2024-25	5978.56	4102.19	1876.38	31.39	19.33	12.06	1.29	14.39	3.65

57.3. SEPCO also submitted historical record of its actual losses for last five years as under:

Financial Year	T&D Actual Losses (%)
2015-16	37.71
2016-17	37.81
2017-18	36.67
2018-19	36.97
2019-20	36.28

57.4. SEPCO claimed that in order to achieve the T&D losses targets, it has prepared a Transmission & Distribution Plan which includes formation of new grids, conversion of existing grids, revamping of secondary transmission (66 kV, 132 kV) lines, augmentation of H.T, L.T lines, provision of T&P items, induction of low loss transformers, theft detection by enforcement agencies and replacement of sluggish meters and upgrade to AMR and AMI infrastructure. The summary of proposed additions as provided by petitioner are given below:

Description	No.	MVA	Km
New Grid Stations	8	182	-
Conversions	9	234	-
Augmentation	8	148	-
Extension T/F Bay	11	278	-
Extension L/Bay	2	-	-
Capacitor Banks (132 kV)	2	-	-
New 132 kV T/Lines	-	-	674.5
New HT Lines	-	-	3983
HT Line reconductoring	-	-	510

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11 kV Capacitors	85	-	-
New LT Lines		-	1627
LT Line Reconductoring	-	-	150
Replacement of over loaded dist. Transformers	1530	-	-
New dist. Transformers	3918		

58. <u>Transmission Losses pertaining to Instant MYT Control Period:</u>

58.1. It is noted that SEPCO requested following transmission losses for MYT control period:

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Transmission Losses at 132kV (%)	1.69	1.59	1.49	1.39	1.29

58.2. The Authority noted that as per the DISCO annual performance report of NEPRA the impact of losses for the past five years is as under;

Period	Actual Losses %	Notified Losses %	Breach %	Impact of Breach Rs. mln	Impact of Notified Rs. mln	Impact of Actual Rs. mln
FY 2016	37.7	27.5	10.2	4,950	13,318	18,268
FY 2017	37.8	27.5	10.3	5,558	14,838	20,396
FY 2018	36.7	28.2	8.5	5,503	18,203	23,706
FY 2019	37.0	29.8	7.3	5,951	24,420	30,371
FY 2020	36.3	29.8	6.6	5,946	27,007	32,953

58.3. It is also noted that SEPCO's requested transmission losses as mentioned above are much lower than its transmission losses of 4.53% as assessed by the third party consultant. In this regard, it is noted that SEPCO submitted its third party transmission loss study conducted by M/s. PPI during the proceedings of the Re-Determination for FY 2015-16. Based on results of the said study, the petitioner requested 4.53% transmission losses for FY 2015-16. It is also noted that the Third Party Loss study was conducted in FY 2013-14 on the basis of SEPCO's transmission assets (132kV, 66kV and 33kV) statistics pertaining to FY 2012-13 which are tabulated as under:

Sr. #	Description	As on 30th June, 2013
1	Grid Stations	61 Nos.
2	Transmission line length	2640 kms.

58.4. The Authority, while evaluating the Transmission loss study, observed that third party consultant mentioned in the final report that:

"The data of actual line current flows, bus voltages and power transformer load currents for entire 132kV and 66kV system of SEPCO was gathered for the conditions of peak and off-peak hours of each month of 2012-13. Thus data for 24- snapshots of the year 2012-13 was captured and processed to be used as input to the Study. Thus the annual energy loss come

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out as 4.53%.

58.5. It is also observed that in the said study the third party consultant, keeping in view the higher transmission losses of 4.53% for SEPCO, recommended the following:

"For SEPCO, the installation of switched shunt capacitor banks at 11kV levels to bring the power factor of distribution network as high as possible is very important as during peak conditions the low voltage on the network causes heavier loading on the lines in order to meet the load demand, thus causing high losses. In addition, to relieve the heavily loaded transmission lines and power transformers by installing more lines and transformers or re-conducting heavily loaded lines using 132kV Rail Conductor to bring the loading reasonably below the limit to operate the system comfortably and with lower losses."

58.6. In view of the above, the Authority understood that SEPCO faced transmission network congestion / constraints and overloading situation in FY 2012-13 and when PPI conducted the said transmission losses study on the basis of transmission data pertaining to FY 2012-13, the transmission losses of 4.53% have been assessed by the third party consultant. The Authority also understood that the higher transmission losses of 4.53% were reflective of the above mentioned critical conditions. Therefore the Authority had no reservations on the results of the transmission losses study conducted by PPI at that time.

58.7. Afterwards the Authority observed the following transmission network (132kV, 66kV and 33kV) conditions in last few years as a result of making huge investments in the transmission segment of SEPCO in line with the aforementioned recommendations by the third party consultant in its transmission loss assessment report:

Sr. #	Description	2014	2015	2016	2017	2018	2019
1	No. of Grid Stations	61	66	67	68	68	68
2	MVA Capacity	-	2227	2233	2350	2756	2794
3	Transmission line length	2653	2658	2750	2868	2870	2870

58.8. In view of the above, the Authority was of the view that with such additions, the constraints and overloading in SEPCO's transmission networks would be eliminated that also resulted in reduced transmission losses which SEPCO achieved in FY 2019-20 on actual basis (2.11%). Therefore the Authority decided to allow a target of 2.11% for SEPCO for the FY 2019-20.

58.9. For the purpose of the instant MYT Petition and in order to set a starting point with respect to SEPCO's transmission network losses, the Authority considers that since the requested transmission losses of 1.69% for FY 2020-21 are much lower than the third party's assessment and the target transmission losses (2.11%) already determined by the Authority in its earlier determination for the 2019-20, therefore the requested margin of 1.69% transmission losses is allowed to SEPCO for the first year of MYT control period i.e. FY 2020-21. For rest of the four years of MYT control period, the Authority has decided to allow the requested margin of reduction in transmission network losses to SEPCO as per following:

Year	2020-21	2021-22	2022-23	2023-24	2024-25
Allowed Transmission Losses	1.69 %	1.59 %	1.49 %	1.39 %	1.29 %

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59. Distribution Losses at 11kV Level pertaining to Instant MYT Control Period:

59.1. It is noted that for the purpose of instant MYT petition, SEPCO requested following distribution losses at 11kV level:

2020-21	2021-22	2022-23	2023-24	2024-25
13.99 %	14.09 %	14.19 %	14.29 %	14.39 %

59.2. While considering the above distribution losses at 11kV level, it is noted that the above requested losses are higher than the targeted losses of 11.46% allowed to SEPCO in Authority's earlier determination for FY 2019-20 and also higher than the results (11.46%) of third party distribution loss study conducted by third party consultant i.e. M/s PPI. It is also noted that SEPCO projected its distribution losses at 11kV level in a manner in which the technical losses will increase by a margin of 0.40% during the MYT control period of next 5-years. The Authority has therefore decided not to accept the request of the Petitioner and to maintain the already allowed /determined target of distribution losses at 11kV i.e. 11.46%, as starting point for SEPCO for FY 2020-21.

59.3. For setting the distribution loss targets at 11kV level for remaining control period of 4-years of MYT term, the Authority considers that by allowing an investment of Rs.7,825 million in ELR component; SEPCO is encouraged to achieve better results in the MYT control period than the requested T&D loss targets. In this regard, an overall reduction of 0.78% in distribution losses at 11kV level is required to be achieved by SEPCO. Accordingly following distribution loss targets at 11kV level are allowed to SEPCO:

Description	2021-22	2022-23	2023-24	2024-25
Requested Dist. Losses at 11kV Level (%)	14.09	14.19	14.29	14.39
Investment Allowed for ELR Projects (Million Rs.)	2,861	1,562	1,654	1,748
Recommended Reduction in 11kV Dist. Losses (%)	0.28	0.16	0.17	0.17
Allowed Dist. Losses at 11kV Level (%)	**11.18**	**11.02**	**10.85**	**10.68**

60. Distribution Losses at LT Level pertaining to Instant MYT Control Period:

60.1. It is noted that for the purpose of instant MYT petition, SEPCO requested consistent margin of 3.65% LT losses for the MYT control period of 5-years which are slightly higher than the results (3.34%) of distribution loss study conducted by third party consultant M/s PPI. It is important to mention here that the Authority allowed 3.34% LT losses in its earlier determination pertaining to the FY 2019-20 for SEPCO. Therefore, the Authority has decided to maintain the earlier target of 3.34% of LT losses for the MYT control period of 5-years i.e. from FY 2020-21 to FY 2024-25 to SEPCO as per following:

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Year	2020-21	2021-22	2022-23	2023-24	2024-25
Allowed LT Losses	3.34 %	3.34 %	3.34 %	3.34 %	3.34 %

61. Margin for Law and Order pertaining to Instant MYT Control Period:

61.1. It is noted that SEPCO, vide its instant MYT petition, requested the following administrative losses for next 5-years:

2020-21	2021-22	2022-23	2023-24	2024-25
15.99 %	15.03 %	14.05 %	13.07 %	12.06 %

61.2. In this regard, it is observed that the Authority in its earlier determinations pertaining to FY 2013-14, allowed a margin of 0.50% administrative losses to all DISCOs except IESCO and TESCO. After that period, the Authority never considered the request for allowing administrative losses and losses due to theft of electricity to any distribution licensee. However, the Authority allowed a margin of law & order to SEPCO, its neighboring DISCOs (HESCO and QESCO) and PESCO in its earlier determinations pertaining from FY 2015-16 to FY 2019-20. It is important to mention here that the Authority has allowed a margin of 1.40% against law and order to SEPCO in FY 2019-20.

61.3. For the purpose of instant MYT petition, the Authority has decided to maintain the already determined target of 1.40% to SEPCO for the first year of MYT control period and then may gradually be reduced to 1.0% margin in the remaining period of 4-years of MYT control period for SEPCO as follows:

2020-21	2021-22	2022-23	2023-24	2024-25
1.40 %	1.30 %	1.20 %	1.10 %	1.00 %

62. ALLOWED LEVEL OF T&D LOSSES PERTAINING TO INSTANT MYT PERIOD:

62.1. In view of the above discussion, the summary of the allowed level of T&D losses for SEPCO for the MYT period is as under:

Year	Transmission Losses (%)	11kV Distribution Losses (%)	LT Losses (%)	Margin for Law & Order (%)	Total T&D Losses (%)
2020-21	1.69	11.46	3.34	1.40	**17.89**
2021-22	1.59	11.18	3.34	1.30	**17.41**
2022-23	1.49	11.02	3.34	1.20	**17.05**
2023-24	1.39	10.85	3.34	1.10	**16.68**
2024-25	1.29	10.68	3.34	1.00	**16.31**

62.2. The Authority considers that T&D losses being of critical importance, SEPCO is directed to target high loss feeders to bring the overall losses down. A detailed plan be prepared and submitted to the Authority for monitoring the progress of SEPCO in this respect.

63. Upfront Indexation/adjustment for the FY 2021-22 and FY 2022-23

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63.1. The Authority understands that by the time the instant decision is notified, the FY 2021-22 would have elapsed and the FY 2022-23 would have also started. Meaning thereby that tariff indexation/adjustment for the FY 2021-22, which ideally should have been allowed in July 2021 would have become overdue, and the indexation/adjustment for the FY 2022-23 would also have become due. In view thereof, and in order to ensure timely recovery of the allowed cost to the Petitioner, the Authority has decided to allow the indexation/adjustment for the FY 2021-22 and the FY 2022-23, upfront in the instant decision as per the adjustment /indexation mechanism provided in this determination. However, the impact of under/ over recovery due to indexation/ adjustment for the FY 2021-22 would be allowed / adjusted subsequently as part of future PYA.

63.2. Here it is pertinent to mention that indexation/adjustment for the FY 2021-22 and FY 2022-23 has been worked out based on the NCPI for the month of December 2020 and December 2021 respectively, for which the reference NCPI for the month of December 2019 has been used. Thus, for the purpose of filing future indexation/ adjustment requests, the Petitioner shall use the NCPI for the month of December for the respective year. The Petitioner is directed to submit its annual adjustment / indexation requests by February every year, so that adjustment / indexation for the next year is determined in timely manner.

64. Whether SEPCO has provided at least 95% of new connections to its eligible consumers as specified in the Consumer Eligibility Criteria and Performance Standard Distribution Rules, 2005? Provide detail of pending connections till 30 June 2021.

64.1. The Authority in the previous tariff determination directed the Petitioner to provide at least 95% of new connections to its eligible consumers as specified in the Consumer Eligibility Criteria and Performance Standard Distribution Rules, 2005. It was further directed to provide detail of pending connections till 30 June 2021.

64.2. The Petitioner during the hearing submitted the following detail:

STATUS OF PENDING RIPE CONNECTIONS FOR THE MONTH –June 2021

Type of Connection	Total Nos.	Total Load (kW)	Pending Connections after expiry of time limit given in NEPRA PSDR 2005					
			Upto 1 month	Upto 2 months	Upto 3 months	Upto 6 months	Upto 1 Year	above 1 year
Domestic	387	495	361	15	4	2		5
Commercial	86	167	72	5	6	2	1	
Industrial	38	3978	25	3	1	5	4	
Agricultural	11	206	7				3	1
Other	2	35	2					
Total	524	4881	467	23	11	9	8	6

64.3. The Authority has considered the submissions of SEPCO and is of the view that SEPCO has submitted that it has 524 Nos. of pending ripe connections. SEPCO hasn't submitted any figure that how many connections have been provided to the eligible consumers so that it can be assessed whether it provided 95% of the applied consumers or otherwise. SEPCO is therefore directed to clear all pending connections and submit a report to NEPRA on a monthly basis.

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65. Whether project-wise detailed report for the investment carried out along with their cost-benefit analysis and technical/financial savings achieved by June 30, 2021.

65.1. The Authority in the previous tariff determination directed the Petitioner to provide project-wise detailed report for the investment carried out along with their cost-benefit analysis and technical/financial savings achieved by June 30, 2021.

65.2. The Petitioner during the hearing submitted the following details:

Investment allowed v/s actual along with their cost benefit analysis and technical/financial savings achieved up-to June 30, 2021.

Year	Unit	2018-19	2019-20	2020-21
Investment Allowed	Rs. In M	3,466	4,000	-
Actual Investment	Rs. In M	2,630	1,581	1,958
Saving	GWH	30.21	43.55	16.72
Saving	Rs. In M	567	885	407
New Grids Stations	Nos		2	2
HT Line KM	KM	24.27	61.5	22.6
LT Line KM	KM	9.41	2.43	1.45
Transformers No.	Nos	411	541	576
HT Feeders Nos.	Nos	14	11	14
LT Works Nos.	Nos	415	125	6

Mln. Rs.

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Investment Allowed	1,671	977	3,400	3,466	4,000	
Actual Utilization	1,016	1,425	3,062	2,630	1,581	1,958
% of Utilization	61%	146%	90%	76%	40%	

65.3. The Authority has considered the submissions of SEPCO and is of the view that SEPCO hasn't fully utilized the investment as allowed by NEPRA in its Tariff Determination, due to which SEPCO hasn't achieved the targets of performance standards. Further SEPCO has mentioned some technical/financial savings, however, the details that how it achieved such savings and how much it impacts on performance improvement hasn't been submitted by SEPCO. Therefore, SEPCO is directed to submit the complete report in this regard.

65.4. Moreover, SEPCO has submitted the upcoming five-year investment plan, however, it hasn't predicted the achievements of performance standards against the incurring of such investments especially in terms of losses, recovery, SAIFI, SAIDI, voltage, pending connection, safety, and consumer complaints. Therefore, SEPCO is directed to share project-wise details including utilization of amounts vis-a-vis performance improvement, particularly in the aforementioned areas.

66. What steps were taken by SEPCO to target high loss feeders to bring down AT&C losses? Whether a detailed plan in this regard was furnished?

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66.1. The Authority in the previous tariff determination directed the Petitioner to target high loss feeders to bring down AT&C losses and submit a detailed plan in this regard.

66.2. The Petitioner during the hearing submitted that the compliance of the direction of Authority has already been made.

66.3. The Authority noted that SEPCO hasn't submitted anything in this regard. Therefore, SEPCO is directed to submit a concrete plan regarding the reduction of AT&C Losses & exemption of 11kV feeders from load shedding.

67. <u>What is the load shedding criteria of SEPCO to meet the load demand?</u>

67.1. The Authority in the previous tariff determination directed the Petitioner to submit load shedding criteria to meet the load demand.

67.2. The Petitioner during the hearing submitted that the Power is drawn keeping in view the following parameters.

i. Load Management.
ii. Consumption as per temperature condition.
iii. Demand of Industry, Commercial and domestic needs, which varies month wise.
iv. Worst Law and order situation in rural areas in night hours.
v. Cash Flow generated against each feeder and supply provided.

67.3. Further, the load management is being carried out on equitable basis under 07 Categories, on the basis of A T&C Losses.

Month	Category	I	II	III	IV	V	VI	VII	Total Feeders
	%age AT&C Losses	Upto 10%	10% to 20%	20% to 30%	30% to 40%	40% to 60%	60% to 80%	80% to above	
	Load Management Hours	0	0	2	4	6	8	12	
12/2021	No. of Feeders	96	0	6	67	28	83	277	557

67.4. If electricity goes off due to rain, wind storm, technical fault, emergency etc the period of breakdown is compensated by withdrawal of load shedding hours in next period.

ENERGY SUPPLY AND DEMAND DURING LAST 05 YEARS & FORECAST FOR FUTURE 05 YEARS
FOR THE PERIOD YEAR (2016-17 to 2021-22)

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YEAR	ALLOCATION / GENERATION SHARE (MW)		POWER DEMAND (MW)		POWER RECEIVED (MW)		POWER SHORT FALL (MW)	
	MAX	AVER:	MAX	AVER:	MAX	AVER:	MAX	AVER:
2016-17	1400	612	1330	810	1002	465	-328	-345
2017-18	1215	633	1318	833	1046	483	-272	-350
2018-19	1386	725	1279	736	1038	424	-241	-312
2019-20	1239	714	1124	647	892	410	-232	-237
2020-21	1425	731	1191	677	1006	416	-185	-261
2021-22 (End 11/21)	1378	889	1175	806	961	484	-214	-322

67.5. The Authority has considered the submissions of SEPCO and directed SEPCO to carry out load shedding in accordance with Rule 4 (f) of Performance Standard (Distribution) Rules, 2005. The criteria being followed by SEPCO is a clear violation of NEPRA Laws and has never been recognized by NEPRA.

68. <u>What are the system constraints due to which SEPCO draws less power as compared to the allocated quota?</u>

68.1. The Authority in the previous tariff determination directed the Petitioner to provide details of system constraints due to which SEPCO draws less power as compared to the allocated quota.

68.2. The Petitioner during the hearing submitted that due to High AT&C Loss Feeders, Category wise / Losses slab wise Load management is being carried out on 11 kV feeders, resulting in less drawl as compared to allocated quota, besides this few system constraints restricts the load drawl as mentioned in attached sheet.

S.NO	NAME OF CONSTRAINTS	REMEDIAL MEASURES	STATUS
	GRID STATIONS		
1	66 KV Kamber	Conversion to 132 KV Level	90% completed ROW Problem
2	66 kv Nara-1	Conversion to 132 KV Level	95% completed ROW Problem
	TRANSMISSION LINES		
1	132 KV T/L Sukkur Site – Arain Road	New Circuit 15 km	60% completed ROW Problem
2	132 kv T/L New Dadu--Old Dadu	New Circuit	80% completed ROW Problem

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3	132 KVT/L New Shikarpur---RatoDero	IN/OUT From Lodra-Larkana	80% completed ROW Problem
11 KV & Below Network			
	11 KV & Below	Nos. Over loaded.	REMARKS
1	11 kv Feeders	32 nos.	Work in progress
2	Distribution Transformers	581 Nos.	

68.3. The Authority has considered the submissions of SEPCO and is of the considered opinion that SEPCO should have submitted the quantified details that how much power (MW) is not being drawn by SEPCO due to these few constraints. Further, SEPCO has claimed that 80-90% of constraints have been removed, however, the remaining 10-20% are pending due to right of way of issues. SEPCO is directed to eliminate all such constraints by taking immediate measures and help from local government and submit a detailed compliance report to NEPRA in this regard.

69. **<u>What curative measures have been taken to tackle the future demand and removal of constraints?</u>**

69.1. The Authority in the previous tariff determination directed the Petitioner to submit the details of curative measures taken to tackle the future demand and removal of constraints.

69.2. The Petitioner during the hearing submitted that, for Future load demands and removal of system constraints, following Curative measures has been proposed.

- 582 MVA. Capacity of Power Transformer will be added, in 07 Nos. new grids, 09 Nos. conversion from 66 to 132 kV and 675 km new 132 kV Lines will be added for system expansion and stability.
- 85 Feeders have been proposed in ELR for reduction Loading and Losses.
- 212 MVA Capacity. Distribution T/F will be added in LTP proposed in ELR for reduction in Distribution T/F loading by enhancing.
- 233 MVA Distribution Transformers will be added to cater future load of new consumers.
- 3500 km HT & 1893 KM LT Lines will be added for supply of Power, Energy loss reduction and reduction in HT/LT ratio.

69.3. The Authority has considered the submissions of SEPCO and is of the view that regarding curative measures to tackle the future demand and removal of constraints, SEPCO has submitted the detail of projects without the timelines and benefits that will be achieved. Therefore, SEPCO is directed to provide detail of projects along with timelines and benefits to be accrued that will be achieved.

70. **<u>What are the remedial measures taken for the achievement of performance standards (targets of SAIFI & SAIDI given by the Authority during FY 2019-20) as laid down in Performance Standards (Distribution) Rules 2005?</u>**

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70.1. The Authority in the previous tariff determination directed the Petitioner to provide the detail of remedial measures taken for the achievement of performance standards (targets of SAIFI & SAIDI given by the Authority during FY 2019-20) as laid down in Performance Standards (Distribution) Rules 2005?

70.2. The Petitioner during the hearing submitted that SEPCO after investment in distribution rehabilitation achieved improvement in SAIFI & SAIDI 2020 – 21 in the light of investment in 2019-20.

YEAR	SAIFI	SAIDI	FAULT RATE	REMARKS
2019-20	478	4095	1.55	Improvement observed in the form of KPI under PSDR 2005
2020-21	441	3893	1.29	

70.3. The Authority has considered the submissions of SEPCO and is of the view that SEPCO has tried to portray the picture that it has improved SAIFI, SAIDI, and Fault rate in FY 2020-21 as compared to 2019-20. The data submitted by SEPCO has been examined and slight improvement has been noted which could have been more if SEPCO utilized maximum amounts under the investment head. Therefore, SEPCO is directed to utilize maximum amounts under the investment head as allowed by NEPRA in its tariff determinations to achieve further improvement in KPIs.

71. <u>**Provide loading position of distribution network and submit a report regarding the plans/investments executed to improve the system constraints?**</u>

71.1. The Authority in the previous tariff determination directed the Petitioner to provide loading position of distribution network and submit a report regarding the plans/investments executed to improve the system constraints.

71.2. The Petitioner during the hearing submitted that in order to improve the loading position of SEPCO, various Power Transformers have been augmented, new Grid Stations have been energized and 66kV Grid Station converted into 132kV level, year wise detail is as under;

<u>**F.Y 2020-21**</u>

- 05 x 20/26 MVA Power Transformers augmented with 31.5/40 MVA (at 132kV G/S Khairpur, Gambat, Larkana City, Rasoolabad & Kandiaro)
- 01 x 10/13 MVA Power Transformer augmented with 20/26 MVA (at 132kV Grid Station Shah Ladhani)
- 02 x new 132kV Grid Stations i.e Lakhi & Bhirya Road energized.

<u>**F.Y 2019-20**</u>

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- 02 x 20/26 MVA Power Transformers augmented with 31.5/40 MVA at 132kV G/S Sukkur City & Arain Road Sukkur)
- 02 x new 132kV Grid Stations i.e Sukkur Township & Ghouspur energized.

F.Y 2018-19

- 01 x 20/26 MVA Power Transformers augmented with 31.5/40 MVA (at 132kV Grid Station Pano Akil)
- 01 x 66kV Grid Station (Rasoolabad) converted into 132kV level.

71.3. The Authority has considered the submissions of SEPCO and observed that SEPCO has submitted some augmentation works for power transformers carried out by it in the last three years in order to reduce the overloading of the system. However, SEPCO hasn't submitted what benefits it had achieved due to these augmentation works. Therefore, SEPCO is directed to submit the complete report in this regard.

72. Whether the loading position of Power Transformers, Distribution Transformers and 11kV Feeders has been improved? Provide the detail for last three years.

72.1. The Authority in the previous tariff determination directed the Petitioner to improve the loading position of Power Transformers, Distribution Transformers and 11kV Feeders and submit the detail for last three years.

72.2. The Petitioner during the hearing submitted the following details:

YEAR	DIST: Transformers			11 KV Feeders			Power Transformers		
	Total	Over Load	%	Total	Over Load	%	Total	Over Load	%
	Nos.	Nos.		Nos.	Nos.		Nos.	Nos.	
2016-17	35875	1597	4.45	462	79	17.1	118	53	44.9
2017-18	37592	763	2.03	490	56	11.4	130	24	18.5
2018-19	38196	541	1.42	531	66	12.4	130	24	18.5
2019-20	38616	576	1.49	541	58	10.7	132	16	12.1
2020-21	39076	581	1.49	548	32	5.8	133	0	0.0

72.3. The Authority has considered the submissions of SEPCO and is of the opinion that SEPCO has claimed a significant improvement in the reduction of overloading of distribution transformers, however, SEPCO hasn't submitted an impact analysis due to such drastic

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decrease in terms of consumer facilitation and relief. Therefore, SEPCO is directed to submit the detailed report in this regard.

73. **Provide details of preventive measures taken during FY 2020-21 to cater to the safety incidents?**

73.1. The Authority in the previous tariff determination directed the Petitioner to provide details of preventive measures taken during FY 2020-21 to cater to the safety accidents.

73.2. The Petitioner during the hearing submitted that following measures have been taken to cater the safety incidents;

- Distribution of PPE among the line staff working on the line.
- Arranging Safety Seminars to educate line staff for their safety as per SOP.
- Distribution of T&P.
- Control over issuance of PTWs.
- Removal of Hazardous Points.
- Monitoring of observance of safety codes.
- Initiating Disciplinary action on account of violation of safety SOPs.

73.3. The Authority has considered the submissions of SEPCO and is of the opinion that SEPCO has tried to portray the picture that it has taken a lot of measures to avoid/reduce fatal accidents and create a safety culture, however, the number of fatal accidents for both employees and the public occurred in SEPCO during the year 2020-21 is 14 which is more as compared to last two years i.e. 13 & 12 in FY 2018-19 & FY 2019-20. Therefore, SEPCO should initiate measures on war footing basis to reduce the number of fatal accidents and submit a concrete action plan in this regard.

74. **Whether TOU meters installed to all the eligible connections? Submit details in this regard.**

74.1. The Authority in the previous tariff determination directed the Petitioner to provide TOU meters to all eligible connections and submit details to NEPRA in this regard.

74.2. The Petitioner during the hearing submitted the following details:

Sr. No	Tariff Category	Total No. of connections for installation of TOU meters.	Total No. of meters installed (up till June 2021)	TOU meters yet to be installed
1	Residential (A-1)	5747	5747	0
2	Commercial (A-2)	4206	4206	0
3	Industrial (B)	8259	8259	0
4	Bulk Supply (C)	352	352	0
5	Agricultural (D)	6243	5837	406
6	A-3 General Services (AMR Meter Installed against GoS Connections and TOU / TOD on others)	5336	5336	0
	TOTAL	30143	29737	406
	Note. 406 Connections of Govt. of Sindh Tariff code converted to A-3 & AMR Meters have been installed			

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74.3. The Authority has considered the submissions of SEPCO and directs SEPCO to clear all pendency and install TOU meters within one month and submit a compliance report in this regard.

75. Progress regarding the installation of AMI meters at the consumer end.

75.1. The Authority in the previous tariff determination directed the Petitioner to submit the progress regarding the installation of AMI meters at the consumer end.

75.2. The Petitioner during the hearing submitted that 15956 AMI Meters against Govt. of Sindh connections have been installed by SEPCO.

75.3. The Authority has considered the submissions of SEPCO and directed SEPCO to submit the impact analysis/benefits achieved due to the installation of AMR meters on government connections. SEPCO is further directed to submit a plan for the installation of AMR meters at least on PMT level in its service territory.

76. What steps were taken to control the theft of electricity?

76.1. The Authority in the previous tariff determination directed the Petitioner to submit the details of the steps taken to control the theft of electricity.

76.2. The Petitioner during the hearing submitted the following steps to control the theft of electricity.

- Anti Theft Campaign is being conducted Batch Wise on Daily basis. Line Superintendent & Linemen carryout the checking in day and night. SDO (Operation) also monitor checking activities of LS & LM.
- During Anti Theft Campaign Illegal / Hooks Connections Removed and removed PVC Cables deposited in Stores through MRN & Off size PVCs burnt at site to discourage the electricity stealers.
- Various checking teams such as M&T, S&I, Rotary, Task Forces are also carrying out checking in field to detect theft in Domestic, Commercial & Industrial Connections.
- Disciplinary action against Officers / Officials have also been initiated if field staff found negligent.
- Keeping in view non-cooperation of Police Department the correspondence with DIGs Sukkur, Larkana, Nawabashah, Hyderabad have been made for extending their cooperation in lodging of FIRs.
- Feeder wise Combing / Securing of Meters under One Point Supply by Removing LT Lines has been started to eliminate theft & Recovery.
- Securing of 145 Nos. 11 KV Feeders have been completed by installing ABC Cable and removing the LT Bare Conductor.
- Regularization of illegal kunda connections on 24 Installment basis. The proposal is submitted before BOD SEPCO for approval. This scheme is initiated to encourage the consumers which are financially poor.

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76.3. The Authority has considered the submissions of SEPCO to submit the %age improvement in AT&C losses after taking measures to control theft of electricity.

77. Upfront Indexation/adjustment for the FY 2021-22 and FY 2022-23

77.1. The Authority also understands that by the time the instant decision is notified, the FY 2021-22 would have elapsed and the FY 2022-23 would have started. Meaning thereby that tariff indexation/adjustment for the FY 2021-22, which ideally should have been allowed in in July 2021 would have become overdue, and the indexation/adjustment for the FY 2022-23 would also have become due. In view thereof, and in order to ensure timely recovery of the allowed cost to the Petitioner, the Authority has decided to allow the indexation/adjustment for the FY 2021-22 and the FY 2022-23, upfront in the instant decision as per the adjustment /indexation mechanism provided in this determination. However, the impact of under/ over recovery due to indexation/ adjustment for the FY 2021-22 would be allowed / adjusted subsequently as part of future PYA.

77.2. Here it is pertinent to mention that indexation/adjustment for the FY 2021-22 and FY 2022-23 has been worked out based on the NCPI for the month of December 2020 and December 2021 respectively, for which the reference NCPI for the month of December 2019 has been used. Thus, for the purpose of filing future indexation/ adjustment requests, the Petitioner shall use the NCPI for the month of December for the respective year.

77.3. The Authority considers that, after taking into account all the adjustments and assessments, as discussed in the instant determination, if the Petitioner still earns extra profits the same will be shared with the consumers and the Petitioner equally.

78. Order

78.1. In view of the discussion made in preceding paragraphs and accounting for the adjustments discussed above, the allowed revenue requirement of the Petitioner, for the FY 2020-21 along-with upfront indexation/adjustment for the FY 2021-22 and FY 2022-23, to the extent of its distribution function is summarized as under;

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Distribution of Power (DOP)		FY 2020-21	FY 2021-22	FY 2022-23
Description	Unit	DOP	DOP	DOP
Units Received	[MkWh]	4,276	4,276	4,577
Units Sold	[MkWh]	3,532	3,532	3,796
Units Lost	[MkWh]	745	745	780
Units Lost	[%]	**17.41%**	**17.41%**	**17.05%**
Investment	**[Mln. Rs.]**	3,981	8,235	21,972
Pay & Allowances		3,722	4,552	5,048
Repalcement Hiring		(96)	(117)	(130)
Post Retirement Benefits		1,428	1,571	1,706
Repair & Maintainance		804	906	983
Traveling allowance		225	253	275
Vehicle maintenance		175	183	214
Other expenses		205	231	251
O&M Cost	**[Mln. Rs.]**	6,463	7,579	8,348
Depriciation		1,394	1,460	1,603
RORB		997	1,309	2,258
O.Income		(1,059)	(1,134)	(1,134)
Margin	**[Mln. Rs.]**	7,796	9,214	11,075
Average Tariff	[Rs./kWh]	**2.21**	**2.61**	**2.92**

78.2. The Petitioner is directed to follow the following time lines for submission of its future indexation/adjustment during the MYT control period;

Description	ADJUSTMENTS/ INDEXATION	TIME LINES
Margin		
Salaries, Wages & Benefits	Annually as per the mechanism given in the decision	Request to be submitted by Petitioner in February of every year, so that adjustment / indexation for the next year is determined in timely manner.
Post-retirement Benefit		
Other operating expenses		
Depreciation		
Return on Regulatory Asset Base		
Other Income		
Prior Year Adjustment	Annually as per the mechanism given in the decision	
KIBOR	Bi-Annually, as per the decision	
Return on Equity (ROE)	No adjustment allowed over Reference ROE	
Spread	As per the mechanism in the decision	

Ref. NCPI-General of December 2019 i.e. 9.49%

78.3. Sukkur Electric Power Company Limited (SEPCO), being a distribution licensee, is allowed to charge its consumers, the following "Use of system charge" (UOSC) for the FY 2022-23;

Description	For 132 kV only	For 11 kV only	For both 132kV & 11 kV
Asset Allocation	24.49%	43.81%	68.30%
Level of Losses	1.49%	11.25%	12.57%
UoSC Rs./kWh	0.66	1.34	2.09

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78.4. Responsible to provide distribution service within its service territory on a non-discriminatory basis to all the consumers who meet the eligibility criteria laid down by the Authority,

78.5. To make its system available for operation by any other licensee, consistent with applicable instructions established by the system operator.

78.6. To follow the performance standards laid down by the Authority for distribution and transmission of electric power, including safety, health and environmental protection instructions issued by the Authority or any Governmental agency [or Provincial Government;

78.7. To develop, maintain and publicly make available, its investment program for satisfying its service obligations and acquiring and selling its assets

78.8. To disconnect the provision of electric power to a consumer for default in payment of power charges or to a consumer who is involved in theft of electric power on the request of Licensee.

78.9. The Petitioner shall comply with, all the existing or future applicable Rules, Regulations, orders of the Authority and other applicable documents as issued from time to time.

78.10. The Authority may review the tariff applicable to each class of consumers for rationalization or modification along-with their terms & conditions from time to time as deemed appropriate, to ensure the revenue requirement of the Petitioner.

78.11. The Authority considers that, after taking into account all the adjustments and assessments, as discussed in the instant determination, if the Petitioner still earns extra profits the same will be shared with the consumers and the Petitioner equally.

79. <u>Summary of Direction</u>

79.1. A summary of all directions passed in this determination by the Authority are reproduced hereunder. The Authority hereby directs the Petitioner to;

i. To ensure segment reporting with clear break-up of costs in financial statements for the Distribution and Supply Functions in light of the amended NEPRA Act for the FY 2020-21 & onward

ii. To restrain from unlawful utilization of receipts against deposit works & security deposits, and to give clear disclosures in its Financial Statements with respect to the consumer financed spares and stores, work in progress and cash & bank balance.

iii. To provide the detail of PEPCO fee claimed and allowed in tariff till June 30, 2021 in its subsequent tariff adjustment/indexation request.

iv. To create a separate Fund for its post-retirement benefits and deposit the amount of already collected provision of postretirement benefits into the Fund.

v. To provide details of actual tax assessments, tax allowed, tax refund and the amount of tax paid for the last five years.

vi. To provide its working of under/(over) recovery of quarterly adjustments, along-with break-up of units sold for each category for the period from FY 2019-20 till FY 2021-22, for consideration of the Authority. Any adjustment in this regard would be adjusted subsequently as PYA.

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vii. To prioritize its investments claimed under STG, DOP and ELR etc. In this respect, removal of system constraints for transferring power from NTDC system must be the first priority, followed by reduction in T&D losses and improvement in metering systems through ELR and overloaded grids and 11kV feeders. The main components would include STG, DOP, ELR and Commercial Improvement.

viii. To target high loss feeders to bring the overall losses down. A detailed plan be prepared and submitted to the Authority for monitoring the progress of SEPCO in this respect.

ix. To clear all pending connections and submit a report to NEPRA on a monthly basis.

x. To share project-wise details including utilization of amounts vis-a-vis performance improvement, particularly in the aforementioned areas.

xi. To submit a concrete plan regarding the reduction of AT&C Losses & exemption of 11kV feeders from load shedding.

xii. To carry out load shedding in accordance with Rule 4 (f) of Performance Standard (Distribution) Rules, 2005. The criteria being followed by SEPCO is a clear violation of NEPRA Laws and has never been recognized by NEPRA.

xiii. To eliminate all such constraints by taking immediate measures and help from local government and submit a detailed compliance report to NEPRA in this regard

xiv. To submit the details of curative measures taken to tackle the future demand and removal of constraints and to provide detail of projects along with timelines and benefits to be accrued that will be achieved.

xv. To utilize maximum amounts under the investment head as allowed by NEPRA in its tariff determinations to achieve further improvement in KPIs.

xvi. To provide loading position of distribution network and submit a report regarding the plans/investments executed to improve the system constraints.

xvii. To improve the loading position of Power Transformers, Distribution Transformers and 11kV Feeders and submit the detail for last three years.

xviii. To clear all pendency and install TOU meters within one month and submit a compliance report in this regard.

xix. To submit a plan for the installation of AMR meters at least on PMT level in its service territory.

xx. To ensure that amount allowed under each head of investment shall not be used under any other head. The re-appropriation of Authority's allowed investment under different heads by DISCO shall not be acknowledged by the Authority and shall be adjusted accordingly. In case of any deviation under each head of the investment for more than 5% in the instant approved investment plans of DISCOs due to any regulatory decisions/interventions/approved plans, DISCOs shall be required to submit additional investment requirements for prior approval of the Authority.

xxi. To take all the possible preventive measures to ensure no fatal accidents occur in future and improve its HSEQ performance. Detail objectives/targets of HSE are attached as Annex-D for compliance.

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xxii. To take all possible measures to facilitate consumers in terms of complaint handling, connection provision as per CSM and establish one window solutions.

xxiii. The HT and LT rehabilitation proposals shall be evaluated on the basis of GIS mapping through ArcGIS and load flow analysis through SynerGee Electric. The HT & LT Plans will be based on of PMS demand forecast and consistent with the STG Plan. The STG plans should be in line with the Transmission System Expansion Plan (TSEP) approved by the Authority from time to time.

xxiv. GIS mapping has to be updated periodically after execution of respective HT and LT rehabilitation proposals and network shall be regularly updated for the optimized future investments and avoid equipment failures through prudent and proactive planning practices.

xxv. DISCOs shall ensure Open Access to all the relevant entities/licensees without discrimination and shall objectively evaluate and make available on the website of DISCO the network available capacity, current allocation of the capacity and the future investment required to be made part of distribution system planning.

xxvi. The DISCO through Market Implementation & Regulatory Affairs Department (MIRAD) shall prepare and develop the medium-term demand forecast, transmission plans and business plan for submission of the same to the Authority. All other departments of the DISCOs shall be obligated to provide their sub-plans to MIRAD for consolidation.

xxvii. MIRAD shall ensure effective reporting and monitoring of the allowed investment on monthly, quarterly and annual basis. The main components would include STG, DOP, ELR and Commercial Improvement.

xxviii. MIRAD shall be adequately staffed at all times as per the approved organochart for effective and efficient performance of its functions. MIRAD shall develop the dashboard for effective monitoring and reporting of above plans. The CEO along with the functional in-charge of each department will be responsible for presenting the above mentioned progress to the Authority and also submit the monthly, quarterly and annual progress reports in the matter.

xxix. DISCO shall ensure Data Standardization for load forecasting and coordinate with PITC for auto retrieval and analysis of data for demand forecasts and use a software based on a modern language instead of Fox-Pro based software for accurate and reliable demand forecasts.

xxx. MIRAD shall undertake an exercise to identify and accurately use the data of captive consumers in the demand forecasts and ensure better coordination with local agencies/housing colonies/industrial consumers for potential upcoming demand for better and reliable demand forecasts.

xxxi. To submit its annual adjustment / indexation requests by February every year, so that adjustment / indexation for the next year is determined in timely manner

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80. The determination of the Authority along-with annex-A,B,C and D, is hereby intimated to the Federal Government for notification in the official gazette in terms of section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997.

AUTHORITY

(X) 2/6/22

Rafique Ahmed Shaikh
Member

Engr. Maqsood Anwar Khan
Member

Tauseef H. Farooqi
Chairman

(X) My additional note is attached herewith.

2/6/22

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Additional Note:

At the outset, the multi-year tariff determination which I am signing is for the control period from financial year 2020-21 to 2024-25; the two years of its control period have already been lapsed. Timely tariff determinations depend on submission of the petition by DISCOs within the given time. However, in sheer disregard of timelines given in the NEPRA Guidelines for Consumer End Tariff-2015 as well as the Authority's direction, DISCOs have failed to submit their petitions in timely manner which reflects their indifference to the regulatory discipline which ultimately cause suffering for the power sector as well as the end-consumers.

For the period from July, 2020, beyond the tariff control period of last determined tariff, the Authority has been issuing the quarterly adjustments under the given mechanism. Such adjustments, though covers the cost increase to larger extent but not suffice to cover the entire financial impact. Therefore, I am of the opinion that quarterly adjustments beyond the tariff control period are highly undesirable and should not be allowed.

This is a fact on record that NEPRA has been allowing huge amount to DISCOs under the head of investments for up-gradation of their infrastructure, however, DISCOs could not be able to improve their T&D losses and quality of supply corresponding to the allowed investment. Therefore, comprehensive audit of DISCOs is necessary to check the utilization of funds allowed under the head of investments.

The overall recovery position of DISCOs is also below the desired level. Resultantly, the country is facing circular debt and despite certain bail out packages, the circular debt is on the rise which currently stands at more than Rs. 2.5 trillion. To get rid of the circular debt issue, immediate actions are needed which may include the structural changes in ownership and control of the DISCOs.

This has also been highlighted in the last many years that the performance of DISCOs has been marred with serious governance issues. Load shedding on account of Aggregate Technical and Commercial (AT&C) losses is one of the classic example of poor governance. Instead of improving their distribution network, checking the theft of electricity and improving the recovery, DISCOs have found an easy way of indiscriminate load shed at feeder level. This AT&C base load shedding is a stumbling block in improving the sales growth of Discos. This is a fact that sufficient generation capacity is available in the country, mostly on take or pay basis. The AT&C base load shedding is suffering the consumers in shape of not having the electricity as well as increased electricity cost due to payment of capacity payment of unutilized capacity. I am of the considered view that the burden of capacity payments due to underutilization of power plants caused by DISCO level load shedding should not be passed on to the consumers.

DISCOs are allowed sizeable amount for payments on account of pension and other post-retirement benefits which is being increased year on year basis. Although, under the agreed terms and conditions, these payments are binding but not a direct cost of product, i.e. generated electricity. Had the pension fund been established earlier in a timely manner to meet this obligation, the burden of these payments on consumers could have been avoided.

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The present centralized control of DISCOs has shown its inherent tendency for inefficiency and unless developed as independent corporate entities, autonomous in their business decisions, DISCOs will continue to burden the power sector. Therefore, immediate actions are needed to revamp DISCOs and free them of centralized control. In my view, this is time to either privatize DISCOs or transit to public private partnership to run these entities as independent business in a competitive environment. The involvement of provincial governments may help in improving the governance of DISCOs especially in controlling electricity theft and improving the recovery.

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Annex – A (STG Projects)

STG Quantities:

S. No	Description	Unit	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	New Grid Station	No.	**1**	**3**	**2**	**1**	-	**7**
2	Conversion of 66 to 132 kV	No.	-	**3**	**2**	**1**	**3**	**9**
3	Extension of Power T/F	No.	**4**	-	-	**4**	-	**8**
4	Augmentation of Power T/F	No.	**6**	**4**	-	**1**	-	**11**
5	Extension of Line Bay	No.	**2**	-	-	-	-	**2**
6	New 132 kV T/L	km	**21**	**278.6**	**179**	**128**	**68**	**674.5**
8	Installation 132 kV Capacitors	No.	-	**1**	-	-	**1**	**2**
COST								
Million (Rs)			**1131**	**4862**	**2620**	**3098**	**1076**	**12787**
BENEFITS								
Energy Savings (GWh)			**39.41**	**69.67**	**78.91**	**88.58**	**97.54**	**97.54**

A. Grid Station Costing:

Sr. No.	Name of Grid Station	SCOPE	Cost Million Rs.	Year
1	132kv Grid Station Khairpur	Augmentation 26 To 40 MVA	73	2020-21
2	132kv Grid Station Gambat	Augmentation 26 To 40 MVA	73	
3	132kv Grid Station Larkana City	Augmentation 26 To 40 MVA	73	
4	132kv Grid Station Larkana New	Addition of 40 MVA P.T/F	73	
6	132kv Grid Station Dadu Old	Addition Of 40 MVA P.T/F	73	
7	132kv Grid Station Lakhi	New Grid	184	
8	132kv Arain Road	Replacement of Defective 40 MVA P.T/F With 26 MVA	73	
9	132kv Shikarpur	Replacement of Defective 40 MVA P.T/F With 40 MVA	73	
10	132kv Grid Station Rasool Abad	Augmentation 26 To 40 MVA	73	
11	132kv Grid Station Kandiaro	Augmentation 26 To 40 MVA	73	
12	132kv Grid Station Shah Ladhani	Augmentation 13 To 26 MVA	50	
13	132 KV Bhirya Road (New Grid)	1x26 MVA Transformer	104	2021-22
14	132 KV Ranipur (New Grid)	1x26 MVA Transformer	169	
15	132 KV Tangwani (New Grid)	1x26 MVA Transformer	169	
16	66 kV Kamber (Conversion 66 kv to 132 kv)	2x26 MVA Transformer	119	

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Sr. No.	Name of Grid Station	SCOPE	Cost Million Rs.	Year
17	66 kV Nara-1 (Conversion 66 kv to 132 kv)	1x26 MVA Transformer	133	
18	66 kV Warah (Conversion 66 kv to 132 kv)	1x26 MVA Transformer	122	
19	132 kV Naudero	(Augmentation 13-26 MVA)	23	
20	132 kV Jacobabad-2	(Augmentation 13-26 MVA)	23	
21	132 kV Kumb	(Augmentation 13-26 MVA)	23	
22	132 kV Tharu Shah	(Augmentation 13-26 MVA)	23	
23	132 KV Khan Wahan (New Grid)	1x26 MVA Transformer	169	
24	132 kvPiryalo (New Grid)	1x26 MVA Transformer	169	2022-23
25	66KV Pad Eidan (Conversion to 132 KV)	1x26 MVA Transformer	195	
26	66KV Dokri (Conversion to 132 KV)	1x26 MVA Transformer	122	
27	132kv Grid Station Dadu-2, New Grid	1x26 MVA Transformer	250	2023-24
28	66 KV ThariMirwah (Conversion to 132 Kv)	1x26 MVA Transformer	200	
29	132KV G/S Kashmore	(Addition of 26MVA)	81	
30	132KV G/s Kandhkot	(Addition of 40MVA)	96	
31	132kvG/S Thull	(Addition of 26MVA)	81	
32	132kv G/S BhanSaeedabad	(Addition of 26MVA)	81	
33	132KV G/S Naseer Abad	(Aug 13-26MVA)	65	
34	132 KV Radhan (New Grid)	1x26 MVA Transformer	169	2024-25
35	66 KV Nara-2 Conversion to 132 kV	1x26 MVA Transformer	122	
36	66 KV GarhiKhairo Conversion to 132 kv	1x26 MVA Transformer	116	
37	132KV G/S Kandiaro	24 MVAR Capacitor Bank	50	

B. Transmission Lines Costing:

Sr. No.	Name of Transmission Line	SCOPE	Length (KM)	Cost Million	Year
1	220 kV Shikarpur (Lodra-Lakhi) &	NEW LINE 21 KM	21	210	2020-21
2	Liberty-Deharki-TPS Guddu/Line	02-no. Line bays at 132 kvDeharki	-	30	
3	132 KV Transmission Line Feed For 132 KV Grid station Bhirya Road	(D/C T/L From Kandiaro-N.S.Feroze Section)	14	129	2021-22

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Sr. No.	Name of Transmission Line	SCOPE	Length (KM)	Cost Million	Year
4	132 KV Transmission Line Feed For 132 KV Grid Station Ranipur	(D/C T/L From Gambat --- Rasool Abad Section)	5	60	
5	132 KV Transmission Line Feed For 132 KV Grid station Tangwani	(D/C T/L From Thull --- Kandhkot Section)	5	60	
6	132 KV Transmission Line Feed For 132 KV Grid station Kamber	(S/C T/L From 132 KV Larkana Site)	30	297	
7	132 KV Transmission Line Feed For 132 KV Grid station Nara-1	(S/C T/L From 220 KV Rohri)	32	462	
8	132 KV Transmission Line Feed For 132 KV Grid station Warah	(S/C T/L From 132 KV Naseer Abad)	25	250	
9	500 KV Dadu New – Dadu Old	New Line	3.9	23	
10	132 KV ARAIN ROAD - SUKKUR SITE	New Circuit	15	201	
11	LIBERT-DEHRKI-GUDDU T/LINE	NEW CIRCUIT	65	1215	
12	220 KV New Shp - Arain Road Section-I (132KV New SHP – Lakhi (Completed 21-KM) Section-II, (132KV Lakhi – Arain Road	New Circuit	22	182	
13	132 KV Kashmore – Kandhkot Line	New Circuit	55	990	
14	Ratodero In & Out from 132 kV Shp – Larkana Line	In/Out Arrangement	6.7	35	
15	132KV G/S N'Feroze	36 MVAR Capacitor Bank	01 Set	50	
16	132 KV Transmission Line Feed For 132 KV Grid station Khan Wahan	(D/C T/L From 132 KV Gambat-Mehrabpur)	12	120	2022-23
17	132 KV Transmission Line Feed For 132 KV Grid station Piryalo	S/C T/L From 132 KV Pir-Jo Goth	8	62	
18	132 KV Transmission Line Feed For 132 KV Grid station Pad Eidan	(S/C T/L From 132 KV Bhirya)	25	136	
19	132 KV Transmission Line Feed For 132 KV Grid station Dokri	S/C T/L From 132 KV Larkana Site	30	233	
20	132 kv T/ (Kandhkot – Thull- Jacobabad)	New Line	72	1296	

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Sr. No.	Name of Transmission Line	SCOPE	Length (KM)	Cost Million	Year
21	220 KV Rohri	2ND Circuit (New Rohri – Nara-1)	32	118	
22	132 KV Transmission Line Feed For 132 KV Grid station Dadu 2	(S/C T/L From 500 KV Dadu)	15	180	2023-24
23	132 KV Transmission Line Feed For 132 KV Grid station ThariMirwah	S/C T/L From 132 KV Rasool Abad	15	300	
24	132 kV Liberty – Ghotki – PanoAkil – New Rohri	New Line	98	1764	
25	132 KV Transmission Line Feed For 132 KV Grid Station Radhan	(S/C T/L From 132 KV Mehar)	15	150	2024-25
26	132 KV Transmission Line Feed For 132 KV Grid Station Nara -2	(S/C T/L From 132 KV Choondko)	15	180	
27	132 KV Transmission Line Feed For 132 KV Grid Station GarhiKhairo	S/C T/L From 132 KV Shahdadkot)	35	309	
28	2nd ckt stringing 132 kV Dadu New – Dadu 2		03	30	

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Annex –B (DOP Projects)

DOP Quantities:

Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
11 KV Line (KM)	397.5	477.0	530.0	583.0	662.5	**2650**
LT Line (KM)	216.0	259.2	288.0	316.8	360.0	**1440**
Transformers (No.)	530	636	707	778	884	**3536**

DOP Costing:

No.	Description	Unit	COST (RS. IN THOUSANDS)					
			2020-21	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**TOTAL**
	COST RECOVERABLE FROM CONSUMERS:							
1)	**New H.T Line**							
a)	**Urban Areas (45%)**							
i)	Osprey (30%)		70,004	84,005	93,338	102,672	116,673	466,692
ii)	Dog (40%)		46,518	55,822	62,025	68,227	77,531	310,123
iii)	Rabbit (30%)		26,746	32,095	35,661	39,227	44,576	178,304
	Sub-Total		**143,268**	**171,921**	**191,024**	**210,126**	**238,780**	**955,119**
b)	**Rural Areas (55%)**							
i)	Dog (40%)		56,856	68,227	75,808	83,389	94,760	379,039
ii)	Rabbit (60%)		65,378	78,454	87,171	95,888	108,964	435,854
	Sub-Total		**122,234**	**146,681**	**162,979**	**179,276**	**203,723**	**814,893**
	Total of H.T Line (a+b)		**265,502**	**318,602**	**354,002**	**389,403**	**442,503**	**1,770,012**
2)	**New L.T Line,**							
a)	**3-Phase (80%)**							
i)	AAC Wasp (40%)		61,128	73,354	81,504	89,654	101,880	407,520
ii)	AAC Ant (60%)		62,381	74,857	83,174	91,491	103,968	415,870
	Sub-Total		**123,509**	**148,210**	**164,678**	**181,146**	**205,848**	**823,390**
b)	**1-Phase (20%)**							
1)	AAC Ant (100%)		19,757	23,708	26,343	28,977	32,928	131,713
	Total of L.T Line (a+b))		**143,265**	**171,919**	**191,021**	**210,123**	**238,776**	**955,103**
	Sub-Total of H.T/L.T Line (1+2)		**408,767**	**490,521**	**545,023**	**599,525**	**681,279**	**2,725,115**
3	**Sub-Stations**							
a.	25 KVA		41,801	50,161	55,734	61,307	69,668	278,670
b.	50 KVA		41,463	49,756	55,284	60,812	69,105	276,420
c.	100 KVA		45,262	54,315	60,350	66,385	75,437	301,749
d.	200 KVA		18,922	22,706	25,229	27,752	31,536	126,145
e.	400 KVA		5,154	6,185	6,872	7,560	8,590	34,362
f.	630 KVA		2,943	3,532	3,924	4,316	4,905	19,620
	Sub-Total		**155,545**	**186,654**	**207,393**	**228,133**	**259,242**	**1,036,966**

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4	**Service Connections**						
a.	Single Phase	56,606	67,927	75,474	83,022	94,343	377,371
b.	Three Phase	64,236	77,084	85,649	94,213	107,061	428,243
c.	L.T TOU Meter	39,940	47,928	53,253	58,579	66,567	266,267
	Sub-Total	**160,782**	**192,939**	**214,376**	**235,814**	**267,970**	**1,071,881**
Sub-Total of H.T/L.T Line (1+2)		408,767	490,521	545,023	599,525	681,279	2,725,115
Sub-Total of Sub-Stations & Service		316,327	379,593	421,769	463,946	527,212	2,108,847
Sub-Total of H.T/L.T Line		725,094	870,113	966,792	1,063,472	1,208,491	4,833,962
Installation Charges (@ 21.2%)		155,895	210,567	233,964	257,360	292,455	1,150,241

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Annex – C (ELR Projects)

ELR Quantities:

S.NO	Description	Unit	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	HT Proposals	Nos.	15	16	17	18	19	**85**
2	LT Proposals	Nos.	262	275	289	304	320	**1450**
Details of ELR Quantities								
1	11 KV New line for New Feeders	KM	150	160	170	180	190	**850**
2	11 KV lines (Extension Due to LTP)	KM	87	92	96	101	107	**483**
3	11 KV Re-conductoring (Osprey, Dog, Rabbit, Gopher)	KM	90	96	102	108	114	**510**
4	11 KV 450 KVAR fixed capacitors	Nos.	15	16	17	18	19	**85**
5	Replacement of overloaded transformers	Nos.	270	288	306	324	342	**1530**
6	Replacement of D-Fitting	Nos.	135	144	153	162	171	**765**
7	New Transformers substations (Rehabilitation)		68	72	76	80	86	**382**
8	New 3-Phase LT line (WASP)	KM	8	9	9	10	11	**47**
9	New 3-Phase LT Line (ANT)	KM	25	26	28	30	31	**140**
10	LT line Reconductoring (3Phase WASP)	KM	16	17	18	19	20	**90**
11	LT line Reconductoring (3-Phase ANT)	KM	10	11	12	13	14	**60**
12	11 KV Sectionalizer (manual)	Nos.	30	32	34	36	38	**170**
13	11 KV Panels with Installation	Nos.	15	16	17	18	19	**85**

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14	Energy Meters 1-Phase & 3-Phase	NOS.	3000	3130	3370	3600	3750	**16850**
15	PVC Cables 7/0.52, 7/0.83 & 19/0.83	KM	119	127	135	143	154	**678**
16	11 KV 500 MCM XLPE Cable (85+20%) =102	KM	4.5	4.6	4.8	5.4	5.7	**25**

ELR Costing:

S.NO	**Description**	**2021**	**2022**	**2023**	**2024**	**2025**	**Total**
1	**11 KV New line for New Feeders**	357	381	405	429	453	**2025**
2	**12 KV lines (Extension Due to LTP)**	185	195	204	214	227	**1025**
3	**11 KV Reconductoring (Osprey, Dog, Rabbit, Gopher)**	114	122	130	137	145	**648**
4	**11 KV 450 KVAR fixed capacitors**	3	4	4	4	4	**19**
5	**Replacement of overloaded transformers**	210	224	238	252	265	**1188**
6	**Replacement of D-Fitting**	3	4	4	4	4	**19**
7	**New Transformers substations (Rehabilitation)**	54	57	60	64	69	**304**
8	**New 3-Phase LT line (WASP)**	16	18	18	20	22	**96**
9	**New 3-Phase LT Line (ANT)**	38	39	42	45	47	**211**
10	**LT line Reconductoring (3Phase WASP)**	24	25	27	28	30	**134**
11	**LT line Reconductoring (3-Phase ANT)**	10	10	11	12	13	**57**
12	**11 KV Sectionalizers (manual)**	3	3	3	3	3	**15**
13	**11 KV Panels with Installation**	23	25	26	28	29	**131**
14	**Energy Meters 1-Phase & 3-Phase**	6	7	7	8	8	**36**
15	**PVC Cables 7/0.52, 7/0.83 & 19/0.83**	14	14	15	16	18	**78**
16	**11 KV 500 MCM XLPE Cable (85+20%) =102**	5	6	6	7	7	**30**
A	**Sub Total Cost**	1065	1134	1200	1271	1344	**6015**
B	**Installation Charges**	85	91	96	102	108	**481**
C	**Contract Work**	185	197	209	221	233	**1044**
D=A+B+C	Total Cost	1335	1421	1505	1594	1685	**7540**
E=1.5% ON D	1.5% Vetting Charges on Total Cost	20	21	23	24	25	**113**
F=13% ON C	**13% SRB Tax on Contract Work**	24	26	27	29	30	**136**
G	**T&P**	2	2	2	2	2	**10**

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H=D+E+F+G	**Gross Total Cost**	1381	1470	1557	1648	1742	**7799**
I	**Consultancy cost @ 1.2%** (Average)	17	18	19	20	21	**94**
J	**Audit & Inspection Charges** @3%	41	44	47	49	52	**234**
K	**less Retirement Cost**	138	147	156	165	174	**779**
L=(H:K)	**Net Capital Cost**	1301	1385	1466	1553	1641	**7347**
L=(H:K)	**Escalated Cost @ 6.5%**	1386	1475	1562	1654	1748	**7824**

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Annex-D

HSE Objectives/Targets

Definition

1. **Goal:** Goals are general guidelines that explain what needs to be achieved by the Licensee with management intervention, providing resources and support. Goals should be specific, measurable, attainable, realistic, and time-sensitive (SMART).

2. **Objective/Target:** Objectives/Targets define strategies or implementation steps to attain the identified goals. They are more specific and outline the "who, what, when, where, and how" of reaching the goals.

3. **KPI:** A Key Performance Indicator is a measurable value that demonstrates how effectively Licensee is achieving goals and objectives. Key Performance Indicators (KPIs) in numbers for the goals and objectives to review and monitor its status for effective implementation.

HSE Objectives/Targets

DISCO's HSE Goal: Improve public and employee safety to achieve zero fatality incidents.

<table>
<tr><th>No.</th><th>Objective/Target</th><th>Key Performance Indicator</th></tr>
<tr><td rowspan="3">1.</td><td rowspan="3">Provide and maintain earthing/grounding to all HT/LT infrastructures, apparatus, and poles, along with stay wire. Earthing/grounding resistance shall be as per Distribution Design Code or manufacturer's instruction. In the absence of grounding instruction, the earthing resistance for HT/LT structures/ poles shall be not more than 5 Ohms and Distribution transformer shall be not more than 2.5 Ohms to determine the integrity of the grounding path to ensure protection from shock hazards. The earthing resistance for Grid Station/ Substation/ Switchyard equipment shall not be more than 2 Ohms. Verify integrity of fixed earthing/grounding by continuity and resistance measurement tests. In general, this cycle can range from 6 months to 3 years, depending on conditions and criticality. Wet locations testing should be 12 months and critical care shall be 6 months. Provide name</td><td>Earthing/grounding of infrastructures, apparatus, and poles, along with stay wire until June 30, 2022.</td></tr>
<tr><td>Periodic verification of integrity of earthing/ grounding.</td></tr>
<tr><td>On the basis of periodic continuity and resistance measurement tests, continually repair/rectify deteriorated earthing/grounding system within one month.</td></tr>
</table>

No.	Objective/Target	Key Performance Indicator
	plate/ tag to all structures/ poles/ equipment's with numbers for tracking of earthing/ grounding testing record, etc. Original record of testing with structures/ poles/ equipment's numbers shall be retained and preserved by licensee for three (03) years.	
2.	Replace all substandard RORA fuses in each subdivision with standard fuses in accordance with approved design such as a high rupturing capacity fuse of standard size and rating. Install only standard fuses every time.	Installation of standard fuses until June 30, 2022.
3.	Conduct annual survey in each subdivision to identify hazardous points, deteriorated systems, hardware and conductors. Implement rehabilitation program to rectify/replace hazardous points, deteriorated systems, hardware and conductors.	Survey report of each subdivision until the end of each fiscal year.
		On the basis of survey report, rectify/replace hazardous points, deteriorated systems, hardware and conductors within three months.
4.	Conduct survey in each subdivision to identify conductors in narrower/ congested areas having less clearance from houses/ buildings. Re-organize/re-position or Install insulated conductors (aerial bundled cables/conductors) to achieve minimum horizontal and vertical safe clearance.	Survey report of each subdivision until the end of each fiscal year.
		On the basis of survey report, re-organize/re-position or install insulated conductors within three months.
5.	Conduct survey to identify substandard/obsolete electromechanical relays/protections for abnormal conditions (short-circuits, overloading, ground fault, broken conductor features, etc.) whose failure can result in serious injuries. Replace substandard/obsolete electromechanical relays/protections with high speed digital/programmable relays/protections.	Survey report until the end of each fiscal year.
		On the basis of survey report, replace relays/ protections within three months.
6.	Conduct a need assessment for authorized workshops. Establish authorized workshops with repair facilities having	Workshop Need Assessment Report until June 30, 2022.

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No.	Objective/Target	Key Performance Indicator
	testing facilities for transformer reliability and integrity to ensure fitness.	Established authorized workshops as per report until Dec 31, 2022.
7.	Arrange and maintain stock of following special PPE at each subdivision and Grid station for authorized employees/ contractors while working or handling energized systems against approved "Permit to Work" under the continuous direction and supervision of the job in-charge. 1. Full Face Shield (polycarbonate or similar non-melting type) 2. Insulated gloves with sleeves rated for the voltage involved. 3. Arc Flash Kit for Arc Flash Protection such as Category 4 Arc Flash Resistant Suite, Arc Flash Hood Arc-rated Gloves and Arc-rated Fall Protection while working at high voltages (more than 420 V). Arrange training at each subdivision and Grid station for these special PPE for authorized employees/ contractors. Ensure use of these special PPE in each subdivisions.	Maintain stock of full face shield, insulated gloves with sleeves and arc flash kit until June 30, 2022. Training by supplier until June 30, 2022. Use of full face shield, insulated gloves with sleeves and arc flash kit at each subdivision and Grid station until June 30, 2022.
8.	Arrange and maintain stock of Full Body Harness with front work positioning belt (positioning lanyard) along with double lanyard for 100% tie at each subdivision and Grid station for authorized employees/ contractors while working on height more than 6 feet/1.8 meter above the ground or impact level. Full Body Harness with front work positioning belt (positioning lanyard) along with double lanyard for 100% tie shall be used at heights more than 6 feet/1.8 meter above the ground when climbing poles, towers and structures including working through mobile elevated aerial platform, man-baskets,	Maintain stock of Full Body Harness with front work positioning belt (positioning lanyard) along with double lanyard until June 30, 2022. Training by supplier until June 30, 2022. Use of Full Body Harness at each subdivision and Grid station until June 30, 2022.

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No.	Objective/Target	Key Performance Indicator
	man-lift or bucket mounted vehicles. Full Body Harness with front work positioning belt is to allow an employee to be supported on an elevated vertical surface such as a wall or pole and to work with both hands free. Use of a body belt alone for fall arrest is prohibited. Full Body Harness with PVC coated hardware should be used when working in an explosive or electrically conductive environment. Anchor the safety harness lanyard on a rigged anchorage point at height, having a fall clearance safety factor of three (03) feet from impact level or ground level. Arrange training at each subdivision and Grid station for these special PPE for authorized employees/ contractors. Ensure use of these special PPE in each subdivision and Grid station.	

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