National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/ADG(Trf)/TRF-559/MEPCO-2021/ 8734-8736
June 2, 2022

Subject: **DETERMINATION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY MULTAN ELECTRIC POWER COMPANY LTD. (MEPCO) FOR DETERMINATION OF DISTRIBUTION TARIFF UNDER MYT REGIME FOR THE FY 2020-21 TO FY 2024-25 [CASE # NEPRA/TRF-559/MEPCO-2021]**

Dear Sir,

Please find enclosed herewith subject Determination of the Authority along with Annex-A and additional note of Engr. Rafique Ahmed Shaikh, Member NEPRA (84 Pages) in Case No. NEPRA/TRF-559/MEPCO-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-559/MEPCO-2021

DETERMINATION OF DISTRIBUTION TARIFF PETITION
FOR
MULTAN ELECTRIC POWER COMPANY LIMITED (MEPCO)
FOR THE FY 2020-21 – FY 2024-25
UNDER
NEPRA TARIFF (STANDARDS AND PROCEDURE) RULES - 1998

Islamabad

, 2022

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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
MEPCO	Multan 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Math

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

CASE NO. NEPRA/TRF-559/MEPCO-2021

PETITIONER

MEPCO Headquarters, Khanewal Road, Multan.

INTERVENER

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

COMMENTATOR

NIL

REPRESENTATION

Chief Executive Officer along-with its Technical & Financial Team

NEPRA AUTHORITY

1. <u>Background</u>

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 23E of the Act, provides NEPRA with the powers to grant Electric Power Supply License for the supply of electric power. Section 23E(1), however, provides that 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, Multan Electric Power Company Limited (MEPCO), 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, in its Petition has requested the following distribution cost for the five years period;

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Description	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Investment	Mln Rs.	18,140	23,714	25,412	24,305	24,780
Units Received	GWh	19,695	20,697	21,110	21,533	21,964
Units Lost	GWh	2,955	3,053	3,082	3,122	3,163
% of T&D Losses	%	15.00%	14.75%	14.60%	14.50%	14.40%
Units Delivered	GWh	16,741	17,644	18,028	18,411	18,801
O&M	Mln Rs.	21,922	25,767	29,220	32,865	36,935
Depreciation	Mln Rs.	5,695	6,388	7,155	7,945	8,749
Return on Regulatory Asset Base (RoRB)	Mln Rs.	7,196	8,305	9,748	11,130	12,404
Other Income	Mln Rs.	(5,248)	(5,438)	(5,877)	(6,310)	(6,743)
Distribution Margin	**Mln Rs.**	**29,564**	**35,021**	**40,246**	**45,629**	**51,345**
Prior Year Adjustment	Mln Rs.	58,338				
Requested Revenue	**Mln Rs.**	**87,903**	**35,021**	**40,246**	**45,629**	**51,345**
Net Average Sale Rate	**Rs./kWh**	**5.25**	**1.98**	**2.23**	**2.48**	**2.73**

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. However, considering the fact that the distribution license of the Petitioner is valid only till April 2022, the Authority decided to deliberate the term of the MYT period as a separate issue during the hearing. Since the impact of any such adjustments has to be made part of the consumer end tariff, therefore, the Authority, in 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 scheduled on August 03, 2021, for which notice of admission / hearing along-with the title and brief description of the petition was published in newspapers on July 14, 2021 and also uploaded on NEPRA website; Individual notices were also issued to stakeholders/ interested parties.

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, considering the fact that distribution license is valid till April 2022?

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 projected O&M, including creation of new offices along-with additional hiring is justified?

v. Whether the requested Depreciation, Other Income and RoRB based on requested WACC is justified?

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

vii. What should be the adjustment mechanisms during the MYT control period? Whether

NEPRA AUTHORITY

there should any efficiency factor (X), Z factor for force majeure events & K Factor for Repair & Maintenance expenses?

viii. Whether there should be any bifurcation of O&M on the basis of controllable and uncontrollable factors?

ix. Whether the requested Prior Years Adjustment is justified?

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

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

xii. Whether MEPCO fully utilized the investments allowed previously in FY 2018-19 and FY 2019-20? MEPCO is required to submit detailed report showing status of each project.

xiii. Whether the indicated Capital Cost of Rs.82,921 Million for proposed projects for next five years under optimally achievable case is justified? MEPCO is required to submit year wise rationale in respect of improvement in HT/LT ratios and average length per 11 kV feeders.

xiv. Whether the indicated Capital Cost of Rs. 113,123 Million for proposed projects for next five years under best case scenario is justified?

xv. Whether the claimed savings of 984.5 GWh and 1365.6 GWh through loss reduction plans as highlighted in Optimally Achievable Case and Best Case respectively are justifiable?

xvi. What are the basis being adopted by MEPCO for assessment of Demand and Energy Forecasts in next five (05) years?

xvii. Whether MEPCO is currently facing network constraints and overloading? If yes, MEPCO is required to submit detailed analysis by identifying the grey areas which caused congestions in its transmission and distribution system. MEPCO is also required to submit load shedding policy in high AT&C loss areas.

xviii. Whether MEPCO has prepared schemes to cater for future demand and removal of system overloading/constraints and provided a detailed report in this regard as per requirement under NEPRA Guidelines for determination of Consumer end Tariff (Methodology and Process) 2015.

xix. Whether MEPCO 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.

xx. Whether MEPCO established a corporate desk to facilitate its corporate clients as per deadline i.e. 31.03.2021 given by NEPRA in the tariff determinations for FY 2018-19 and FY 2019-2020?

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

xxii. What is the load shedding criteria of MEPCO to meet the load demand?

xxiii. What are the system constraints due to which MEPCO draws less power as compared

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

to the allocated quota?

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

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

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

xxvii. Whether TOU meters installed to all the eligible connections? Submit details in this regard and also share Progress regarding the installation of AMI meters at the consumer end.

xxviii. Progress of installation of ABC cable to control theft of electricity, which is the major source of the increase in transmission and distribution losses.

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

4. <u>Filing Of Objections/ Comments</u>

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 Nayatel. A brief of the concerns raised in the IR is as under;

4.2. 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.

4.3. The Authority during the tariff determinations of 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 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".

NEPRA AUTHORITY

4.4. In view thereof, in the instant tariff Petition, the subject matter has been discussed as a separate issue in the Supply of Power Tariff determination of the Petitioner.

5. 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;

6. <u>Whether the request of Petitioner to allow MYT for a period of five years is justified, considering the fact that distribution license is valid till April 2022?</u>

6.1. 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, however, the Distribution license of the Petitioner is valid only till April 2022. In view thereof, the Authority decided to deliberate the matter during the hearing.

6.2. The Petitioner during the hearing on the issue submitted that it is a going concern, having natural monopoly over Distribution system in its service jurisdiction and will continue its operations in the future. The Company will file a request for renewal of its license within due course of time. It was also submitted that determination of Multiyear tariff for a period of five years is justified in anticipation of renewal of distribution license by the Authority after April, 2022.

6.3. The Authority, considering the fact that the Petitioner has already filed request for renewal of its distribution license, which is under process with the Authority, 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 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 Distribution 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.

7. <u>Directions given to the Petitioner in its previous Tariff determination</u>

7.1. 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;

NEPRA AUTHORITY

8. <u>To spend at least 20% of the village electrification funds for improvement / up-gradation of the grid without which it should not undertake any village electrification resulting in overloading of its system. The village electrification would only be undertaken without augmentation of the grid, if it already has spare MVAs.</u>

8.1. The Authority in the MYT determination of MEPCO for the FY 2015-16 observed that the impact of all the investments may get diluted, if the Petitioner carry out village electrification imprudently as imprudent village electrification may result in overloading and increasing the T&D losses.

8.2. In the past, the village electrification was restricted to poles, lines and distribution transformers only. Its impact on the existing grid or strengthening of the grid due to the additional load in the form of village electrification was totally ignored. In view thereof, the Authority directed the Petitioner to spend at least 20% of the village electrification funds for improvement / up-gradation of the grid. The Petitioner was further directed not to undertake any village electrification which would result in overloading of its system and the village electrification would only be undertaken without augmentation of the grid, if it already has spare MVAs.

8.3. PEPCO vide letter dated July 01, 2020, directed all the DISCOs to deduct 20% from the SAP funds. This action caused hue and cry amongst the different stakeholders and a meeting of Cabinet was convened on July 07, 2020, wherein it was decided that the practice of deducting 20% from SAP funds should be discontinued.

8.4. The same decision was communicated to NEPRA, which was subsequently discussed with the honorable Federal Minister of Energy with respect to its implications to the Sector. The Federal Minister assured that wherever grid augmentation is involved, the Ministry of Energy (Power Division) will ensure these funds to DISCOs to beef up the grid facilities.

8.5. The Authority keeping in view the decision of Cabinet dated July 07, 2020 and subsequent assurance by the Honorable Federal Minister of Energy, 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.

8.6. The Petitioner during the hearing submitted that directions in this regard has been issued to all relevant offices under MEPCO and the direction of the Authority is being implemented.

9. <u>To immediately ensure that consumer's deposits are not utilized for any other purpose and the same is reflected in the Audited accounts for the FY 2020-21 & onward.</u>

10. <u>To immediately restrain from unlawful utilization of receipts against deposit works and security deposits immediately, and the same is reflected in the Audited accounts for the FY 2020-21 & onward.</u>

11. <u>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.</u>

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

NATIONAL POWER REGULATORY AUTHORITY NEPRA AUTHORITY 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.

11.2. Similarly for the FY 2018-19, 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, after excluding therefrom cash/ bank balances and amount of stores & Spares available with the Petitioner as on 30-06-2019 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 during the hearing submitted that consumer deposits are used for the purpose for which these are received by MEPCO. These are reflected in the audited accounts of the company every year in line with IAS & Companies Act, 2017. The Petitioner also stated that there is no unlawful utilization of receipts against Deposit Works and Security Deposits on the part of MEPCO. These receipts are being reflected in the audited accounts of the company every year in line with the applicable rules. It was also mentioned that MEPCO is already giving disclosures as required under the IAS applicable in Pakistan, however, the specific disclosures will be given in the audited accounts of FY 2020-21.

11.5. The Authority from the account of the Petitioner for the FY 2019-20, has again observed that the Petitioner as per its audited 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.

11.6. 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 the 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.

11.7. The Authority has also decided to take up this matter separately with the Petitioner through M&E/Legal Department, however, at the same again directs the Petitioner to ensure that in future consumer's deposits are not utilized for any other purpose. The Petitioner is also directed to restrain from unlawful utilization of receipts against deposit works and security deposits, failing which, the proceedings under the relevant law may be initiated against the Petitioner. The Petitioner is again directed to give clear disclosures in its Financial

NATIONAL POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Statements with respect to the consumer financed spares and stores, work in progress and cash & bank balance.

12. **Ensure proper tagging of assets so that cost incurred are properly classified as per their nature and report be submitted to the Authority by June 30, 2021**

12.1. The Authority in the previous tariff determinations of the Petitioner, observed that proper tagging of the assets is of utmost importance in order to enable the Petitioner to properly classify its cost in terms of capital or expense and accordingly, directed the Petitioner to ensure proper tagging of assets so that cost incurred are properly classified as per their nature and report be submitted to the Authority by June 30, 2021.

12.2. The Petitioner during the hearing submitted that MEPCO is the largest DISCO in Pakistan with 09 Op. Circles, 02 GSO Circles, 02 M&T Circles and 38 Op. Divisions. The costs incurred for the rehabilitation, expansion and allied works are properly classified as per their nature into different categories of assets. The tagging of assets is a lengthy activity and report in this regard shall be submitted upon completing of the same.

12.3. The Authority observed that it has been directing the Petitioner to ensure proper tagging of assets in order to enable the Petitioner to properly classify its cost in terms of capital or expense since the FY 2016-17 onward. However, despite lapse of sufficient time, the Petitioner has not been able to complete the task. In view thereof, the Authority has decided to take up this matter separately with the Petitioner through M&E/Legal Department, however, at the same again directs the Petitioner to ensure proper tagging of its assets and submit compliance report in the matter.

13. **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.**

13.1. The Petitioner during the hearing submitted that it has suffered a gap of Rs.23,531 million in the actual provisions for post-retirement benefits as per audited Financial Statements and the amount allowed by NEPRA based on the actual payments for the FY 2015-16 till FY 2019-20, as given below:

Mln. Rs.

Year	Actual Provisions	Allowed by NEPRA	Gap
2015-16	7,327	2,134	5,193
2016-17	4,930	2,461	2,469
2017-18	6,550	2,707	3,843
2018-19	8,679	4,232	4,447
2019-20	12,233	4,655	7,578
Total	39,720	16,189	23,531

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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

14. 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.

14.1. The Authority during the tariff determination of the Petitioner for the FY 2019-20, directed the Petitioner to provide the required 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 2015-16 to FY 2019-20.

14.2. The Petitioner during the hearing submitted the following detail in this regard;

Rs. in Mln

FY	LPS recovered	Supplemental Charges
2014-15	1,335	-
2015-16	825	825
2016-17	1,841	-
2017-18	2,087	1,642
2018-19	2,171	2,171
2019-20	1,848	1,848
Total	10,107	6,486

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

14.3. The matter has been deliberated further under the issue of PYA.

15. 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?

15.1. 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'.

15.2. 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.

15.3. The Petitioner during the hearing submitted that its financial statements for the FY 2019-20 were finalized before the receipt of this direction. However, the segment reporting will be made in the next year Financial Statements.

15.4. The Petitioner is directed 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.

16. To provide details of PEPCO Management Fees, if any, claimed previously so that same could be adjusted in the subsequent tariff determinations.

16.1. 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.

16.2. 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.

16.3. The Petitioner during the hearing requested the Authority to allow Rs.610 million as PEPCO management fee as part of its PYA request.

16.4. The matter has been discussed in detail under the PYA issue of the Petitioner.

17. <u>Whether the projected energy purchases are justified?</u>

17.1. The Petitioner regarding total purchase has submitted it starts at 19,695 GWh which is assumed to grow at a CAGR of 2.30% and reaches 21,964 GWh by FY 25. The PPP for the five year control period has been taken as projected by CPPA-G. The Petitioner during the hearing submitted that the energy Purchases are projected after taking into account the trend of last two years and the impact of COVID-19 Pandemic i.e. 2018-19 and 2019-20, which was 1.90 and (0.20%) respectively. The Petitioner has projected the following energy purchases and units sales as under;

		Test Year	Y 1	Y 2	Y 3	Y 4
Description	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Units Received	GWh	19,695	20,697	21,110	21,533	21,964
Units Lost	GWh	2,955	3,053	3,082	3,122	3,163
% of T&D Losses	%	15.00%	14.75%	14.60%	14.50%	14.40%
Units Delivered	GWh	16,741	17,644	18,028	18,411	18,801

17.2. The Petitioner has projected total unit sales start at 16,741 GWh and are increased by the annual demand growth, determined by the number of new consumers and the change in consumption per consumer. The Compounded Average Growth Rate (CAGR) in sales for 2020-21 to 2024-25 is about 2.95%.

17.3. 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 MEPCO for the MYT control period.

18. <u>What are the basis used by the Petitioner for bifurcation of its costs into supply and distribution segments?</u>

18.1. The Petitioner on the issue submitted that Pursuant to NEPRA Act (Amended upto 2018) and the Authority directions, it is filing separate Tariff Petitions for Power Distribution Tariff and Power Supply Tariff. Since it is not maintaining separate books of accounts for the two businesses i.e. Distribution business & Power Supply Business, therefore it is assumed that;

- The accounting information of historic actual results relate to both businesses.

NEPRA AUTHORITY

- ✓ Segregation of data for Distribution of Electric Power Business is not made in books of accounts so far and single set of books of accounts are being kept for recording information pertaining to both businesses.
- ✓ The forecasted expenses relating to Distribution of Electric Power Business have been assessed on the basis of available data in separate A/c heads (where possible) in combination with the possible bifurcation of the costs between the two businesses.
- ✓ The expenses relating to Revenue offices, Meter Reading Services, Bill Distribution Services, Collection charges, Commercial Department, MIS (Management Information System) and Market implementation and Regulatory affair department (MIRAD) belong to Power supply tariff. The creation of MIRAD has been recommended by the Ministry of Energy (MoE) and adopted by MEPCO to implement Competitive Trading Bilateral Contract Market (CTBCM) model duly approved/ determined by the Authority. MIRAD will deal with all matters and other regulatory affairs regarding CTBCM.
- ✓ All existing Fixed Assets go to Distribution Business.
- ✓ CPPA-G issues Power Purchase Invoices directly to the Power Supply Business which is responsible for all the payments related to Power Purchase Cost.
- ✓ Power Supply business will make payment of Revenue Requirement of the Distribution Business at the rate determined by the Regulator (NEPRA), the same rate will be charged for wheeling of energy by other generator, Bulk Power Consumers (BPCs) etc.
- ✓ The recovery of outstanding balances of NTDCL, CPPA-G and the payments to NTDCL, CPPA-G and the Distribution tariff is the responsibility of the Power Supply Business.
- ✓ Bad debts and provisions against bad debts relate to Power Supply Business.
- ✓ The costs occurring against standby arrangements of Supply business are a sunk cost for MEPCO which do not depend upon the quantum of the business.
- ✓ MEPCO is a "Supplier of the last resort" or "Default Supplier" which means that MEPCO is to keep and maintain Power Supply Business setup to act as Power Supplier in any untoward situation.
- ✓ The provision for employee's Post retirement benefits has been apportioned in the ratio of Salary, wages & Benefits assigned to the respective businesses since FY 2018-19 onwards.
- ✓ All equity, previous accumulated losses and Prior Year Adjustments (PYA) upto FY 2017-18 relates to Distribution tariff.
- All arrears of recovery from consumers for the previous periods belong to Distribution tariff but Power Supply Business is responsible for its recovery.
- All previous long term loans and debt servicing is the responsibility of the Power Distribution Business.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

- ✓ The Regulator has not provided any guidelines regarding the Power Supplier's Margin (PSM), therefore, it has been assumed as 1.5% of the Power Purchase Cost of Power Supply Business.
- ✓ All Transmission and Distribution (T&D)Losses relate to Distribution of Electric Power Business, however, MEPCO has some reservations on the issue especially losses due to pilferage of electricity after the Distribution of Electric Power Business which may lead the Business to certain exposures/risks .
- ✓ The claims and subsequent receipts of all types of Subsidies including Tariff Differential Subsidy (TDS), Industrial Support Package (ISP), Zero Rated Industrial Rebate (ZRIR) etc. is the responsibility of the Power Supply Business.
- ✓ The receivable from associated companies on different accounts (e.g. free supply etc.) will be dealt by the Power Supply Business.
- ✓ The whole wire business from 132 kV to the consumer Meter is owned and maintained by the Distribution of Electric Power Business. Therefore any investment for expansion, rehabilitation etc. of the system is also come in the purview of the said business.
- ✓ The Late Payment Surcharges form consumers and Supplemental Charges on account of delayed/Late payments to Power generators relate to Power Supply Business and these two will knock off each other as per decision /directions of NEPRA.
- ✓ Any other issue not mentioned above shall be dealt by that time in the order of their relevance and merit for both businesses.

18.2. The Petitioner during the hearing submitted the following regarding bifurcation into supply and distribution segments;

Costs of Departments assumed under Supply of Power Business	Costs of Departments assumed under Distribution of Power Business
a. Commercial Directorate	All the existing Departments/ Tasks excluding the Power Supply Business.
b. MIS Directorate	Finance & Human Resource Departments work for both the businesses.
c. Revenue Offices	
d. M&T Offices	
e. Meter Reading	
f. Bill Distribution	
g. Bill Collection	
h. MIRAD	

18.3. 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.

18.4. The Authority in the determination of MEPCO for the FY 2019-20 decided the following;

"The Au/thority 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."

18.5. 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.

19. <u>Whether the projected O&M, including creation of new offices along-with additional hiring is justified?</u>

20. <u>What should be the adjustment mechanisms during the MYT control period? Whether there should any efficiency factor (X), Z factor for force majeure events & K Factor for Repair & Maintenance expenses?</u>

21. <u>Whether there should be any bifurcation of O&M on the basis of controllable and uncontrollable factors?</u>

21.1. The Petitioner in the matter submitted that the base year O&M is set at Rs.1.30/kWh for the first year of the tariff that is subject to adjustment with actual results. The Petitioner has provided the following final summary of the forecasted O&M Expenses for 2020-21 to 2024-25 during hearing of the instant Petition;

Mln. Rs.

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-24
Salaries, Wages & Benefits	8,449	10,307	12,412	14,518	16,643
Replacement Hiring	253	720	484	390	358
Hiring against New Offices	121	251	340	345	524
Retirement Benefits	7,252	7,977	8,775	9,652	10,618
Total Employee Cost	16,075	19,256	22,011	24,906	28,143
PM Assistance Package	605	586	569	552	535
Repair & Maintenance	2,551	2,859	3,201	3,552	3,910
Other O&M Cost	2,683	3,067	3,439	3,856	4,347
TOTAL (O&M)	21,914	25,767	29,220	32,865	36,935
Increase/(decrease)	-0.10%	18%	13%	12%	12%

21.2. It has also been submitted that increase in Pay & Allowances is attributable to the annual increment, impact of promotions and up-gradations during the tariff control period.

22. <u>Replacement Hiring:</u>

22.1. The Petitioner has requested Replacement hiring cost by submitting that it has planned for induction of the following number of employees during tariff control period against existing yard stick.

New induction against existing Yardstick.

	FY 21	FY 22	FY 23	FY 24	FY 25
No. of Employees	949	2,146	1,429	1,095	947
Projected Annual Cost (Mil. Rs.)	310	882	592	478	438
Proj.Cost-Wire Business (Mil. Rs.)	253	720	484	390	358
Proj.Cost-Supply Business (Mil. Rs.)	57	162	108	88	80

22.2. The Petitioner while justifying its request has stated that it is a staff deficient by 20.46% and at present working at working strength of 16,066 No. of employees against the sanctioned strength of 19,780 in different cadres. Therefore, the company has planned for induction of above stated number of employees during the tariff control period.

22.3. The Petitioner provided the following manpower statistics as of February 2021 highlighting the shortage of staff in the company:

Man power statistics (As of February 2021)

Sr. No	Description	Sanctioned	Actual Working Strength				Deficiency	%age
			Reg.	Contract	Daily wages	Total		
Officers (BPS-17 and above)								
a.	Technical	419	360	-	-	360	59	14.08
b.	Non-Technical	138	111	-	-	111	27	19.57
Sub-Total		557	471	-	-	471	86	15.44
Officials (BPS-01 to 16)								
a.	Technical	11,474	9,139	193	205	9,537	1,937	16.88
b.	Non-Technical	7,169	5,076	98	98	5,272	1,897	26.46
c.	Clerical	580	436	15	3	454	126	21.72
Sub-Total		19,223	14,651	306	306	15,263	3,960	20.60
Total Manpower		19,780	15,122	306	306	16,734	4,046	20.46

NEPRA AUTHORITY

22.4. The Petitioner submitted that it is evident from the tables above, that it has been requesting NEPRA for allowing cost of hiring staff at positions where it is under-staffed. The deficiency in staff is clearly great importance at the officer level as per approved yardstick which stands at 15.44%. The deficiency and the associated financial impact have successively increased over the years, as the Company's consumer base is continually expanding. The consumer base of the company is expected to be increased at average rate of 6.1% or 0.450 Million consumers per year.

22.5. The Petitioner stated that in order to meet the technical and operational targets, it is proposed that 949 vacancies are to be filled by the company during FY2020-21. This recruitment will increase the base year O&M by Rs.310 Million. The projected cost of Rs.253 million & Rs.57 million assigned to the Wire Business & Power Supply Business respectively. In the same manner Rs.882 million, Rs.592 million, Rs.478 million & Rs.438 million have been projected for recruitment against vacant posts under existing yardstick of MEPCO during FY 2021-22, 2022-23, 2023-24 & 2024-25 respectively.

23. **Creation of new office along with additional hiring including MIRAD**

23.1. In addition, the Petitioner has also requested creation of new office along with additional hiring for newly created offices. The Petitioner has planned for induction of the following number of employees during tariff control period against human resource requirement of newly created offices.

New induction against creation of new offices

	FY 21	FY 22	FY 23	FY 24	FY 25
No. of Employees	423	537	611	685	987
Projected Annual Cost (Mil. Rs.)	148	307	416	422	642
Proj.Cost-Wire Business (Mil. Rs.)	121	251	340	345	524
Proj.Cost-Supply Business (Mil. Rs.)	27	56	76	77	118

23.2. The Petitioner has also mentioned that it has to create a new department "Market Implementation and Regulatory Affair Department (MIRAD)" to work under framework of Competitive Trading Bilateral Contract Market (CTBCM). Initially the BoD MEPCO has approved 20 new key positions in phase-I which includes 09 positions through relocation/ internal transfer from existing yardstick & 11 new positions to be hired from the market. In phase-I, an estimated capital expenditure of Rs.54.330 Million and O&M expenses of Rs.48.519 Million per annum has been projected. However, in 2nd phase 55 remaining posts (allied Staff) with an estimated annual financial impact of Rs.39.124 Million will be hired for smooth running of MIRAD. Further, it is proposed to create 01 new each Operation circle, M&T circle, RRE/Construction Division, Regional Store, Construction Sub-Division, MIRAD and 05 new Operation Divisions, 36 new Operation Sub Divisions and 08 new/upgraded Grid Station offices. For the above purpose creation and induction of 3,243 new posts have been proposed with an annual additional financial impact of Rs.1,813 million, starting from the year of induction accordingly.

23.3. The Petitioner regarding Basic pay, Allowances and Employee benefits submitted that pay & allowances for FY 2020-21 have been estimated to be Rs.10,811 Million, out of which Rs.8,823 Million & Rs.1,978 Million have been projected for Wire Business & Power Supply Business respectively. Pay & allowances and employee benefits including retirement benefits constitute a major portion of the Company's O&M expenses.

Basic Pay, Allowance & Employee Benefits

	FY 21	FY 22	FY 23	FY 24	FY 25
Salaries, Wages & Benefits	10,801	13,806	16,202	18,672	21,453
Proj.Cost-Wire Business (Mil. Rs.)	8,823	11,278	13,235	15,253	17,525
Proj.Cost-Supply Business (Mil. Rs.)	1,978	2,528	2,967	3,419	3,928

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

24. <u>Staff Retirement Benefits</u>

24.1. Regarding Staff Retirement Benefits, the Petitioner stated that NEPRA in its determination for FY 2019-20 had allowed only the amount of actual payments made to pensioners rather than the total amount of provision against Post Retirement Benefits under IAS-19. MEPCO filed Motion for Leave to Review against the tariff determination for FY 2018-19 & FY 2019-20. In the said review motion, MEPCO requested to allow provisions for post-retirement benefits amounting to Rs.50,650 million for FY 2015-16 to FY 2019-20 against Distribution tariff. It included Rs.21,303 Million in respect of less determined provisions for Post Retirement Benefits and Rs.29,347 Million for the amount charged to Other comprehensive income in respect of Distribution of Electric Power Business.

24.2. The Petitioner further submitted that currently it has pension obligations of PKR 80,583 million and is unable to transfer this amount in a separate fund as the Company does not have sufficient cash; therefore, it is proposed that Provisions for retirement benefits may be allowed in actual in addition to the Prior Year Adjustment of less determined Provisions during FY 2015-16 to FY 2019-20.

24.3. Keeping in view the above, the gross Post Retirement Benefits have been projected for 2020-21 on the basis of last actuarial Valuation Report with estimated average 10% increase for FY 2021-22 till FY 2024-25, subject to adjustment on actual basis;

Provision For Staff Retirement Benefits	FY 21	FY 22	FY 23	FY 24	FY 25
Provision for Retirement Benefits	8,877	9,765	10,742	11,816	12,998
Proj.Cost-Wire Business (Mil. Rs.)	7,252	7,977	8,775	9,652	10,618
Proj.Cost-Supply Business (Mil. Rs.)	1,625	1,788	1,967	2,163	2,380

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

25. Repair & Maintenance

25.1. The Petitioner regarding Repair & Maintenance has submitted that the Regulator allowed Rs.1,384 million against repair & maintenance for FY 2019-20 against actual expenditure of Rs.1,729 million although the company elaborated each item of Repair & Maintenance. It is reiterated that repair & maintenance cost shall enable the company to ensure smooth and efficient functioning of the transmission and distribution system in operation. Moreover, it shall contribute to the benefit of the consumers at large by reducing power outages, system breakdowns and better service quality in addition to contribution in reduction of the T&D Losses. Foregoing in view, NEPRA is requested to allow full amount of the repair & maintenance projected for tariff control period in this MYT. The repair and maintenance is mainly for standalone items necessary for keeping the system in operation with no additional benefits.

25.2. The Petitioner to justify its claim has submitted that the adherence to service standards and improvement of customer services is only possible through continuous repair and maintenance of distribution network etc. Timely repair and maintenance is vital to continuous and reliable supply of electricity. Delays in scheduled repairs ultimately result in system breakdowns which in turn not only has an impact on the end-consumer, including adversely affecting industrial and agricultural production, but also damages the distribution network which then requires further investments. Furthermore, non-undertaking of routine repairs results in accumulation of faults with the utility which requires significant investments, a few years down the line against an issue that could have been dealt earlier at a significantly lower cost. Repairs are thus an important aspect in controlling the increase in end-user tariff and necessary, if distribution loss targets are to be achieved.

25.3. Historically, variance between requested and allowed repair & maintenance costs has been over 20%. Such a situation, in view of the significant decrease in repair requirements of the Company's infrastructure shall have a drastic impact on the sustainability of the existing distribution system which will ultimately affect the wellbeing of the consumers. The Petitioner accordingly requested the following R&M cost under the MYT period;

DESCRIPTION	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Proj.	Proj.	Proj.	Proj.	Proj.
R&M Office Buildings	22.8	20.5	22.5	24.8	27.2
R&M G/Station & Line	105.8	121.7	139.9	160.9	185
R&M Distribution Transformers	840.6	966.7	1,111.70	1,243.50	1365
Service Drop	539.7	620.6	713.7	820.8	897.9
Meter	979.7	1060.4	1,137.20	1,218.80	1,343.20
R&M General Plant	37.5	41.3	45.4	49.9	54.9
R&M Residential Buildings	25.8	27.5	30.3	33.3	36.6
TOTAL	2,551	2,859	3,201	3,552	3,910

26. <u>Other O&M Expenses</u>

26.1. The Petitioner has provided the following break-up of its Other O&M expenses;

DESCRIPTION	2020-21	2021-22	2022-23	2023-24	2024-25
	Proj.	Proj.	Proj.	Proj.	Proj.
Travelling	830	972	1,093	1,211	1,344
Transportation	507	594	697	826	1,001
Other O&M Cost	1,346	1,501	1,649	1,819	2,002
TOTAL	2,683	3,067	3,439	3,856	4,347
Increase/(decrease)	11%	14%	12%	12%	13%

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

27. <u>Adjustment Mechanism – X Factor, Z Factor and K-Factor</u>

27.1. The Petitioner has bifurcated its O&M costs into controllable and uncontrollable costs. As per the Petitioner, the uncontrollable costs have been requested to be trued-up at the end of every year and the controllable costs should be indexed every year to the following factor (CPI – X + Z).

27.2. The Petitioner submitted that according to the MYT guidelines a CPI minus X Multi-Year Tariff is being proposed as it will allow the Company to automatically apply indexations for inflation. For Operating Expenses the Petitioner has submitted that all other expenses are increased by CPI-X during the entire tariff control period except Repair & Maintenance which is based on "K" factor.

27.3. The Petitioner proposed that efficiency factor "X" as zero '0' for the Tariff Control Period on the premise that the implementation of CTBCM will further affect the cost effectiveness of the Company when most of the industrial and bulk power consumers will be leaving MEPCO and the Company will only be serving the low category domestic consumers.

27.4. The Petitioner has proposed that there shall be a provision for costs incurred as a result of force majeure events such as earthquakes, flooding, wind storms, thunder storms, acts of terrorism, etc. In the absence of a provision for such events and adjustments restricted strictly to the CPI-X factor, the Company will be unable to recoup the costs required to undertake the necessary repairs. Accordingly, it has been proposed that an additional Z factor should be included in the MYT to cover costs for such events. These costs shall be computed after the occurrence of such an event at which point the Company shall estimate the financial impact of such an event and request NEPRA's approval for inclusion in the subsequent year. As replacement of any equipment as result of such damage shall be covered through proposed investments to be approved by NEPRA, it is anticipated that major costs falling under Z factor will comprise repair & maintenance and incidental costs. In the event that insurance coverage is available at a reasonable cost, recoveries made under such an arrangement will not be incorporated in the tariff for the subsequent period.

27.5. With a view to allow the Company greater autonomy over its operations relating to network management, the Petitioner stated that repair & maintenance costs has been assumed as "K" factor @ 1.5% of gross Distribution Plant Equipment of gross fixed assets, which is consistent with the actual requirements due to vast & old distribution system.

28. Controllable and Uncontrollable cost

28.1. Regarding Segregation between "Controllable" and "Uncontrollable" cost, the Petitioner stated that the employee related costs (Salaries & Wages and Retirement Costs) are treated as uncontrollable to be passed through on actual basis in the Tariff. All other Costs are considered to be controllable and subject to adjustment with CPI only except Repair & Maintenance which is based on "K" factor. It further submitted that segregation of controllable and uncontrollable factors and their treatment in MYT is of vital importance. Non-segregation of these costs may force the Company to absorb some "uncontrollable costs" beyond its control, which are not fully recovered from its tariff resulting in financial losses to the Company. Therefore, any increase in uncontrollable costs be adjusted on an annual basis in the MYT tariff.

29. Prime Ministers Assistance Package

29.1. Regarding Prime Ministers Assistance Package, the Petitioner stated that it is allowed for families of employees who die in service issued vide DG (HR) PEPCO WAPDA House, Lahore Office Memorandum No. GM (HR)/HRD/A-332 /4050-75 dated: 04.11.2016. The MEPCO BOD in 134th meeting held on 20.03.2018 notified by Company Secretary MEPCO HQs Multan vide letter No. 24390-414 dated: 02.04.2018 accorded approval for adoption of said package w.e.f 04.11.2016 subject to condition that the company will prepare a new amended MEPCO policy duly vetted by Director (Legal) MEPCO HQs Multan ensuring that there will be no duplication of benefits and employees will not be deprived of any benefit which they are already availing. Office order for adoption of said package was issued vide No. 89-I/46059-81 dated: 24.04.2018. The said package involves different types of financial benefits (Lump Sump Grant, Pension, Accommodation, Education, Allotment of plot, employment, marriage grant, health, house building advance, Special Lump sump grant from Welfare fund & GPF Fund.) to the families of deceased employees who die in service.

NEPRA AUTHORITY

29.2. The Petitioner submitted that overall financial impact of adoption of said package fully is approx. Rs. 0.043 per unit. Most of the DISCOs including LESCO, IESCO, GEPCO, FESCO & HESCO have adopted this package (some fully & some partially) and there is a lot of pressure from the widows, legal heirs of the deceased employees for disbursement of their dues on this account. Not to speak of the pending court cases, Wafaqi Mohtasib cases and litigation on different forums. For the above purpose creation and induction of 3,243 new posts have been proposed with an annual additional financial impact of Rs. 1,813 (Million) starting from the year of induction accordingly.

29.3. 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;"*

29.4. 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.

29.5. 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.

29.6. 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 Audited accounts of the Petitioner for the FY 2019-20 as base year.

29.7. 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.

NATIONAL POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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

30. <u>Salaries, Wages and Other benefits (excluding post-retirement benefits)</u>

30.1. The Authority noted that head of Salaries, Wages and Other Benefits include employees Pay & Allowances and Post-retirement benefits and accounts for over 70% of the Petitioner's total O&M costs, excluding therefrom depreciation. 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 uncontrollable cost for XWDISCOs as long as they remain in public sector.

30.2. 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 Audited 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. This also addresses the concern of the Petitioner in terms of salaries & wages cost being uncontrollable.

30.3. The actual total cost reflected in the Audited accounts of the Petitioner for the FY 2019-20, under Salaries & Wages *(excluding postretirement benefits, discussed separately)* is Rs.9,151 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, the cost of Salaries & Wages *(excluding postretirement benefits, discussed separately)*, for both the Distribution and Supply Functions works out as Rs.10,008 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.

30.4. Since the Audited 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.8,175 million.

30.5. The assessed Salaries & Wages costs for the FY 2020-21 i.e. Rs.8,175 million, shall be considered as the reference cost for working out future Salaries & Wages expenses, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

31. <u>Additional/ Replacement Hiring</u>

31.1. Regarding cost of new recruitment, the Authority observed that Salaries & Wages cost for the FY 2019-20, as per the Audited 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.

32. <u>Creation of New Circle / Divisions / Sub-Divisions</u>

32.1. Regarding request of the Petitioner to create 01 new each Operation circle, M&T circle, RRE/Construction Division, Regional Store, Construction Sub-Division, MIRAD and 05 new Operation Divisions, 36 new Operation Sub Divisions and 08 new/upgraded Grid Station offices, with an annual additional financial impact of Rs.1,813 million, starting from the year of induction, the Authority understands that creation of new circles / divisions /sub divisions is a decision, specific under single year tariff regime, whereby each year its financial and qualitative impact may be evaluated/analyzed. Under multiyear tariff regime the instant decision becomes irrelevant as the existing state of affairs of the Petitioner is considered as benchmark for future efficiencies. Further, keeping in view the management changes and revamping of BoDs, the idea could be to get the benefit of technological advancements to improve efficiency with reduced reliance on more man power.

32.2. However, at the same time, the Authority also understands that managing higher number of consumers with minimum resources could only be possible through heavy investment in advance technologies and by applying out of box thinking, which generally is brought in by the private sector. Therefore, the Authority principally agrees with the request of the Petitioner to allow for creation of new circles /divisions / subdivisions. However, allowing upfront financial impact for creation of new circles, divisions and subdivisions, without having the progress reports in not in the interest of consumers.

32.3. The Authority considers that it will be in a position to adjudicate on the issue once the Petitioner provides details of the actual cost incurred in respect of creation of new circles, divisions and sub-divisions and substantiates the same with the quantified benefits achieved. Accordingly, the Authority has decided to carry out a mid-term review of the Petitioner's O&M cost to the extent of creation of new circles, divisions and sub-divisions only, as long as the Petitioner remains in the Public sector. The Authority will assess the cost incurred by the Petitioner regarding creation of new circles, divisions and sub-divisions in the midterm review on the principal of prudency, based on the following parameters.

- ✓ Reduce the duration of interruptions by reducing travelling time for repair and maintenance crews;
- ✓ Reduce the frequency of interruptions by improving the quality of line monitoring and maintenance;
- ✓ Reduce the extent of commercial losses by increasing the presence of field staff;
- ✓ Reduction in customer complaints;
- ✓ Better Customer Service in terms of reduction in complaint handling time;

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

- ✓ Improvement in technical system;
- ✓ Improvement in Power supply continuity;
- ✓ Reduction in Administrative and technical losses;
- ✓ Improvement in employees productivity;
- ✓ Improvement in Recoveries;
- ✓ Reduction in travelling and vehicle costs etc.

32.4. The Petitioner, however, while considering to create new circles/ divisions/ sub-divisions, must explore the technological advancements and outsourcing options rather than by simply relying upon any inherited yard stick.

33. **Hiring for MIRAD**

33.1. 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.

33.2. Regarding recruitment for MIRAD, the Petitioner has submitted that its BoD has approved 20 new key positions in phase-I which includes 09 positions through relocation/ internal transfer from existing yardstick & 11 new positions to be hired from the market. Accordingly, for inclusion of cost impact of hiring made for MIRAD by the Petitioner, details were requested from the Petitioner. The Petitioner shared its latest status of hiring made on account of MIRAD, whereby only 06 positions have been filled either through transfers or on current charge. As per the submitted information, the recruitment process of MIRAD has still not been completed, however, the Petitioner has requested for the financial impact for these positions.

33.3. 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

34. **Post-Retirement Benefits**

34.1. The Petitioner has requested gross Post Retirement Benefits for the 2020-21 on the basis of last actuarial Valuation Report with estimated average 10% increase for FY 2021-22 till FY 2024-25, subject to adjustment on actual basis, as under:

Provision For Staff Retirement Benefits	FY 21	FY 22	FY 23	FY 24	FY 25
Provision for Retirement Benefits	8,877	9,765	10,742	11,816	12,998
Proj.Cost-Wire Business (Mil. Rs.)	7,252	7,977	8,775	9,652	10,618
Proj.Cost-Supply Business (Mil. Rs.)	1,625	1,788	1,967	2,163	2,380

NEPRA AUTHORITY

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

34.2. 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	4,072	3,940	2,887	2,198
2	Medical Facilities	12	15	12	11
3	Free Electricity	104	81	87	84
4	Leave Encashment	282	294	225	168
	Total	4,470	4,330	3,211	2,461

34.3. Based on the above breakup of pension expense for the FY 2020 the requested amount has broken down as under;

Rs mln

	FY 21	FY 22	FY 23	FY 24	FY 25
Post retirement benefits	8,086	8,895	9,785	10,763	11,840
Medical Facilities	23	26	28	31	34
Free Electricity	207	228	251	276	303
Leave Encashment	560	617	678	746	821

34.4. The Authority noted that the head of Post-retirement benefit includes employees' pension, free electricity and medical facility. The Authority also understands that employees of XWDSICSOs are hired on Government pay scales, thus thus, any pension increase announced by the Federal Government in the Budget is also applicable on the retired employees of XWDISCOs.

34.5. 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.

34.6. In compliance with the Authority's direction, the Petitioner has created a separate Fund for its post-retirement benefits.

34.7. The Authority has considered the submissions of the Petitioners and has also analyzed the performance of the Petitioner in terms of Regulatory benchmarks of T&D losses and Recoveries. The Authority observed that the Petitioner has almost been able to achieve the target of T&D losses given by the Authority and its recovery position has remained closed to 98% over the years, except for the FY 2019-20 primarily due to COVID impact. For the FY 2020-21, the Petitioner has been able to recover 100% of its billed amount.

34.8. Considering the aforementioned performance of the Petitioner, the Authority has decided to allow provision for Post-retirement benefit for the first year of the MYT control period as per the amount requested by the Petitioner i.e. Rs.8,877 million for the FY 2020-21. However, the Petitioner is directed to deposit the amount of provision, over and above their actual post-retirement benefit payments, in the Fund and in case of failure to deposit the excess amount in the Fund, the same shall be adjusted/deducted in the subsequent tariff determination and from thereon, only actual amounts paid and amount transferred into the fund would be allowed.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

34.9. 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.7,252 million as requested by the Petitioner, to be adjusted in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

35. **Repair & Maintenance Costs**

35.1. Regarding Repair and Maintenance expenses, the Petitioner has requested to allow the full amount projected for tariff control period in this MYT by submitting that historically the variance between requested and allowed repair & maintenance costs has been over 20%, and any such decrease shall have a drastic impact on the sustainability of the existing distribution system which will ultimately affect the wellbeing of the consumers. The R&M cost proposed by the Petitioner under the MYT control period is as under;

Mln. Rs.

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-24
Repair & Maintenance	2,551	2,859	3,201	3,552	3,910

35.2. The Petitioner for the adjustment of above costs has submitted that the same has been assumed as "K" factor @ 1.5% of gross Distribution Plant Equipment of gross fixed assets, which is consistent with the actual requirements due to vast & old distribution system.

35.3. The Authority has carefully examined the Petitioner's request of linking the R&M cost as a percentage of Net Fixed Assets (NFAs). The Authority, while going through the actual expenditure incurred by the Petitioner on account of R&M during the last three years as per its audited accounts, observed that the same works out as 0.88% and 1.08% of the gross Distribution Plant Equipment of gross fixed assets for the FY 2018-19 and FY 2019-20 respectively. Moreover, the Petitioner has not provided any rationale or working to substantiate its request of setting R&M as 2% of Gross Distribution Plant Equipment of gross fixed assets except that it has to maintain vast & old distribution system.

35.4. No doubt that the adherence to service standards and improvement of customer services is only possible through continuous repair and maintenance of distribution network, however, at the same time the Petitioner has also requested for huge CAPEX of around Rs.83 billion for making additional investment in Fixed Assets, resulting in new, expensive and efficient equipment, leading to overall reduction in R&M cost and increasing the total Assets base. Thus, the Petitioner idea if adopted would result in undue benefit to the Petitioner in the long run. In addition to aforementioned discussion, the Petitioner's request of annual adjustment in this regard is against the very sprit of multiyear tariff regime. Thus, the request of the Petitioner to link R&M cost with the certain % of Gross Fixed Assets i.e. K Factor is not justified. It has also been noted that the Petitioner has not been able to spend more than Rs.1,269 million under the R&M head during the last three years, excluding meters.

35.5. In view of the foregoing and keeping in view the current approved tariff methodology, the Authority has decided to allow an amount of Rs.1,257 million under R&M head, for the FY 2020-21, after incorporating the inflationary impact on the R&M cost as per the audited accounts of the Petitioner for the FY 2019-20, excluding meters, for both the Distribution

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

and Supply Functions. The same is hereby allowed to the Petitioner for the FY 2020-21 for both its distribution and Supply Functions.

35.6. Since the Audited 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 R&M for the FY 2020-21 has been allocated to the distribution function i.e. Rs.1,257 million.

35.7. The assessed repair and maintenance cost for the FY 2020-21 i.e. Rs.1,257 million, shall be considered as the reference cost for working out future repair and maintenance expenses, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

35.8. The Authority has been directing the Petitioner to capitalize the cost of meters instead of expensing out, however, despite Authority's repeated directions, the Petitioner has again recorded the cost of meters under the head of R&M. Therefore, while assessing the R&M costs of the Petitioner for the FY 2020-21, the Authority has excluded the cost of Meters from the actual cost of R&M of the Petitioner for the FY 2019-20.

36. <u>Other O&M Expenses</u>

36.1. Other O&M expenses includes Travelling costs, Vehicle Maintenance and other O&M expenses i.e. Rent, Rates & Taxes, Power, Light and Water, Communication, Bill Collection Charges, Office supplies, Director Fees, Auditor Remuneration, Professional Fees, Outside Service Employed, Management Fees, NEPRA License Fees, Advertisement & Publicity, Subscriptions & Periodicals, Representation & Entertainment, Insurance, Bank Charges, and other miscellaneous expense. The Petitioner projected its Other O&M costs including Travelling and Vehicle Maintenance costs as under;

Mln. Rs.

DESCRIPTION	2020-21	2021-22	2022-23	2023-24	2024-25
	Proj.	Proj.	Proj.	Proj.	Proj.
Travelling	830	972	1,093	1,211	1,344
Transportation	507	594	697	826	1,001
Other O&M Cost	1,346	1,501	1,649	1,819	2,002
TOTAL	2,683	3,067	3,439	3,856	4,347
Increase/(decrease)		14%	12%	12%	13%

NEPRA AUTHORITY

36.2. The Petitioner proposed that O&M part of Distribution Margin shall be indexed with CPI subject to adjustment for efficiency gains (X factor).

36.3. 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 has decided to accept the actual figures of the FY 2019-20 as such and allowed an inflationary increase of 9.49 % over the same and accordingly has assessed the other O&M expenses as Rs.3,215 million for both the distribution and Supply of Power Function.

36.4. By considering the figures as per actual financial statement, 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.

36.5. 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 costs with CPI minus X, however, at the same time it has been requested to keep the X-factor as zero. The Authority 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.

36.6. Since the Audited 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.1,823 million.

36.7. The aforementioned assessment for the FY 2020-21 shall be considered as reference for working out future Other Operating Expenses for remaining tariff control period to be adjusted as per the adjustment mechanism provided in the instant determination.

37. <u>Z factor for force majeure events</u>

37.1. The Petitioner has proposed that an additional Z factor should be included in the MYT to cover costs for force majeure events such as earthquakes, flooding, wind storms, thunder storms, acts of terrorism, etc. These costs shall be computed after the occurrence of such an event at which point the Company shall estimate the financial impact of such an event and request NEPRA's approval for inclusion in the subsequent year.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

37.2. The Authority observed that it has allowed insurance cost to the Petitioner in the reference cost of Other expenses for the FY 2019-20 for future increases. The insurance cost covers grids and vehicles etc. If the Petitioner intends to cover its other assets along-with more insurance coverage then it has to mitigate its commercial risk through its profits.

38. <u>Whether the requested Depreciation, Other Income and RoRB based on requested WACC is justified?</u>

38.1. The Petitioner has submitted that Depreciation is charged on the straight-line method so as to diminish the cost of an asset over its estimated useful life. As per Company's policy, building and civil works are depreciated @ 2%, feeders and grids & equipment's @ 3.5%, other plant/equipment and vehicles @ 10%. The depreciation for FY 2020-21 to FY 2024-25 has been estimated on the original cost of the assets.

					Mln. Rs.
Depreciation Expense	FY 21	FY 22	FY 23	FY 24	FY 25
Total	**5,695**	**6,388**	**7,155**	**7,945**	**8,749**

38.2. The Petitioner further stated that as per the MYT guidelines, Depreciation expense for future years will be assessed in accordance with the following formula/mechanism:

DEP(Rev)= DEP(Ref) * 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

38.3. 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.

38.4. 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.163,270 million. Accordingly, the depreciation charge for the FY 2020-21 has been assessed as Rs.5,435 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.

NATIONAL POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

38.5. 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.3,304 million for the FY 2020-21. Accordingly, the consumers would bear net depreciation of Rs.,2131 million.

38.6. The actual depreciation reflected in the Audited 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 entire depreciation cost of Rs.5,435 million for the FY 2020-21 has been allocated to the distribution function.

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

39. Other income

39.1. Regarding Other Income, the Petitioner has submitted that includes mark-up on bank deposits, amortization of deferred credit and income from other sources. As there is no clear trend found during the past, hence, other income have been assessed on the basis of last five year moving average except for the amortization of deferred credit which has been calculated @ 3.5% on the accumulated balance of contributions against connection installed/ deposit works i.e. consumer financed assets. It further stated that Late Payment Surcharge has been excluded from the total Other Income as per decision of NEPRA in the earlier Tariff determination of MEPCO for the FY 2014-15. The Petitioner accordingly projected the following other income during the MYT;

Mln. Rs.

Other Income Breakup	FY 21	FY 22	FY 23	FY 24	FY 25
Late payment surcharge	2,453	2,632	2,803	2,986	3,180
Profit on bank deposits	1,276	973	1,113	1,219	1,302
Meter / service rent	74	67	72	76	77
Reconnection fees	46	37	39	41	41
Rental & Service income	80	75	83	83	83
Repair, testing and inspection fees	-	96	98	100	103
Credit balance written off	-	54	55	56	58
Sale of Scrape	102	55	66	77	83
Miscellaneous	383	380	403	391	399
Other income	75	194	110	112	119
Amortization of deferred credit	3,212	3,507	3,838	4,155	4,478
Total Other income incl. LPS	**7,701**	**8,070**	**8,680**	**9,296**	**9,923**
Less: Late payment surcharge	2,453	2,632	2,803	2,986	3,180
Other income Excl. LPS	**5,248**	**5,438**	**5,877**	**6,310**	**6,743**

NEPRA AUTHORITY NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

39.2. 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.

39.3. 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 decided to consider the amount as requested by the Petitioner, including the amount of amortization of deferred credit but exclusive of the amount of late payment charges. In view thereof, the Authority has assessed Rs.5,248 million as Other Income as per the request of Petitioner for the FY 2020-21, which does not include late payment charge but includes amortization of deferred credit.

39.4. 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.

39.5. 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 out as Rs.3,576 million, to be adjusted during the MYT control period as per the adjustment mechanism prescribed in the instant determination.

40. Return on Rate Base

40.1. On the issue of RoRB, the Petitioner has submitted that Return on equity is calculated using CAPM model and requires the estimation of following components:

i) Risk free rate (Rf)

ii) Beta (B)

iii) Market premium (P)

40.2. The Risk free rate is the rate of return that the investors expect to earn on investments that have virtually no risk of default. Risk is viewed in terms of the variance in actual returns around the expected return. For an investment to be risk free in this environment, then, the actual returns should always be equal to the expected return. In view of the business horizon of a electricity distribution business, the Company's contractual obligations and operational risks which extend beyond a single year, it is proposed that weighted average yield on 05 year Pakistan Investment Bond (PIB) as of June 25, 2020 be considered as the risk free rate. This rate would be adjusted on an annual basis as per State Bank of Pakistan publications.

40.3. The Petitioner also mentioned that NEPRA has allowed Return on Equity (Market Risk Premium & Risk Free Rate) as 15% in previous Tariff Determination; therefore, the same has been used for calculating RORB. On the issue of Beta, the Petitioner has stated that NEPRA uses a standard beta for calculating the return on equity for all DISCOs. The same beta has been used for computing return on equity in all previous three determinations.

41. Cost of Debt

41.1. As per the Petitioner, the Cost of debt is taken as 3 Months KIBOR+3% of 2nd July, 2020. However, any taxes paid by the company will be passed on directly to the end-consumers.

42. WACC

42.1. Based on the above input parameters, the Petitioner has calculated its weighted average cost of capital computes to 11.72%.

43. Regulatory asset base for 2020-21 to 2024-25

43.1. The Petitioner regarding Regulatory Asset Base has submitted that it is calculated as the sum of Opening GFA and capital additions less depreciation, plus capital work-in-progress and less deferred credit. The Regulatory Asset Base (RAB) is the gross fixed asset that is used in the distribution activities of the Company. The return on rate base is calculated by applying the WACC on the RAB.

44. Future Assessment Mechanism

44.1. The Petitioner stated as per MYT guidelines the RORB assessment will be made in accordance with the following formula/mechanism:

RORB(Rev) = RORB(Ref) *RAB(Rev) / RAB(Ref)

Where:

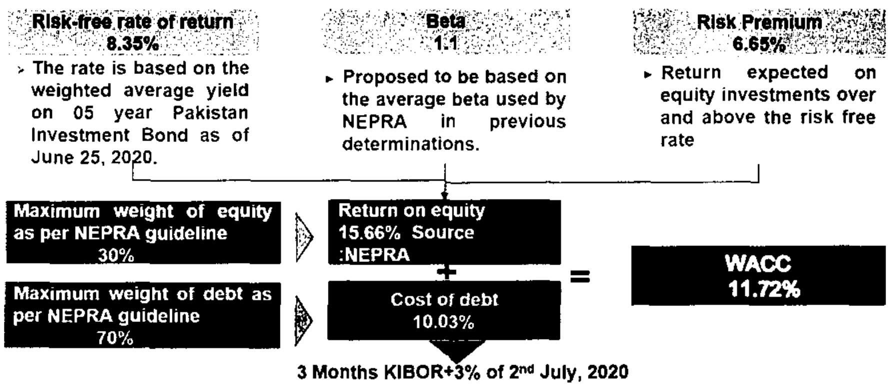
RORB(Rev) = Revised Return on Rate Base for the Current Year

RORB(Ref)=Reference Return on Rate Base for the Reference Year

RAB(Rev) = Revised Rate Base for the Current Year

RAB(Ref) = Reference Rate Base for the Reference Year.

44.2. During the hearing, the petitioner submitted the following:



44.3. The Petitioner presented the following numbers of RAB during the hearing:

Mln. Rs.

DESCRIPTION	Financial Year				
	2020-21	2021-22	2022-23	2023-24	2024-25
	Projected				
Gross Fixed Assets in Operation - Op Bal	154,065	173,518	194,506	217,799	241,737
Addition in Fixed Assets	19,453	20,988	23,293	23,938	24,402
Gross Fixed Assets in Operation - Cl Bal	173,518	194,506	217,799	241,737	266,139
Less: Accumulated Depreciation	57,128	63,516	70,672	78,616	87,365
Net Fixed Assets in Operation	116,390	130,990	147,128	163,121	178,774
Add: Capital Work In Progress - Net of DW	13,694	16,383	18,460	18,783	19,117
Investment in Fixed Assets	130,084	147,373	165,587	181,905	197,891
Less: Deferred Credits	65,245	70,500	76,125	81,448	86,675
Regulatory Assets Base	64,839	76,873	89,463	100,457	111,217
Average Regulatory Assets Base (RAB)	61,393	70,856	83,168	94,960	105,837
Rate of Return/WACC	11.72%				
Return on Rate Base	7,196	8,305	9,748	11,130	12,404

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

44.4. 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;

(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;

44.5. 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.

44.6. 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%.

44.7. 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.

44.8. 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.

44.9. 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.

44.10. 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).*

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

Cost of Equity;

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

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

The cost of debt is;

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%

45. <u>Treatment of Capital Work in Progress (CWIP) while calculating the RoRB</u>

45.1. 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;

46. <u>Energy Regulators Regional Association (ERRA) Practices for RAB</u>

46.1. 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;

NP «MARKET COUNCIL»
EDUCATION CENTRE

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;

DWC - annual change over year t in working capital;

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

46.2. 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.

46.3. 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.

46.4. 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	144,295	154,065
Addition	9,770	9,205
Fixed Assets C/B	154,065	163,270
Depreciation	51,433	56,868
Net Fixed Assets	102,632	106,401
Capital WIP C/B	-	-
Fixed Assets Inc. WIP	102,632	106,401
Less: Deferred Credits	72,463	73,658
Total	30,169	32,743
RAB		**31,456**
WACC		10.66%
RORB		**3,354**
Capital WIP C/B		14,205
Equity Portion of CWIP 30%		4,261
ROE on CWIP		617
Total RORB		**3,970**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

46.5. 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.3,970 million for the FY 2020-21 has been allocated to the distribution function .

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

46.7. The Authority from the annual accounts of the Petitioner for the FY 2019-20, has again observed that the Petitioner as per its audited 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.

46.8. 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.

47. <u>Adjustment Mechanism</u>

47.1. The Petitioner proposed the following Adjustment Mechanism for the MYT Control Period in different Cost Components by stating that the Mechanism is in line with the MYT guidelines and determination of NEPRA in the case of other DISCOs already operating under Multi-Year Tariff.

Sr. No.	Tariff Component	Adjustment
01	Fuel Cost	Monthly
02	Var. O&M, CPP and UoSC	Quarterly
03	O&M Cost	Annually
04	Post Retirement Benefits	Annually
Sr. No.	Tariff Component	Adjustment
05	Depreciation, RORB, Other Income	Annually
06	Pr. Year Adjustment	Annually
07	KIBOR	Annually

NEPRA AUTHORITY

47.2. The Petitioner has submitted that the adjustments in line with mechanism given NEPRA guidelines for determination of consumer end tariff dated 16th January 2015 except O&M cost;

Sr. No.	Tariff Component	Adjustment Mechanism
01	Return on RAB (RORB)	$RORB_{(Rev)} = RORB_{(Ref)} \times RAB_{(Rev)} / RAB_{(Ref)}$
02	Depreciation Expense	$DEP_{(Rev)} = DEP_{(Ref)} \times GFAIO_{(Rev)} / GFAIO_{(Ref)}$
03	Other Income	$OI_{(Rev)} = OI_{(1)} + \{OI_{(1)} - OI_{(0)}\}$

48. <u>Adjustment Mechanism for O&M Cost:</u>

48.1. The Petitioner has requested adjustments for O&M cost after its bifurcation into controllable and uncontrollable costs. For the uncontrollable costs, it has been requested to be trued-up at the end of every year and the controllable costs should be indexed every year with (CPI – X + Z).

$$O\&M = [\text{Controllable cost} \times \{1 + (CPI - X)\} + \text{Uncontrollable costs} + Z$$

Where,

CPI = Consumer Price Index

X = Efficiency factor

Z = Costs relating to extraordinary events

49. <u>Efficiency Factor (X):</u>

49.1. The Petitioner has proposed to keep the efficiency factor "X" as zero '0' for the Tariff Control Period due to the fact that implementation of CTBCM can affect the cost effectiveness of the Company when the Industrial and Bulk Power Consumers may leave the Petitioner's System and the Petitioner's will be restrained to serve the low tariff category consumers with high AT&C losses.

49.2. 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, Transportation, Travelling etc., has incorporated these costs in the reference cost, keeping in view the audited accounts of the Petitioner for the FY 2019-20/ 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.

49.3. 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 costs with CPI minus X, however, at the same time it has been requested to keep the X-factor as zero. The Authority 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.

49.4. Regarding request of the Petitioner to allow "Z" factor, the Authority observed that it has allowed insurance cost to the Petitioner in the reference O&M cost for the FY 2020-21 subject to future increases, and the same covers for any such extra ordinary events. Therefore, the request of the Petitioner, to allow any such factor as a separate cost is not justified.

49.5. 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;

50. <u>Salaries & Wages and Post-retirement Benefits;</u>

50.1. 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 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.

51. <u>Post-retirement benefits</u>

51.1. Post-retirement benefits would be allowed based on the actuarial valuation report for the year for which assessment is being made or as per the latest available audited financial statements. It would be mandatory for the Petitioner to deposit the whole amount of allowed Post retirement benefits into the separate Fund and route all its pension payments through the Fund. If the Petitioner fails to transfer the whole amount of postretirement benefits into the Fund, the Authority would adjust the deficit payments in the next year's provision and from thereon, only actual amounts paid and amount transferred into the fund would be allowed.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

52. O&M Costs

52.1. 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)]

53. RORB

53.1. 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)

53.2. 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.

53.3. 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. 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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

54. Depreciation Expenses

54.1. 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

54.2. 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.

55. Other Income

55.1. 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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

56. Whether the requested Prior Years Adjustment is justified?

56.1. The Petitioner submitted that Rule 53 of NEPRA Tariff Guidelines provides that under-recovery or over-recovery of the cost-of-service incurred during the previous year shall be accounted for going forward during the current year under the head of prior period adjustment. The Petitioner also submitted that its tariff for the FY 2018-19 & 2019-20 was determined by NEPRA on 24th December, 2020 and notified by the GoP, w.e.f. 12th February, 2021. The total Prior Year Adjustments pertaining to FY 2018-19, 2019-20 and any unrecovered/under-recovered cost prior to the said years are summarized below:

Mln. Rs.

Description	Wire Business	Supply	TOTAL
Staff Retirement Benefit FY 2015-16 to 2019-20	50,651	2,227	52,878
Return on Rate Base (RORB)	5,400	-	5,400
PEPCO Management Fee	610	-	610
PM Assistance Package for families of Govt. employees who die in service	1,670	374	2,045
PPP Adjustments	-	14,106	14,106
TOTAL	**58,332**	**16,707**	**75,039**

56.2. **The Petitioner regarding provision for staff Retirement Benefits**, has submitted that it is a public limited company incorporated under the repealed companies ordinance, 1984 (Now Companies Act, 2017) and maintaining its Financial Statements under the SECP regulations and International Accounting Standards (IAS) adopted in Pakistan. Similarly Provisions for Post-Retirement Benefits are recognized in line with the requirements of IAS-19 based on third party Actuarial Valuations/ Independent Actuaries. The Authority partially allowed Post Retirement Benefit up-to the extent of actual payment of post-retirement benefits despite the fact that in compliance of Authority directions, the Company established a separate post-retirement benefits Trust Fund and managed to transfer Rs.2,854 million till March 31, 2021 in the Fund, out of the determined Distribution Margin included only the actual payments of post-retirement benefits. On the other hand, the Authority not even allowed the funds actually deposited in post-retirement fund by MEPCO from the already allowed inadequate Distribution Margin. The Petitioner further submitted that the Authority in Para 25.6 and 25.9 of its Distribution Tariff Determination for the FY 2018-19 & FY 2019-20, dated December 24, 2020 that provisions were allowed before FY 2012-13 which were not deposited into the pension fund. In this regard, it is clarified that the amounts allowed at that time in the head of Pay & Allowance were inclusive of Post-Retirement benefits and the same were also inadequate in relation to the actual provisions. The Petitioner provided comparison of actual & determined cost of Pay & Allowances including Retirement Benefits for the FY 2008-09 to FY 2011-12, as under:

Mln. Rs.

Year	Actual			Determined	Less Determined
	Pay & Allowance	Provision for PRB	Total		
2008-09	2,512	931	3,443	3,035	-408
2009-10	2,674	1,759	4,433	3,490	-943
2010-11	3,687	2,009	5,696	4,014	-1,682
2011-12	4,467	2,527	6,994	4,616	-2,378
TOTAL	**13,340**	**7,226**	**20,566**	**15,155**	**-5,411**

56.3. It further submitted that the allowed provisions were even less than the actual payments made for FY 2008-09 to 2011-12 as summarized below:

Mln. Rs.

Year	Actual			Determined	Less Determined
	Pay & Allowance	Provision for PRB	Total		
2008-09	2,512	322	2,834	3,035	201
2009-10	2,674	384	3,058	3,490	432
2010-11	3,687	483	4,170	4,014	-156
2011-12	4,467	629	5,096	4,616	-480
TOTAL	13,340	1,818	15,158	15,155	-3

NEPRA AUTHORITY

56.4. The above table shows that during FY 2008-09 to FY 2011-12, the amount available for Post-Retirement Benefits was so inadequate to honor even the actual payments of Post-retirement Benefits. Rather the deficit of Rs.3 Million was financed by MEPCO from its own kitty being a compulsory obligation of the company. The above situation give a brief incite to the unavailability of funds to create pension trust fund even before FY 2012-13. The Petitioner has submitted that it suffered a gap of Rs.23,531 million in the actual provisions for post-retirement benefits as per audited Financial Statements and the amount allowed by NEPRA based on the actual payments for the FY 2015-16 till FY 2019-20. The year wise gap is given below:

Mln. Rs.

Year	Actual Provisions	Allowed by NEPRA	Gap
2015-16	7,327	2,134	5,193
2016-17	4,930	2,461	2,469
2017-18	6,550	2,707	3,843
2018-19	8,679	4,232	4,447
2019-20	12,233	4,655	7,578
Total	39,720	16,189	23,531

56.5. It is also obvious that in absence of sufficient funds (provisions not allowed by NEPRA), the Petitioner may not be able to deposit the requisite amounts in Post Retirement Benefit fund. This will further discourage the NEPRA objective that by creating Post Retirement Fund a time will come when the fund will be able to generate sufficient amount in line with the required provisions and due to this the Distribution Margin of the petitioner would eventually be reduced and ultimately the consumer end Tariff will reduce. However, in the present scenario of allowing only actual payments against post-retirement benefits, the said phenomena do not seem practicable. The Authority has already allowed Provisions for Post-Retirement Benefits to 03 DISCOs namely IESCO, LESCO & FESCO operating under MYT regime.

56.6. Foregoing above, the Petitioner has requested the Authority to allow Rs.50,651 million against post-retirement benefits charged during FY 2015-16 to 2019-20, which were less allowed by the Authority.

56.7. **Regarding RORB,** the Petitioner stated that the Authority less allowed RORB to the extent of Rs.5,400 Million during FY 2015-16 to 2019-20 as per the following detail;

Mln. Rs.

Year	Determined	Actual	Variance
2015-16	2,518	3,862	1,344
2016-17	3,489	4,279	790
2017-18	4,541	4,862	321
2018-19	4,122	5,446	1,324
2019-20	6,610	8,232	1,622
Total	**21,280**	**26,680**	**5,400**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

56.8. The Petitioner also submitted its working of Regulatory Asset Base (RAB) & RORB, on the basis of actual audited financial statements for FY 2015-16 to FY 2019-20 as under;

Description	2015-16	2016-17	2017-18	2018-19	2019-20
Average RAB	32,644	36,168	41,096	49,752	54,822
Rate of Return	11.83%	11.83%	11.83%	10.95%	15.02%
RORB	**3,862**	**4,279**	**4,862**	**5,446**	**8,232**

56.9. Regarding PEPCO Management Fee, the Petitioner submitted that Debit Notes of Rs.610 million against PEPCO management fee have been issued to the Petitioner during the FY 2014-15 to FY 2016-17 and the case with all supporting documents has been filed as a part of PYA in the MYT. The Petitioner accordingly requested the Authority to allow Rs.610 million.

56.10. On the issue of PM Assistance Package for Govt. Employees died during Service, the Petitioner submitted that the same was approved by the BoD MEPCO in its 134th meeting held on 20.03.2018 adopted the Establishment Division's OM and the estimated financial impact of Rs.1,670 million has been requested in the PYA adjustable to actual expenses.

56.11. **Regarding previous years' provision for post-retirement benefits,** the Authority observed that amount of post-retirement benefits was allowed to the Petitioner based on available information at that time and has become a past & closed transaction, for which no adjustment is allowed. Considering the fact that now the Petitioner has been allowed Provision for post-retirement benefits in the MYT Regime, and also the fact that the current adjustment request incorporates substantial increase in power purchase cost, therefore, further adding any such cost in the instant adjustment request would not be in the consumer interest. However, the Authority going forward keeping in view the pension obligation of the Petitioner, amount deposited in the fund and quantum of future tariff increases may allow some additional amounts in this regard for depositing in the fund, in order to protect the financial liabilities of the Pensioners.

56.12. **Regarding RoRB adjustment of Rs.5,400 million,** the Authority noted the Petitioner has neither provided its calculations in the matter nor has pointed out any error or rebutted the calculations of NEPRA. Further, if the Petitioner had any grievances on the same, if should have come in review for the relevant year. In view thereof, the Authority does not see any merit in the request of the Petitioner, hence declined.

56.13. **Regarding PM assistance package,** the Authority in principle agrees with the request of the Petitioner to allow the Prime Minister Assistance Package as announced by the Federal Government for the families of employees who died during service. However, for the requested amount, the Authority considers that allowing any such costs, upfront would be unfair with the consumers, therefore, the Authority may consider such costs once the actual expenditure is incurred by the Petitioner. Therefore, the Petitioner is required to provide employees name, CNIC number, designation, date of death, along with the financial impact, etc. once the actual payment is made, in its next tariff petition/adjustment request for consideration of the Authority.

56.14. **Regarding PEPCO management fee,** the Authority noted that the matter has already been decided by the Authority in the earlier tariff determination of the Petitioner, whereby the Authority 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. In view thereof, the instant request of the Petitioner is not justified. The Authority also noted that the Petitioner was also directed to provide details of PEPCO Management Fees, if any, claimed previously so that same could be adjusted in the subsequent tariff determinations. The Petitioner however has not provided any such details, therefore, is again directed to provide the required details.

NEPRA AUTHORITY

56.15. The Prior Year Adjustment includes the impact of variation in the following, based on the Authority's allowed benchmarks of T&D losses and recoveries;

- ✓ 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 previously assessed PYA and the amount actually recovered.
- ✓ Difference between actual other income and the amount allowed
- ✓ Variation due to Sales Mix.

56.16. It is important to highlight that variation between the PPP billed to DISCOs by CPPA-G and the amount recovered by the DISCOs, based on the Authority's allowed benchmarks of T&D losses and recoveries, are being accounted for separately through Quarterly Adjustment mechanism, therefore, the instant PYA includes only the remaining components.

56.17. 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.

56.18. The Authority also noted in the tariff determination of the Petitioner for the FY 2019-20, it directed the Petitioner to provide the details of late payment charges recovered from the consumer and the 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.

56.19. The Petitioner during the hearing submitted the following detail in this regard;

Rs. in Mln

FY	LPS recovered	Supplemental Charges
2014-15	1,335	-
2015-16	825	825
2016-17	1,841	-
2017-18	2,087	1,642
2018-19	2,171	2,171
2019-20	1,848	1,848
Total	**10,107**	**6,486**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

56.20. From the details submitted by MEPCO in this regard, it is evident that it has recovered LPS of an amount of Rs.3,621 million in excess of supplemental charges billed by CPPA-G to MEPCO from FY 2015-16 to FY 2019-20 worked out on yearly basis, therefore, the Authority in line with its earlier decisions in the matter, has adjusted the excess amount of Rs.3,621 million in the instant determination of the Petitioner, as part of PYA. Here it is pertinent to mention that while accounting for LPS against Supplemental Charges, NEPRA individually accounts for the amount of LPS against each DISCO's supplemental charges as per the decision of the Authority. The Petitioner is hereby directed to provide the detail of LPS recovered viz a viz amount of supplemental charges billed by CPPA-G for the FY 2020-21, with subsequent adjustment/indexation request.

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

Rs. Mln

Description	MEPCO
1st & 2nd Qtr. FY 2018-19	
Allowed Amount	34,633
Qtr. Rs./kWh	1.6156
Recovered	36,581
Under/(Over) Recovery	(1,948)
3rd & 4th Qtr. FY 2018-19	
Allowed Amount	5,495
Qtr. Rs./kWh	0.3204
Recovered	5,265
Under/(Over) Recovery	230
Interim D.M FY 2018-19	
Allowed Amount	4,791
Qtr. Rs./kWh	0.2794
Recovered	4,591
Under/(Over) Recovery	200
1st Qtr. FY 2019-20	
Allowed Amount	1,429
Qtr. Rs./kWh	0.0833
Recovered	1,380
Under/(Over) Recovery	49
Distribution Margin FY 2019-20	
Allowed	26,167
Recovered	18,808
Under/(Over) Recovery	7,359
Other Income FY 2019-20	
Allowed	(4,234)
Actual	(5,246)
Under/(Over) Recovery	(1,012)
Sales Mix Variances	
FY 2019-20	(4,773)
	(4,773)
Late Payment Charges in Excess to Supplemental charges FY 2014-15 to FY 2019-20	(3,621)
Distribution Margin FY 2020-21	
Allowed	26,167
Recovered	22,983
Under/(Over) Recovery	3,185
Total Prior Period Adjustment	(332)

NEPRA AUTHORITY

56.22. 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.

56.23. After considering all the aforementioned factors, the Authority observed that the Petitioner has retained a net amount of Rs.2,770 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.

56.24. 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.2,770 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.

56.25. 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.

57. <u>Whether MEPCO has prepared schemes to cater for future demand and removal of system overloading/constraints and provided a detailed report in this regard as per requirement under NEPRA Guidelines for determination of Consumer end Tariff (Methodology and Process) 2015.</u>

57.1. The Petitioner during the hearing submitted the following:

- ✓ It has prepared 5-years IGTDP (FY 2020-21 to FY 2024-25) and submitted to NEPRA.
- ✓ It includes Schemes for removal of current System Constraints / Overloading and also caters for future Demand.

57.2. The Authority observed that in the previous tariff determination, it directed the Petitioner to prepare schemes to cater for future demand and removal of system overloading/constraints and provide a detailed report in this regard as per requirement under NEPRA Guidelines for determination of Consumer end Tariff (Methodology and Process) 2015. The Authority considered the submission of MEPCO and is of the view that MEPCO shall provide its detailed progress report in the matter every year pertaining to targets achieved as given in the IGTDP.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

58. <u>Whether MEPCO 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.</u>

58.1. 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.

58.2. The Petitioner during the hearing submitted that it has provided 352,712 new connections during FY 2020-21 and Connections (Ripe) of 152,430 Nos. are pending ended June 2021, which will be completed by the end of September 30, 2021.

58.3. The Petitioner submitted the following detail of new connection targets against the installed number:

FY	Target	Installed
2016-17	272,000	297,553
2017-18	350,000	372,907
2018-19	350,000	355,023
2019-20	350,000	359,506
2020-21	420,000	352,712

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

58.4. The Authority has considered the submissions of the Petitioner and is of the opinion that as per data provided, 152,430 ripe connections are pending up-to June 2021, out of which 54,073 connections are pending since one year. This indicates that the Petitioner has failed to provide new connections to its eligible consumers as per PSDR 2005. Therefore, the Petitioner is strictly directed to clear all pending connections to its eligible consumers as specified in the Consumer Eligibility Criteria and Performance Standard Distribution Rules, 2005 and submit a detailed compliance report to NEPRA on a monthly basis.

59. <u>Whether MEPCO established a corporate desk to facilitate its corporate clients as per deadline i.e., 31.03.2021 given by NEPRA in the tariff determinations for FY 2018-19 and FY 2019-2020?</u>

59.1. The Authority in the previous tariff determination directed the Petitioner to establish a corporate desk to facilitate its corporate clients as per deadline i.e., 31.03.2021 given by NEPRA in the tariff determinations for FY 2018-19 and FY 2019-2020?

59.2. The Petitioner during the hearing submitted that it has already established a one window operation cell for corporate clients vide No. 48198-204/CE/MEPCO/EA-I/PF dated January 18, 2021.

59.3. The Authority has considered the submissions of the Petitioner and directs it that a report be submitted, indicating the current/latest status including but not limited to total number of complaints received, total number of complaints resolved, type of complaints, type of consumers etc. for consideration of the Authority.

60. <u>What steps were taken by MEPCO to target high loss feeders to bring down AT&C losses? Whether a detailed plan in this regard was furnished?</u>

60.1. 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.

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

Overall Loss
High Loss feeders Ending 06/2021
20 – 30% Slab = 105 Nos.
30 – 40% Slab = 15 Nos.
40 – 50% Slab = 03 Nos.
Above 50% Slab = 04 Nos.
Technical Loss

60.3. 84 Nos. feeders having Technical Loss above 15%, included in the IGTDP to be executed in the next five years.

60.4. The Authority however noted that the Petitioner earlier provided its data of High Loss feeders till 03/2021, as under:

20 – 30% Slab = 341 Nos.
30 – 40% Slab = 111 Nos.
40 – 50% Slab = 35 Nos.
Above 50% Slab = 64 Nos.

60.5. The Authority has observed significant variance in the data submitted by MEPCO in its tariff petition vis a vis data submitted earlier, whereby, AT&C losses have been reduced significantly in the period of three months of peak summer season i.e. April 2021 to June 2021. The Petitioner is therefore directed to re-evaluate and re-verify the data and submit the same for consideration of the Authority.

60.6. Furthermore, MEPCO has submitted its future plan to be executed in the next five years, however, it should also have submitted details of measures taken previously to bring its AT&C losses down. Therefore, MEPCO is directed to submit the detailed (project wise) report along with its timelines executed and/or to be executed in upcoming years. It is further directed to submit a detailed analysis regarding the benefit accrued (in terms of improvement in AT&C losses) against amounts incurred in previous years.

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

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

61.2. The Petitioner during the hearing submitted that Load Shedding policy in high AT&C Loss area is as under:

Category – iii (20-30 %) = 02 Hours
Category – iv (30-40%) = 04 Hours
Category – v (40-60%) = 06 Hours
Category – vi (60-68%) = 08 Hours
Category – vii (Above 60%) = 12 Hours

NEPRA AUTHORITY

61.3. The Authority has considered the submissions of MEPCO and is of the considered opinion that the load shedding criteria submitted by MEPCO is not in accordance with Performance Standards (Distribution) Rules 2005. The Authority never recognizes the same as it creates discrimination among the consumers. Therefore, MEPCO is strictly directed to carry out load shedding in accordance with Rule 4 (f) of Performance Standard (Distribution) Rules, 2005.

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

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

62.2. The Petitioner during the hearing submitted that all the Power Transformers in GSO network of MEPCO are operating under load and less withdrawal due to overloading of any Power Transformer has not been observed in current peak summer season. GSO network is also functioning smoothly and less withdrawal due to any major breakdown has not been observed in current peak summer season, however, less withdrawal due to system constraints of NTDC and MEPCO is being observed.

62.3. The Authority has considered the submissions of MEPCO and is of the view that the reply of MEPCO against this issue does not seem convincing. The data submitted by MEPCO regarding loading position for July 2021 revealed that a total of 49 Power transformers were overloaded which is more than the status given for June 2021. This indicates that the overloading of power transformers has increased with the growing demand of load. Similarly, 4,612 distribution transformers were found overloaded in July 2021 which was also on higher side as compared to the overloading distribution transformers in June 2021. Therefore, it can be construed that the claim of MEPCO is not based on ground facts and needs verification. In consideration of above comments, MEPCO is directed to review its submissions and resubmit the same for consideration of the Authority.

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

63.1. The Authority in the previous tariff determination directed the Petitioner to submit the details of remedial measures taken by MEPCO for the achievement of performance standards (targets of SAIFI & SAIDI given by the Authority during FY 2019-20) as laid down in NEPRA Performance Standards.

63.2. The Petitioner during the hearing submitted the following works and measures have been taken during 2020-21 for the achievement of SAIFI/SAIDI targets.

- ✓ 891 No. HT & 615 No. LT tilted poles/structures set right, tree trimming of 17691 KM HT & 4422 KM HT lines carried out, 1390 No. HT & 962 No. LT Sag tightened, 1615 No. HT & 691 No. LT Stay tightened, 1806 No. bush tightened of distribution transformers & load balancing of 972 No. distribution transformers carried out, 318 No. rora fuses replaced, 6615 No. HT & 5291 No. LT jumpers replaced.
- ✓ Priority wise comprehensive plan has been made for replacement of deteriorated poles/lines & conductor for smooth & continuity power supply to the consumers.
- ✓ 56 No. HT & 511 No. LT proposals completed during 2020-21
- ✓ 03 No. new grid stations constructed during 2020-21.
- ✓ 01 No. grid station converted from 66kv to 132kv during 2020-21.
- ✓ 916 Nos. distribution transformers augmented during 2020-21
- ✓ Observation of Priorities and principals of load shedding.
- ✓ MEPCO deserves minimum load shedding as per SOPs/guidelines by NEPRA / NTDC, keeping priorities as fixed by NEPRA Authority.

63.3. The Authority has considered the submissions of MEPCO and is of the view that MEPCO has failed to achieve the SAIFI and SAIDI targets despite carrying out such number of woks. The data for last five years clearly shows that the performance of MEPCO in terms of SAIFI has declined, as detailed hereunder:

2015-16	203
2016-17	235
2017-18	316
2018-19	369
2019-20	376

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

63.4. The Authority noted that there is no system improvement despite utilizing colossal amounts under investments and O&M heads. The Petitioner should have submitted impact analysis in terms of SAIFI/SAIDI against the measures taken. Therefore, MEPCO is directed to submit the project-wise detail and subsequent improvement of performance standards.

64. <u>Provide details of preventive measures taken during FY 2020-21 to cater to the safety incidents?</u>

64.1. 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 incidents?

64.2. The Petitioner during the hearing submitted the following preventive measures taken during FY 2020-21 to cater to the safety incidents:

- ✓ Established Safety Directorate comprising of one Director (Safety), One Deputy Director (Safety), One Assistant Directors (Safety) and Safety Inspector at H/Q and Nine Assistant

Director (Safety) in nine (OP) Circles for proper monitoring of safety activities, surprise spot checking, Audit and inspections of Sub Divisions, proper training of line staff, practical demonstration of CPR.

- ✓ Accidents investigations and implementation on recommendations of enquiry reports.
- ✓ Conducted Quick impact training programs for line staff, supervisory staff at RTC, Multan and at CTCs of (OP) Circles.
- ✓ Conducted Safety Seminars at each Division / Circle on monthly basis
- ✓ Conducted Safety Committee Meetings at Sub Divisional, Divisional, Circle and Regional level. Worthy CEO MEPCO along with GM (CS) and GM (OP) imparted detailed safety instructions to all field officers for implementation on safety SOPs.
- ✓ Safety Directorate made safety management what's app group on which daily all SEs (OP) sent abstract of all HT, Transformer Sub Stations and LT Complaints with details of PTW taken and provision of earthing, mentioned violations of line staff and action taken against them.

64.3. The Authority has considered the submissions of MEPCO and is of the view that MEPCO 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, MEPCO has failed to achieve the desired results as there is no decrease in the number of fatal accidents in last two years. Further, MEPCO has claimed reduction in fatal accidents as it has only shared the number of employee's accidents. However, if the accidents for both employees and public are considered then the MEPCO claim is not justified. The detail is as under:

Year	Employees	Pubic	Total
2019-20	10	03	13
2020-21	06	07	13

NEPRA AUTHORITY

64.4. Therefore, MEPCO should initiate measures on war footing basis to reduce the number of fatal accidents and submit a concrete action plan in this regard.

65. <u>Provide project details/investments done during FY 2020-21 along with the impact on system improvement.</u>

65.1. The Authority in the previous tariff determination directed the Petitioner to provide the project details/investments done during FY 2020-21 along with the impact on system improvement.

65.2. The Petitioner during the hearing submitted that MEPCO made an investment of Rs.4,004 Million in FY 2020-21 and achieved savings of 107.69 kWh (Rs.1,397 Million).

65.3. The Authority has considered the submissions of MEPCO and is of the opinion that MEPCO's submissions are not in line with the issue framed. MEPCO has not submitted the project wise detailed report for investment carried out. Further, MEPCO has only mentioned the impact of energy saving by showing the total actual investment made.

65.4. MEPCO should also have provided detail of each & every project, investment made and impacts on system improvements due to execution of these projects in terms of reliability & quality of power supply, customer satisfaction, and safety of public and its properties. Therefore, MEPCO is directed to submit the same in this regard for consideration of the Authority.

66. Progress regarding the installation of AMI/AMR meters at the consumer end.

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

66.2. The Petitioner during the hearing submitted that MEPCO is working on the installation of AMR meters.

66.3. The Authority has considered the submissions of MEPCO and is of the considered opinion that MEPCO has submitted a generic statement rather giving a comprehensive response pertaining to number of AMR meters installed, to be installed, impact analysis, benefits so far achieved and etc. MEPCO is directed to submit a plan for the installation of AMR meters at least on PMT level in its service territory.

67. Progress of installation of ABC cable to control theft of electricity, which is the major source of the increase in transmission and distribution losses.

67.1. The Authority in the previous tariff determination directed the Petitioner to submit the Progress of installation of ABC cable to control theft of electricity, which is the major source of the increase in transmission and distribution losses.

67.2. The Petitioner during the hearing submitted that the installation of ABC Cable has been implemented in some theft areas of MEPCO service territory and a plan for the installation of ABC Cable is included in the Distribution Integrated Investment Plan (DIIP) of MEPCO.

67.3. The Authority has considered the submissions of MEPCO and is of the considered opinion that MEPCO should have submitted an impact analysis of the benefits it has achieved after installation of ABC. This should help MEPCO to take decision for making any additional investment for installation of ABC in other areas too. Therefore, MEPCO is directed to submit the same in this regard for consideration of the Authority.

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

68.1. The petitioner in its MYT petition, requested for T&D losses for 5-years MYT period from FY 2020-21 to FY 2024-25 with the following break-up:

Year	Technical Losses (%)	Administrative Losses (%)	Total Losses (%)
FY 2020-21	15.00	0.00	**15.00**
FY 2021-22	14.75	0.00	**14.75**
FY 2022-23	14.60	0.00	**14.60**
FY 2023-24	14.50	0.00	**14.50**

FY 2024-25	14.40	0.00	**14.40**

68.2. The petitioner also provided the following segregation of its T&D losses in respect of its technical losses as under:

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Transmission Losses at 132kV (%)	1.37	1.40	1.34	1.30	1.30
11kV Network Losses (%)	13.63	13.35	13.25	13.20	13.10
Total Technical Losses (%)	**15.00**	**14.75**	**14.60**	**14.50**	**14.40**
Energy Balances					
Units Received (GWh)	19695	20697	21110	21533	21964
Units Sold (GWh)	16741	17644	18028	18411	18801
Units Lost (GWh)	2954	3053	3081	3122	3163
Technical Losses (%)	**15.00**	**14.75**	**14.60**	**14.50**	**14.40**
Administrative Losses (%)	0.00	0.00	0.00	0.00	0.00

68.3. MEPCO, during the hearing dated: 03.08.2021, also submitted the following Historic trend of its T&D losses as follows:

Period	Units Purchased	Units Sold	Units Lost	Actual Losses	Target Losses
	GWh	GWh	GWh	%age	%age
2014-15	14,062	11,711	2,351	16.72	15.00
2015-16	14,763	12,341	2,422	16.40	15.00
2016-17	15,952	13,254	2,698	16.91	15.00
2017-18	19,006	15,853	3,153	16.59	15.00
2018-19	19,367	16,310	3,057	15.79	15.79
2019-20	19,325	16,382	2,943	15.23	14.90

68.4. MEPCO in its 'Distribution Integrated Investment Plan (DIIP)' has mentioned that it will reduce T&D losses from 15.23% in FY 2019-20 to 14.40% by FY 2024-25. T&D Losses of MEPCO will be reduced to the tune 0.83% in the optimally achievable case. Whereas, the reduction in losses as per Best Case Scenario during five years of MYT control period is reported as 1.7%. However, the petitioner has stated that as per resource constraints it will not be able to implement Best Case. The year wise Reduction in Technical Losses as provide by MEPCO by undertaking investment plan under optimally achievable scenario is given below:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Year	2019-20 (Actual)	2020-21	2021-22	2022-23	2023-24	2024-25
T&D Losses	15.23%	15.00%	14.75%	14.60%	14.50%	14.40%

68.5. Further, the petitioner in its DIIP has stated that the evaluation of Transmission & Transformation (T&T) Losses by third party has been completed by M/s Power Planner International. However, the study of Distribution Losses is in process with M/s PPI and will be completed by 2022 using SynerGEE and GIS.

68.6. MEPCO further claimed that to achieve the proposed reduction in target T&D losses, it has prepared DIIP which includes formation of new grids, conversion of existing grids, revamping of secondary transmission lines, augmentation of HT & LT lines, provision of T&P items, induction of low loss transformers, theft detection by enforcement agencies and replacement of meters, with static meters and upgrade to Automated Meter Reading (AMR) and Advanced Metering Infrastructure (AMI).

68.7. MEPCO during the hearing of instant MYT petition pleaded that the Authority allowed T&D losses of 14.90% for FY 2019-20 in Tariff Determination of FY 2018-19 & FY 2019-20. MEPCO achieved T&D losses of 15.23% for the same year. MEPCO filed a Review Petition against the determination of NEPRA. Hearing in the case was held on 2nd March, 2021, but the decision is awaited so far. Therefore, MEPCO requested the Authority to allow the actual T&D Loss at 15.23% for FY 2019-20.

68.8. The Authority noted that the petitioner requested to allow its actual T&D losses of 15.23% for FY 2019-20 against Authority's determined target of 14.90% for the same period which has already lapsed. In this regard, it is observed that MEPCO did not provide any justification and/or rationale which enable revision in determined target T&D losses of 14.90% for previous period i.e. FY 2019-20. It is further noted that the Authority, in its earlier determination for FY 2019-20, set a target of 14.90% T&D losses for MEPCO by considering all facts and submissions by the petitioner.

68.9. In light of above, the Authority decided to maintain the already determined target of T&D losses of 14.90% for FY 2019-20 and accordingly no revision will be allowed to MEPCO for already lapsed period.

68.10. 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	16.4	15.0	1.4	1,731	18,544	20,275
FY 2017	16.9	15.0	1.9	2,713	21,415	24,128
FY 2018	16.6	15.0	1.6	3,102	29,079	32,181
FY 2019	15.8	15.0	0.8	2,174	40,763	42,937
FY 2020	15.2	15.0	0.2	682	51,183	51,865

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

69.1. The Authority noted that MEPCO, while submitting instant MYT petition, apprised that its T&T losses study has been completed in FY 2017-18 and the 5-years DIIP investment plan has been prepared keeping in view the recommendations by third party consultant in the third party T&T loss study which was conducted by M/s. PPI in FY 2017-18. It is also noted that the said study was conducted on the basis of MEPCO's transmission assets (132kV, 66kV and 33kV) statistics pertaining to FY 2015-16 which are tabulated as under:

Sr. #	Description	As on 30th June, 2016
1	Grid Stations	126 Nos.
2	Transmission line length	4353 kms.

69.2. While evaluating the Transmission loss study, it is 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 MEPCO was gathered for the conditions of peak and off-peak hours of each month of 2015-16. Thus data for 24- snapshots of the year 2015-16 was captured and processed to be used as input to the Study. Thus the annual energy loss come out as 3.90%.

69.3. It is also observed that in the said study the third party consultant, keeping in view the higher transmission losses of 3.90% for MEPCO, recommended the following:

"For MEPCO, 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."

69.4. The Authority also noted that in the earlier determination of MEPCO for the FY 2018-19 & FY 2019-20, it has already considered that the higher transmission losses of 3.90% were reflective of the above mentioned critical conditions of the transmission networks of MEPCO. Therefore the Authority accepted the results of the transmission losses study conducted by PPI at that time.

69.5. For the purpose of instant MYT tariff petition, MEPCO requested transmission losses of 1.37% for FY 2020-21, 1.40% for FY 2021-22, 1.34% for FY 2022-23, 1.30% for FY 2023-24 and 1.30% for FY 2024-25. In this regard, it is noted that MEPCO claimed lower transmission losses as compared to the results of third party study due to major additions in its transmission networks (132kV and 66kV) as recommended earlier in T&T losses study by the third party consultant.

69.6. Foregoing in view, the Authority decided that the margin of transmission losses, requested in the MYT petition filed by MEPCO being lower than the transmission losses assessed by PPI, is allowed to MEPCO as per following:

2020-21	2021-22	2022-23	2023-24	2024-25
1.37%	1.40%	1.34%	1.30%	1.30%

NEPRA AUTHORITY

70. <u>Distribution Losses pertaining to Instant MYT Control Period:</u>

70.1. It is noted that MEPCO, while submitting the instant MYT petition, apprised that its distribution losses study is under process by the third party consultant i.e. M/s PPI and will be completed in 2022. For the purpose of instant MYT petition, MEPCO requested following distribution losses:

2020-21	2021-22	2022-23	2023-24	2024-25
13.63%	13.35%	13.25%	13.20%	13.10%

70.2. While considering the above distribution losses, it is noted that the distribution losses of 13.63% as claimed in instant MYT petition for FY 2020-21 are higher than the targeted losses of 11.75% allowed to MEPCO in Authority's earlier determination for FY 2018-19 and FY 2019-20. The Authority decided that in the absence of the third party distribution losses study, the already determined targeted distribution losses will not be revised. Further, the Authority directed that the already determined target distribution losses should be maintained and 11.75% distribution losses should be allowed as starting point for MEPCO for the FY 2020-21.

70.3. For setting the distribution loss targets in remaining control period of 4-years of MYT term, the Technical Department is of the opinion that by allowing a huge investment of Rs. 17,122 million in ELR component; MEPCO is encouraged to achieve better results in the MYT control period than the requested T&D loss targets. Further, a reduction of only 0.53% in distribution losses as proposed by MEPCO over the MYT control period is not acceptable and an overall reduction of 1.71% in distribution losses is required to be achieved by MEPCO. Accordingly, the Authority decided to allow the following distribution loss targets for MEPCO:

Description	2021-22	2022-23	2023-24	2024-25
Requested Dist. Losses	13.35%	13.25%	13.20%	13.10%
Allowed Dist. Losses	**11.39%**	**11.00%**	**10.53%**	**10.04%**

70.4. The summary of the allowed level of T&D losses for MEPCO for MYT period is as under:

Year	Transmission Losses (%)	Distribution Losses (%)	Total T&D Losses (%)
2020-21	1.37	11.75	**13.12**
2021-22	1.40	11.39	**12.79**
2022-23	1.34	11.00	**12.34**
2023-24	1.30	10.53	**11.83**
2024-25	1.30	10.04	**11.34**

70.5. The Authority directs the Petitioner to expedite completion of distribution network losses study conducted by third party consultant i.e. M/s PPI and submit the said study to the Authority by June 30, 2022. The Authority further directs the Petitioner to take remedial measures for achievement of performance standards as laid down in NEPRA Performance Standards (Distribution) Rules, 2005. A plan showing steps to be taken by MEPCO in this regard be prepared and submitted to the Authority. MEPCO is further directed to make efforts to maintain the desired level of its performance indicators including SAIFI, SAIDI and allowed targets of T&D losses once achieved up to the mark.

71. <u>Whether MEPCO fully utilized the investments allowed previously in FY 2018-19 and FY 2019-20? MEPCO is required to submit detailed report showing status of each project.</u>

71.1. The petitioner submitted following details regarding investment utilization in FY 2018-19 and FY 2019-20:

(Million Rs.)

Description / Head	FY 2018-19		FY 2019-20	
	Determined	Actual	Determined	Actual
Own Resources				
DOP	-	853	-	1,378

ELR	-	1,871	-	2,192
STG (energy efficiency, capacitors)	-	3,403	-	2,291
Vehicles (Utility & Others)	-	3	-	38
ERP	-	11	-	21
AMR Meters	-	-	-	-
Others	-	608	-	535
Hospital Equipment	-	-	-	36
Consumer Finance				
Village Electrification/Deposit Work	-	2,517	-	2,403
Capital Receipts	-	4,172	-	4,994
Total	**13,439**	**13,439**	**14,000**	**13,887**

71.2. Further, the petitioner stated that the financing for above investment was through foreign loans and PSDP/own resources as well as through consumer contribution/deposit works. The details of financing as provided by petitioner is given below:

Description	FY 2018-19	FY 2019-20
Local Loan	-	-
Foreign Relent Loan	607	-
PSDP / Own Resources	6,143	6,490
Grants	-	-
Consumer Contribution	4,172	4,994
Loan Basis (AMI/ AMR Meters)	-	-
Lease Basis (Vehicles)	-	-
Deposit Works/ Others	2,517	2,403
Total – Million Rs.	**13,439**	**13,887**

71.3. The above information submitted by the petitioner has been reviewed and it is observed that MEPCO has made investments amounting to Rs.13,439 million (against allowed investment of same amount) for FY 2018-19 and Rs.13,887 million (against allowed investment of Rs. 14,000 million) for FY 2019-20. The above claimed investments have also been verified from the audited accounts pertaining to FY 2018-19 and FY 2019-20 as provided by MEPCO. Since the information submitted by MEPCO is supported by its audited accounts, therefore the same has been accepted by the Authority.

72. **Whether the indicated Capital Cost of Rs.113,123 million for proposed projects for next five years under best case scenario is justified?**

72.1. The Petitioner although has submitted its Distribution Investment Plan under the Best Case Scenario amounting to Rs.113,123 million, however, at the same time the Petitioner has stated that it can arrange funding up to Rs.82,921 million required to undertake the investment plan under Optimally Achievable Case and may not be able to arrange financing of Rs. 113,123 million required for the implementation of investments requested under Best Case. Further, MEPCO has also stated that considering limited capabilities and procurement constraints, the implementation of Best Case is not possible.

72.2. In view of the above statements by the Petitioner, it is concluded that MEPCO showed its inability to undertake proposed investments under Best Case Scenario due to certain Technical & capacity constraints and financial limitations. Therefore the Authority has decided not to consider the requested investments of Rs.113,123 million claimed under Best Case Scenario.

73. <u>Whether the indicated Capital Cost of Rs.82,921 Million for proposed projects for next five years under optimally achievable case is justified? MEPCO is required to submit year wise rationale in respect of improvement in HT/LT ratios and average length per 11 kV feeders.</u>

73.1. The petitioner has submitted its DIIP for next 5-years starting from FY 2020-21 to FY 2024-25 under Optimally Achievable Case amounting to Rs.82,921 million. The considerations for preparation of optimally achievable scenario are given as below:

73.2. **To remove system constraints / overloading on STG, HT and LT side:** MEPCO stated that there are total 8 constraints on 132 kV side out of which 6 constraints are due to NTDC network and remaining 2 are due to MEPCOs own network congestions. The details are given hereunder;

S. #	Name of Grid Station/ Transmission Line	Load Recorded	Quantum of Force Load Shedding in Peak Hours
1	220KV NGPS Multan	T-1 = 97.29% T-5 = 97.29%	60MW
2	500KV New Multan	T-3 = 96.00% T-4 = 96.00% T-5 = 96.00%	40MW
3	500/220KV Yousafwala	T-3 = 98.00% T-4 = 98.00% T-5 = 98.00% T-6 = 98.00%	40MW
4	220KV Kassowal	T-1= 101.43% T-2= 101.43%	40MW
5	220KV Vehari	T-1 = 98.57% T-2 = 98.57% T-3 = 107.76%	55MW
6	220KV Chishtian	T-1 = 94.28% T-2 = 94.28%	55MW
7	132KV NGPS Vehari Road CCT	Load Restricted up to 450A	20MW
8	132KV D/C Kot Addu Chowk Azam Chowk Muda CCT	Load restricted up to 450A	20MW

73.3. **Constraints and Overloading at 11kV Feeders:** The details of 11 kV feeder constraints/overloading as provided by MEPCO is given below:

S. #	Circle	Name of Feeders	Grid Station	Max Load 2019-20	Month	Max Load 2020-21
1	M.Garh	Mochi Wala	132 KV Mara Khas	400	Sep-19	-
2	Multan	Al-Fazal	132 KV Shuja Abad	390	Aug-19	400
3	Vehari	Ahmed Abad	132 KV Ludden	400	Sep-19	-
4	Multan	Nishat Road	132KV Qasim Pur	400	Aug-19	-
5	Vehari	Hassan Shah	132 VK Karam Pur	400	Sep-19	-
6	Vehari	Firdous	132 KV Ludden	400	Sep-19	-
7	Sahiwal	Baba Farid	132 KV Hoota	400	Aug-19	-
8	M.Garh	City	132 KV Chowk Sarwar Shaheed	400	Sep-19	-
9	Multan	New Vehari Road	132KV Vehari Road	400	Jul-19	400
10	Multan	Nawab Liaqat Ali	132 KV Shuja Abad	400	Aug-19	400
11	Multan	Kotli Najabat	132KV BASTI MALOOK	350	Sep-19	400
12	Sahiwal	Karmian Wala	132 KV Arif Wala	370	Aug-19	400

73.4. **Cater future demand to avoid future over loading & accommodate prospective consumers:** Petitioner stated that it has proposed 80 new grid stations and 190 new feeders in order to accommodate future demand of MEPCO and ensure reliable supply to consumers.

a. **Reduction of Losses (to bring Technical Loss Below 15%):** MEPCO has included in the IGTDP the 84 Nos. feeders having Technical Loss above 15% to be executed in the next five years.

b. **Bringing voltage drop within permissible range (± 5%):** To improving voltage profile to meet the specified regulatory performance standards.

c. **Reduction in Feeders Length:** The petitioner has stated that the HT / LT Ratio will be improved from 1.56:1 to 1.6:1 and average HT Length from 49.65 to 42.33.

d. **Improve System Reliability:** The petitioner stated that the distribution transformers failure rate will be reduced to <1% so that SAIDI/SAIFI targets specified regulator are meet.

e. **Safety (Workforce & Equipment):** To ensure proper training and T&P for maintenance staff so that fatal & non-fatal accidents are eliminated.

f. **IT Infrastructure & AMI System:** To convert all remaining 212,570 Three Phase meters to Smart Meters. Further, strengthening Data Centre and implementation of ERP & Customer Information System (CIS).

g. **Human Resource Improvement:** Start Training & capacity building initiatives.

h. **Communications Improvement:** Promote e-communication culture (outlook).

i. **Transportation Improvement.**

NEPRA AUTHORITY

73.5. The petitioner has further quantified the targets to be achieved by implementation of DIIP program during next five years of MYT control period. Summary of major targets to be achieved are given as follows:

S. #	Strategic Objectives	Unit	Actual 2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
1	Reduce overall electricity losses	% of kWh	15.2%	15.0%	14.75%	14.6%	14.4%	14.3%
	Transmission Loss Reduction	MkWh	-	113	127	76	21	36
	Distribution Loss Reduction	MkWh	-	111.8	106.2	121.7	134.2	137.8
	Total Loss Reduction	MkWh	-	224.8	233.2	197.7	155.2	173.8
2	Improving voltage profile To meet specified regulatory performance standards	% of specified voltage	(+ -) 13%	Improved	Improved	Improved	Improved	Within acceptable limits
3	Improve power factor to meet specified regulatory standards	0.95%	Average 0.92	Improved	Improved	Improved	Improved	Average 0.95
4	Improve HT/LT ratio	-	1.56:1	1.57:1	1.58:1	1.59:1	1.6:1	1.6:1
5	Average Length of HT Line	km	49.65	48.08	46.51	45.10	43.66	42.33
6	Eliminate fatal & non-fatal accidents	No of accidents	10/10	Eliminate	Eliminate	Eliminate	Eliminate	Eliminate

73.6. The scope of STG, DOP (Expansion & Rehabilitation) and other measures to improve commercial and operational efficiency of MEPCO as highlighted in Optimally Achievable Case of DIIP are as under:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

STG SCOPE (Grid Stations)

S. #	Description	Total No.	Total Capacity (MVA)	2020-21	2021-22	2022-23	2023-24	2024-25
1	New							
A	132 KV	26	1716	5	5	5	6	5
2	Conversion							
a	66 to 132 KV	6	273	4	1	0	1	0
3	Augmentation							

a	132 KV	30	539	7	5	6	6	6
4	Extension (Transformer)							
a	132 KV	22	615	3	5	5	4	5
5	Capacitors							
a	132 KV	8	-	-	2	2	2	2
6	Conversion of ISO Bay into Line Bay							
a	132 KV	20	-	-	20	0	0	0
7	Ext: of 11 KV Control House							
a	11 KV	26	-	-	11	9	5	1
8	Twin Bundle Bus Bars							
a	132 KV	20	-	-	11	6	3	0

B. **STG SCOPE (Transmission Lines)**

S. #	Description	Total Length (km)	2020-21	2021-22	2022-23	2023-24	2024-25
1	132 KV D/C (Rail)	222.1	152.1	35	6	29	-
2	132 KV D/C (Lynx)	43	23.8	5	13	15.5	9.5
3	132 KV SDT (Rail)	253.6	-	20	102	13	118.6
4	132 KV SDT (Lynx)	230.5	210.5	20	-	-	-
5	Reconductoring	171.7	52.7	59	60	-	-
6	Second Circuit Stringing (Lynx)	112	26	-	-	86	-

C. **Distribution Scope (HT/LT proposals)**

Category	Unit	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Number of H.T proposals	Nos.	75	82	81	91	93	422
New H.T Lines	Km	650	710	701	788	805	3655
H.T Line Reconductoring	Km	405	443	437	491	502	2279
H.T Lines for New T/F Substations	Km	65	74	76	77	83	375
11 kV Capacitors	Nos.	188	205	203	228	233	1055
11 kV Cables	Km	27	30	29	33	33	152
Number of L.T proposals	Nos.	591	675	690	700	750	3406
New L.T Lines	Km	272	311	317	322	345	1567
L.T Line Reconductoring	Km	102	117	119	121	130	589
New Transformers Substations	Nos.	532	608	621	630	675	3065
Distribution Transformers Augmentation	Nos.	986	2013	2036	1308	796	7139

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Replacement of 2-Leg Transformers	Nos.	1144	1013	887	841	916	4801
Energy Meters (Against Defective)	Nos.	327,429	330,703	334,010	337,350	340,724	1,670,216

73.7. The cost breakup for above projects as provided by the petitioner is given below:

Description	FY 21	FY 22	FY 23	FY 24	FY 25	TOTAL
A. CORE BUSINESS – CAPEX						
Transmission	2,370	4,372	4,106	4,453	4,529	19,830
Distribution without deposit	4576	5543	5793	6067	6337	28316
Linemen Safety	409	508	624	646	791	2978
GIS Mapping	1	27	19	3	3	52
Total A	**7357**	**10449**	**10542**	**11170**	**11659**	**51176**
B. SUPPORT BUSINESS- CAPEX (INCLUDES HR, COMMERCIAL, FINANCIAL, COMMUNICATION IMPROVEMENTS)						
Commercial Improvement	343	2165	3082	2389	1342	9321
HR Improvement	1044	1460	1713	1410	1570	7198
Communication Improvement	10	-	11	-	-	21
Financial Improvement	25	35	10	45	50	165
Total B	**1422**	**3660**	**4816**	**3844**	**2962**	**16705**
C. CORE BUSINESS – OPEX						
Transmission	95	175	164	178	181	793
Distribution	183	222	232	243	253	1133
Linemen Safety	18	42	74	105	146	385
Total C	**296**	**439**	**470**	**526**	**581**	**2,311**
D. SUPPORT BUSINESS- OPEX						
Commercial Improvement	18	141	310	290	255	1014
HR Improvement	1784	2313	2298	2447	2672	11514
Communication Improvement	29	30	45	48	50	202
Financial Improvement	-	-	-	-	-	-
Total D	**1,831**	**2,484**	**2,653**	**2,785**	**2,977**	**12,730**
Sub Total CAPEX (A+B)	8,779	14,109	15,358	15,014	14,621	67,881
Sub Total OPEX (C+D)	2,127	2,923	3,123	3,310	3,558	15,040
Grand Total (A+B+C+D)	**10,905**	**17,033**	**18,480**	**18,324**	**18,179**	**82,921**

73.8. MEPCO submitted further breakup of **Rs.82,921 Million** as given below:

- STG Expansion & Rehabilitation CAPEX

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
New Grids	308	1,830	1,706	2,232	2,073	8,149
Conversions	178	126	0	255	0	559
Extensions	20.7	341	559	252	315	1,487.7
Augmentations	384	450	575	612	652	2,673
T/Lines	1,479	1,286	1,146	1,003	1,404	6,318
132 kV Capacitors	-	69	69	71	82	291
Conversion of ISO Bay	-	194	0	0	0	194
Ext: of 11kV Control House	-	24.2	20.7	12.5	2.7	60.1
Twin Bundle	-	51.7	30	15.9	0	97.6
Total Cost	2,370	4,372	4,106	4,453	4,529	19,830

- Distribution System Expansion & Rehabilitation CAPEX

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
New H.T Lines	980	1072	1059	1190	1216	5516
H.T Line Reconductoring	368	403	398	447	457	2072
11 kV Capacitors	31	34	34	38	39	175
11 kV Panels	108	118	117	131	134	608
Replacement of T/F Earthing	4	4	4	4	4	20
11 kV Sectionalizers	64	70	70	78	80	363
11 kV 500 MCM Cable	24	27	26	30	30	137
New L.T Lines	152	174	178	180	193	877
L.T Line Reconductoring	103	137	148	156	168	711
New H.T Lines for New T/F Substations	52	59	60	61	66	297
Replacement of D-Fittings	23	23	23	23	23	113
New 25KVA Transformer	17	20	20	21	22	100
New 50KVA Transformer	53	60	62	63	67	305
New 100KVA Transformer	374	427	437	443	474	2155
New 200KVA Transformer	117	133	136	138	148	672
Augmentation of 25KVA Overloaded Dist Transformers	11	22	22	14	9	78

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Augmentation of 50KVA Overloaded Dist. Transformers	45	93	94	60	37	329
Augmentation of 100KVA Overloaded Dist. Transformers	101	207	209	134	82	733
Augmentation of 200KVA Overloaded Dist. Transformers	144	295	298	191	117	1044
Replacement of Dist. Transformers	406	360	315	299	325	1705
Single Phase Energy Meters (against defective)	470	475	479	484	489	2397
Three Phase Energy Meters (against defective)	35	35	36	36	36	178
PG Connectors	68	68	68	68	68	340
Total Cost of Dist. Rehabilitation	3,751	4,313	4,291	4,288	4,282	20,925
Total Cost of Dist. Rehabilitation (including store & installation charges 20%)	4,501	5,176	5,149	5,145	5,138	25,110
Total Cost of Dist. Rehabilitation (including store & installation charges 20%, contingency charges 2%, and escalation per annum 6.5%)	4,576	5,543	5,793	6,067	6,337	28,316

- GIS Mapping and P&E

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
11 kV Feeders Mapping	0.34	0.31	0.29	0.28	0.24	1.46
LT Circuits Mapping	0.58	2.69	2.74	2.74	2.74	11.47
Tools Required (HT+LT)	-	23.52	15.68	-	-	39.20
TOTAL	1	27	19	3	3	53

- Commercial Improvement Plan

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
CAPEX						
Mobile Phones for MRs	6	35	130	111	6	289
Data Center		1,490	2,238	1,724	1,322	6,774

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

AMRs	225	622	698	540	-	2085
Customer Service Center	87	-	-	-	-	87
Surveillance	25	18	16	14	14	87
Total CAPEX	343	2165	3082	2389	1342	9321
OPEX						
Mobile Phones for MRs	3	5	36	53	84	181
Data Center	-	181	252	212	143	725
AMRs	-	-	-	-	-	-
Customer Service Center	12	12	12	13	14	63
Surveillance	4	7	9	12	14	46
Total OPEX	**18**	**141**	**310**	**290**	**255**	**1,014**

- HR Improvement Plan

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
CAPEX						
Improving Working Environment of offices & training facilities	699	791	905	1037	1193	4625
Improving Transport Facilitates	345	669	808	373	377	2573
Total CAPEX	**1044**	**1460**	**1713**	**1410**	**1570**	**7197**
OPEX						
Capacity Building	79	100	107	110	113	509
Improving Working Environment of offices & training facilities	1389	1401	1587	1791	2020	8188
Improving Transport Facilitates	6	46	97	126	159	434
Staffing	310	766	507	420	380	2383
Total OPEX	**1784**	**2313**	**2298**	**2447**	**2672**	**11514**

- Communication Improvement Plan

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
CAPEX						
Internal Communication	6	-	11	-	-	17
External Communication	4	-	-	-	-	4
Total CAPEX	10	-	11	-	-	21
OPEX						
Internal Communication	1	1	14	15	15	45
External Communication	28	29	31	33	35	15
Total OPEX	19	30	45	48	50	192

- Financial Improvement Plan – CAPEX

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Mln Rs.)
ERP SAP	25	35	10	45	50	165

Total	25	35	10	45	50	165

73.9. The Authority observed that the earlier submissions by MEPCO 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 was also observed that the instant petition by MEPCO has been filed for multiyear tariff i.e. for a period of five (5) years, keeping the following responsibilities and functions which include:

- STG strengthening and expansion at high voltage (132 and 66 kV) for removing constraints for power transfer from NTDC transmission system to MEPCO 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.

74. 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

		GIS Mapping of LT Lines
4	Commercial Improvement Plans	Installation of AMR Meters
		HHUs for Meter Reading
		Consumer Census
		Anti-Theft Efforts
		Installation of IT Infrastructures
5	Human Resource Improvement Plans	Hiring of Additional Manpower to undertake the Projects
		Capacity Building of Human Resource

75. <u>Observations on Submission of Investment Plans under Optimally Achievable Case:</u>

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

75.2. As noted above, MEPCO has submitted 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. 82,921 Million for next 5-years. However, MEPCO provided following break-up of its proposed investment plan amounting to Rs.77,623 million instead of above claimed amount of Rs.82,921 million:

(Rs. in Million)

	Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	STG Expansion & Rehabilitation CAPEX	2370	4372	4106	4453	4529	19830
2	DOP Expansion & ELR CAPEX	4576	5543	5793	6067	6337	28316
3	GIS Mapping and P&E	1	27	19	3	3	53
4	Commercial Improvements CAPEX	343	2165	3082	2389	1342	9321
5	Commercial Improvements OPEX	18	141	310	290	255	1014
6	HR Improvements CAPEX	1044	1460	1713	1410	1570	7197
7	HR Improvements OPEX	1784	2313	2298	2447	2672	11514
8	Communication Improvements CAPEX	10	-	11	-	-	21

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

9	Communication Improvements OPEX	19	30	45	48	50	192
10	Financial Improvements CAPEX	25	35	10	45	50	165
	TOTAL	**10,190**	**16,086**	**17,387**	**17,152**	**16,808**	**77,623**

75.3. MEPCO submitted the following funding arrangements required to undertake the aforementioned investment plans under Optimally Achievable Case:

Source of Funding	2020-21	2021-22	2022-23	2023-24	2024-25	Total
MEPCO's Own Financing through Tariff	10,905	17,033	18,480	18,324	18,179	**82,921**

75.4. As discussed in the preceding paragraph, the investment plans prepared by MEPCO is 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 MEPCO:

Description	Unit	Quantity
Grid Stations		
132 kV Grid Stations	No.	123
66 kV Grid Stations	No.	6
132 kV Consumer Owned Grid Stations	No.	11
Power Transformers	No.	312
Capacity of Power Transformers	MVA	8721
Transmission Lines (132 kV & 66 kV)		
Total Length of 132kV Transmission Lines	KM	4072
Total Length of 66kV Transmission Lines	KM	635
Distribution System		
11 kV Feeders	No.	1652
Total Length of 11 kV Lines	KM	79837
Total Length of LT Lines	KM	50332
Distribution Transformers	No.	187791
Capacity of Distribution Transformers	KVA	9102165
Existing HT / LT Ratio	Ratio	1.58 : 1
Average Length of 11kV Feeder	KM	48.33

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Constraints in Existing System of MEPCO:

Description	Unit	Quantity
Overloaded 132 kV Grid Stations	No.	8
Overloaded Power Transformers	No.	30

Overloaded 11 kV Feeders	No.	323
Overloaded Distribution Transformers	No.	4057

75.5. In order to assess the above investment requirements of the Petitioner, a review of the historical pattern of the actual expenditure made by the Petitioner has been conducted to ensure investment utilization capability of MEPCO. The following table shows actual expenditure made from FY 2015-16 to FY 2019-20 by the petitioner:

(Million Rs.)

Description	2015-16	2016-17	2017-18	2018-19	2019-20	Total
DOP	851	1318	1099	853	1378	**5499**
ELR	1183	1538	1654	1871	2192	**8438**
STG	1457	1695	2271	2796	2291	**10510**
Village Electrification / Capital Contribution	2283	2000	2846	4172	4994	**16295**
Deposit Works	2400	2867	3496	2517	2404	**13684**
Others	1834	1998	1558	1230	628	**7248**
Total	10008	11416	12924	13439	13887	61674

75.6. Further review of the investments requested by the petitioner, allowed by NEPRA Vis a Vis actual utilization by the petitioner revealed the following:

Description	2015-16	2016-17	2017-18	2018-19	2019-20
Requested	14,781	12,050	18,000	13,560	17,122
Allowed	10,546	11,416	13,000	13,439	14,000
Actual	10,008	11,416	12,924	13,439	13,887
Excess/(Less)	(538)	-	(76)	-	(113)
%age	94.90	100.00	99.42	100.00	99.19

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

75.7. From above, it is observed that during last 5-years, MEPCO has utilized major portion (more than 98%) of the allowed investment and has spent the maximum of Rs.13,887 million in FY 2019-20 over the last five years period.

75.8. Further analysis of the requested investment plan proposed under Optimally Achievable Case revealed that the petitioner has claimed an amount of Rs.12,720 million on account of operational expenditure (OPEX) and included this amount in its Investment Plan despite the fact that the investment plan always reflective of the capital expenditure (CAPEX) and such OPEX should NOT be part of investment plans. In this regard, it is noted that MEPCO requested an amount of Rs.28,470 million on account of O&M expenses as part of its revenue requirements pertaining to next 5-years MYT control period. Therefore, the Authority considers that the amount of Rs.12,720 million as OPEX is to be excluded from the investment plans of MEPCO to avoid duplication of allocated budget and should have been requested by the Petitioner as part of O&M expenses.

75.9. Based on the aforementioned observations, analysis, assessment, discussion and keeping in view the historical capability of MEPCO to utilize the allocated budget against investment requirements, the Authority expects that MEPCO would make all necessary efforts to carry out its proposed investment plans under Optimally Achievable Case. Accordingly, the Authority has decided to allow the following investment to MEPCO for MYT control period of 5-years from FY 2020-21 to FY 2024-25:

(Rs. in Million)

Description	Requested under Optimal Case	Allowed Investments
STG Expansion & Rehabilitation CAPEX	19,830	19,830
DOP Expansion & ELR CAPEX	28,316	28,316
GIS Mapping and P&E	53	53
Commercial Improvements CAPEX	9,321	9,321
Commercial Improvements OPEX	1,014	-
HR Improvements CAPEX	7,197	7,197
HR Improvements OPEX	11,514	-
Communication Improvements CAPEX	21	21
Communication Improvements OPEX	192	-
Financial Improvements CAPEX	165	165
Total	**77,623**	**64,903**

75.10. The Authority considers that with the planned investment plans under Optimally Achievable Case, the following additions in T&D networks of MEPCO are expected to be included;

Total MVA Addition at 132 kV Grids:	1716 MVA
MVA Addition through Conversion from 66kV to 132kV:	273 MVA
New Transmission Lines at 132kV:	750 kMs
Capacitors Installation (132 kV Fixed):	8 Nos.
New HT (11 kV) Lines:	3,655 kms
New LT (415/230 V) Lines:	1,567 kms
New Distribution T/Fs Addition:	3,065 Nos.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

75.11. It is expected that following improvements will be achieved as a result of undertaking allowed investments by MEPCO in next 5-years:

Description	Actual 2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
T&D Loss Reduction	15.23%	13.12%	12.79%	12.34%	11.83%	11.34%
Improvement in Voltage Profiles	13%	12%	10%	8%	7%	5%
Improvement in Power Factor	0.92	0.92	0.93	0.93	0.94	0.95

Improvement in HT / LT Ratio	1.56 : 1	1.58 : 1	1.58 : 1	1.59 : 1	1.6 : 1	1.6 : 1
Improvement in Average Length of 11kV Feeders	49.65	48.33	46.51	45.10	43.66	42.33
Eliminate Fatal Accidents	10	13	0	0	0	0

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

(Rs. in Million)

	Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	STG Expansion & Rehabilitation CAPEX	2,370	4,372	4,106	4,453	4,529	**19,830**
2	DOP Expansion & ELR CAPEX	4,576	5,543	5,793	6,067	6,337	**28,316**
3	GIS Mapping and P&E	1	27	19	3	3	**53**
4	Commercial Improvements CAPEX	343	2,165	3,082	2,389	1,342	**9,321**
5	HR Improvements CAPEX	1,044	1,460	1,713	1,410	1,570	**7,197**
6	Communication Improvements CAPEX	10	-	11	-	-	**21**
7	Financial Improvements CAPEX	25	35	10	45	50	**165**
	TOTAL	**8,369**	**13,602**	**14,734**	**14,367**	**13,831**	**64,903**

75.13. In order to examine the investments made by MEPCO and to provide some degree of stability in the MYT regime, the Authority has decided that a mid-term review of the actual investments made by MEPCO would be conducted and compliance with NEPRA performance standards. Additionally, MEPCO is required to submit the report containing achievements made viz-a-viz yearly targets along with the Annual Performance Report as per PSDR 2005.

75.14. The Authority further directs MEPCO 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. The Authority also directs MEPCO to achieve the targets as allowed by NEPRA so that progress on the implementation of these projects can be monitored effectively.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

76. <u>Whether the claimed savings of 984.5 GWh and 1365.7 GWh through loss reduction plans as highlighted in Optimally Achievable Case and Best Case respectively are justifiable?</u>

76.1. The petitioner on the issue submitted that the savings claimed in the Distribution Integrated Investment Plan (DIIP) are based on the Study of Network on PSS/E & SynerGEE Software. Further, after implementation of investment plans MEPCO will be able to achieve energy savings at transmission and distribution voltage levels. The details of energy savings as provided by the Petitioner is given below:

Year	Optimally Achievable Scenario (GWh)					Total GWh
	Transmission	Distribution				
		H.T	L.T	Energy Meters	ABC Cables	
2020-21	113	90	11.82	9.168	0.792	224.78
2021-22	127	82	13.5	9.259	1.208	232.967
2022-23	76	97.2	13.8	9.352	1.391	197.743
2023-24	21	109.2	14	9.446	1.536	155.182
2024-25	36	111.6	15	9.54	1.662	173.802
Total	**373**	**490**	**68.12**	**46.765**	**6.589**	**984.474**

Year	Best Case Scenario (GWh)					Total GWh
	Transmission	Distribution				
		H.T	L.T	Energy Meters	ABC Cables	
2020-21	199	126	16.91	9.168	1.584	352.662
2021-22	114	145	17.195	9.259	2.416	287.87
2022-23	37	186	17.385	9.352	2.782	252.519
2023-24	28	192	17.575	9.446	3.072	250.093
2024-25	18	174	17.67	9.54	3.324	222.534
Total	**396**	**823**	**86.735**	**46.765**	**13.178**	**1365.678**

76.2. The Authority noted that MEPCO claimed cumulative energy savings of 984.5 GWh achieved through implementation of its ELR projects during next five years under Optimally Achievable Case whereas, these savings will reach out at 1365.7 GWh achieved through implementation of its ELR projects during next five years under Best Case. In this regard, it is clarified that MEPCO during the hearing, while presenting its justification on preparation of DIIP under Best Case, admitted that due to certain issues the Best Case Investment Plan will not be implemented. Therefore, it can be concluded that the energy savings claimed against Best Case Investment Plan will not be achieved by MEPCO.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

76.3. As far as the claimed energy savings of 984.5 GWh against Optimally Achievable Case are concerned, it is clarified that an investment of Rs.19,252 million would be allowed to MEPCO against its ELR projects. Therefore cumulative energy savings claimed by MEPCO are supported.

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 revenue requirement of the Petitioner, for the FY 2020-21, FY 2021-22 and FY 2022-23, to the extent of its distribution function is summarized as under;

Distribution of Power (DOP)

Description	Unit	FY 2020-21 DOP	FY 2021-22 DOP	FY 2022-23 DOP
Units Received	[MkWh]	19,570	19,570	21,897
Units Sold	[MkWh]	17,003	17,067	19,195
Units Lost	[MkWh]	2,568	2,503	2,702
Units Lost	[%]	13.12%	12.79%	12.34%
Investment	[Mln. Rs.]	8,369	13,602	14,734
Pay & Allowances		8,175	9,971.05	10,990.49
Post Retirement Benefits		7,252	7,977	8,663
Repair & Maintainance		1,257	1,416	1,537
Traveling allowance		815	918	996
Vehicle maintenance		419	472	513
Other expenses		590	664	721
O&M Cost	[Mln. Rs.]	18,507	21,418	23,421
Depriciation		5,435	5,799	6,214
RORB		3,970	4,542	5,198
O.Income		(3,576)	(3,706)	(3,706)
Margin	[Mln. Rs.]	24,336	28,053	31,126
Average Tariff	[Rs./kWh]	1.43	1.64	1.62

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

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. Multan Electric Power Company Limited (MEPCO), 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	26.40%	43.70%	70.10%
Level of Losses	1.34%	8.21%	9.44%
UoSC Rs./kWh	0.43	0.78	1.25

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, with the prior approval of the Authority, an 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.

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 give clear disclosures in its Financial Statements with respect to the consumer financed spares and stores, work in progress and cash & bank balance.

ii. To ensure proper tagging of its assets and submit compliance report in the matter.

iii. 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.

iv. To capitalize the cost of meters instead of expensing out

v. To provide details of PEPCO Management Fees, if any, claimed previously so that same could be adjusted in the subsequent tariff adjustment

vi. To provide its working regarding under/over recovery of quarterly adjustment 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.

vii. To clear all pending connections to its eligible consumers as specified in the Consumer Eligibility Criteria and Performance Standard Distribution Rules, 2005 and submit a detailed compliance report to NEPRA on a monthly basis.

viii. Report be submitted, indicating the current/latest status including but not limited to total number of complaints received, total number of complaints resolved, type of complaints, type of consumers etc. for consideration of the Authority.

ix. To submit the detailed (project wise) report along with its timelines executed and/or to be executed in upcoming years. It is further directed to submit a detailed analysis regarding the benefit accrued (in terms of improvement in AT&C losses) against amounts incurred in previous years.

x. To carry out load shedding in accordance with Rule 4 (f) of Performance Standard (Distribution) Rules, 2005.

xi. To submit the details of system constraints due to which it draws less power as compared to allocated quota.

xii. To submit the details of remedial measures taken by MEPCO for the achievement of performance standards (targets of SAIFI & SAIDI given by the Authority during FY 2019-20) as laid down in NEPRA Performance Standards.

xiii. To provide the project details/investments done along with the impact on system improvement.

xiv. To submit the progress regarding the installation of AMI/AMR meters at the consumer end.

xv. To submit the Progress of installation of ABC cable to control theft of electricity, which is the major source of the increase in transmission and distribution losses.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

xvi. To make efforts to maintain the desired level of its performance indicators including SAIFI, SAIDI and allowed targets of T&D losses once achieved up to the mark.

xvii. To achieve the targets as allowed by NEPRA so that progress on the implementation of allowed projects can be monitored effectively.

xviii. 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-A for compliance.

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

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. 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.

xxii. 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.

xxiii. 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.

xxiv. 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.

xxv. 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.

xxvi. 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

above mentioned progress to the Authority and also submit the monthly, quarterly and annual progress reports in the matter.

xxvii. 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.

xxviii. 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.

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

80. The determination of the Authority along-with Annex-A, 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

Rafique Ahmed Shaikh
Member

Engr. Maqsood Anwar Khan
Member

Tauseef H. Farooqi
Chairman

My additional note is attached herewith.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

02.06.22

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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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.

2/6/22

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

02 06 22

Annex-A

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.

No.	Objective/Target	Key Performance Indicator
1.	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	Earthing/grounding of infrastructures, apparatus, and poles, along with stay wire until June 30, 2022.
		Periodic verification of integrity of earthing/ grounding.
		On the basis of periodic continuity and resistance measurement tests, continually repair/rectify deteriorated earthing/grounding system within one month.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

-81-

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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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.	

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY