Registrar

National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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-499/TESCO-2019/45323-45325
December 11, 2020

Subject: **Determination of the Authority in the matter of Petition filed by Tribal Areas Electricity Supply Company Ltd. (TESCO) for Determination of its Distribution Tariff for the FY 2019-20** [Case # NEPRA/TRF-499/TESCO-2019]

Dear Sir,

Please find enclosed herewith subject Determination of the Authority (29 Pages) in Case No. NEPRA/TRF-499/TESCO-2019.

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.

Enclosure: As above

11 12 20

(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-499/TESCO-2019

DETERMINATION OF DISTRIBUTION TARIFF PETITION OF FY 2019-20

FOR

TRIBAL AREAS ELECTRICITY SUPPLY COMPANY LIMITED (TESCO)

UNDER

NEPRA TARIFF (STANDARDS AND PROCEDURE) RULES - 1998

Islamabad

~~**November , 2020**~~

December 11, 2020

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
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
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
PESCO	Peshawar Electric Supply 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

DETERMINATION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY TRIBAL AREAS ELECTRICITY SUPPLY COMPANY LIMITED (TESCO) FOR DETERMINATION OF ITS DISTRIBUTION TARIFF FOR THE FY 2019-20

CASE NO. NEPRA/TRF-499/TESCO-2019

PETITIONER

Tribal Areas Electric Supply Company Limited (TESCO), Head Office, Sakhi Chashma, Shami Road, Peshawar.

INTERVENER
M/s CM Pak Limited (ZONG)

COMMENTATOR
NIL

REPRESENTATION

i.	Mian Hamid	Chief Executive Officer
ii.	Mr. Fazli Wahab	Dy. Manager C/A
iii.	Mr. Tajamul Hussain	Dy. Manager C/S
iv.	Abdullah Haroon	A.D Finance

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1. **Background**

1.1. The amendments in the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 was passed by the National Assembly on 15th March, 2018, which was published in the official Gazette on 30th April 2018 (the "**Amendment Act**"), resulting in restructuring of the energy sector.

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. 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. In view thereof, Tribal Areas Electricity Supply Company Limited (TESCO), 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 for the FY 2019-20 in terms of Rule 3 (1) of Tariff Standards & Procedure Rules-1998 (hereinafter referred as "Rules").

1.5. The Petitioner, inter alia, has requested for a distribution cost of Rs.1,443 million for the FY 2019-20 i.e. Rs.0.82/kWh based on projected sales of 1,766 GWh as detailed below;

Description	FY 2019-20
Total Units Sale - GWh	**1,766**
	Rs. Mln
O&M Cost	979
Depreciation	474
RoRB	845
Other Income	(887)
Net Distribution Margin	**1,411**
Financial Charges	**33**
Total	**1,444**
Average Tariff Rate	**0.82**

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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 on December 02, 2019. 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 February 13, 2020, for which notice of admission / hearing along-with the title and brief description of the petition was published in newspapers on February 03, 2020 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 Petitioner has complied with the direction of the Authority in their earlier determination?

ii. Whether the projected sales (GWh) is reasonable?

iii. Whether the projected Distribution Margin (excluding RoRB) is justified? The petitioner is required to provide Grid wise plan of its proposed O&M.

iv. Whether the projected Return on Regulatory Asset base (RORB) for the FY 2019-20 is justified?

v. Whether the requested Financial Charges are justified, especially when the Petitioner is requesting RoRB?

vi. Whether the distribution margin should be recovered on Rs./kW or Rs./kWh basis?

vii. Whether the Petitioner's request for allowance of working capital is justified?

viii. Whether the requested T&D loss target for the FY 2019-20 is reasonable? Whether this target comprises of both Technical and Commercial losses?

ix. Whether TESCO fully utilized the investments in different heads allowed previously in FY 2016-17 and FY 2017-18? TESCO is required to provide project wise detailed report showing benefits achieved so far.

x. Whether the petitioner's proposed Investment Plan for the FY 2019-20 is justified? Whether the requested investment without submission of 5 Year IGTDP is justified? Petitioner must provide the project wise detailed report along with rationale against the requested investment for FY 2019-20.

xi. What are the proposed plans specifically for loss reduction and removal of overloading and system constraints/congestions with TESCO?

xii. Whether the ToU meters installed on Residential connections have the capability to record MDI?

xiii. Whether the basis used by the Petitioner for bifurcation of its costs into supply and distribution segments is justified?

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xiv. Whether TESCO is currently facing network congestions? If yes, TESCO is required to submit detailed analysis by identifying the grey areas which causes congestions in its transmission and distribution system.

xv. As provided in NEPRA Amendment Act, 2018, TESCO as Distribution Licensee shall be deemed to hold Supply License also for a period of 5-years. In this regard, TESCO is required to explain its organizational restructuring in respect of segregation of responsibilities for Distribution Business and Sale Business?

xvi. As per NEPRA Amendment Act, 2018, obligations of procurement of assets including meters (for satisfying its services) and disconnection / reconnection services (on demand of Supplier) are with Distribution Licensee whereas procedure for metering, billing, collection of approved charges and recovery of arrears are the obligations of Supply Licensee. In this scenario, TESCO is required to state the mode and manner being developed and followed for appropriate coordination between Distribution Licensee and Supply Licensee?

xvii. What are the reasons for delay in installation of pending connections?

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

xix. 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 CM Pak Limited (ZONG). A brief of the concerns raised by M/s CM Pak is as under;

4.2. The intervener highlighted issues being faced in terms of provision of electricity, coupled with over billing, deteriorating system and non-cooperative mechanism being adopted with respect to discharge of liabilities by the Petitioner. It was also submitted that provision of electricity connections despite paid demand notes ranges from 100-400 days, whereas, as per the rule 4 of NEPRA Performance Standards (Distribution) Rules, 2005, the time period prescribed for new connections is within 30 to 55 days. The Intervener accordingly requested the Authority to issue directions to the Petitioner for provision of electricity connection in accordance with law and decide the pending over billing complaints/issues within a specified time in accordance with law.

4.3. The Authority observed that the issues highlighted by the Intervener were primarily complaints in nature, therefore, directed the Petitioner, during the hearing, to ensure provision of pending connections without further delay. The Authority also directed the Petitioner to establish a corporate desk to facilitate its corporate clients in terms of provision of electricity and to address the issues of overbilling, if any, on priority basis. The Authority also noted that an issue regarding delay in installation of pending connections was also framed for discussion during the hearing. However, the Petitioner did not submit any details with respect to the pending connections as of June 2019. The Authority while analyzing the DISCOs performance statistics report published by PEPCO noted that total applications

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pending for new connections in respect of the Petitioner were 1,021, which include 139 domestic, 758 commercial, 102 Agriculture, 20 industrial and 2 others applications. The Authority directs the Petitioner to provide electricity connections to all these pending applications without further delay and submit a quarterly progress report in this regard.

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

5. <u>Directions given to the Petitioner in its earlier Tariff determination</u>

5.1. The Authority gave certain directions to the Petitioner in its tariff determination for the FY 2017-18, which have already been deliberated in detail in the distribution tariff determination of the Petitioner for the FY 2018-19, therefore, need not to be discussed again in the instant determination. The Authority further 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. Further, the directions given by the Authority in the tariff determination to of the Petitioner for the FY 2018-19, have been reproduced in the instant decision for compliance by the Petitioner.

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

7. <u>As provided in NEPRA Amendment Act, 2018, TESCO as Distribution Licensee shall be deemed to hold Supply License also for a period of 5-years. In this regard, TESCO is required to explain its organizational restructuring in respect of segregation of responsibilities for Distribution Business and Sale Business?</u>

8. <u>As per NEPRA Amendment Act, 2018, obligations of procurement of assets including meters (for satisfying its services) and disconnection / reconnection services (on demand of Supplier) are with Distribution Licensee whereas procedure for metering, billing, collection of approved charges and recovery of arrears are the obligations of Supply Licensee. In this scenario, TESCO is required to state the mode and manner being developed and followed for appropriate coordination between Distribution Licensee and Supply Licensee?</u>

8.1. 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'.

8.2. In light of the aforementioned provisions of the Act, the Petitioner was required to bifurcate its costs in terms of Distribution and Supply Function and provide basis thereof.

8.3. The Petitioner during the hearing submitted following basis for bifurcation of cost to Distribution and Supply function;

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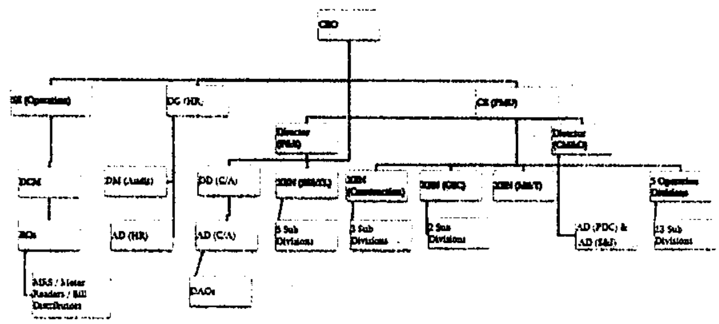
SUPPLY OF POWER	DISTRIBUTION OF POWER
Superintending Engineer (Operation)	Chief Engineer (PMU)
Deputy Commercial Manager	Director (P&E), Director (CM&O)
Revenue Officers	5 Operation Divisions, 23 Subdivisions
Meter Reading Supervisors, Meter Readers and Bill Distributors.	XEN (GSC), XEN (Construction),
The above are allocated 100% expenses to Supply of Power.	XEN (SS&TL), XEN (M&T)
Salaries and other expenses of head quarter expenses are allocated on the basis of services provided.	The above are allocated 100% expenses to Distribution of Power.
80% expenses of computer center	Salaries and other expenses of head quarter expenses are allocated on the basis of services provided
	20% expenses of computer center
Both businesses are bifurcated on the basis of functions, job descriptions and activities resulting in cost & revenue to TESCO and number of employees are considered as cost driver.	

8.4. The Petitioner provided the following organogram in this regard;



8.5. Regarding coordination between two business i.e. Distribution and Supply functions, the Petitioner submitted the following;

i. Chief Engineer (PMU) is responsible for all activities of Distribution of Power business.

ii. Superintending Engineer (Operation) is responsible for all activities of Supply of Power business.

iii. Deputy Commercial Manager (DCM) (staff officer of SE-Operation) is responsible for metering, billing and collection.

iv. Executive Engineers of Operation Divisions are responsible for operation and maintenance of the feeders, distribution transformers and LT lines, sub services to consumers. They will also manage requirement of meters, disconnection and reconnection on the request of Supply of Electricity Business. Sub Division will provide services to Distribution of Electricity and Supply Services on proportionate basis of 70% to 30% respectively.

v. Revenue Officers are responsible for metering, billing and collection. They will report to DCM.

vi. Procurement of energy meters & other distribution system equipment will be done centrally through Manager (Material Management) on request of Executive Engineers and issue the same to field offices on their request.

vii. All the financial transactions between two businesses will be adjusted through inter office transaction advices.

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viii. Every Revenue Office & Executive Engineer Office will be declared as accounting unit and a Divisional Accounts Officer will be posted therein.

ix. Divisional Accounts Officer will be responsible to keep the record of all financial transactions.

8.6. 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 metering, billing and collection form part of the Supply License.

8.7. The Authority observed that the Petitioner has bifurcated its costs keeping in view the functions as provided in the Act, i.e. all non-sale elements of the distribution segment *(i.e. installation/investment, operation, maintenance and controlling of distribution networks)* as part of the Distribution License and all sale related activities *(metering, billing and collection)* as part of the Supply License.

8.8. The Petitioner has also shared its organizational restructuring program in respect of segregation of responsibilities for Distribution Business and Sale Business, whereby the Chief Commercial officer shall be the head of Supply Business and Chief Engineer (T&G) & Chief Operation Officer shall be responsible for distribution activities. Similarly, the Petitioner has also shared the manner being developed and followed for appropriate coordination between Distribution Licensee and Supply Licensee.

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

9. **Whether the projected sales (GWh) is reasonable?**

9.1. The Petitioner in its petition has assumed sales of 1,776 GWh. The Petitioner regarding the projection has stated that it has assumed an annual demand growth of 10.13% due to increase in electricity supply to domestic consumers from 4 hours per day to 8 hours per day. Further, an annual demand growth of 7.61% due to completion of return of Internally Displaced Persons has been assumed.

9.2. The Authority observed that the issue being relevant with the Supply Business has been deliberated in detail under Supply Tariff Petition of TESCO for the FY 2019-20.

10. **Whether the projected Distribution Margin (excluding RoRB) is justified? The petitioner is required to provide Grid wise plan of its proposed O&M.**

10.1. The Petitioner has requested an O&M costs of Rs.978 million in its Petition for its distribution function for the FY 2019-20 as detailed hereunder;

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Description	Actual / Requested (Rs. Mln)
	FY 2019-20
Salary & benefits	630
Post retirement benefits	242
Traveling cost	20
Vehicle running expenses	14
Repair & maintenance	44
Other expenses	28
Distribution O&M	**978**

10.2. The O&M costs includes Employees cost (including Post-Retirement Benefit), Admin Expenses, Repair and Maintenance expenses, Travelling Expenses, Transportation Expenses, Management Fee and Miscellaneous expenses related to its distribution function. The Petitioner in terms of the requested O&M has only submitted that the same has been worked out by incorporating inflationary adjustments to the latest available data of operating expenses and increase announced by the Federal Government to the extent of employees cost.

11. **Salaries Wages & Other Benefits**

11.1. The Petitioner has requested an amount of Rs.872 million for the FY 2019-20, for its distribution of power function, under the head of Salaries, Wages & Other Benefits including Rs.243 million for the post-retirement benefits. The Petitioner in support of its claim submitted that actual expenses, as per audited accounts of FY 2018-19, have been adjusted to incorporate the anticipated rise of wages/salaries by Govt. of Pakistan and other expenses due to current inflationary pressures and Dollar hike. It has also been submitted that since TESCO was incorporated as company in compliance with power sector reform policy of Government of Pakistan and the WAPDA employees working in Area Electricity Board Peshawar gradually become employees of the company in terms of the Man Power Transition Plan, therefore, TESCO has to Maintain the GOP pay scales and the terms of employment for the employees which were prevalent in WAPDA. The GOP in its Annual Budget for FY2019-20 has increased the Pay and Pension of Government employees @ 10%, similarly 5% increase from December 2019 onward is assumed as an effect of Annual Increment. Employees Retirement Benefits have been based on the average of annual increase in the last three years audited figures.

11.2. The Petitioner also submitted that it has advertised for 61 vacant post with the approval of GoP which will enhance O&M expenditure for the year 2019-20 also.

11.3. Considering the fact that the period i.e. FY 2019-20, for which the cost is being assessed has already lapsed, therefore, the Authority considers it appropriate to also take into account the actual cost incurred by the Petitioner in this regard during the FY 2019-20. However, till finalization of the instant determination, the financial statements of the Petitioner for the FY 2019-20 were not made available. The Authority, however, understands that since the Petitioner is a public sector company, it is required to pay its employees, the increases in salaries & wages as announced by the Federal Government through Budget.

11.4. In view thereof, the Authority has decided to incorporate the increases announced by the Government on Salaries, Wages in the Budget of FY 2019-20, on the amount allowed to the Petitioner for Salaries & Wages for the FY 2018-19, excluding Post retirement benefits, for

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both the distribution and supply functions. Accordingly, the Petitioner is allowed a total amount of Rs.748 million for its Salaries & Wages Cost *(excluding postretirement benefits, discussed separately)* for the FY 2019-20. Based on the same criteria as adopted by the Petitioner itself to bifurcate the cost in terms of Distribution and Supply Functions, the cost of Salaries & wages for the Distribution Function of the Petitioner for the FY 2019-20 works out as Rs.602 million, which is hereby allowed.

11.5. Regarding cost of new recruitment, the Authority observed that Salaries & Wages cost for the FY 2019-20, is being allowed based on the actual expenses of the Petitioner as per its Audited accounts for the FY 2018-19, therefore, impact of any new recruitment already made in the FY 2018-19 has been duly accounted for in both the FY 2018-19 and FY 2019-20. For the proposed recruitment to be carried out in FY 2019-20, the Authority understands that allowing cost of additional hiring, upfront would be unfair with the consumers, without considering/ analyzing the benefits of such recruitment. Therefore, the Authority may consider such costs once the actual recruitment is carried out and the Petitioner provides details of the actual cost incurred duly substantiated with the quantified benefits accrued.

12. Post-Retirement Benefits

12.1. The Authority considering the overall liquidity position in the power sector and in order to ensure that the Petitioner fulfils its legal liability with respect to the post-retirement benefits, directed the Petitioner to create a separate fund in this regard before 30th June 2015. Subsequently, this deadline was extended by the Authority. The rationale was that the creation of funds would ensure that the Petitioner records it liability more prudently since the funds would be transferred into a separate legal entity. In addition to that these independent funds would generate their own profits, if kept separate from the company's routine operations and in the longer run reducing the Distribution Margin and eventually consumer-end tariff.

12.2. The Petitioner in its instant Petition has not provided any update in the matter, however, has requested an amount of Rs.243 million, under the head of post-retirement benefits.

12.3. The Authority, understands that payment of postretirement benefits to the retired employees is a compulsory obligation of the Petitioner and by not creating a separate post retirement fund would not absolve the Petitioner from its responsibility in this regard.

12.4. In view thereof, the Authority has decided to consider the increases announced by the Government on Post retirement benefits in the Budget of FY 2019-20. Accordingly, after incorporating the increases announced by the Government in the Budget of FY 2019-20, on the total amount of Postretirement benefits allowed to the Petitioner for the FY 2018-19, the request of the Petitioner to allow Rs.243 million as Postretirement benefits for the distribution function for the FY 2019-20, including the impact of payments for the Ex-WAPDA employees retired before 1998, is reasonable and hence allowed.

12.5. The Petitioner is again directed to create a separate post retirement fund as already directed by the Authority.

13. Operation & Maintenance Costs

13.1. For projections or assessment of OPEX costs, two commonly used approaches are Ex-Ante 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 expenses, in the form of

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY 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. Secondly, the utility shares the savings or losses with consumers. The former approach 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.

13.2. The widely used approach is that no adjustments to allowed Revenues or OPEX allowances are made hence providing an incentive to the utility its improve its operations

13.3. Although, the period i.e. FY 2019-20, for which the costs are being assessed, has already lapsed, however, the financial statements of the Petitioner for the FY 2019-20, to ascertain its actual costs incurred during the year have not been made available till finalization of the instant determination, therefore, the Authority has decided to make its own assessment in this regard.

14. **Repair & Maintenance Expenses**

14.1. The Petitioner requested an amount of Rs.44 million for its Distribution function for the FY 2019-20. The Petitioner while justifying its request submitted that it has to maintain its old and over loaded system in order to ensure un-interrupted power supply to the consumers, moreover cost of material has also increased due to inflationary pressure. Accordingly, the requested amount has been based @0.45% of the net fixed assets of Rs.9,757 million. The Petitioner provided the following detail in this regard;

Repair & Maintenance	Actual (Rs. Mln)		Requested (Rs. Mln)
	FY 2016-17	FY 2017-18	FY 2019-20
	Rs. in Mln	Rs. in Mln	Rs. Mln
Grid stations (132kV & 66kV)	22	20	26
Transmission lines (132kV & 66kV)	13		12
11kV feeders / switchgears	1		2
LT lines (below 11kV)			1
Offices & non-residential buildings	1	6	3
Total	37	26	44

14.2. Her it is pertinent to mention that the Petitioner total actual costs for the FY 2018-19 under the head of repair & maintenance, for both the supply and distribution function remained at Rs.35 million.

14.3. For the FY 2019-20, the Petitioner was required to provide Grid wise plan of the proposed R&M with justification of the requested amounts, however, no such details have been provided by the Petitioner either during the hearing or afterwards. Therefore, the petitioner is directed to provide the required details in future. However, at the same time, the Authority understands that adherence to the prescribed service standards and improvement of customer services is only possible through continuous repair and maintenance of the network. In view thereof, and based on comparison with other XWDISCOs, the Authority has decided to allow the impact of inflation over the Actual expenses of the Petitioner for the FY 2018-19. Accordingly, the total R&M of the Petitioner for the FY 2019-20 works out as Rs.38 million, for both the Distribution and Supply Functions. Based on the same criteria as used by the Petitioner to bifurcate its costs in terms of Distribution and Supply Functions, the Authority has assessed Rs.31 million as R&M cost for the Distribution Function of the Petitioner for the FY 2019-20 out of total allowed amount of Rs.38 million.

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14.4. The Authority observed that the Petitioner is being directed since FY 2015-16, to maintain a proper record of its assets by way of tagging each asset for its proper tracking. In addition, the Petitioner was also directed to provide an explanation on the concerns raised by the Authority in terms of its R&M cost, however, no such explanation has been received from the Petitioner. The petitioner is therefore once gain directed to maintain a proper record of its assets by way of tagging each asset for its proper tracking and also to provide explanation on the concerns raised by the Authority in terms of its R&M cost in the tariff determination for the FY 2015-16.

15. **Travelling Expenses**

15.1. The Petitioner requested in the Petition, an amount of Rs.20 million on account of travelling cost for the FY 2019-20, for its distribution function based on inflation adjustments to its operating expenses from the latest available data. The Petitioner also submitted that Travelling expenses have been projected because Government of Pakistan has enhanced the rates of daily allowances on official duty within the country. Here it is pertinent to mention that the Petitioner has been allowed an amount of Rs.14 million for travelling for the FY 2018-19, for both its distribution and supply function.

15.2. Although, the Petitioner, while requesting the amount of Rs.20 million for the FY 2019-20, did not substantiate its request with any evidence or details, the Authority understands that responsibility of the Petitioner includes the entire FATA and needs to travel frequently, in order to properly monitor and resolve complaints in timely manner.

15.3. In view of the foregoing discussion, after incorporating the impact of inflation over the allowed travelling expenses for the FY 2018-19, the Authority has assessed an amount of Rs.15 million as travelling expenses for both the distribution and supply function of the Petitioner for the FY 2019-20. Based on the same criteria as used by the Petitioner to bifurcate its costs in terms of Distribution and Supply Functions, the Authority has assessed Rs.10 million as Travelling cost for the Distribution Function of the Petitioner for the FY 2019-20 out of total allowed cost of Rs.15 million.

16. **Transportation Expenses**

16.1. The Petitioner has requested an amount of Rs.14 million on account of Transportation charges for its distribution function, including vehicle repair costs, for the FY 2019-20 based on inflationary adjustments to the Petitioner's operating expenses from the latest available data. The Petitioner in support of its claim submitted that most of the vehicles are old and has completed useful life of 10 years & need major overhauling. The Petitioner stated its Financial position does not allow it to replace them with new vehicles thus, left with no option but to maintain them apart from that TESCO distribution system is spread all over Tribal Area.

16.2. Here it is pertinent to mention that the Petitioner has been allowed an amount of Rs.10 million under this head for the FY 2018-19 for its distribution function.

16.3. Although, the Petitioner, while requesting the amount of Rs.14 million for the FY 2019-20, has not substantiated its request with any evidence or details, the Authority keeping in view the Petitioner's service area, past trends, comparison with other XWDISCOs, trend of fuel prices and including the impact of inflation over the actual/ allowed transportation costs for the FY 2018-19, the Authority has decided to allow the amount of Rs.13 million for its distribution function for the FY 2019-20 under the head of Transportation cost.

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17. **Other Expenses**

17.1. The Petitioner has requested an amount of Rs.128 million on account of Other Expenses under the head of admin expenses, management fee and miscellaneous expenses for the FY 2018-19 i.e. Rs.29 million for Distribution Function and Rs.99 million for Supply Function. Other Expenses include Rent, Rates & Taxes, Office Supplies, Legal Fees, Power & Light, NEPRA Fees, etc. Here it is pertinent to mention that the Petitioner was allowed an amount of Rs.38 million under this head for the FY 2018-19 for both the distribution and supply functions, after excluding therefrom the amount claimed as PEPCO management fees.

17.2. The Petitioner, while requesting the amount of Rs.128 million for the FY 2019-20 including Rs.29 million for its distribution function, has not substantiated its request with any justification or details, therefore, the Authority for the FY 2019-20, has decided to allow the impact of inflation on the total amount of Other Expenses allowed to the Petitioner for the FY 2018-19. Accordingly, the amount of other expense allowed for the FY 2019-20 works out as Rs.42 million for both the distribution and Supply Functions. For the purpose of bifurcation of allowed cost in terms of Distribution and Supply Functions, the same criteria as used by the Petitioner has been adopted. Based on the said criteria, the cost of other expenses for the Distribution function for the FY 2019-20 works out as Rs.10 million, which is hereby allowed to the Petitioner.

17.3. Since the Authority has already decided to not allow any cost on the pretext of PEPCO Management fee, as discussed in detail in the tariff determination of the Petitioner for the FY 2018-19, the Petitioner is directed to provide details of PEPCO Management Fees, if any, claimed previously after the FY 2010-11, so that same could be adjusted in the subsequent tariff determinations.

18. **Depreciation**

18.1. The Petitioner on account of Depreciation Charges for distribution function has requested an amount of Rs.474 million for the FY 2019-20. The Petitioner submitted that for distribution of power actual depreciation expense for 2019-20 is calculated on the basis of the value of existing assets plus the addition in assets during the FY 2019-20. All the assets are depreciated on straight line method as per utility practice.

18.2. In order to make fair assessment of the Petitioner's depreciation charges, the Authority has taken into account the amount of investments allowed to the Petitioner for the instant year. After taking into account new investments, the Gross Fixed Assets in Operation for the FY 2019-20 have been worked out Rs.10,849 million. Accordingly, the depreciation charge for the FY 2019-20, calculated on actual depreciation rates for each category of Assets as per the Company's policy, has been assessed as Rs.378 million i.e. Rs.375 million for Distribution function and Rs.3 million for the Supply function.

18.3. After carefully examining the relevant details and information pertaining to the deferred credit and amortization, the Authority has assessed amortization of deferred credit to the tune of Rs.276 million for the FY 2019-20, thus, consumers would bear net depreciation of Rs.102 million.

19. **Other Income**

19.1. The Petitioner has projected Rs.887 million as other income for the FY 2019-20 for its distribution function. Other income is considered as negative cost which may include, but

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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.

19.2. The Authority has decided to consider the amount of Other Income as proposed by the Petitioner for the FY 2019-20, 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.887 million as Other Income which does not include late payment charge but includes amortization of deferred credit.

19.3. The Authority in consistency with its earlier decision, on the issue, has not included the amount of LPS while assessing the other income for FY 2019-20. 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.

19.4. In view thereof, the Authority, again directs the Petitioner 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, in its next tariff petition.

20. **Whether the Petitioner's request for allowance of working capital is justified?**

20.1. The Petitioner in the Petition submitted that the tariff requested by TESCO in respect of Distribution network for the FY 2019-20 may be determined as proposed along with Working Capital requirement. However, no further justification or any working or rationale for the working capital requirement has been submitted by the Petitioner, either in the Petition or during the hearing or even afterwards.

20.2. In view thereof, the Authority does not see any rationale to consider the working capital request of the Petitioner.

21. **Whether the projected Return on Regulatory Asset base (RORB) for the FY 2019-20 is justified?**

22. **Whether the requested Financial Charges are justified? Especially when the Petitioner is requesting RoRB?**

22.1. The Petitioner has requested an amount of Rs.845 million as RoRB for the FY 2019-20, using a Rate of Return of 11.83%, for its distribution function.

22.2. The Petitioner has provided following calculation of the requested amount of Return;

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Description	2019-20 Projected (Rs. Mln)
Gross Fixed Assets in Operation – Closing Balance	8932
Addition in Fixed Assets	4660
Gross Fixed Assets in Operation – Closing Balance	13592
Less: Accumulated Depreciation	-3836
Net Fixed Assets in Operation	9757
Add: Capital Work In Progress	4932
Investment in Fixed Assets	14689
Less: Deferred Credits	5450
Regulatory Assets Base	9239
Average Regulatory Assets Base	7144
Rate of Return	11.83%
Return on Rate Base	**845**

22.3. The Authority noted that Section 31(3) of the amended NEPRA Act prescribes that;

(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;

22.4. The Authority allows Return to DISCOs based on WACC as no separate financial charges are allowed. For calculation of Return of Equity (RoE) component of the WACC, the Authority uses the Capital Asset Pricing Model (CAPM), being the most widely accepted model, applied by Regulatory agencies all over the world to estimate the cost of capital for regulated utilities. Since the Authority uses Plain Vanilla WACC, hence the impact of tax shield is taken as zero, and in case any tax is actually paid by the Petitioner, it is treated as pass through.

22.5. As per the 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.

22.6. For assessment of the RoE component for the FY 2019-20, weighted average yield on 05 Years Pakistan Investment Bond (PIB) as of June 27, 2019 has been considered as risk free rate which is 13.7687%. 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.

22.7. To have an appropriate measure of the market rate of return, the return of KSE-100 Index, over a period of 8 years, has been analyzed which remained at around 15%, which translates into risk premium of around 1.23% *(with risk free rate of 13.7687%, Weighted Average Yield of 5-Year PIB as of June 27, 2019)*. Therefore, keeping in view the aforementioned, Market Risk Premium of 1.23% is considered as reasonable for calculation of cost of equity component.

22.8. The Authority, keeping in view the earlier studies in the matter, range of betas used by international Regulators, and request of the Petitioner, has decided to maintain a beta of 1.10 while assessing the RoE component of the Petitioner.

22.9. As regard the cost of debt, it is the interest rate on which a company would get borrowing from the debt market / commercial banks or the rate on which banks lend to their customers.

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In order to have a fair evaluation of the cost of debt, the Authority has analyzed the financial statements of the DISCOs. The Authority noted that majority of loans obtained by XWDISCOs are relent loans, therefore, keeping in view the NEPRA (Benchmarks for Tariff Determination), Guidelines, 2018, and the loans obtained by K-Electric, the Authority considers cost of debt as 3 month's KIBOR + 2.00% spread as reasonable. Consequently, the cost of debt has been worked out as 14.97% i.e. 3 Months KIBOR of 12.97% as of 25th July 2019 plus a spread of 2.00% *(200 basis points).*

22.10. Consequent to the aforementioned discussion, the Authority has re-worked the WACC as below;

Cost of Equity;
$Ke = R_F + (R_M - R_F) \times \beta$
(13.7687% + (15%-13.7687% = 1.23% x 1.1) = 15.12%
Cost of Debt;
Kd = 14.97%

22.11. Accordingly, the WACC has been worked out as under;

WACC;
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 = ((15.12% x 30%) + (14.97 % x 70%)) = 15.02%

22.12. Thus, using rate of return of 15.02%, the Authority has assessed Rs.600 million as return on rate base as per the following calculations:

Description	FY 2018-19	FY 2019-20
Fixed Assets O/B	7,367	8,991
Addition	1,624	1,858
Fixed Assets C/B	8,991	10,849
Depreciation	3,396	3,774
Net Fixed Assets	5,595	7,075
Capital WIP C/B	4,458	5,101
Fixed Assets Inc. WIP	10,053	12,175
Less: Deferred Credits	7,023	7,221
Total RAB	3,030	4,955
Average RAB		3,993
WACC		15.02%
RORB		600

22.13. Based on the same criteria used by the Petitioner for allocation of its RORB among its Distribution and Supply Functions, the RoRB for the Distribution function of the Petitioner for the FY 2019-20 works out as Rs.597 million.

22.14. The Authority during the tariff determination of the Petitioner for the FY 2015-16, noted that the Petitioner has 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 is of the view that the amount collected as security deposit cannot be utilized for any other reason and any

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY profit earned thereon has to be distributed to the consumers. Also, the amount collected under the head of receipt against deposit works has to be spent for the purpose for which it has been collected. The utilization of the money collected against deposit works and security deposits other than the works for which it has been received is illegal and unlawful. In view thereof, the Petitioner in the tariff determination for the FY 2015-16, FY 2016-17 and FY 2017-18 was directed to provide rational / justification for improper utilization of the money because the consumers have to suffer unnecessary delay on this account.

22.15. Similarly for the FY 2018-19, the Authority again observed that the Petitioner had insufficient cash balance as on 30th June 2019, 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.

22.16. Accordingly, the Authority decided, to include the amount of receipts against deposit works as a part of Deferred Credits for the assessment of RAB for FY 2019-20, after excluding therefrom the cash/ bank balances and the amount of stores & Spares available with the Petitioner as on June 30, 2019.

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

22.18. The Petitioner in addition to RoRB has also requested financial cost to the tune of Rs.33 million. However, the Petitioner did not provide any detail or justification to the nature of these requested financial charges.

22.19. The Authority observed that Rate of Return (WACC) allowed to the Petitioner includes both the cost of equity as well as the cost of debt, on the Regulatory Asset Base of the Petitioner, thus, caters for the financial cost incurred by the Petitioner on loans taken for the purpose of investments. Therefore, the request of the Petitioner for allowing financial charges separately does not merit consideration.

22.20. Based on the discussion made in the preceding paragraphs, incorporating all the aforementioned increases, the Authority has assessed Rs.995 million on account of Distribution Margin i.e. Salaries, wages and other benefits including Post-retirement benefits, Traveling, Transportation, Other expenses, Repair & Maintenance, Depreciation, RoRB and other income for the FY 2019-20 as tabulated below;

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Description	Unit	FY-20
Pay & Allowances		602
Post Retirement Benefits		243
Repair & Maintainance		31
Traveling allowance		10
Vehicle maintenance		13
Other expenses		10
		-
O&M Cost	[Mn. Rs.]	909
Depriciation		375
RORB		597
O.Income		(887)
Margin	[Mn. Rs.]	995

23. **Whether TESCO fully utilized the investments in different heads allowed previously in FY 2016-17 and FY 2017-18? TESCO is required to provide project wise detailed report showing benefits achieved so far.**

24. **What are the proposed plans specifically for loss reduction and removal of overloading and system constraints/congestions with TESCO?**

25. **Whether TESCO is currently facing network congestions? If yes, TESCO is required to submit detailed analysis by identifying the grey areas which causes congestions in its transmission and distribution system.**

25.1. The aforementioned issues have been discussed in detail in the tariff determination of the Petitioner for the FY 2018-19 for its Distribution Function, wherein the Authority noted that the Petitioner did not provide the project wise report for the actual investments carried out along-with their cost/benefit analysis and technical/financial savings achieved, therefore, has directed the Petitioner to submit the required details by December 31, 2020.

26. **Whether the petitioner's proposed Investment Plan for the FY 2019-20 is justified? Whether the requested investment without submission of 5 Year IGTDP is justified? Petitioner must provide the project wise detailed report along with rationale against the requested investment for FY 2019-20.**

26.1. The petitioner in its instant tariff petitions for Distribution Network, requested Rs. 5,134 million for the FY 2019-20. The break-up of investment requested by the Petitioner is as under:

Rs. in Mln

Description	2019-20 (Projected)
DOP	1,654
ELR	19
STG	3,006
CWIP	455
Total	5,134

26.2. The Petitioner regarding plans to fund the aforementioned investments, submitted that Rs.4,660 million will be financed through Capital contribution and remaining amount of Rs.474 million from deposit works. The petitioner provided the following detail of works in this regard;

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Investment Plan	Actual FY 2019-20 Rs. in Mln	System Improvements and Benefits Achieved in		Financial Impact
		Base Line Conditions	Improved Conditions	
STG				
New grids	266	1.Overloaded power transformers.	Voltage improved up to 10% at different areas.	
Conversion of grids (66 kV to 132 kV)	2,170	2.Poor voltage regulation.	T&T loses reduced.	
Augmentation of grids	312	3.High technical loss.	System upgraded and supply hours have been increased up to 6 hours per day for domestic consumers and up to 24 hours for industrial independent consumers.	Recovery of TESCO has gradually increased from Rs. 400 Mln per month to Rs. 690 Mln per month.
New transmission lines	258			
Total	3,006			

DoP

Installation of new HT/LT lines / extension of 11kV networks	445	1.Poor voltage profile.	1.Improved voltage profile	
New distribution transformers installation	168	2.High technical losses.	2.Considerable reduction in technical line losses	Recovery of TESCO has gradually increased from Rs. 400 Mln per month to Rs. 690 Mln per month.
Rehabilitation of HT/LT lines	306	4.Excessive tripping on HT/LT networks.	4.Reduction in number of 11 kV tripping.	
Bifurcation of 11 kV feeders	735			
Provision of new connections				
Total	1654			

26.3. The Authority observed that the Petitioner was allowed an investment of Rs.971 million and Rs. 770 million for the FY 2016-17 and FY 2017-18 respectively. The investment for the FY 2016-17 was allowed keeping in view the actual cost incurred by the Petitioner as the determination was issued after completion of FY 2016-17. For the FY 2017-18, the Petitioner has been able to utilize around 96% of the allowed investment i.e. Rs.744 million against allowed amount of Rs.770 million. Similarly, Similarly for the FY 2018-19, the Petitioner has been allowed an investment of Rs.2,150 million based on actual amounts appearing in the financial statements of the Petitioner for the FY 2018-19.

26.4. The Petitioner in the tariff determination for FY 2017-18 was directed to provide;

i. Cost/benefit analysis of investments made during last 05 years & technical/financial savings achieved.

ii. Project wise detailed report for the investments allowed for the FY 2016-17 & 2017-18.

26.5. However, no such detail has been provided by the Petitioner either during the hearing or afterwards. The Authority has taken a serious notice of non-compliance of its direction in true letter & spirit by the Petitioner, which is serious violation of licensing terms that may lead to initiation of proceedings against the licensee under the relevant rules, and again directs the Petitioner to provide the required information.

26.6. Although, the Petitioner has failed to comply with the directions of the Authority in terms of providing cost benefit analysis of the investments carried out during the previous years, yet the importance of investments cannot be ignored in order to provide safe and reliable electricity to the consumers. Therefore, the Authority has carried out its own analysis / assessment of the Petitioner's Investment requirement for the FY 2019-20. In order to assess the investment requirements of the Petitioner, the Authority relied upon the historical pattern of the investments allowed by NEPRA vis a vis actual utilization by Petitioner. The comparison of investment requested, allowed and actual expenditure incurred from FY 2013-14 to FY 2018-19 is given hereunder:

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Rs. in Mln

Investment	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Requested	542	613	1,013	971	770	2,150
Allowed	542	613	1,013	971	770	2,150
Actual	317	367	814	971	744	2,150
Excess / (Less)	-225	-246	-199	0	-26	0
%age	58.49	59.87	80.36	100	96.67	100

26.7. From the above table, the Authority observed that TESCO has spent maximum of Rs.2,150 million in FY 2018-19 over last six (06) years. The Authority noted the following network additions in TESCO territory due to execution of aforementioned planned investments over last six (06) years:

Sr. #	Upto June	2014	2015	2016	2017	2018	2019
1	No. of Grid Stations (132kV, 66kV & 33kV)	15	15	16	16	18	19
2	Transmission Line Length (km) (132kV, 66kV & 33kV)	742	742	742	761	761	824
3	No. of 11kV feeders	173	183	187	199	207	215
4	Length of 11kV Lines (km)	7363	7746	9234	7768	8023	9705

26.8. It is obvious from above, that the transmission and distribution network of the Petitioner has expanded gradually during last 7 years by making a planned investment except for length of transmission lines which has gradually increased after FY 2016-17.

26.9. Keeping in view the above analysis, maximum investment utilization capability of TESCO (Rs. 2,150 million in FY 2018-19) and the significance of the investments required to cater for future demand, minimize network constraints / overloading, improve performance standard indices and reduce T&D losses, the Authority encourages the Petitioner to improve its capability to carry out more investment and accordingly decides to allow an investment of Rs.2,500 million for TESCO for the FY 2019-20.

26.10. The Authority observed that the Petitioner has failed to comply with the provision of detailed cost/benefit analysis report for the investments made during the last five years and technical/financial savings achieved. Further, the Authority is of the view that TESCO, as per provisions of the NEPRA Act, is responsible to make such plans which is required to meet future demand and also relieve the network overloading. Therefore the Authority directs TESCO to prepare schemes to cater future demand and for removal of system overloading/constraints and provide the detailed cost/benefit analysis report for the investments made during for the five years period i.e. from FY 2016-17 to FY 2019-20 and technical/financial savings achieved. A detailed report shall be submitted by the Petitioner as part of its 5-years IGTDP for approval of the Authority before filing of next tariff petition as per requirement under NEPRA Guidelines for determination of Consumer End tariff (Methodology and Process) 2015.

27. **Whether the requested T&D loss target of 17.93% for the FY 2019-20 is reasonable? Whether this target comprises of both Technical and Commercial losses?**

27.1. The petitioner in its tariff petitions, requested for T&D losses of 17.93% for FY 2019-20 with the following break-up:

FY 2019-20		
Technical	Administrative	Total
17.93%	0	17.93%

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

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Description	FY 2019-20
Transmission Losses at 132kV (%)	4.08
11kV Network Losses (%)	13.85
LT Line Losses (%)	*
Total Technical Losses (%)	**17.93**
Units Received (GWh)	2151
Units Sold (GWh)	1766
Units Lost (GWh)	386
Technical Losses (%)	**17.93**
Administrative Losses (%)	**0**

* *The petitioner has not provided the information in separate heads.*

27.3. The Petitioner during the hearing, also presented its actual T&D losses for the last five years as follows:

(GWh)

Description	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual
Units Received	1397	1269	1451	1696	1821
Units Billed	1101	1029	1227	1481	1603
Units Lost	296	240	224	215	218
% Loss	**21.2**	**18.9**	**15.4**	**12.7**	**11.96**

<u>Transmission Losses:</u>

27.4. The Authority observed that the Petitioner submitted its third party transmission loss study conducted by M/s PPI during the proceedings of its earlier tariff Petitions, on the basis of TESCO's transmission assets (132kV, 66kV and 33kV) statistics pertaining to the FY 2015-16, as tabulated below;

Sr. #	Description	As on 30th June, 2016
1	Grid Stations	16 Nos.
2	Transmission line length	742 kms.

27.5. The Authority, while evaluating the Transmission loss study, observed that the 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 TESCO 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 4.08%.

27.6. M/s PPI also recommended the following, in view of high transmission losses of 4.08% for TESCO;

"For TESCO, 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-

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conducting heavily loaded lines using Rail Conductor to bring the loading reasonably below the limit to operate the system comfortably and with lower losses."

27.7. The Authority understands that TESCO faced transmission network congestion / constraints and overloading situation in FY 2015-16, when PPI conducted the transmission losses study on the basis of transmission data pertaining to FY 2015-16 and accordingly assessed transmission losses of 4.08%. The Authority also understands that higher transmission losses of 4.08% were reflective of the above mentioned critical conditions, therefore, has no reservations on the results of the transmission losses study conducted by PPI at that time.

27.8. For the purpose of instant tariff petition, the Petitioner has requested transmission losses of 4.08% for FY 2019-20, on the basis of third party transmission loss study.

27.9. For the assessment of transmission losses for the FY 2019-20, the Authority considered the following additions in TESCO's transmission networks (132kV and 66kV) in last 3 years:

Sr. #	Description	2017	2018	2019
1	No. of Grid Stations	16	18	19
2	MVA Capacity	606	744	1210
3	Transmission line length	761	761	824

27.10. Keeping in view the above additions in the transmission networks of TESCO, the Authority expects a tangible reduction in transmission losses which the Petitioner is unable to achieve and requested for higher transmission losses. Therefore, the Authority has decided not to allow the requested transmission losses of 4.08% and maintains the same level of transmission losses i.e. 2.0% (achieved by TESCO in FY 2018-19) for the FY 2019-20 as well.

Distribution Losses:

27.11. The Petitioner has requested distribution losses of 13.85% for the FY 2019-20 on the basis of third party distribution loss study. The Authority is of the view that since TESCO in FY 2018-19 was able to reduce its distribution losses to 9.96% (on actual basis) therefore, TESCO is encouraged to maintain the same level of losses in respect of its distribution networks. Accordingly, keeping in view the Petitioner's actual situation, the Authority has decided to maintain the same level of distribution losses of 9.96% for FY 2019-20 as well.

27.12. Based on above discussion, the detailed break-up of the allowed T&D Losses of the Petitioner for the FY 2019-20 is as under

Transmission Losses	Distribution Losses	**Total Allowed T&D Losses**
2.0%	9.96%	**11.96%**

Directions with respect to losses;

27.13. Considering T&D losses being of critical importance, the Petitioner is directed to;

- ✓ Target high loss feeders to bring the overall losses down. A detailed plan be prepared and submitted to the Authority for monitoring the progress in this respect. Similarly, to carry out detailed analysis about hard and soft areas relative to its claims in earlier studies.
- ✓ The Authority considers that the Petitioner can minimize its technical losses through

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prudent planning and engineering design practices, therefore, is directed to implement such activities and submit is plans in this regard to the Authority.

- ✓ The Petitioner is also directed to take remedial measures for achievement of performance standards as laid down in NEPRA Performance Standards (Distribution) Rules, 2005, for which a detailed plan be prepared, mentioning steps to be taken by the Petitioner, and submitted to the Authority accordingly.

28. **Whether the existing Tariff Terms and Conditions needs to be modified to incorporate concerns raised by various consumers?**

28.1. A lot of complaints have been received through Pakistan Citizen Portal, as well as in the Consumer Affairs Department of NEPRA, from XWDISCOs and other stakeholders, regarding clarification of Terms & Conditions with regard to applicability of tariff for different consumer categories, like Hostels (Commercial), Foreign Embassies, Water pumps & tube-wells, Fish farms etc.

28.2. In order to address these concerns, the Authority framed an issue for discussion during the hearing of DISCOs and for providing written comments in this regard. The Petitioner during the hearing requested for clarification regarding tariff to be charged to Cold storage, private hostels and fish farms/ hatcheries.

28.3. Further, the Ministry of Energy (MOE) vide letter dated May 20, 2020, forwarded request from the Government of Punjab for revision in Tariff Category for Water and Sanitation Agencies (WASA) in Punjab from A-3 General Service Category to D-1(b) SCARP (Salinity Control & Reclamation Program).

28.4. The Authority considers that SCARP is not the relevant Tariff category for Water Schemes as SCARP is applicable to all Reclamation and Drainage Operation pumping under SCARP related installation. Moreover, the purpose of creation of A-3 category was to reduce the undue benefit of Off-Peak rates for such consumers who although have TOU meters but only operate during day hours. In view thereof, the Authority has decided to maintain its earlier decision of inclusion of water schemes under A-3 category.

28.5. The Authority has also decided the other concerns of the DISCOs and other stakeholders by amending the terms & conditions of the tariff, if deemed correct, and the same are attached with the Supply Tariff determination of the Petitioner.

29. **Whether the distribution margin should be recovered on Rs./kW or Rs./kWh basis?**

29.1. For allocation of distribution network costs, different approaches are being used worldwide, however, there is no universally accepted methodology for allocating grid costs, and a variety of criteria have been adopted for this end. The most prominent classification is the distinction between capacity tariffs and volumetric tariffs or Hybrid Models, combining both Capacity and Volumetric tariffs. Capacity tariffs depend on the peak load as grid costs are mainly capacity driven, therefore, consumers with high peak loads pay the highest network costs, as the line or feeder is dimensioned to cope with the maximum power in kW or MW it is expected to carry at a certain point in time, not by the volume (kWh or MWh), it is expected to transmit over a certain time period. On the other hand, volumetric tariffs are charged for each kWh of electricity consumed from the grid and are easier to implement with conventional meters. Volumetric tariffs can be;

- ✓ proportionate: consumers pay per kWh, independent of volume level;

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- ✓ progressive: the tariff per kWh increases with an increasing consumption level;
- ✓ regressive: the tariff per kWh decreases with an increasing consumption level; and,
- ✓ time-of-use: different tariffs in line with the available grid capacity (peak /off-peak).

29.2. The idea behind following any specific methodology for the cost recovery is that the DISCO, responsible for maintaining, developing and operating the distribution network, must be able to recuperate its prudently incurred costs. It must be reminded that DISCO is a natural monopoly, meaning that it is cheaper to have one company building and operating the distribution network rather to have multiple companies, duplicating the necessary lines and competing for consumers to connect to their network.

29.3. In view thereof, the Authority for the sake of simplicity, ease of understanding, and the fact that the majority of the meters installed at consumer end level do not have the capability to record the peak load of consumers and also keeping in view the request of the Petitioner to allow a Rs./kWh rate, has decided to adopt the Rs./kWh approach for recovery of the allowed revenue requirement of the Petitioner from its consumers.

29.4. Here it is also pertinent to mention that the Petitioner is allowed a revenue cap target, whereby, it is hedged against any volume risk, as they make allowed revenues independent of the number of users served and energy delivered. Thus, in case on any over/ under recovery of the allowed revenues based on the allowed benchmarks of T&D losses and recovery, would be adjusted in the subsequent tariff settings of the Petitioners.

30. **Whether the ToU meters installed on Residential and General Service connections have the capability to record MDI? Whether there should any Fixed Charges on residential and General Services consumers?**

30.1. The Petitioner during the hearing submitted that although the TOU meters have the capability to record MDI, however, the billing software records KWh only.

30.2. The Authority observed that currently no fixed charges are being levied on Domestic consumers and General Service Category, i.e. such consumers only pay variable charge @ Rs./kWh, based on the amount of actual energy consumed during the month.

30.3. Considering the increase in capacity charges coupled with demand exiting the system due to net metering etc., the Authority is cognizant that there is a need to levy certain fixed charges for those domestic and general services consumers who have installed net metering facility, however, as the issue requires further deliberation, therefore, the Authority has decided not to levy any fixed charges for such consumers.

31. **Wheeling Issues**

31.1. The Authority approved National Electric Power Regulatory Authority (Wheeling of Electric Power) Regulations, 2016 (the Regulations) vide SRO dated June 13, 2016, in order to facilitate wheeling of power in the country. However, different stakeholders voiced their concerns on the Regulations in terms of treatment of T&D losses during wheeling, imposition of Cross subsidies, treatment of Stranded costs if any, applicability of Use of System charges of NTDC, Hybrid BPCs, and Banked Energy etc.

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31.2. In view thereof, consultative sessions on wheeling involving all the stakeholders, were held in NEPRA as well as in LUMS, Lahore. Based on the input received from various stakeholders during the sessions and in-house deliberations, the Authority placed the amended Wheeling Regulations on the website for the comments of different stake holders and further decided to address some of these issues in the tariff determinations of XWDISCOs for the FY 2018-19 and FY 2019-20. The Authority accordingly made two additional issues of Cross Subsidy charge and Stranded cost under the instant petition, for which advertisement was published in the leading newspapers on September 9th, 2020 and hearing in this regard was held on 17th September, 2020. Here it is also pertinent to mention that to get an international view on these issues, the Authority has also engaged an international consultant through USAID.

31.3. The Authority considering the impact of the above issues on the power sector, considers that the matter requires further deliberations, and has therefore decided to issue a separate additional decision on the aforementioned proceedings.

31.4. Thus, the Use of System Charge (UoSC) determined by the Authority in the instant decision, as mentioned under the Order part, may be revised accordingly, if required in light of the decision of the Authority on the wheeling issues, which will be issued separately.

32. **Order**

32.1. 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 2019-20, to the extent of its distribution function is summarized as under;

Description	Unit	FY-20
Units Received	[MkWh]	1,943
Units Sold	[MkWh]	1,711
Units Lost	[MkWh]	232
Units Lost	[%]	11.96%
Pay & Allowances		602
Post Retirement Benefits		243
Repair & Maintainance		31
Traveling allowance		10
Vehicle maintenance		13
Other expenses		10
O&M Cost	[Mn. Rs.]	**909**
Depriciation		375
RORB		597
O.Income		(887)
Margin	[Mn. Rs.]	**995**
Revenue Requirement	[Mn. Rs.]	**995**
Average Tariff	[Rs./kWh]	**0.58**

32.2. Tribal Areas Electricity Supply Company Limited (TESCO), being a distribution licensee, is allowed to charge its consumers, the following "Use of system charge" (UOSC);

Description	For 132 kV Only	For 11 kV Only	For both 132 & 11 kV
Asset Alocation	21%	36%	57%
Level of Losses	2.00%	7.95%	9.79%
UoSC Rs./kWh	0.20	0.39	0.61

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32.3. Use of System Charge (UoSC), as mentioned above, may be revised accordingly, if required in light of the decision of the Authority on the wheeling issues, which will be issued separately.

32.4. TESCO is 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,

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

32.6. 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;

32.7. 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

32.8. 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.

32.9. 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.

33. **Summary of Direction**

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

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

ii. Segment reporting with clear break-up of costs in the financial statements for the FY 2019-20 and onward for Distribution and Supply Functions in light of the amended NEPRA Act.

iii. to immediately provide electricity connections to all the pending applications without further delay and submit a progress report in this regard by the end of each quarter.

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

v. Ensure compliance of the Authority's direction in true letter and spirit and provide a workable plan, with the consent of PESCO on the issue of payables, to ensure disposing of its liability in this regard latest by December 31, 2020.

vi. to ensure that consumer's deposits are not utilized for any other purpose and the same is reflected in the Audited accounts for the FY 2020-21 & onward.

vii. to 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.

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viii. 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.

ix. 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, in its next tariff petition.

x. Create a separate post retirement fund by March 31, 2021, and report in this regard be submitted to the Authority.

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

xii. to provide details of PEPCO Management Fees, if any, claimed previously by March 31, 2021, so that same could be adjusted in the subsequent tariff determinations.

xiii. Provide project wise detailed report for the investment carried out along-with their cost/benefit analysis and technical/financial savings achieved by December 31, 2020.

xiv. Carry out detailed analysis about the hard and soft areas relative to claims in earlier studies.

xv. Take remedial measures for achievement of performance standards as laid down in NEPRA Performance Standards (Distribution) Rules, 2005.

xvi. Target high loss feeders to bring the overall losses down. A detailed plan be prepared and submitted to the Authority by March 31, 2021, for monitoring the progress in this respect.

33.2. The determination of the Authority 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

Engr. Bahadur Shah Member	Rehmatullah Baloch Member 4/12/2020
Rafique Ahmed Shaikh Member	Saif Ullah Chattha Vice Chairman 2.12.2020

Tauseef H. Farooqi
Chairman

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